



United States Department of the Interior

BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT

PACIFIC OCS REGION
770 Paseo Camarillo, 2nd Floor
Camarillo, CA 93010-6064

May 20, 2013

Mr. Mike Ludwig
Truthout
1234 Congress Street
New Orleans, LA 70117

Re: FOIA Request #BSEE-2013-00094

Dear Mr. Ludwig:

This is in response to your Freedom of Information Act (FOIA) request dated March 11, 2013, and received in this office on March 13, 2013. In your request, you are requesting the following information:

1. Copies of any and all drilling permits issued between the years 2005 and 2013 to operator Venoco Inc. for oil and gas exploration, drilling and injection well operations at Venoco's Platform Gail, Platform Grace and Platform Holly, each located off the coast of California. According to BSEE definitions, these permits may include permits for a "new well," permits for "a revision to a new well," permits for "a bypass," permits for "a revision to a bypass," permits for "a sidetrack," and permits for "a revision to a sidetrack." Platform Gail is located in the Santa Barbara Channel and produces from the Sockeye field. Platform Grace is located in the Santa Barbara Channel and produces from the Santa Clara Field. Platform Holly is also located in the Santa Barbara Channel.
2. Copies of any violations and/or notices of violation issued by BSEE to Venoco related to oil and/or gas offshore exploration, drilling and injection well activities at Platform Gail, Platform Grace and Platform Holly.
3. Copies of any permits, emails, memorandums, notices and documents produced by BSEE and/or Venoco Inc. that include information on "hydraulic fracturing," "frac" and "fracking" operations at Platform Holly, Platform Grace and Platform Gail.

In reviewing the documents, we are releasing in full disclosure, 1141 pages of documents. We have determined that portions of 8 pages of the materials are exempt from release under Exemption 5 of the FOIA [5 U.S.C. Section 552 (b)-(5), which concerns the release of predecisional inter-agency or intra-agency correspondence. Also, please note that the responsive documents being provided are related to Platforms Grace and Gail only. We have no responsive documents for Platform Holy.

Mr. Lane Nemirow with the Office of the Solicitor was consulted in reaching this decision. If you disagree with this determination, you may appeal this partial denial to the FOIA Appeals Officer. The FOIA Appeals Officer must receive your FOIA appeal no later than 30 workdays from the date of this final letter responding to your FOIA request. Appeals arriving or delivered after 5 p.m. E.T., Monday through Friday, will be deemed received on the next workday. Your appeal must be delivered by mail, courier service, fax, or email to the address listed at <http://www.doi.gov/foia/appeals.cfm>. If appealing by mail your appeal and all correspondence must be addressed to:

Freedom of Information Act Appeals Officer
Department of the Interior
Office of the Solicitor
1849 C Street, NW, MS 6556
Washington, DC 20240

You must include with your appeal copies of all correspondence between you and the bureau concerning your FOIA request, including a copy of your original FOIA request and this partial denial letter, and an explanation of why you believe the bureau's response is in error. Failure to include this documentation with your appeal will result in the Department's rejection on your appeal. All communications concerning an appeal should be clearly marked with the words, "FREEDOM OF INFORMATION APPEAL."

Also, the Office of Government Information Services (OGIS) was created as part of the 2007 OPEN Government Act amendments to the FOIA to offer mediation services to resolve disputes between FOIA requesters and Federal agencies as a nonexclusive alternative to litigation. Using OGIS services does not affect your right to pursue litigation. You may contact OGIS at:

Office of Government Information Services (OGIS)
National Archives and Records Administration
8601 Adelphia Road, Room 2510
College Park, Maryland, 20740-6001

For your information, Congress excluded three discrete categories of law enforcement and national security records from the requirements of the FOIA. See 5 U.S.C. § 552 (c) (2006 & Supp. IV (2010)). This response is limited to those records that are subject to the requirements of the FOIA. This is a standard notification that is given to all our requesters and should not be taken as an indication that excluded records do, or do not, exist.

This completes our response to your request. If you have any questions, please contact me at (805) 389-7621, or send me an email at janice.hall@bsee.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Janice R. Hall", with a stylized flourish at the end.

Janice R. Hall
FOIA Officer

Enclosure

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☒ NEW WELL ☐ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 BSEE OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013	
4 WELL NAME (CURRENT) E-27		5 SIDETRACK NO (CURRENT)	6 BYPASS NO (CURRENT)	
7 PROPOSED START DATE December 20, 2011		8 PLAN CONTROL NO (NEW WELL ONLY)		
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04311 XXXXXXX				
10 ☐ Revision	11 If revision, please list changes			

RECEIVED
 NOV 30 2011

OFFICE OF FIELD OPERATIONS

WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE	
12 LEASE NO P-204		17 LEASE NO P-205	
13 AREA NAME 6B		18 AREA NAME 6B	
14 BLOCK NO 4660		19 BLOCK NO 4661	
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) 726,819.90	16 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,050,218.40	20 LATITUDE (☐ NAD 83 / ☒ NAD 27) 762.020.42	21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,046,713.31

LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME T/ Pico (1st Gas)	23 TOP (MD) 2994	24 TOP (TVD) 2808	22 NAME Upper Topanga	23 TOP (MD) 6831	24 TOP (TVD) 5536
T/ M1	4727	4044			
T/ M4	5475	4574			

25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250 414 or 30 CFR 250 1617(c) and (d) as appropriate)

Drill program includes design criteria for well, BOPE, casing program, drilling prognosis, cement program, mud program, directional plan, surface and subsurface location map, 123S - Supplemental APD information

26 CONTACT NAME Jody Robins	27 CONTACT TELEPHONE NO 805-745-2153	28 CONTACT E-MAIL ADDRESS jody.robins@venoco-inc.com
29 AUTHORIZING OFFICIAL (Type or print name) Dan Taimuty	30 TITLE Development Manager	
31 AUTHORIZING SIGNATURE 	32 DATE 11/18/11	

THIS SPACE FOR BSEE USE ONLY

APPROVED ☒ With Attached Conditions ☐ Without Conditions	BY 	TITLE DISTRICT MANAGER
API WELL NO ASSIGNED TO THIS WELL 043112080200	DATE 1-9-12	

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings userless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☒ NO ☐ N/A	This is the 27th well drilled with the same structural pipe set depth.
D) If requesting a waiver of the conductor casing, have you submitted a log to BSEE District Office that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	The 24", 13 3/8" and 9 5/8" casing program is the same as wells E-23, E-24, E-25 and E-26.
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☒ YES ☐ NO ☐ N/A	
G) Is the calculated daily volume possible from an uncontrolled blowout of this well greater than the daily volume included in the worst case discharge scenario in the approved oil spill response plan?	☐ YES ☒ NO ☐ N/A	Approved Field Drilling Rules

Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco Inc				2) Well Name (Proposed): E-27 ST BP			
3) Bottom Hole Lease: P-0204				4) Surface Lease: P-0205			
5) API Number: 0431120XXX				6) Type of Well: ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): 4000'			
9) Rig Name: Kenai 2				10) SubSea BOP: ☐ Yes ☒ No			
11) Water Depth (ft): 739'		12) RKB Height (ft): 108'		13) Mineral Code:			
14) Drive Pipe Size (in): 24"		15) Drive Pipe Depth (ft): N/A		16) Anchors: ☐ Yes ☒ No			
17) Well Design Information:							
Interval Number: 1		Type: Conductor		Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
1	24"	186	X-56	3060	1450	1400'	662
						1400'	
GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION			
Hole Size (in) 26		Type N/A		Annular Test (psi) N/A			
Mud Weight (ppg) 8.9		Size (in)		BOP/Diverter Test (psi)			
Mud Type Code		Wellhead Rating (psi)		Mud Test Weight (ppg)			
Frac Gradient (ppg) N/A		Annular Rating (psi)		Casing/Liner Test (psi) 200			
Liner Top Depth (ft)		BOP/Diverter Rating (psi)		Formation Test (ppg)			
Cement Volume (ft ³) 1460							
Interval Number: 2		Type: Surface		Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
2	13 3/8"	61	K-55	3090	1540	2840'	1338
						2708'	
GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION			
Hole Size (in) 17 1/2"		Type Diverter		Annular Test (psi)			
Mud Weight (ppg) 9.1		Size (in) 21 1/4"		BOP/Diverter Test (psi) 200			
Mud Type Code		Wellhead Rating (psi) 2K		Mud Test Weight (ppg)			
Frac Gradient (ppg) 9.4		Annular Rating (psi) 2K		Casing/Liner Test (psi) 2150			
Liner Top Depth (ft)		BOP/Diverter Rating (psi) 2K		Formation Test (ppg)			
Cement Volume (ft ³) 2350'							
Interval Number: 3		Type: Production		Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
3	9 5/8"	43.5	L-80	6330	3810	7133'	2870
						5750'	
GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION			
Hole Size (in) 12 1/4"		Type Class III		Annular Test (psi) 2500			
Mud Weight (ppg) 9.5		Size (in) 13 5/8"		BOP/Diverter Test (psi) 2500			
Mud Type Code		Wellhead Rating (psi) 5K		Mud Test Weight (ppg)			
Frac Gradient (ppg) 11.0		Annular Rating (psi) 5K		Casing/Liner Test (psi) 2500			
Liner Top Depth (ft)		BOP/Diverter Rating (psi) 5K		Formation Test (ppg) 11.0			
Cement Volume (ft ³) 2382'							

* NOTE* For additional casing/liner intervals, please submit an additional Form 0123S

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. BSEE uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for Forms BSEE-0123 and BSEE-0123S is estimated to average 100 hours per response. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Bureau of Safety and Environmental Enforcement, 381 Elden Street, Herndon, VA 20170.

November 16, 2011

Mr. Jody Robins
Drilling Engineer
Venoco Inc.
Ventura California

4587 Telephone Road
Suite 203
Ventura, CA 93003

T: +1 805 658 5800
F: +1 805 658 5805
www.interactprojects.com

Subject: Venoco Inc. Platform Gail E-27 New Well Drilling Program Casing and Cementing Certification.

Dear Jody:

In response to the requirements set forth in **The Code of Federal Regulations (CFR) Part 250- Oil and Gas and Sulphur Operations in The Outer Continental Shelf, Subpart A 250.420 What well casing and cementing requirements must I meet.** InterAct provides the following verification for the Venoco Inc. Platform Gail E-27 New Well Drilling Program:

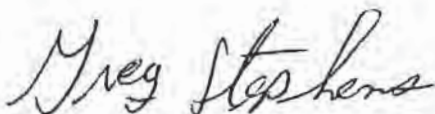
I do hereby verify that:

The Venoco, Inc. Platform Gail E-27 New Well Drilling Program (November 9th, 2011) provides two independent tested barriers, including one mechanical barrier, across each flow path during the well completion activities.

Furthermore, I verify that:

The casing and cementing design of the Platform Gail E-27 New Well Drilling Program is appropriate for the expected wellbore conditions.

Sincerely,



Greg Stephens P.E. (California P 1377)

Attachment: InterAct Statement of Qualifications

InterAct Statement of Qualifications

InterAct Offers a broad range of professional engineering and project management services to the international oil and gas industry. InterAct assists operators at every stage of the field life cycle, from development through the production phase to facilities decommissioning and abandonment, both on and offshore. Key Services by InterAct are:

Drilling and production services

- Abandonment services (subsea well)
- Activity management Facility decommissioning and abandonment
- Field development concept studies
- Permitting and environmental services
- Subsea installation and intervention
- Drilling and Production Services

InterAct drilling engineers work closely with clients' geologists and reservoir engineers to prepare cost effective well designs that ensure maximum productivity. We have successfully designed and managed drilling projects for horizontal and extended reach wells, deepwater subsea wells, reservoirs with complex geological formations, and wells in urban areas. Our portfolio of services includes:

- Drilling and completion designs
- Directional design
- Testing work over and stimulation programs
- Artificial lift design and optimization
- Drilling and production services
- Rig and equipment sizing, contracting and procurement
- Well and drill site permitting
- Wellbore review and management of slot recovery programs

Website: www.interactprojects.com

Experience and Summary of Greg Stephens

Mr. Stephens is a California registered professional engineer (P-1377) with 30 years of experience with major international oil companies. Mr. Stephens' experience includes staff assignments in drilling and production operations, including the Santa Barbara Channel and senior level assignments in Operations, Project Management, Business Development / Acquisitions, and Corporate Governance for domestic and international ventures.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-27 NEW WELL DRILLING PROGRAM
API# 04-311- 20XXXXX
LEASE OCS-P-0204

November 9, 2011

Attachment to BSEE Permit - Drilling Program

Objective: Drill development well E-27 and complete it as a dual well with production from the short string in the Monterey Formation and injection into the long-string in the Upper Topanga Formation. Well TD's in OCS-P- 0204 Lease.

Surface Location: OCS-P-205 - Slot No. 28 (X= 1,046,713.31' & Y= 727,020.42')

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Proposed TD: OCS-P-204, 7133' MD/5750' TVD

TD Location: 200.52' S and 3505.09' E or (X = 1,050,218.40' and Y = 726,819.90')

Markers:	MD	TVD	VSS	Press	EMW	Comments
13 3/8" Casing	2840	2708	-2600			
Pico - 1 st Gas	2994	2808	-2700	1195	8.5	Estimated BHP
Monterey M1	4727	4044	-3936	1740	8.5	Estimated BHP
Monterey M4	5475	4574	-4466	1780	7.6	Estimated BHP
T/ Upper Topanga	6831	5536	-5428	1735	5.9	Estimated BHP
TD	7133	5750	-5642			

<u>Proposed Casing:</u>	<u>MD</u>	<u>TVD</u>
24", 186# (.75" Wall), X-56, DrilQuip S-60	1400'	1400'
13 3/8", 61#, K-55, Buttress	2840'	2708'
9 5/8", 43.5#, L-80, LT&C	7133'	5750'

26" Hole Section

1. Move rig over slot #28. Install ESD station on rig floor or driller's console.
2. M/U 26" bit and BHA with Gyro MWD tool.
3. Drill a riserless 26" hole from the ocean floor to +/-1420' (573' penetration).
 - Hole should be drilled at 75 to 100 fph rate unless WOB indicates rock is firm
 - Pump Durogel sweeps prior to each connection
 - Run a drift shot with MWD after passing through the last guide funnel before commencing to ensure the drill pipe did not get outside the guide buckets
 - Make drift checks every connection with MWD to ensure straight hole
 - Drill the hole to fit the pipe plus 20' of rat hole
 - Review NPDES and perform all required sampling, testing and monitoring. Fill out discharge sheet daily. Mud volumes and cuttings must be accounted for and reported while drilling the riserless hole section. Report any spills immediately.
4. Circulate hole clean to mud line with seawater/50 bbl sweep at as high a rate as possible. Spot a 100+ viscosity pre-hydrated gel pill across the open hole. POOH.
5. Run 24" casing with Dril-Quip rep on location:
 - Rig up spider bowl and hand slips, 250 ton side door elevator, & power tong
 - R/U casing fill-up line. Be ready to wash down casing if necessary – 24" circulating swage is required. Test fit head prior to spud well.
 - P/U 41' joint with float shoe installed.
 - Run remaining 24" range 3, 75" wall X-56 casing with Dril-Quip S-60 connections
 - No centralizers will be run.
 - Install two anti-rotation keys per joint.
 - Pump through each joint to check the shoe floats
 - Use the crane to tail each joint to the rig floor
 - Fill joints with calculated amount of seawater.
 - P/U splash zone joint that is coated with Carboline 1207. Do not fill this joint.
 - P/U wellhead joint. This joint is coated with white System IV to prevent corrosion. Do not fill this joint.
 - Calculate approximate cut-off point of the wellhead joint and grind seam weld off of 24" casing to allow cutter and slip-lok starting wellhead to function – this should be done on the deck.
 - Land the casing with splash zone joint positioned +/- midway at MLLW. Do not fill.
6. P/U Weatherford slotted base plate designed to fit on top of the 24" with 5" bowl and slips.
7. M/U stab-in cement stinger on 5" drill pipe and TIH. Place centralizers on the bottom joint and the third joint. Space out to get as close to the rig floor as possible.
8. Stab into the shoe and rig up BJ cement line. Leave enough slack to unsting from the shoe to dump cement on top of float shoe at end of job.

9. Pump 200+ bbl of seawater at high rate to clean the annulus and verify stinger is in place
10. Cement 24" structural pipe as per program (use 32" hole for volume calculation and no OHE). Bring cement back to the ocean floor, leaving 20 bbls in drill string. Unsting from shoe and dump cement leaving TOC +/- 40' above the shoe. Break off cement line
11. Pull out of the hole with one stand. Pump wiper ball through the drill pipe to clear any residual cement from the string. POOH.
12. Wait on cement until the cement develops 500 psi compressive strength. P/U pipe to check cement bond. If the pipe slips in the rathole, wait on cement an additional 4 hours and repeat test before releasing casing.
13. Once 24" conductor is fully supported by cement, rig up casing cutter. Cut casing at +/- 63" above the wellhead deck. Lay down cut-off and landing joint
14. Nipple up and pressure test the diverter riser assembly as follows:
 - 20-3/4" 3M X 21-1/4" 2M DSA.
 - 6' X 21-1/4" 2M X 21-1/4" 2M spool.
 - 20' X 21-1/4" 2M X 21-1/4" 2M spool.
 - 2' X 21-1/4" 2M X 21-1/4" 2M diverter spool.
 - 4.375' X 21-1/4" 2M Hydril.
 - Bell nipple.
15. Install diverter lines. The final adjustments on diverter line stands will be made at this time.
 - **DIVERTER VALVE INSTALLATION:** Depending on availability, Venoco will either use 8" hydraulically controlled ball valves or 9" hydraulically controlled single gate shear rams for the outboard valve locations. The main valve located at the Tee under the annular will be an 8" ball valve as in previous installations.
 - **DIVERTER TESTING:** Follow BSEE regulations for pressure testing, flow testing of vent lines and actuation of the diverter system. Diverter to be flow tested at initial installation. Pressure test to 200 psi and within 7 days of previous test if still in use. Actuate once every 24 hrs and alternate stations for actuation and tests. Plan initial pressure test against the casing and cement in the shoe. If casing does not test or if follow up tests are required plan to use Cameron supplied test plug.
 - All pressure test, flow test, and actuation results shall be recorded on IADC reports
 - Perform diverter drill with each crew on tour while drilling section.

17-1/2" Hole Section

1. Install wear bushing. M/U 17-1/2" bit and directional drilling BHA (steerable assembly with gyro MWD). Run in the hole and tag top of cement. Note depth.
2. Pressure test, function test and flow test the diverter system per BSEE regulations. Pressure test the diverter and casing to 200 psi. Flow test the diverter with seawater. Subsequent flow tests are not required, but actuation test is required daily at alternating stations and pressure test every 7 days at alternating station.
 - Take gyro shots while TIH to confirm bottom hole location.

3. Drill out cement with seawater. Circulate out cement and change the well over to mud. Shut off pumps. Monitor the well to confirm the fluid level is static.
4. Directional drill 17 1/2" hole to the 13 3/8" casing point at 2840' MD / 2708' TVD as per directional plan
 - Perform and log Diverter tests on tour sheet per MMS regulations
 - Use spider plot and anti-collision plot to monitor proximity. Continue to gyro survey until MWD surveys confirm free of interference.
 - Control drill with low mud weight to keep from losing returns. Historically mud weights over 9.1 ppg have led to losses. LCM pill should be ready in pill pit.
 - Overboard dump and dilution of mud and cuttings will be required in this hole section to maintain low mud weight. Prior to drilling, sample the mud mixed for drilling this section and send to lab for base line test. Follow all NPDES requirements for measurement, monitoring and reporting prior to dumping
5. Circulate and condition mud for casing and POOH
6. Rig up and run 13-3/8" casing string to +/- 2840' as follows
 - Float shoe, 2 jts 13-3/8" 61# K-55 Buttress casing, Float collar, 13-3/8" 61# K-55 Buttress to surface
 - Fill pipe while running
 - Ensure there is a swage with safety valve on rig floor (function for BSEE)
 - Baker-Lock the first four joints. Pump through float equipment to check
 - Centralize the casing with centralizers in the middle of the two shoe joints then every third joint back to the mud line (+/- 850') and every 5th joint inside the 24" casing. Do not run centralizer on top three joints below wellhead.
 - Circulate and reciprocate pipe until hole cleans up.
7. Cement 13-3/8" per the attached cement program.
 - Displace cement with mud
 - The last 20 bbls should be seawater for pending casing cut.
 - Reciprocate the casing while cementing and displacing the cement job.
 - Bump plug with 1000 psi over final circulating pressure.
 - Bleed off pressure and check floats.
8. Wait on cement until cement passes transition time per cement tests. Monitor annulus and casing for losses. Ensure well is static and it is safe to remove the diverter.
 - Rig down cement head and lines.
 - Drain the diverter and flush with seawater
 - Nipple down DSA and pick up the diverter system.
 - Install and set 13-3/8" casing slips.
 - Cut 13 3/8" pneumatic saw. Lay down extra joint and cut-off piece.
 - Nipple down diverter system and offload
 - Install casing head, 20-3/4", 3k x 13-5/8", 5k, per Cameron procedure.
 - Test the void/seals to 1078 psi (70% collapse of 13-3/8" 61# K-55 casing).
 - Install riser and nipple up the 13 5/8", 5M BOPE with annular preventer, 2 7/8" X 5" VBR

- in top ram, blind shear rams, and 5" pipe rams in lower set of rams.
- Set test plug and test BOP per BSEE regs to 250/2500 ps. Pull test plug
- Install wear bushing.

12-1/4" Hole Section

1. M/U 12-1/4" bit and directional BHA. Drill out to within 30' of the 13 3/8" casing shoe. Test the casing to 2150 psi (70% of burst of 13 3/8" 61# K-55) for 30 minutes and chart.
2. Drill out shoe and 10' of new formation. Rig up cement unit and perform FIT to 11.0 ppg
2. Drill 12-1/4" hole to TD of +/-7133' MD/5750' TVD as per directional plan.
 - Overboard discharge will not be allowed in this hole section.
 - Cut 30' cores at +/-5000' MD and +/-5575' MD.
 - Perform and log BOP tests (2 weeks) on tour sheet per BSEE regulations. Perform and document all weekly BOP/H2S drills and all items on BSEE checklist. Fill out NPDES monitoring information daily.
 - H2S is present in this hole section. Rig up H2S equipment per BSEE approved H2S and SO2 Contingency Plan. Safety company should calibrate monitors every 12 hours and document on tour sheets. H2S drills should continue throughout operations.
 - MWD/GR will be run through this section of the hole to assist in correlation.
 - Perform flow checks and circulate bottoms up as necessary.
 - Keep fluid loss low in mud to reduce swelling/swabbing in the clay formation.
 - Make wiper trips as necessary to keep hole in good shape. As a guide plan to wipe new hole at lease every 12 hrs and pull back to the shoe every 24 hours until hole conditions are understood.
 - Notify engineer if losses occur. All LCM material to be acid soluble. A sized CaCO3 LCM pill should be ready in pill pit.
3. Short trip to shoe and back to TD. Circulate and condition the hole for logs. POOH
4. RU logging unit. Run open hole logs per attached logging program. Utilize electronic disconnect to allow for increase weak point.
5. RIH with hole opener BHA after logging and condition the hole for 9 5/8" casing. POOH and rig up casing crew. Pull the wear bushing.
6. Run 9 5/8", 43.5#, L-80, LT&C casing to +/-7133' as follows:
 - Davis Lynch Float shoe
 - 2 joints 9-5/8" 43.5# L80 LTC
 - Davis Lynch Float collar
 - 9-5/8" 43.5# L80 LTC to surface
7. While running casing:
 - Ensure swage with safety valve on rig floor. Function and note for BSEE on tour sheets.
 - XO to fit the safety valve and all casing threads
 - Baker-Lock the first four joints

- Pump through float equipment to check. Fill pipe while RIH
 - Centralize the casing with centralizers in the middle of the two shoe joints then every joint to +/- 4800' and then every other joint into the 13-3/8" shoe, then every 5th joint to the mud line (+/- 850').
8. Circulate and reciprocate pipe until hole cleans up.
 9. Cement the 9 5/8" casing per the attached cementing program.
 - Reciprocate the casing while cementing and displacing the cement job
 - Displace cement with the cement unit using mud.
 - Bump plug with 1000 psi over final circulating pressure.
 - Bleed off pressure and check floats
 10. Wait on cement until cement passes transition time per cement tests. Monitor annulus and casing for losses.
 - After WOC pressure test annulus to 800 psi and ensure annulus is static
 - Drain the BOP stack and flush with seawater (casing head valve).
 - Nipple down the 13-5/8" riser spool (4') and pick up the BOP
 - Install the 9 5/8" by 13 3/8" Cameron casing slips
 - Cut 9 5/8" casing with pneumatic saw. Lay down extra joint and cut off.
 - Remove 13-5/8" riser spacer spool.
 - Install Cameron tubing spool (13-5/8", 5k x 11", 5k)
 - Pressure test the void/seals to 2667 psi (70% collapse of 9-5/8" 43.5# L-80).
 - Install DSA (11" 5k x 13-5/8" 5k) on top of tubing spool. Nipple up 13 5/8", 5M BOPE
 11. Set test plug and test BOP to 250/2500 psi per BSEE regulations and chart. Pressure test against 5" and 2 7/8" tubing. Pull test plug. Install the wear bushing
 12. Pick up 8 1/2" bit and clean out BHA. Run in hole and tag cement. Pressure test 9 5/8" casing to 2500 PSI for 30 minutes and chart test. Clean out to the float collar or deeper if indicated by log results and need to perforate deeper. Pressure test the 9 5/8" casing to 2500 PSI for 30 minutes and chart test. Pull out of the hole.
 13. RIH with bit and 9 5/8", 43.5# casing scraper to effective clean out depth. Circulate and condition mud but do not change over at this time to maintain hydrostatic on casing to allow for bond log results.
 14. Rig up wireline and run cement bond log over the 9 5/8" casing. Be prepared to run log under pressure if recommended. Evaluate logs and determine if block squeezing of completion interval will be required. Squeeze well as required.
 15. RIH to TD. Dump and clean mud pits to prepare for changeover. Displace the drilling mud and circulate the well with clean filtered seawater using sweeps. Filter seawater until < 30 NTU's obtained. POOH.

Completion Procedure

NOTE: Install a 2 1/16" 5M casing valve with a 1502 tee and pressure gauge, a check valve and high pressure hose connection below the tubing hanger. Test to 2500/250 psi for 5 minutes. It will be used to pump seawater into the well to control the well.

NOTE: BOPE testing to continue on 14 day frequency through the completion that is approved as part of the APD.

1. The well will be a dual completion with the long string for injecting into the Lower Topanga and the short string producing the Monterey (see attached Proposed Completion Diagram).
2. Make up 4 1/2" TCP Perforation guns, run in hole, rig up wireline, correlate and put guns on depth. Pressure up to fire guns and perforate the Monterey M4 and Upper Topanga per logs
3. Make up 8 1/2" bit and 9 5/8" scraper and run in hole to scrape perforations. Circulate hole clean.
4. Make up, run, and set 9 5/8" Model D packer with mill out extension, 10' seal bore extension with 2 7/8" tail, and completion equipment at +/- 6600' MD. Take over pull on Model D during setting process to confirm packer is set.
5. Pick up the long string completion equipment as per attached schematic. The dual packer will be configured for short string set to allow the long string seal assembly to be tested. The snap latch will be run above the seal assembly to confirm seal location when spacing out. Run in hole to above the Model D packer. Stab into packer, locate and snap in. Get space out measurement, pick up and space out to land, make up hanger half and lower completion and land same. Get up and down weight prior to landing. Follow Cameron procedure for landing dual hanger half. At no time will hanger hold down pin be removed. Orient the hanger half at surface and lower into position in the wellhead.
6. Drop and pump ball down onto seat with a low pump rate. After ball lands, pressure up tubing to 2000 psi to pressure test seal assembly for 15 minutes. Continue to pressure up to 3000 psi to expel ball. Rig up slickline on the long string and pressure test lubricator to 2000 psi and pressure test before each run when the lubricator connection is broken. Run and set injection valve in the X nipple at +/- 1000', rig down slickline. Set short string hanger half, install BPV in long string. Pull short string hanger half.
7. Rig up and run in hole with short string with completion equipment. Do not make up TRSSV. Run in and stab into seal bore of 9 5/8" Model GT dual packer. Drop setting ball down short string landing joint. Pressure up short string to 3000 psi in 500 psi increments to set the Model GT packer. Hold 3000 psi on tubing for 15 minutes. Slowly bleed pressure off tubing. Pressure test the packer and annulus to 2000 psi. Do not pressure up the short string and blow the packer setting ball at this point.
8. Pick up short string, pull out of hole and make up TRSSV and pressure test the control line. Run in with short string, get space out measurements, Pick up and install hanger half, reconnect and pressure test the control line to top of hanger. Get up and down weight prior

to landing.

9. Prior to stinging into the seal assembly, spot 50 bbls of packer fluid.
10. Follow Cameron procedure for landing dual hanger half. At no time will hanger hold down pin be removed. Orient the hanger half at surface and lower into position in the wellhead. Pressure test the packer, tubing hanger and annulus to 2500 psi for 30 minutes and record on chart. With pressure on control line to keep TRSSSV open pressure up tubing to 3500 psi against ball and seat and shear out ball.
11. Bleed off control line pressure to close the short string TRSSSV. Install BPV in short string. Injection valve and BPV previously set in the long string.
12. Nipple down BOPE and nipple up Cameron adapter and dual tree. Remove BPVs, install blanking plugs, and pressure test bonnet void and tree to 3000 psi. Remove blanking plugs.
13. Release rig.

Requested Waivers

1) Sec 250.421 (d): Intermediate casing

Request: Intermediate casing shall only be set if hole condition dictate. Based on field drilling histories, the formations encountered on Platform Gail have normal pressure gradients and can be drilled with mud weights in the 9.0 to 9.6 ppg range. Formation pressures of existing wells show that depletion has occurred, making the reservoir pressures even lower. Leak off tests taken on the surface casing shoes have been between 11.2 and 12.2 ppg. This casing string is therefore not needed to control formation pressure.

If hole conditions and/or well control should become a concern, then intermediate casing will be set.

2) Sec 250.423 (a) (3): Test production casing to a minimum test pressure of 70% of minimum internal yield

Request: Test production casing to the maximum anticipated surface pressure (MASP) that the string will be subject to. (Note: Casing is designed so that the MASP is less than 70% of the rated casing burst pressure.)

3) Sec 250.423 (c): The Operator must perform a negative pressure test to ensure proper casing installation.

Request: This requirement is not applicable as we are not running a subsea wellhead or liner. It is not possible to perform a negative pressure test on a surface wellhead.

4) Sec 250.448 (b): BOP high-pressure tests

Request: Revise the high-pressure test for ram-type BOP's, annular type BOP's, the choke manifold, and other BOP components to be 500 psi greater than the calculated MASP for the applicable section of hole as indicated in the APD.

Other Data

Please see the E-4ST5 APD for the following material:

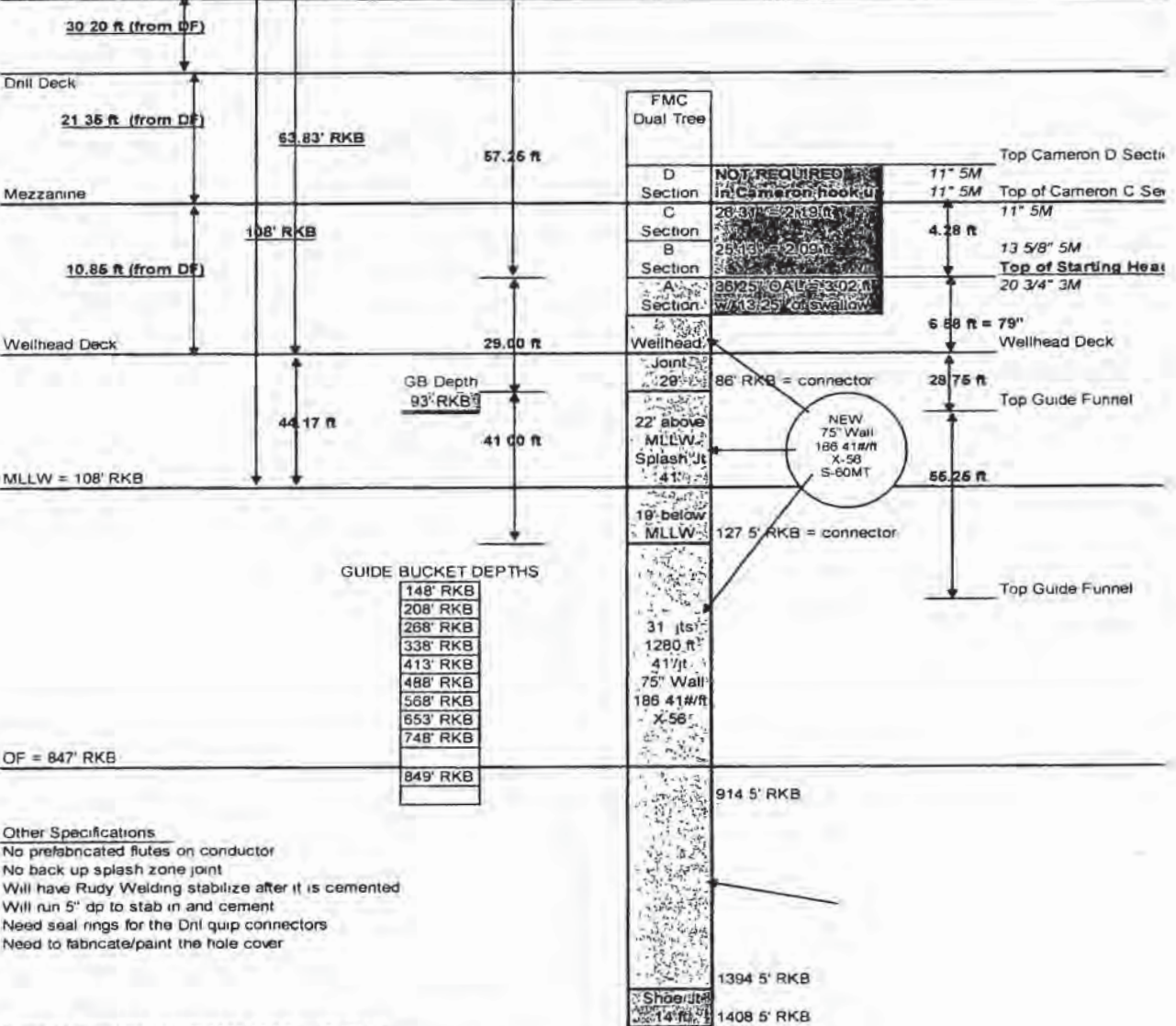
- BSR shear test data and calculations
- Detailed choke manifold schematics
- BOP control schematics

PLATFORM GAIL NEW WELL STARTING HEAD AND CONDUCTOR

REV January 12, 2010

KB Kenai Rig 2 = 108

Rig Floor Kenai Rig 2 = 108.5'



Other Specifications

- No prefabricated flutes on conductor
- No back up splash zone joint
- Will have Rudy Welding stabilize after it is cemented
- Will run 5' dp to stab in and cement
- Need seal rings for the Dnl quip connectors
- Need to fabricate/paint the hole cover

Notes on Materials and Welding and Specifications

- Splash Zone Joint to have Carboline 1207
- Wellhead Joint to have System 4 as defined by the SP-80-2 "Protective Coatings and Painting Specification"

Guide Buckets	
Below MLLW	
Divecon Depths	108 DF to MLLW
15	-93
-40	-148
-100	-208
-160	-268
-230	-338
-305	-413
-380	-488
-460	-568
-545	-653
-640	-748

Vertical to 1000'
Max Angle:
D.F. Elevation 107'
D.F. to Tubing Head: XX.XX
Water Depth: 739'
Tree: Cameron Dual (Proposed)
Wellhead: Cameron

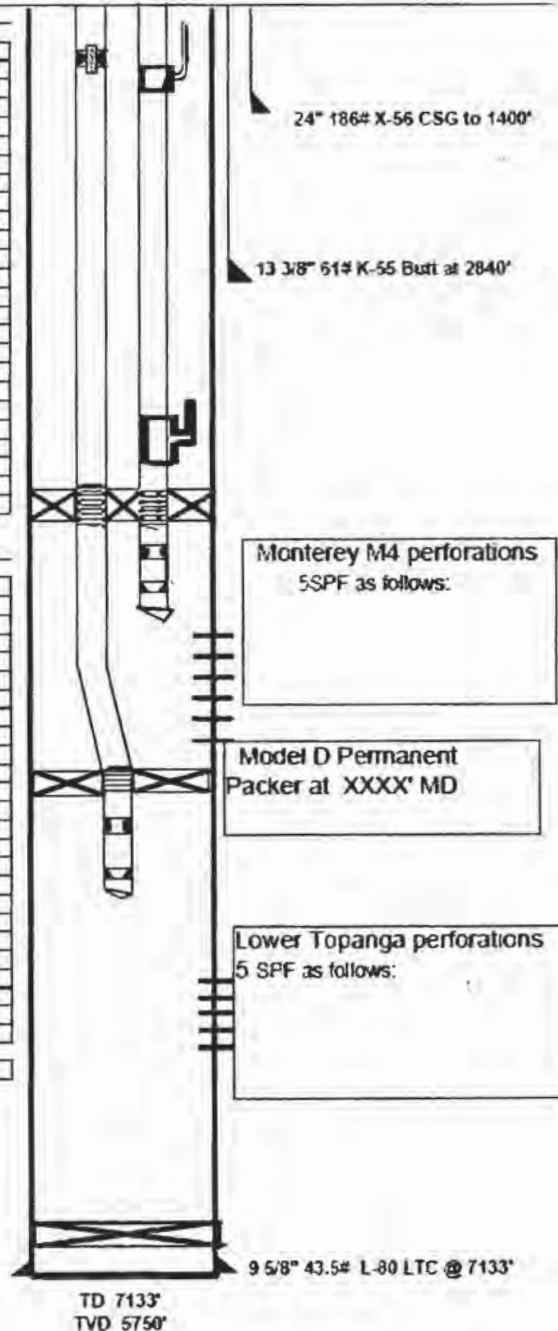
Lease: OCS-P-0204
SOCKEYE FIELD
WELL E-27 Proposed
M4 Producer - Lower Topanga Injector

Drawing Revision for

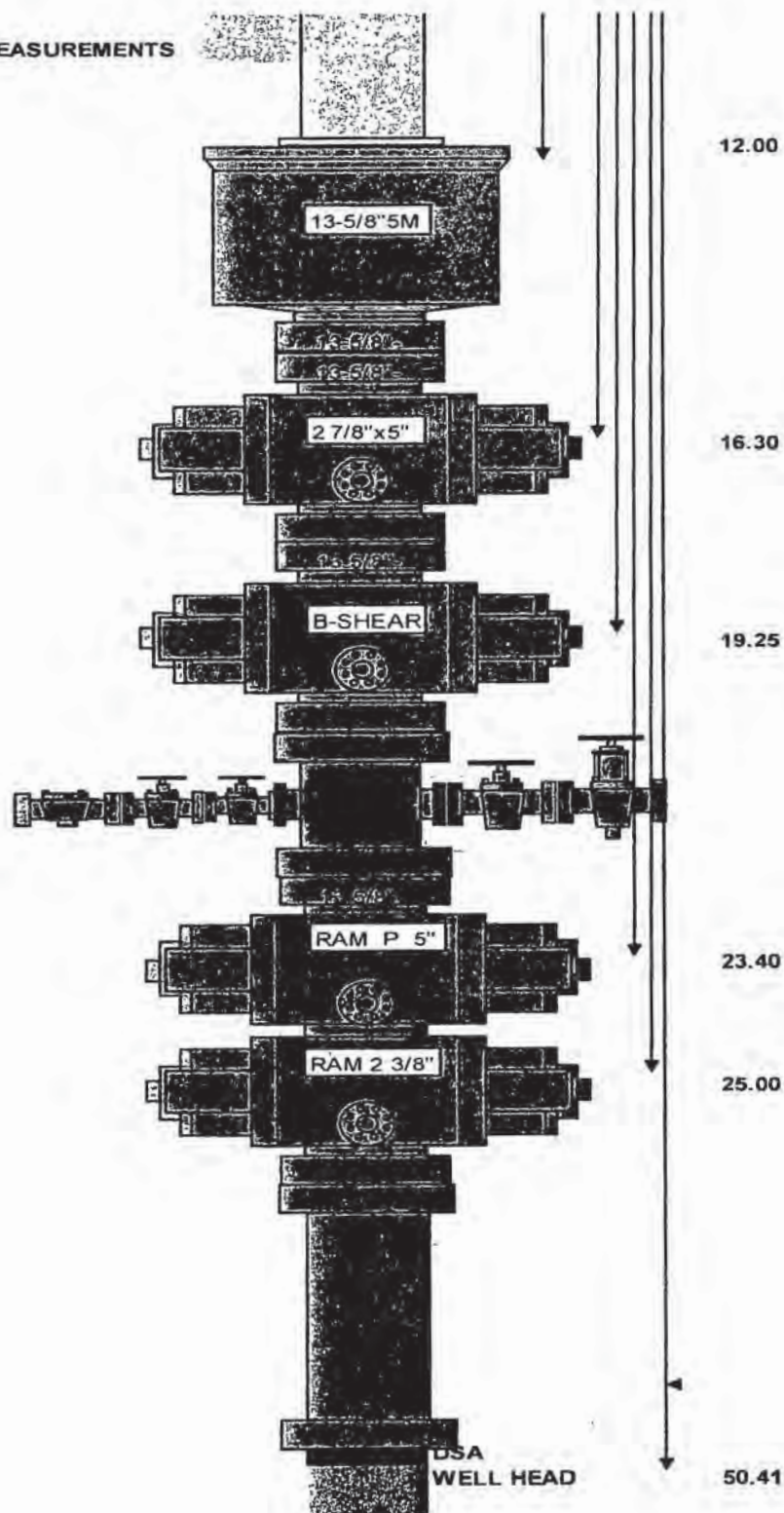
Completion Date:

Short String Description	OD	ID	Length	Top
RFKB				31.50
FMC Tubing Hanger Hat	11.000	2.441	1.10	
2-7/8" 6.5# L-80 EUE and Pup Joint	2.875	2.441	3.73	
2-7/8" 6.5# L-80 EUE and Pup Joint (Space Out)	2.875	2.441	4.35	
2-7/8" 6.5# L-80 EUE and Tubing SC&B	2.875	2.441	363.37	
2-7/8" 6.5# L-80 EUE and Pup Joint	2.875	2.441	5.19	
Baker 2-7/8" TE-6 \$\$\$V	4.630	2.441	4.75	
2-7/8" 6.5# L-80 EUE and Pup Joint	2.875	2.441	4.13	
2-7/8" 6.5# L-80 EUE and Tubing SC&B	2.875	2.441	XXXX	
2-7/8" 6.5# L-80 EUE and Pup Joint	2.875	2.441	4.50	
Gas Lift Mandrel	4.750	2.441	5.15	
2-7/8" 6.5# L-80 EUE and Pup Joint	2.875	2.441	3.54	
2-7/8" 6.5# L-80 EUE and Tubing SC&B	2.875	2.441	51.22	
2-7/8" 6.5# L-80 EUE and Pup Joint	2.875	2.441	5.19	
Baker Locator Seal Assembly - 9.84 overall w/ 56 seals	3.240	2.441	1.51	
Upper Mandrel to Scoop Head - Scoop Head OD 3.313	4.250	2.591	11.32	
Baker 3-5/8" "GT" Dual Pkr - short string set-400 shear	3.500	2.441	3.53	
Lower Mandrel	2.591	2.441	1.93	
2-7/8" 6.5# L-80 EUE and Pup Joint	2.875	2.441	4.13	
2-7/8" 6.5# L-80 EUE and Tubing SC&B	2.875	2.441	31.44	
Baker 5X Nipple	3.700	2.593	1.12	
2-7/8" 6.5# L-80 EUE and Tubing SC&B	2.875	2.441	31.57	
Baker 5X Nipple	3.700	2.205	1.12	
Re-Entry Guide	2.650	2.441	2.50	

Long String Description	OD	ID	Length	Top
RFKB				51.50
FMC Tubing Hanger Hat	11.000		0.89	
2-7/8" 6.5# L-80 EUE and Pup Joint w/SC&B	2.875	2.441	3.65	
2-7/8" 6.5# L-80 EUE and Pup Joint (Space Out) SC&B	2.875	2.441	14.25	
2-7/8" 6.5# L-80 EUE and Tubing w/SC&B	2.875	2.441	955.60	
Baker 4 Nipple for Injection Valve	3.470	2.312	1.12	
2-7/8" 6.5# L-80 EUE and Tubing w/SC&B	2.875	2.441	XXXX	
2-7/8" 6.5# L-80 EUE and Pup Joint SC&B	2.875	2.441	5.15	
Upper Mandrel to Scoop Head - Scoop Head OD 3.313	2.875	2.441	10.13	
Baker 9-5/8" "GT" Dual Packer - short string	3.500	2.441	3.53	
Lower Mandrel	2.591	2.441	4.08	
2-7/8" 6.5# L-80 EUE and Pup Joint w/SC&B	2.875	2.441	4.17	
2-7/8" 6.5# L-80 EUE and Tubing w/SC&B	2.875	2.441	XXXX	
2-7/8" 6.5# L-80 EUE and Pup Joint w/SC&B	2.875	2.441	5.14	
Locator Seal Assembly - 10.65 overall 7 seals	3.480	2.441	1.60	
Baker 9-5/8" Model "DB" Packer (set at 7032" drill pipe)	3.130	4.750	4.04	
M4 Out Extension	7.070	6.000	6.35	
M4 Out Extension crossover	7.550	3.250	1.10	
Total Bore Extension	4.230	3.250	9.38	
Crossover Seal box x 2-7/8 pin	2.875	2.441	0.66	
2-7/8" 6.5# L-80 EUE and Pup Joint w/SC&B	2.875	2.441	2.07	
2-7/8" 6.5# L-80 EUE and Tubing w/SC&B	2.875	2.441	30.52	
Baker 5X Nipple	3.470	2.310	1.12	
2-7/8" 6.5# L-80 EUE and Tubing w/SC&B	2.875	2.441	21.40	
Baker 5X Nipple	3.700	2.21	1.12	
Re-Entry Guide	3.720	2.44	1.05	



**KENAI BOPE
RIG FLOOR MEASUREMENTS**



EVALUATION PROGRAM

1) MUD LOGGING

12 ¼" Hole Section – Continuous mud logging shall be performed from drilling out the shoe of the 13 3/8" casing to total depth. Collect dry samples at 30' intervals.

2) **CORING** – two 30' cores to be cut at +/-5000' md and +/-5575' md

3) LOGGING WHILE DRILLING

12 ¼" Hole Section – An MWD/GR will be used for directional surveys and core points

4) ELECTRIC LOGGING

12 ¼" Hole Section

Log Run #1 – Triple Combo

Log Run #2 – FMI-GR

Notify Geologist to witness all logs.
Primary Geologist: Monica Carlsen
805-745-2115 office
805-448-5622 cell

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Seafloor-1,400' (26" hole)	SW/Gel/Durogel Sweeps	8.6 - 8.9	<20	8.5-9.5	20-35	
1400'-2840' (17-1/2" hole)	SW/Gel/Gelite/Polypac	8.7 - 9.1	<8	8.5-9.0	18-30	23k-29k
2840'-7133' (12-1/4" hole)	SW/Gelite/Gel/SP-101	8.7 - 9.8	<6	8.0-9.5	18-25	23k-29k

Sea Floor –1400' This interval will be drilled with a seawater / Durogel high viscosity sweeps with returns to the sea floor. Build seawater/Durogel sweeps with PV:YP ratio of 1:4+ using high rate of dispersion. Add Soda Ash after Durogel is dispersed to extend viscosity. It is imperative to make sure the hole is clean and stable to get the casing to bottom.

1400'-2840' The objective in this interval is to drill a 17 ½ inch hole from the 24 inch casing shoe to 2,650 ft and run 13 3/8 inch 61# casing from 2,650 ft. to surface. The fluid system recommended is a Seawater/MI Gel/Gelite/Polypac system. It is planned to ocean discharge the 17 ½" hole section per the approved NPDES Permit.

2840'-7133' The objective in this interval is to drill an 12 ¼ inch hole from the 13 3/8 inch casing shoe to 6820 ft and run 9 5/8 inch 43.5# casing from TD to surface. The fluid system recommended is a Seawater/MI Gel/Gelite/SP101 system.

Notes:

- 1) Operate solids control equipment to maintain drill solids as low as possible.
- 2) **Maintain 2 bbls of ZnO₂** onboard to treat out H₂S. 2 bbls can treat 1040 bbls of mud.
- 3) A minimum of **500 sx** of barite shall be kept on the platform at all times to raise the mud weight 0.5 ppg

Hydrogen Sulfide Considerations:

Both the Monterey, Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the BSEE approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	24"	13 3/8"	9 5/8"
2	Setting Depth (feet - TVD)	1400	2708	5750
3	Expected Leak Off Test EMW at shoe (ppg)	9.4	11	12
4	Depth of next Casing (feet - TVD)	2708	5750	5750
5	Maximum Expected Formation Pressure (psi)	1197	2542	2542
6	Expected Mud Weight (ppg)	9.1	9.5	9.6
7	Formation Equivalent Mud Weight (ppg)	8.5	8.5	8.5
8	Expected Hydrostatic Pressure at TD (psi)	1281	2841	2870
9	Amount of Overbalance at TD (psi)	84	299	329
10	Fracture Gradient at shoe (psi/ft)	Diverter	0.57	0.62
11	Fracture Pressure at shoe (psi)	Diverter	1549	3588
12	Hydrostatic Pressure at shoe (psi)	662	1338	2870
13	Margin between Mud Weight and LOT (psi)	Diverter	211	718

Maximum Anticipated Surface Pressures

1	Casing Size (in)	24"	13 3/8"	9 5/8"
2	Setting Depth (feet - TVD)	1400	2708	5750
3	Expected Leak Off Test EMW at shoe (ppg)	9.4	11	12
4	Expected Mud Weight (ppg)	9.1	9.5	9.6
5	Depth of next Casing (feet - TVD)	2708	5750	5750
6	Maximum Expected Formation Pressure (psi)	1197	2542	2542
7	Expected gas gradient (psi/ft)	0.05	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.5	8.5	8.5
	Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	1062	2254	2254
10	Fracture Gradient at shoe (psi/ft)	Diverter	0.57	0.62
11	Fracture Pressure at shoe (psi)	Diverter	1549	3588
12	Surface pressure to break down shoe (psi)	Diverter	1414	3301
13	Maximum Anticipated Surface Pressure (psi)	Diverter	1414	2254

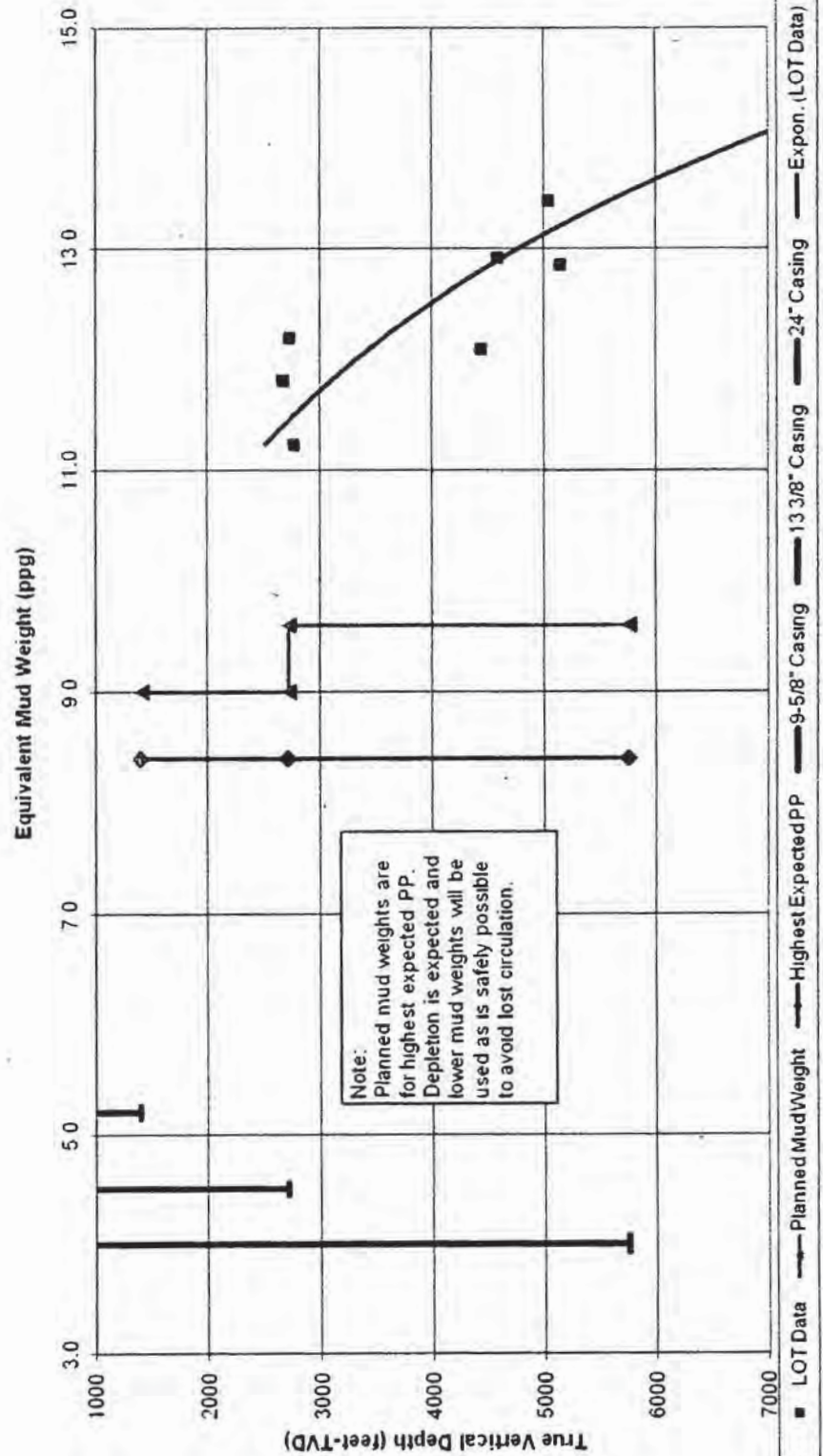
CASING PROGRAM

Hole Section	26"	17 1/2"	12 1/4"
Mud Weight	8.6	9.5	9.6
Buoyancy Factor	0.869	0.855	0.855
MASP (psi)	200	2254	2254
Gas Lift Pressure (psi)	0	0	1800
Casing Size (in)	24"	13.375"	9.625"
Setting Depth, MD (ft)	1400	2840	7133
Setting Depth, TVD (ft)	1400	2708	5750
Top of Casing, MD (ft)	0	0	0
Weight (lb/ft)	186	61	43.5
Grade	X-56	K-55	L-80
Threads	DQ S-60 MT	BTC	LTC
ID (in)	22.5	12.515	8.755
Drift diameter (in)		12.359	8.599
Collapse (psi)	1450	1540	3810
Burst (psi)	3060	3090	6330
Joint Strength (kips)	3068	633	825
Body Strength (kips)	3068	962	1005
Collapse Safety Factor	2.32	1.15	1.33
Burst Safety Factor	15.30	1.37	2.81
Tensile Safety Factor	9.40	2.55	2.26

Notes:

- 1) Burst is calculated on the greater of MASP or gas lift pressure.
- 2) Collapse is based on mud outside of an evacuated casing string.
- 3) Tension is based on buoyed weight of casing string + 100 kips overpull.

Platform Gall Well E-27 Pore Pressure, Mud Weight & Fracture Pressure



SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. **Assume any gas circulated to surface to have hydrogen sulfide potential.** Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

CEMENTING PROGRAM

24" Structural Casing

Objective: Cement 24" casing as an anchor for the diverter system and provide drilling fluid returns to surface. The 24" will be cemented back to the mud line. 40 feet of cement will be left inside the 24" casing on top of the stab-in guide shoe.

General information:

24", 186#, X-56 Casing 0' - 1400' (22.50" ID)

5", 19.5#, S-135 DP 0' - 1400' (4.276" ID)

Open Hole Size: 26" drilled, 32" assumed for volume calculations

Open Hole Volume Factor is 2.44 CF/FT (for 32" hole)

Shoe Joint Volume Factor is 2.76 CF/FT

Open Hole Excess 0% over estimated 32" hole

24" Conductor Pipe

Well Data

Casing Size: 24"

Open Hole: 32"

Depth: 1400'/MD/ 1400' TVD

Mud Line: 847'

TOC 847'

BHST: 70 deg. F BHCT: 70 deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Tail Volume			
24" Conductor Pipe in 32" O.H.	553	2.44	= 1350 cft
Shoe Joint	40	2.76	= 110 cft
			= 1460 cft

Cement System & Volumes

Preflush: 50 bbls Sea water

Class G with 30 gal/100 sx CaCl₂, 2 gal/100 sx FP-6L, 10 gal/100 sx CD-32L mix in seawater.

Tail Cement Volume: 1270 sks

Mix Weight: 16.0 ppg

Yield: 1.15 cft/sk

Total Liquid: 4.60 gps

Mix Water Seawater

Thickening Time TBD

24 hrs C. S. TBD

48 hrs C. S. TBD

Note: Lab and field blend tests will be performed to verify slurry properties

13 3/8" Surface Casing

Objective: Set and cement 13 3/8" casing prior to drilling oil or gas bearing zones. The shoe of the 13 3/8" casing will provide a fracture gradient sufficient to drill through the zones of interest safely. A formation integrity or leak off test will be conducted after drilling out this shoe. The 13-3/8" will be cemented back to the mud line.

General Information:

13 3/8", 61#, K-55 Casing @ 2840' MD / 2708' TVD (12.415" ID)

24", 186#, X-56 Casing (22.5" ID) Shoe at 1400'

Open Hole Size: 17 1/2"

Open Hole Excess 30% over theoretical

13 3/8" Surface Pipe

Well Data

Casing Size: 13 3/8" 61#

Open Hole: 17 1/2"

Depth: 2840'

Mud Line: 847'

TOC 847'

BHST: 106 deg. F BHCT: 90 deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Lead Volume			
13 3/8" Csg in 24" Casing	550	1.7855	= 982.0 cft
13 3/8" Csg in 17 1/2 Open Hole	1040	0.6946	= 722.4 cft
Excess 30%			= 216.7 cft
			= 1921.1 cft
Tail Volume			
13 3/8" Csg in 17 1/2 Open Hole	400	0.6946	= 277.8 cft
Excess 30%			= 83.4 cft
Shoe Joint	80	0.8543	= 68.3 cft
			= 429.5 cft

Cement System & Volumes

Preflush: 20 bbls 8.4 ppg weighted spacer

Lead: +/- 669 sks Class G cement with additives to be determined

Cement Volume 669 sks
Mix Weight 11.6 ppg
Yield: 2.87 cuft/sk
Mix Water SEAWATER

Tail: +/- 440 sks Class G cement with additives to be determined

Cement Volume 373 sks
Mix Weight 16.0 ppg
Yield: 1.15 cuft/sk
Mix Water SEAWATER

9 5/8" Production Casing

Objective: Cement 9 5/8" casing at Total Depth of the well. This casing string will be cemented back to the mud line and will be exposed to gas lift pressure.

General Information:

9-5/8" 43.5# L-80 Casing @ 7133' MD / 5750' TVD (8.755" ID)

13 3/8", 61#, L-80 Casing (12.515" ID) Shoe at 2650' MD

9 5/8" x 13 3/8" stage collar at 2400' MD

Lap Volume Factor is 0.349 CF/FT

Open Hole Size: 12 1/4"

Open Hole Excess 25% over theoretical or 10% over caliper log

9 5/8" Production Pipe 3/2/2009

Well Data First Stage

Additives and Pre-flush to be determined through BJ Services lab testing

Casing Size: 9 5/8" 43.5 #

Open Hole: 12 1/4"

Depth: 6820' MD/5508' TVD

Mud Line: 847'

Stage Collar 2400'

Temperatures BHST XXX deg. F BHCT: XXX deg. F

Volume Calculations	Depth	Volume Factor	Total Volume
Lead Volume	ft.	cu.ft./ft.	cu. ft.
9 5/8" Csg in 13 3/8' Csg	1993	0.3354	= 668.5 cft
9 5/8" Casing in 12 1/4" Open Hole	2293	0.3132	= 718.2 cft
Excess 25%			= 179.6 cft
			= 1566.3 cft
Tail Volume			
9 5/8" Casing in 12 1/4" Open Hole	2000	0.3132	= 626.4 cft
Excess 25%			= 156.6 cft
Shoe Joint	80	0.4181	= 33.4 cft
			= 816.4 cft

Cement System & Volumes

Preflush: 40 bbls 8.4 ppg weighted spacer

Lead: +/-565 sks Lightweight cement with additives to be determined

Cement Volume 565 sks

Mix Weight 10.5 ppg

Yield: 2.77 cuft/sk

Mix Water SEAWATER

Tail: +/- 698 sks Class G cement with additives to be determined

Cement Volume 698 sks

Mix Weight 15.8 ppg

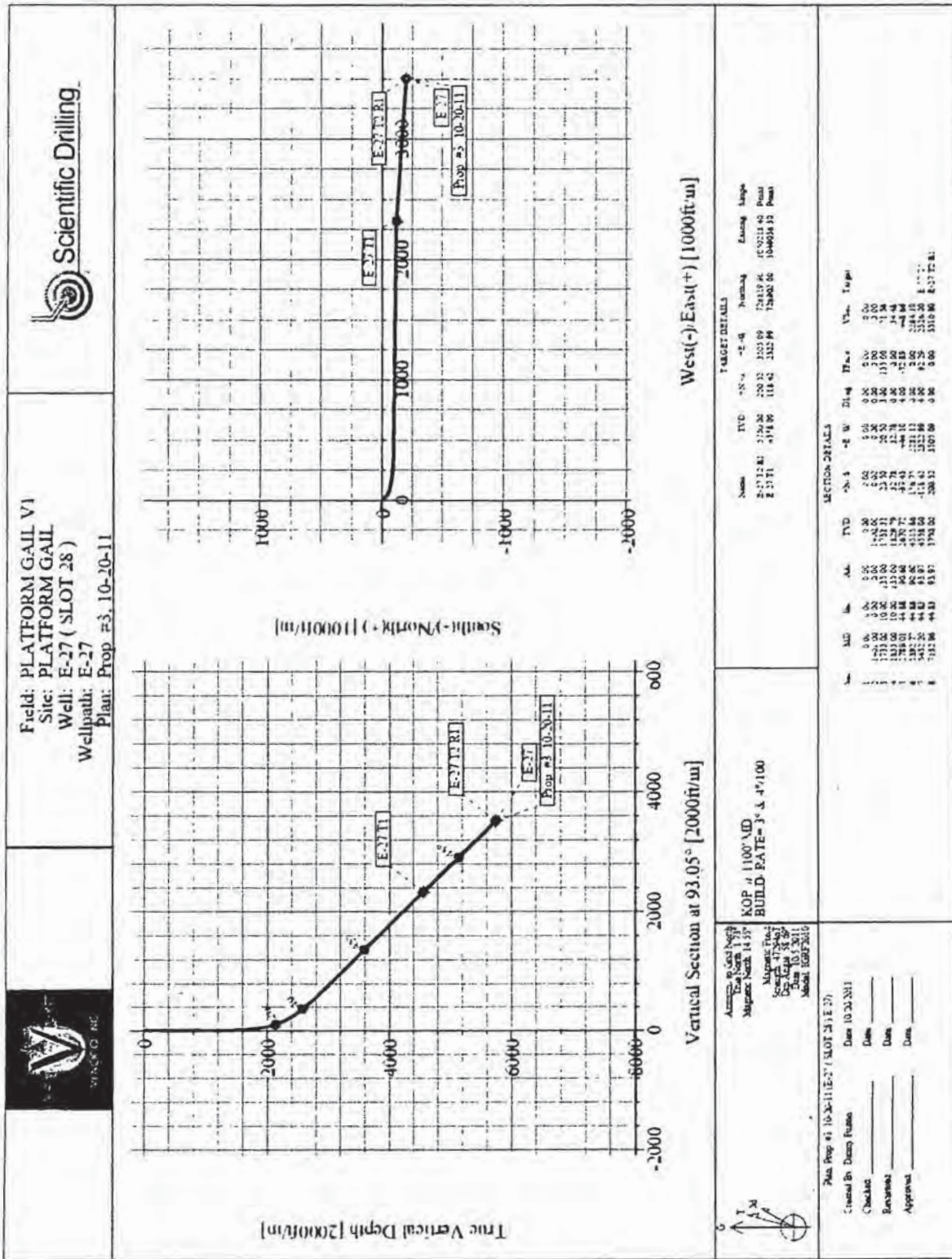
Yield: 1.17 cuft/sk

Mix Water SEAWATER



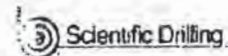
Rig #2 Specifications

<u>Drilling Range:</u>	21,000' with 5" Drillpipe.
<u>Drawworks:</u>	Skytop Brewster N-12 / 2,000 H.P. Driven by (2)-1,000 H.P. General Electric 752 DC Traction Motors With a Parkersburg V-200 Hydromatic Brake and Electronic Control Panel.
<u>Mast:</u>	Skytop Brewster 142' High. Rated at 1,250,000# GNC and 1,000,000# Static Hook Capacity.
<u>Substructure:</u>	Skytop Brewster 21' High (10' Pony Available), With 1,250,000# Capacity.
<u>Mud Pump #1:</u>	National 12P-160 Triplex, 7"x12" 1,600 H.P., Powered by (2)-1,000 H.P. General Electric 752 DC Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Mud Pump #2:</u>	National 12P-160 Triplex, 7"x12" 1,600 H.P., Powered by (2)-1,000 H.P. General Electric 752 Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Rotary Table:</u>	Continental Emaco 27-1/2" (37-1/2" Optional)
<u>Traveling System:</u>	Skytop Brewster 6 Sheave, 500 Ton Block Hook Combination and National P-500 Ton Swivel.
<u>SCR Power System:</u>	Ross Hill 4 Bridge, 4 Input SCR Unit With Highline Connection and G E. Electrical Control Unit.
<u>Mud System:</u>	(2)-Pit System, 1,000 Total Barrels, With Trip, Shaker, Volume, Mud Cleaning, Suction and Pill Mixing Compartments, (6)-Lightning Mud Agitators, Submerged Guns, (2)-5x6 Centrifugal Pumps and (2)-Flowline Cleaners.
<u>B.O.P.E.:</u>	Hydral GK 13-3, 37, 5,000# Annular, Shaffer LWS 13-5/8", 5,000# D-Ram, Hydral 220 Gallon Accumulator and 5,000# Choke Manifold or as Designated by Contract.
<u>Water Storage:</u>	400 BBLs.
<u>Auxiliary Equipment:</u>	(2)-Air Winches, Wireline Unit (092"), (2)-Air compressors, Upper & Lower Doghouses, Toolpusher Trailer.





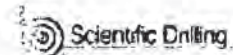
Scientific Drilling International Planning Report



Company: VENOCO		Date: 10/20/2011	Time: 15:18:27	Page: 1						
Field: PLATFORM GAIL V1		Co-ordinate(NE) Reference: Well: E-27 (SLOT 28), Grid North								
Site: PLATFORM GAIL		Vertical (TVD) Reference: E-27 108.0								
Well: E-27 (SLOT 28)		Section (VS) Reference: Well (0.00N,0.00E,93.05Azi)								
Wellpath: E-27		Survey Calculation Method: Minimum Curvature Db: Sybase								
Plan: Prop #3, 10-20-11		Date Composed: 10/20/2011								
Principal: Yes		Version: 1								
		Tied-to: From Surface								
Field: PLATFORM GAIL V1 VENTURA CALIFORNIA, U. S. A.		Map Zone: California, Zone VI								
Map System: US State Plane Coordinate System 1927		Coordinate System: Well Centre								
Geo Datum: NAD27 (Clarke 1888)		Geomagnetic Model: IGRF2010								
Sys Datum: Mean Sea Level										
Site: PLATFORM GAIL CALIFORNIA, U. S. A. VENTURA										
Site Position:	Northings: 727050.42 ft	Latitude: 34 7 30.801 N								
From: Map	Easting: 1046713.36 ft	Longitude: 119 24 0.054 W								
Position Uncertainty: 0.00 ft		North Reference: Gnd								
Ground Level: 0.00 ft		Grid Convergence: -1.73 deg								
Well: E-27 (SLOT 28)										
SUR. N 727026.43 E 1046704.32										
Slot Name:										
Well Position:	-N-S -30.00 ft	Northings: 727020.42 ft	Latitude: 34 7 30.805 N							
	-E-W -0.05 ft	Easting: 1046713.31 ft	Longitude: 119 24 0.044 W							
Position Uncertainty: 0.00 ft										
Wellpath: E-27										
Current Datum: E-27	Height: 108.00 ft	Drilled From: Surface								
Magnetic Date: 10/5/2011		Tie-on Depth: 0.00 ft								
Field Strength: 47294 nT		Above System Datum: Mean Sea Level								
Vertical Section: Depth From (TVD)		Declination: 12.82 deg								
		Mag Dip Angle: 58.89 deg								
		-N-S	Direction							
		ft	deg							
5447.77	0.00	0.00	93.05							
Plan Section Information										
MD	Incl	Azim	TVD	-N-S	+E-W	DLS	Build	Turn	IFO	Target
ft	deg	deg	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	deg	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00	0.00	0.00	
1723.00	10.00	135.00	1731.31	-20.50	20.50	3.00	3.00	0.00	135.00	
1933.00	10.00	135.00	1929.79	-32.78	32.78	0.00	0.00	0.00	0.00	
2789.01	44.88	90.80	2870.72	-97.43	444.10	4.00	3.85	-4.84	-52.89	
5392.77	44.88	20.80	4515.38	-118.75	2281.12	0.00	0.00	0.00	0.00	
5452.20	44.83	93.97	4558.00	-119.42	2322.99	4.00	-0.98	5.87	92.29	E-27 T1
7132.96	44.83	93.97	5750.00	-200.52	3505.09	0.00	0.00	0.00	0.00	E-27 T2 R1
Survey										
MD	Incl	Azim	TVD	VS	N/S	E/W	DLS	MapN	MapE	Sys TVD
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	ft	ft
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	-108.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	-3.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	92.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	192.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	292.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	392.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	492.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	592.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	692.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	792.00
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	892.00
1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	992.00
1200.00	0.00	0.00	1200.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	1092.00
1300.00	0.00	0.00	1300.00	0.00	0.00	0.00	0.00	727920.42	1046713.31	1192.00



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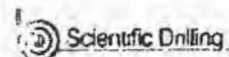


Company: VENOCO Date: 10/20/2011 Time: 15:13:27 Page: 2
Field: PLATFORM GAIL V1 Co-ordinate(NE) Reference: Well: E-27 (SLOT 38), Grid North
Site: PLATFORM GAIL Vertical (TVD) Reference: E-27 103.0
Well: E-27 (SLOT 38) Section (VS) Reference: Well (0.00N,0.00E,33.05Az)
Wellpath: E-27 Survey Calculation Method: Minimum Curvature Dbr: Sybase

MD ft	Inc deg	Arm deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	MapN ft	MapE ft	Sys TVD ft
1400.00	0.00	0.00	1400.00	0.00	0.00	0.00	0.00	727020.42	1046713.31	1292.00
1500.00	3.00	135.00	1499.85	1.25	-1.35	1.35	3.00	727018.57	1046715.16	1391.95
1600.00	5.01	135.00	1599.63	7.79	-7.41	7.41	3.39	727013.01	1046720.72	1491.63
1700.00	9.01	135.00	1698.77	17.51	-16.84	16.84	3.30	727003.78	1046729.95	1590.77
1733.00	10.00	135.00	1731.31	21.56	-20.50	20.50	3.50	726999.92	1046733.91	1623.31
1800.00	10.00	135.00	1797.29	30.21	-28.72	28.72	5.50	726991.70	1046742.03	1699.29
1833.00	10.00	135.00	1829.79	34.43	-32.73	32.73	5.50	726987.84	1046746.09	1721.79
1900.00	11.31	124.50	1895.59	44.65	-40.77	42.54	4.00	726979.85	1046755.85	1787.59
2000.00	15.00	113.99	1992.96	55.43	-51.24	62.30	4.20	726968.58	1046776.11	1884.86
2100.00	19.50	107.14	2088.62	92.95	-61.80	89.79	4.00	726958.62	1046803.10	1980.62
2200.00	22.15	102.61	2152.38	126.65	-70.62	123.36	4.00	726949.80	1046836.87	2074.38
2300.00	25.92	99.25	2273.59	197.30	-79.25	183.38	4.00	726942.17	1046876.67	2165.69
2400.00	29.74	96.59	2362.11	213.80	-84.66	209.59	4.00	726935.76	1046922.90	2254.11
2500.00	33.60	94.58	2447.20	266.24	-89.81	261.32	4.00	726930.61	1046975.13	2339.20
2600.00	37.49	93.03	2529.55	324.35	-93.63	319.31	4.20	726926.74	1047033.12	2420.55
2700.00	41.39	91.56	2606.77	387.65	-96.25	383.26	4.00	726924.17	1047096.57	2497.77
2799.01	44.88	90.60	2670.72	448.56	-97.43	444.19	4.00	726922.99	1047157.41	2562.72
2900.00	44.88	90.60	2578.51	456.40	-97.51	451.25	0.00	726922.91	1047165.16	2670.51
3000.00	44.88	90.60	2749.37	526.30	-98.29	522.40	0.00	726922.16	1047235.71	2841.37
3000.00	44.88	90.60	2820.24	597.39	-99.00	592.96	0.00	726921.42	1047308.27	2712.24
3100.00	44.88	90.60	2891.10	567.58	-99.74	563.51	0.00	726920.88	1047376.92	2793.10
3200.00	44.88	90.60	2961.97	738.37	-100.48	734.08	0.00	726919.94	1047447.37	2953.97
3300.00	44.88	90.60	3032.53	508.56	-101.22	504.81	0.00	726919.20	1047517.92	2924.23
3400.00	44.88	90.60	3103.70	579.36	-101.96	575.17	0.00	726918.46	1047588.48	2995.70
3500.00	44.88	90.60	3174.56	249.85	-102.71	245.72	0.00	726917.71	1047659.03	3066.56
3600.00	44.88	90.60	3245.43	1020.34	-103.45	1016.27	0.00	726916.97	1047729.58	3137.43
3700.00	44.88	90.60	3316.29	1090.53	-104.19	1026.32	0.00	726916.23	1047800.13	3208.29
3800.00	44.88	90.60	3387.15	1161.32	-104.93	1157.38	0.00	726915.49	1047870.68	3279.15
3900.00	44.88	90.60	3458.02	1231.92	-105.67	1227.93	0.00	726914.75	1047941.24	3350.02
4000.00	44.88	90.60	3528.88	1302.31	-106.42	1298.49	0.00	726914.00	1048011.79	3420.88
4100.00	44.88	90.60	3599.75	1372.90	-107.16	1369.04	0.00	726913.26	1048082.35	3491.75
4200.00	44.88	90.60	3670.61	1443.29	-107.90	1439.59	0.00	726912.52	1048152.90	3562.61
4300.00	44.88	90.60	3741.48	1513.78	-108.64	1510.14	0.00	726911.78	1048223.45	3633.48
4400.00	44.88	90.60	3812.34	1584.28	-109.38	1580.69	0.00	726911.04	1048294.00	3704.34
4500.00	44.88	90.60	3883.21	1654.77	-110.12	1651.25	0.00	726910.30	1048364.56	3775.21
4600.00	44.88	90.60	3954.07	1725.26	-110.87	1721.80	0.00	726909.55	1048435.11	3846.07
4700.00	44.88	90.60	4024.93	1795.75	-111.61	1792.35	0.00	726908.81	1048505.66	3916.93
4800.00	44.88	90.60	4095.80	1866.24	-112.35	1862.90	0.00	726908.07	1048576.21	3987.80
4900.00	44.88	90.60	4166.66	1936.74	-113.09	1933.46	0.00	726907.33	1048646.77	4058.66
5000.00	44.88	90.60	4237.53	2007.23	-113.83	2004.01	0.00	726906.59	1048717.32	4129.53
5100.00	44.88	90.60	4308.39	2077.72	-114.58	2074.56	0.00	726905.84	1048787.87	4200.39
5200.00	44.88	90.60	4379.26	2148.21	-115.32	2145.11	0.00	726905.10	1048858.42	4271.26
5300.00	44.88	90.60	4450.12	2218.70	-116.06	2215.67	0.00	726904.36	1048928.98	4342.12
5392.77	44.88	90.60	4515.56	2284.10	-116.75	2281.12	0.00	726903.67	1048999.43	4407.66
5400.00	44.88	91.31	4520.99	2289.20	-116.82	2286.22	4.00	726903.60	1049009.53	4412.99
5452.20	44.83	93.27	4559.30	2326.50	-118.42	2322.99	4.00	726902.00	1049036.30	4450.00
5500.00	44.83	93.27	4591.20	2359.69	-120.75	2356.81	0.00	726899.67	1049069.92	4483.90
5600.00	44.83	93.27	4662.82	2430.19	-125.64	2426.24	0.00	726894.78	1049140.25	4554.82
5700.00	44.83	93.27	4733.74	2500.68	-130.52	2497.27	0.00	726889.90	1049210.58	4625.74
5800.00	44.83	93.27	4804.66	2571.17	-135.41	2567.80	0.00	726885.01	1049280.91	4696.66
5900.00	44.83	93.27	4875.58	2641.56	-140.29	2637.93	0.00	726880.13	1049351.24	4767.58
6000.00	44.83	93.27	4946.50	2712.15	-145.18	2708.26	0.00	726875.24	1049421.57	4838.50



Scientific Drilling International Planning Report



Company: VENOCO	Date: 10/20/2011	Time: 15:18:27	Page: 3
Field: PLATFORM GAIL V1	Co-ordinate(NE) Reference:	Well: E-27 (SLOT 28), Grid North	
Site: PLATFORM GAIL	Vertical (TVD) Reference:	E-27 128 0	
Well: E-27 (SLOT 28)	Section (VS) Reference:	Well (0.00N,0.00E,23.05Azi)	
Wellpath: E-27	Survey Calculation Method:	Minimum Curvature	Db: Sybase

Survey										
MD ft	Incl deg	Azim deg	TVD ft	VS ft	N/S ft	E/W ft	DLS deg/100ft	MapN ft	MapE ft	Syn TVD ft
5100.00	44.33	93.97	5017.42	2782.94	-150.06	2773.59	0.00	722570.38	1049491.90	4909.42
5200.00	44.83	93.97	5068.34	2853.13	-154.95	2848.93	0.00	722685.47	1049582.24	4980.34
5300.00	44.83	93.97	5159.26	2923.53	-159.23	2919.26	0.00	722800.59	1049632.57	5051.26
5400.00	44.83	93.97	5230.18	2994.12	-164.72	2989.59	0.00	722855.70	1049702.90	5122.18
5500.00	44.33	93.97	5301.10	3064.61	-169.20	3059.92	0.00	722850.82	1049773.23	5193.10
5600.00	44.83	93.97	5372.02	3135.10	-174.49	3130.25	0.00	722845.93	1049843.56	5264.02
5700.00	44.83	93.97	5442.94	3205.59	-179.37	3200.58	0.00	722841.05	1049913.89	5334.94
5800.00	44.83	93.97	5513.86	3276.08	-184.25	3270.91	0.00	722836.16	1049984.22	5405.86
5900.00	44.83	93.97	5584.78	3346.57	-189.14	3341.24	0.00	722831.28	1050054.55	5476.78
6000.00	44.83	93.97	5655.70	3417.07	-194.03	3411.57	0.00	722826.39	1050124.88	5547.70
7100.00	44.83	93.97	5726.62	3487.56	-198.91	3481.91	0.00	722821.51	1050195.22	5618.62
7132.98	44.83	93.97	5750.30	3510.90	-200.52	3505.59	0.00	722819.80	1050213.40	5642.00

Location	
MD	TVD

Scientific Drilling International

Anticollision Report



Company:	VENOCO	Date:	11/2/2011	Time:	15:59:14	Page:	1	
Field:	PLATFORM GAIL V1							
Reference Size:	PLATFORM GAIL	Co-ordinates (NE) Reference:	Well: E-27 / SLOT 23 / Grid North					
Reference Well:	E-27 (SLOT 23)	Vertical (TVD) Reference:	E-27 108.0					
Reference Wellpath:	E-27					Dbr:	Sybase	
NO GLOBAL SCAN: Using user defined selection & scan criteria				Reference:	Plan Prop. #3, 10-20-11			
Interpolation Method:	MD + Stations	Interval:	100.00 ft	Error Model:	150WSA Ellipse			
Depth Range:	0.00 to 7132.96 ft	Scan Method:	Closest Approach 3D	Error Surface:	Ellipse			
Maximum Radius:	500.00 ft							
File:	PROP. #3, 10-20-11	Date Completed:	1/20/2011					
Principal:	746	Version:	1					
		Tied-to:	From Surface					
Summary								
Size	Offset Well	Wellpath	Reference MD ft	Offset MD ft	Cur-Ctr Distance ft	Edge Distance ft	Separation Factor	Warning
PLATFORM GAIL	E-10	E-10 V0	1400.00	1400.12	24.13	22.07	11.41	
PLATFORM GAIL	E-11	E-11 V0	1400.00	1400.04	25.55	24.00	15.55	
PLATFORM GAIL	E-12	E-12 V0	1400.00	1399.82	38.28	32.56	7.03	
PLATFORM GAIL	E-13	E-13 CH V0	1400.00	1399.88	2.59	4.04	3.47	
PLATFORM GAIL	E-13	E-13 RD V0	1400.00	1399.95	5.58	4.24	3.47	
PLATFORM GAIL	E-14	E-14 V0	1400.00	1400.05	33.14	31.48	19.97	
PLATFORM GAIL	E-15	E-15 V0	1400.00	1399.56	38.75	33.34	7.15	
PLATFORM GAIL	E-16	E-16 CH V0	1400.00	1400.03	27.71	25.08	16.36	
PLATFORM GAIL	E-16	E-16 RD V0	1400.00	1400.04	27.58	25.04	16.37	
PLATFORM GAIL	E-17	E-17 RD1 V0	1400.00	1399.95	14.57	12.85	9.49	
PLATFORM GAIL	E-17	E-17 V0	1400.00	1399.95	14.53	12.97	9.51	
PLATFORM GAIL	E-19	E-19 RD V0	1400.00	1400.09	39.49	37.79	22.96	
PLATFORM GAIL	E-19	E-19 V0	1400.00	1400.08	39.49	37.77	22.91	
PLATFORM GAIL	E-19	E-19 RD V0	1400.00	1399.94	32.72	31.05	19.55	
PLATFORM GAIL	E-19	E-19 V0	1400.00	1399.95	33.26	31.42	19.08	
PLATFORM GAIL	E-1	E-1 V0	1400.00	1399.85	21.70	19.30	11.39	
PLATFORM GAIL	E-20	E-20 V0	1400.00	1400.02	17.99	15.19	10.53	
PLATFORM GAIL	E-21	E-21 V0	1400.00	1399.99	22.53	18.92	4.12	
PLATFORM GAIL	E-22 @ 102 KB	E-22 V1	1400.00	1399.99	16.58	15.69	13.18	
PLATFORM GAIL	E-22	E-22 V0	1400.00	1399.99	16.58	15.40	10.76	
PLATFORM GAIL	E-23	E-23 V0	1400.00	1399.99	3.97	3.71	7.30	
PLATFORM GAIL	E-24	E-24 ST1 SUR V0	1400.00	1399.82	19.25	17.37	15.08	
PLATFORM GAIL	E-24	E-24 ST1 V0 Plan Prop						Out of range
PLATFORM GAIL	E-24	E-24 V0	1400.00	1399.82	19.25	15.55	3.56	
PLATFORM GAIL	E-25	E-25 PLAN 3 V0	1400.00	1199.45	32.31	27.72	7.04	
PLATFORM GAIL	E-25	E-25 PLAN 4 V0	1400.00	1400.00	30.00	24.60	5.55	
PLATFORM GAIL	E-26	E-26 SUR V0	1400.00	1400.03	20.38	14.97	3.77	
PLATFORM GAIL	E-26	E-26 V0 Plan Prop	1400.00	1400.00	20.51	15.41	3.25	
PLATFORM GAIL	E-2	E-2 V0	1400.00	1399.56	38.75	33.34	7.15	
PLATFORM GAIL	E-3	E-3 CH V0	1400.00	1399.99	29.88	28.17	17.41	
PLATFORM GAIL	E-3	E-3 RD V0	1400.00	1399.99	29.86	26.99	10.40	
PLATFORM GAIL	E-3	E-3 ST2 V0	1400.00	1399.99	29.56	28.15	17.52	
PLATFORM GAIL	E-4	E-4 ST1 V0	1400.00	1400.02	17.18	15.47	10.02	
PLATFORM GAIL	E-4	E-4 ST2 V0	1400.00	1400.02	17.18	15.47	10.02	
PLATFORM GAIL	E-4	E-4 ST3 V0	1400.00	1400.02	17.18	15.47	10.02	
PLATFORM GAIL	E-4	E-4 ST4 V0	1400.00	1400.02	17.18	15.47	10.02	
PLATFORM GAIL	E-4	E-4 ST5 PLAN V0 Plan:	1400.00	1400.02	17.18	15.55	11.21	
PLATFORM GAIL	E-4	E-4 ST5 SUR V0	1400.00	1400.02	17.18	15.36	13.02	
PLATFORM GAIL	E-4	E-4 CH V0	1400.00	1400.02	17.18	15.47	10.02	
PLATFORM GAIL	E-5	E-5 V0	1400.00	1399.79	34.23	28.51	6.29	
PLATFORM GAIL	E-5	E-5 RD V0	1400.00	1399.65	12.26	10.58	7.75	
PLATFORM GAIL	E-5	E-5 RD2 V0	1400.00	1399.65	12.26	10.58	7.75	
PLATFORM GAIL	E-5	E-5 V0	1400.00	1399.65	12.26	10.69	7.79	
PLATFORM GAIL	E-7	E-7 CH V0	1400.00	1399.67	44.51	43.07	25.79	
PLATFORM GAIL	E-7	E-7 RD V0	1400.00	1399.67	44.51	43.07	25.79	
PLATFORM GAIL	E-7	E-7 RD2 V0 Plan Prop						Out of range
PLATFORM GAIL	E-8	E-8 CH V0	1400.00	1399.87	27.22	25.51	17.82	
PLATFORM GAIL	E-8	E-8 ST1 V0	1400.00	1399.85	28.35	25.53	15.43	
PLATFORM GAIL	E-8	E-8 ST2 V0	1400.00	1399.85	28.34	25.53	15.52	
PLATFORM GAIL	E-9	E-9 CH V0	1400.00	1399.91	27.24	25.48	17.37	
PLATFORM GAIL	E-9	E-9 RD1 V0	1400.00	1399.91	27.24	25.48	17.37	
PLATFORM GAIL	P-204_1	P-204_1 V0						Out of range
PLATFORM GAIL	P-205_1	P-205_1 V0						Out of range
PLATFORM GAIL	P-205_2	P-205_2 V0						Out of range

GENERAL QUESTIONS:		
1	Have you considered the following in your well planning and drilling plan determinations: evaluation for flow potential, site selection, shallow hazards, deeper hazard contingency planning, well control planning for fluid influxes, planning for lost circulation control, regulatory issues and communications plans, planning the well, pore pressure, fracture gradient, mud weight, casing plan, cementing plan, drilling plan, wellbore hydraulics, wellbore cleaning, barrier design, and contingency planning? [API 65-2 1.5]	Yes/No
2	Have you considered the general well practices while drilling, monitoring and maintaining wellbore stability, curing and preventing lost circulation, and planning and operational considerations? [API 65-2 1.6]	Yes/No
FLOW POTENTIAL		
3	Will a pre-spud hazard assessment be conducted for the proposed well site?	Yes/No
4	List all potential flow zones within the well section to be cemented.	Describe below
5	Has the information concerning the type, location, and likelihood of potential flow zones been communicated to key parties (cementing service provider, rig contractor, or 3 rd parties)?	Yes/No
CRITICAL DRILLING FLUID PARAMETERS		
6	Are fluid densities sufficient to maintain well control without inducing lost circulation?	Yes/No
CRITICAL WELL DESIGN PARAMETERS		
7	Will you use a cementing simulation model in the design of this well?	Yes/No
7a	If yes, how is the output of this simulation model used in your decision-making process?	Describe below
7b	If no, include discussion of why a model is not being used.	Describe below
7c	Either way, include the number and placement of centralizers being used.	Describe below
8	Will you ensure the planned top of cement will be 500 feet above the shallowest potential flow zone?	Yes/No
9	Have you confirmed that the hole diameter is sufficient to provide adequate centralization?	Yes/No
10	If there are any isolated annuli, how have you mitigated thermal casing pressure build-up?	NA or Describe below
11	Will you ensure the well will be stable (no volume gain or losses, drilling fluid density equal in vs. out) before commencing cementing operations?	Yes/No
12	List all annular mechanical barriers in your design	Describe below
13	Has the rat hole length been minimized or filled with drilling fluid with a density greater than the cement density?	Yes/No
14a	If you have any liner top packers exposed to the production or intermediate annulus, what is the rating for differential pressure across this packer?	NA or Describe below
14b	If you have any liner top packers exposed to the production or intermediate annulus, have you confirmed that your negative test will not exceed this rating?	Yes/No/NA
15	What type of casing hanger lock-down mechanisms will be used?	Describe below
16	For all intermediate and production casing hangers set in subsea, HP wellhead housing, will you immediately set/energize the lock-down ring prior to performing any negative test?	Yes/No NA
17	For all production casing hangers set in subsea, HP wellhead housing, will you set/energize the lock-down sleeve immediately after running the casing and prior to performing any negative test?	Yes/No NA
CRITICAL OPERATIONAL PARAMETERS		
18	Will you have 2 mechanical barriers in addition to cement in your final casing string (or liner if it is your final string)?	Yes/No
19	Do you plan to nipple down BOP in accordance with the WOC requirements in 30 CFR 250.422(a)?	Yes/No
20	Do you plan on running a cement bond log on the production and intermediate casing/liner prior to conducting the negative test on that string?	Yes/No
Are contingency plans in place for the following:		
21	Lost circulation?	Yes/No
22	Unplanned shut-down?	Yes/No
23	Unplanned rate change?	Yes/No
24	Float equipment does not hold differential pressures?	Yes/No
25	Surface Equipment issues?	Yes/No
26	Will you monitor the annulus during cementing and WOC time?	Yes/No
27	If using foam cement, is a risk assessment being conducted and incorporated into cementing plan?	Yes/No NA

28	If using foam cement, will the foamer, stabilizer, and nitrogen injection be controlled by an automated process system?	Yes/No NA
CRITICAL MUD REMOVAL PARAMETERS		
28	Have you tested your drilling fluid and cementing fluid programs for compatibility to reduce possible contamination?	☒ Yes ☐ No
29	Have you considered actual well conditions when determining appropriate cement volumes?	☒ Yes ☐ No
30	Has the spacer been modeled or designed to achieve the best possible mud removal?	☒ Yes ☐ No
CRITICAL CEMENT SLURRY PARAMETERS		
31	Have all appropriate cement slurry parameters been considered to ensure the highest probability of isolating all potential flow zones?	☒ Yes ☐ No
32	Do you plan on circulating bottom up prior to the start of the cement job?	☒ Yes ☐ No

If any question is answered "No", additional explanation will be needed as to why that practice is not being followed; identify the question and provide that explanation below. The follow questions are not "Yes/No" questions and will require a description (if not applicable, state "Not Applicable").

- 4. No potential flow zones
- 7a. Ensure the cement design is appropriate for the well.
- 7b.
- 7c. +/- 100 centralizers to be run on 9 5/8" production casing.
- 10a.
- 12. 9 5/8" casing, float shoe, float collar, cement
- 14a.
- 15. NA

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Manager.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells.
3. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
4. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, lost circulation during cementing, etc., shall be verbally reported immediately to the District Manager.
5. The District Manager shall be notified in advance in the event of production tests.
6. Two copies of all logs, including the mud log to date, shall be furnished to this office immediately after logging.
7. Before a completion program is commenced or the hole is abandoned, the District Manager shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
8. This APD is approved subject to the requirement that, should the well be successfully completed for production or re-completed and production resumed after being off of production more than 90 days, this office must be notified when it is placed in a producing status. Such notification may be received in this office by no later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following information items:
 - 1) Operator name.
 - 2) Platform and well name, number and location.
 - 3) Date well began or resumed production.
 - 4) The lease number and, if applicable, unit participation area to which the well's production is attributable.
13. This APD is valid for one year from the date it is approved.

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 BSEE OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpintera Ave Carpinteria, CA 93013			
4 WELL NAME (CURRENT) E-22		5 SIDETRACK NO (CURRENT)	6 BYPASS NO (CURRENT)			
7 PROPOSED START DATE May 26, 2012		8 PLAN CONTROL NO (NEW WELL ONLY)				
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04-311-20747-00						
10 ☐ Revision	11. If revision, please list changes					
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE			
12 LEASE NO P-0205			17. LEASE NO P-0205			
13 AREA NAME 6B			18 AREA NAME 6B			
14 BLOCK NO 4661			19 BLOCK NO 4661			
15 LATITUDE (☒ NAD 83 / ☐ NAD 27) 727750.40			16 LONGITUDE (☒ NAD 83 / ☐ NAD 27) 1043150.48			
20 LATITUDE (☒ NAD 83 / ☐ NAD 27) 727020.40			21 LONGITUDE (☒ NAD 83 / ☐ NAD 27) 1044696.30			
LIST OF SIGNIFICANT MARKERS ANTICIPATED						
22 NAME		23 TOP (MD)	24 TOP (TVD)	22 NAME	23 TOP (MD)	24 TOP (TVD)
25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate.) Drilling program includes design criteria for well, casing program, drilling prognosis, mud program, directional program, and 123-S Supplemental APD Information						
26 CONTACT NAME Derek Paulgaard			27 CONTACT TELEPHONE NO 805-745-2146		28 CONTACT E-MAIL ADDRESS dj.paulgaard@venocoinc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Larry Huskins			30 TITLE Operations Manager			
31 AUTHORIZING SIGNATURE <i>P. Livitt</i> (FOR LARRY HUSKINS)			32 DATE 4/30/2012			
THIS SPACE FOR BSEE USE ONLY						
APPROVED ☒ With Attached Conditions ☐ Without Conditions		BY <i>Shelly L. Shelly</i>		TITLE District Manager California District		
API WELL NO ASSIGNED TO THIS WELL 043112074701				DATE 6-4-12		

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to BSEE District Office that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain	☐ YES ☒ NO ☐ N/A	Approved field drilling rules.
G) Is the calculated daily volume possible from an uncontrolled blowout of this well greater than the daily volume included in the worst case discharge scenario in the approved oil spill response plan?	☐ YES ☒ NO ☐ N/A	Approved field drilling rules.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name Venoco Inc				2) Well Name (Proposed) E-22 ST 1 BP			
3) Bottom Hole Lease P-0205				4) Surface Lease P-0205			
5) API Number 04-311-20747-01				6) Type of Well ☐ Exploratory ☒ Development			
7) H ₂ S ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft) KOP			
9) Rig Name Kenai 2				10) SubSea BOP ☐ Yes ☒ No			
11) Water Depth (ft) 739'		12) RKB Height (ft) 108'		13) Mineral Code			
14) Drive Pipe Size (in) N/A		15) Drive Pipe Depth (ft) N/A		16) Anchors ☐ Yes ☒ No			

17) Well Design Information																																																	
Interval Number: 1		Type: Casing			Name: Existing Production Casing																																												
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)																																										
Existing	9-5/8"	47.0 lb/ft	L-80	8,870 psi	4,760 psi	3,500' / 3,366'	8.5 ppg																																										
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Cement Volume (ft ³)	N/A																																																
Interval Number: 2		Type: Slotted Liner			Name: Production Liner																																												
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)																																										
2	7"	26.0 lb/ft	L-80	7,240 psi	5,410 psi	5,150' / 4,338'	8.5 ppg																																										
2	5-1/2"	17.0 lb/ft	L-80	7,740 psi	6,290 psi	7,324' / 4,417'	8.5 ppg																																										
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Interval Number:		Type: Intermediate			Name:																																												
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* NOTE* For additional casing/liner intervals, please submit an additional Form 0123S

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. BSEE uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for Forms BSEE-0123 and BSEE-0123S is estimated to average 100 hours per response. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Bureau of Safety and Environmental Enforcement, 381 Elden Street, Hemdon, VA 20170.

April 27, 2012

Mr. Derek Paulgaard
Drilling Engineer
Venoco Inc.
Ventura California

4567 Telephone Road
Suite 203
Ventura, CA 93003

T: +1 805 658 5600
F: +1 805 658 5605
www.interactprojects.com

Subject: **Venoco Inc. Platform Gail E-22 ST1 Drilling Program Casing and Cementing Certification.**

Dear Derek:

In response to the requirements set forth in **The Code of Federal Regulations (CFR) Part 250- Oil and Gas and Sulphur Operations in The Outer Continental Shelf, Subpart A 250.420 What well casing and cementing requirements must I meet.** InterAct provides the following verification for the Venoco Inc. Platform Gail E-28 New Well Drilling Program:

I do hereby verify that:

The Venoco, Inc. Platform Gail E-22 ST1 Drilling Program (April 16, 2012) provides two independent tested barriers, including one mechanical barrier, across each flow path during the well completion activities.

Furthermore, I verify that:

The casing and cementing design of the Platform Gail E-22 ST1 Drilling Program is appropriate for the expected wellbore conditions.

Sincerely,



Greg Stephens P.E. (California P 1377)

Attachment: InterAct Statement of Qualifications

InterAct Statement of Qualifications

InterAct Offers a broad range of professional engineering and project management services to the international oil and gas industry. InterAct assists operators at every stage of the field life cycle, from development through the production phase to facilities decommissioning and abandonment, both on and offshore. Key Services by InterAct are:

Drilling and production services

- Abandonment services (subsea well)
- Activity management Facility decommissioning and abandonment
- Field development concept studies
- Permitting and environmental services
- Subsea installation and intervention
- Drilling and Production Services

InterAct drilling engineers work closely with clients' geologists and reservoir engineers to prepare cost effective well designs that ensure maximum productivity. We have successfully designed and managed drilling projects for horizontal and extended reach wells, deepwater subsea wells, reservoirs with complex geological formations, and wells in urban areas. Our portfolio of services includes:

- Drilling and completion designs
- Directional design
- Testing work over and stimulation programs
- Artificial lift design and optimization
- Drilling and production services
- Rig and equipment sizing, contracting and procurement
- Well and drill site permitting
- Wellbore review and management of slot recovery programs

Website: www.interactprojects.com

Experience and Summary of Greg Stephens

Mr. Stephens is a California registered professional engineer (P-1377) with 30 years of experience with major international oil companies. Mr. Stephens' experience includes staff assignments in drilling and production operations, including the Santa Barbara Channel and senior level assignments in Operations, Project Management, Business Development / Acquisitions, and Corporate Governance for domestic and international ventures.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-22 ST1 Drilling Program
API# 04-311-20747-01
LEASE OCS-P-0205
April 16, 2012

Objective: Drill development sidetrack well E-22 ST1 and complete it as a horizontal well in the Monterey "M-2" Formation. Well TDs in OCS-P- 0205 Lease.

Surface Location: OCS-P-205, Slot No. 26

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Existing Casing New KB Depths:

24", 186.4#, X-42	1411'
13 3/8", 68#, K-55	2798'
9 5/8", 47#, L-80	3500' (window depth)

Proposed Liner

7" 26#, L-80, FlushMax x	TOL at 3350' to 5150' (estimated top M2 at 5176' MD)
5 1/2", 17#, L-80, GeoConn	5150' to 7324'

NOTE: 5 1/2" casing will be pre-perforated every other joint

Casing Pressure Test Details from original drilling operation

- The 9 5/8" casing stage collar did not open during the primary cementing, the opening bomb was dropped but circulation could not be established. After WOC cement attempt to test the 9 5/8" X 13 3/8" annulus and pressure leaked off at 475 psi. After install casing head and NU BOPE, ran in hole and pushed the closing plug in hole with drill pipe and went through the closing procedure. Drill out the stage collar and casing and stage collar were pressure tested to 2500 psi with 9.1 ppg reported in hole.

Markers:	MD	TVD	VSS	Press	EMW	Comments
9 5/8" Casing (window)	3500	3366	-3258	8.5	8.5	Miocene Shale
Monterey M1	4266	3981	-3873	1760	8.5	Estimated BHP
Monterey M2	5176	4312	-4233	1867	8.5	Estimated BHP
TD	7324	4417	-4309	2031	8.5	Estimated BHP

BOPE Equipment and Testing

- BOPE will be tested every 14 days during proposed operations.
- BOP equipped with 4 ram preventers and an annular. Test the BOP to 250/2500 psi with 5" and 3 1/2" drill pipe. The 13 5/8" BOPE will be configured for drilling or re-completion

operations, with 2 7/8" X 5" VBR pipe rams in the top gate and blind/shear rams in the second gate from top, the mud cross will be below the blind/shear rams, and double gate with 5" rams at top and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. The 2 3/8" rams will not be tested as we are not working with 2 3/8" tubing in this well. All tests will be recorded on a chart for the MMS to review.

Hydrogen Sulfide Considerations:

The Monterey has the potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

NOTE: Have a **minimum of 2 bbls H2S scavenger ZnO or Safe-Scav HS** (triazine) on board for use in mud in the event they are required during drilling. 2 bbls can treat 1040 bbls of mud.

Drilling Fluids:

- It is proposed to use MI's 9.0 ppg UltraDril Water Based Mud system
- There will be no discharge of drilling fluids during the well operations

Sidetrack Procedure

1. As part of the well preparations a CIBP will be set at +/- 3500'. The casing will have been pressure tested to 1000 psi. Prior to sidetrack commencing pressure test casing and CIBP to 2300 psi. Additionally, prior to sidetrack, a USIT log will be run and a determination will be made as to the suitability of the cement job behind the 9-5/8" casing.
2. RIH with whipstock assembly and MWD tools to CIBP. Orient whipstock and set whipstock.
3. Mill window in 9 5/8" casing. Trip for new mills as necessary. Periodically pump rope fiber sweeps to clean up metal shavings. Mill 10' of rathole into formation and pull above window. Get 11 0 ppg FIT. POOH.
4. Make up 8 1/2" Directional BHA per BHI. Drill 8-1/2" horizontal hole to TD of 7324' MD/4418' TVD as per BHI directional plan E-22 RD1 Plan3.
 - Overboard discharge will not be allowed in this hole section.
 - Perform and log BOP tests (2 weeks) on tour sheet per BSEE regulations. Perform and document all weekly BOP/H2S drills and all items on BSEE checklist. Fill out NPDES monitoring information daily.
 - H2S is present in this hole section. Safety company should calibrate H2S monitors every 12 hours and document on tour sheets. H2S drills should continue throughout operations
 - MWD/GR will be run in this hole section
 - Perform flow checks and circulate bottoms up as necessary
 - Keep fluid loss low in mud to reduce swelling/swabbing in the clay formation.
 - Make wiper trips as necessary to keep hole in good shape
 - As this is a horizontal hole section, circulating should be 3-4 BU or until mud is clean
 - Notify engineer if losses occur. All LCM material to be acid soluble.

8. Short trip to shoe and back to TD. Rotate pipe and circulate at recommend rate to clean hole. Circulate and condition the hole 3-4 x BU for logs. POOH
9. Run in with Weatherford tubing-conveyed logging tools and log lateral. POOH.
10. RIH with clean-out BHA as per swell packer company recommendation, or as indicated, and condition the hole for casing. Rotate pipe and circulate at recommended rate to clean hole. POOH
11. Rig up casing crew.
12. Run 7", 26#, L-80 FlushMax x 5 1/2", 17#, L-80, GeoConn casing from +/-7324' to 3350' as follows:
 - 9 5/8" x 7" Liner Hanger to be set at +/- 3350' MD
 - 7" X 5 1/2" combination string to be run.
 - One swell packer will be set near the top of the M2
 - Spacing of packers and slotted joints to be determined from logs
 - Run liner on drill pipe and with HWDP spaced out as needed per torque and drag prediction program and if hole conditions dictate to push liner to bottom.
 - Run centralizers above and below each swell packer
 - Run in the hole slowly to avoid surging the formation.
 - A circulating swage with a safety valve will be on the rig floor.
13. Run the liner in the hole to +/-7324'. Circulate the well until the returns are clean. Drop the setting ball and set the liner hanger and packer. Release running tool from liner hanger.
14. After setting liner hanger packer, the liner top packer will be pressure tested to 2300 psi for 30 minutes. Note: Fracture Gradient at 3500' is estimated to be 12.1 ppg EMW (.63 psi/ft). A pressure test to 2300 psi with 9.0 ppg mud will create pressure test 1735 psi over the estimated Fracture Gradient at 3500.
15. Displace WBM to seawater from the liner top to surface weighted up with additional NaCl as indicated by drilling gas shows. POOH with running tools
16. RIH with 7" test packer and set above liner. Test casing and liner lap above packer to 2300 psi for 30 minutes. POOH.

Completion Procedure

NOTE: Install a 2 1/16" 5M casing valve with a 1502 tee and pressure gauge, a check valve and high pressure hose connection below the tubing hanger. Test to 2500/250 psi for 5 minutes. It will be used to pump seawater into the well to control the well.

NOTE: BOPE testing to continue on 14 day frequency through the completion that is approved as part of the APD.

5. The well will be a single horizontal completion in the Monterey "M-2" (see attached Proposed Completion Diagram).

- 6 RIH with 4 3/4" bit to TD. Displace well to seawater. Acidize lateral per plan. Acid plan will be developed with log results. POOH
7. Pull wear bushing. Pick up the completion equipment in following order:
 - Wireline entry guide
 - 2 7/8" Baker 'BXN' seating nipple
 - 1 joint of 2 7/8" EUE 8rd Tubing
 - 2 7/8" Baker 'BX' seating nipple
 - 1 joints of 2 7/8" EUE 8rd Tubing
 - Baker 7" HS Packer w/ 6' pup joints made up to the top and bottom of the packer
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" GLM with live valve run in place
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" GLM with live valve run in place
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" Baker TE-5 TRSSSV
 - XX joints of 2 7/8" EUE 8rd Tubing
 - Cameron Tubing Hanger
8. After pick up TRSSSV, install control line and pressure test to 7000 psi. Run in hole with tubing and control line banding the line to the tubing with 2 bands per joint. Run in to landing depth, pick up and install Cameron tubing hanger and install control line and pressure test to 7000 psi. Pump XX bbls packer fluid and place from packer set depth to above the bottom GLM. Get up and down weight prior to landing. Follow Cameron procedure for landing tubing hanger At no time will hanger hold down pin be removed. Pressure test tubing hanger void.
9. After tubing hanger is landed and tested, RU slickline and set tubing plug in XN nipple.
10. Pressure up tubing to 3000 psi in 500 psi increments to set the HS packer and hold 3000 psi on tubing for 15 minutes. Slowly bleed pressure off of tubing.
11. Bleed off control line pressure to close TRSSV
12. Pressure up on annulus and pressure test the packer, annulus, tubing plug, and TRSSV to 1000 psi. Bleed pressure off of annulus (Note: live gas lift valves will be run)
13. Pressure up tubing to 1100psi and open TRSSV to release pressure trapped b/w TRSSV and tubing plug. Close TRSSV.
NOTE: Tubing plug and TRSSV will constitute our 2 tested barriers.
14. Install BPV into tubing hanger. ND BOPE and NU Cameron 3 1/2" tree with adapter. Install blanking plug and pressure test bonnet void and tree to 3000 psi. Remove blanking plug.
15. Release rig and turn well over to production.

Requested Waivers

- 1) Sec 250.423 (a) (3): Test production casing to a minimum test pressure of 70% of minimum internal yield

Request: Test production casing to the maximum anticipated surface pressure (MASP) that the string will be subject to. (Note: Casing is designed so that the MASP is less than 70% of the rated casing burst pressure)

- 2) Sec 250.448 (b): BOP high-pressure tests

Request: Revise the high-pressure test for ram-type BOP's, annular type BOP's, the choke manifold, and other BOP components to be 500 psi greater than the calculated MASP for the applicable section of hole as indicated in the APD.

Other Data

Please see the E-4ST5 APD for the following material:

- BSR shear test data and calculations
- Detailed choke manifold schematics
- BOP control schematics

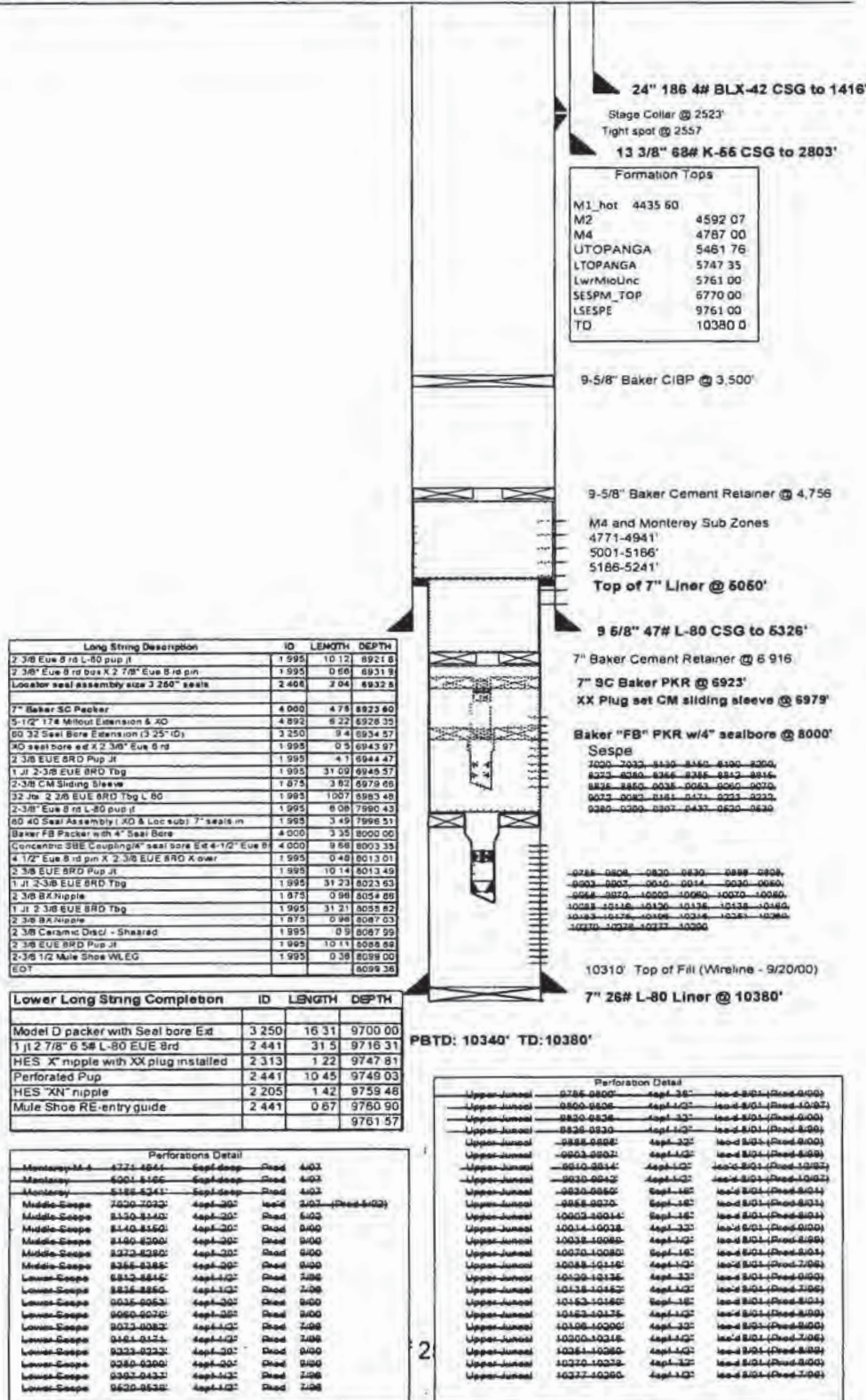
Venoco Pit Gail E-22 ST BSEE Redrill Procedure Rev 1.docx

Vertical to 1900'
Max Angle 31 deg @ 4000' and 3 deg @ TD
D F Elevation 113'
D F to Tubing Head 52'
Water Depth 739'
Tree FMC 5000 PSI WP

Lease OCS-P-0205 **SOCKEY FIELD** **WELL E-22**

Drawing Revision 04/19/12 DJP
Completion Date 7/13/96
Recompletion 8/16/01, 4/2/07

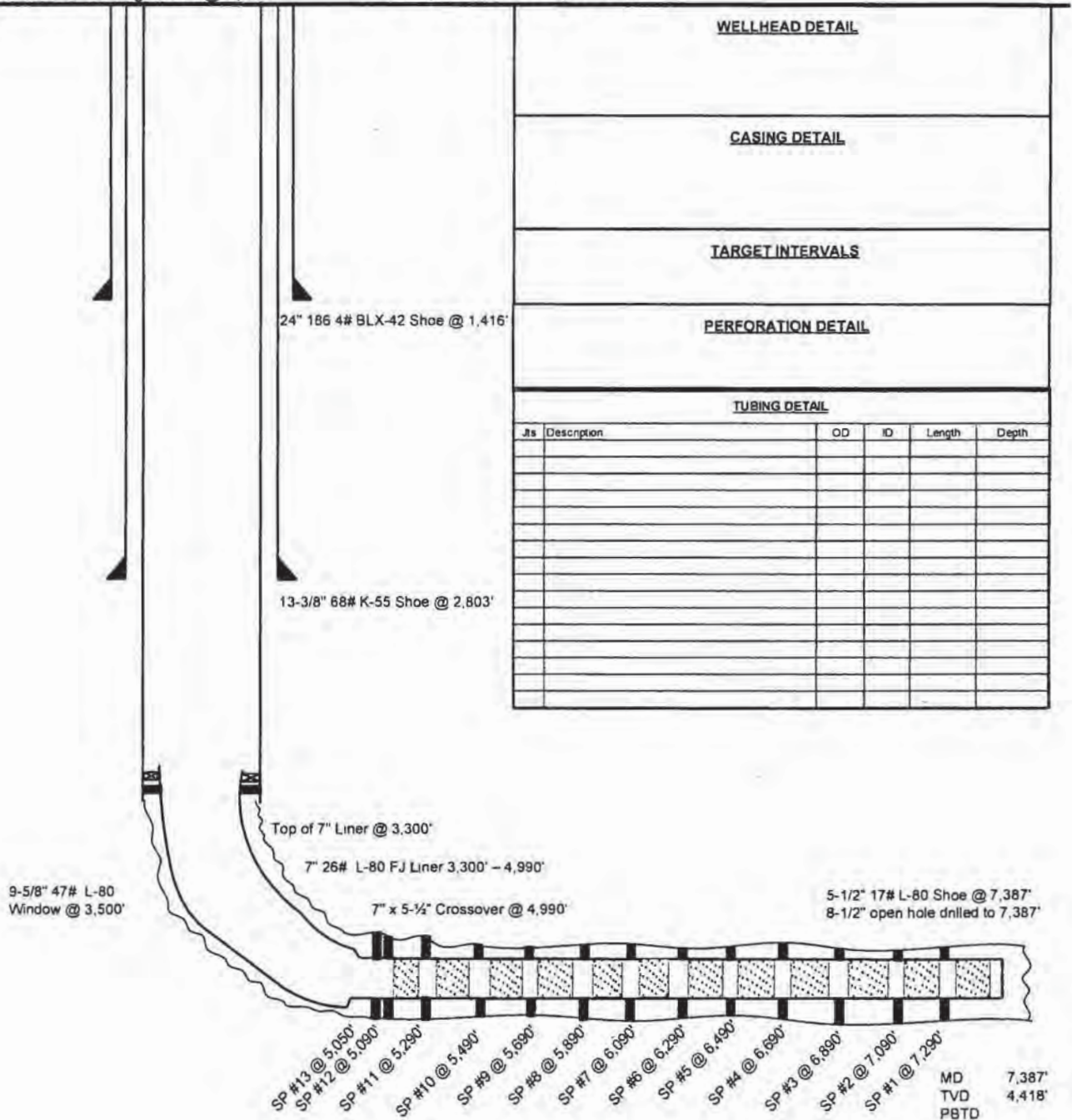
PROPOSED PREP FOR SIDETRACK



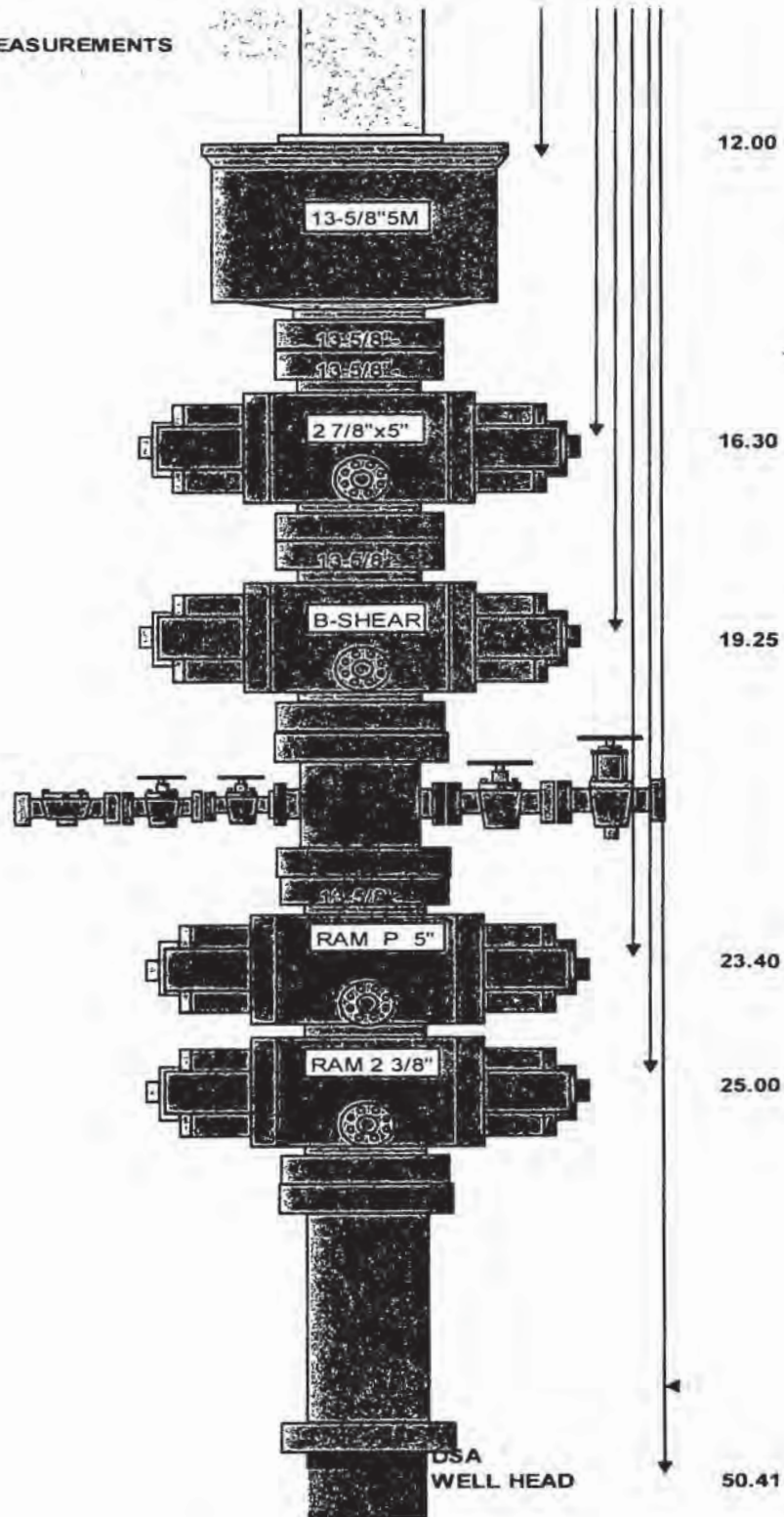
DF Elevation 107'
 DF to Tubing Head
 Water Depth
 Tree Cameron, Single
 Wellhead Cameron
 TD 7,387' MD, 4,418' TVD
 Max Incl 88°, Incl @ TD 88°
 Max DLS 12 deg/100 ft @ 3,590'

Lease OCS-P-0205
SOCKEYE FIELD
E-22RD1
API:
M2 Lateral- Producer
Proposed Completion

Drawing Revision 2/28/12 MLO



BOPE
KENAI BOPE
RIG FLOOR MEASUREMENTS



MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP
3500'-7324' (8 ½" hole)	UltraDril WBM	8.7 - 9.5	<6	8.0-9.5	18-25

3500'-7324'

The objective in this interval is to drill an 8 ½" hole from the window in the 9 5/8" casing to 7324'. The fluid system recommended is UltraDril WBM, MI's high performance water based mud system.

Notes:

- 1) Operate solids control equipment to maintain drill solids as low as possible.
- 2) **Maintain 2 bbls (104 gal) of H₂S scavenger on board.** ZnO or Safe-Scav HS (triazine) are both compatible with this mud system. 2 bbls can treat 1040 bbls of mud.
- 3) **A minimum of 500 sx of barite shall be kept on the platform at all times, enough to raise the mud weight 0.5 ppg.**
- 4) There is no minimum amount of Xanthan gum viscosifier to be kept on the platform, as it is not required to raise the mud weight of the UltraDril system.

Hydrogen Sulfide Considerations:

The Monterey has potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

CEMENT PROGRAM

Not Applicable

EVALUATION PROGRAM

1) MUD LOGGING

8 ½" Hole Section – Continuous mud logging shall be performed from drilling out the shoe of the 7" window to the total depth. Collect dry samples at 30' intervals.

2) CORING – none

3) LOGGING WHILE DRILLING

8 ½" Hole Section – MWD/GR will be run for the entirety of the hole

4) ELECTRIC LOGGING

8 ½" Hole Section

Triple combo + CMI

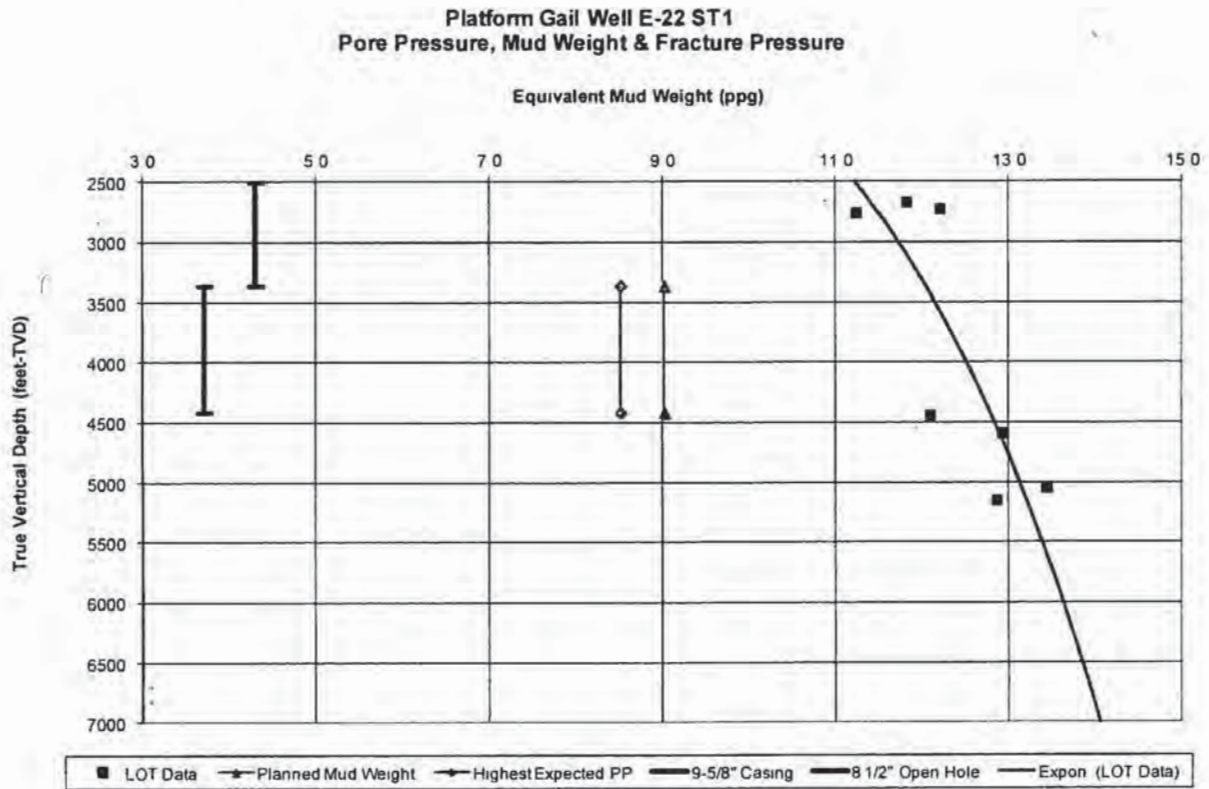
Notify Geologist to witness all logs.
Primary Geologist: Monica Carlsen
805-745-2115 office
805-448-5622 cell

Back-up Geologist: Chris Peltonen
805-745-2266 office
805-732-8846 cell

MASP CALCULATIONS

		Window	Pilot Hole
1	Casing Size (in)	9-5/8	8 1/2
2	Setting Depth (feet - TVD)	3365	4417
3	Expected Leak Off Test EMW at shoe (ppg)	12 1	12 1
4	Expected Mud Weight (ppg)	9	9
5	Depth of next Casing (feet - TVD)	4417	4417
6	Maximum Expected Formation Pressure (psi)	1952	1952
7	Expected gas gradient (psi/ft)	0 05	0 05
8	Formation Equivalent Mud Weight (ppg)	8.5	8 5
	Max Pressures using 100% Gas to Surface		
9	Max Surface Pressure neglecting shoe (psi)	1731	1731
10	Fracture Gradient at shoe (psi/ft)	0 63	0 63
11	Fracture Pressure at shoe (psi)	2117	2779
12	Surface pressure to break down shoe (psi)	1949	2558
13	Maximum Anticipated Surface Pressure (psi)	1731	1731
	Max Pressures using 70% Gas & 30% Mud		
14	Maximum Anticipated Surface Pressure (psi)	1178	1178
15	Top of fluid (feet-TVD)	3092	3092
16	Pressure at shoe (psi)	1460	1952
17	Margin between pressure and breakdown(psi)	657	827

Pore Pressure Plot



CASING DESIGN

Hole Section	Existing	8 1/2"
Mud Weight	9	9
Buoyancy Factor	0.863	0.863
MASP (psi)	1731	1731
Gas Lift Pressure (psi)	1800	N/A
Casing Size (in)	9-5/8*	slot liner
Setting Depth, MD (ft)	4950	
Setting Depth, TVD (ft)	4157	
Top of Casing, MD (ft)	0	
Weight (lb/ft)	43.5	
Grade	L-80	
Threads	STL	
ID (in)	8.755	
Drift diameter (in)	8.599	
Collapse (psi)	3810	
Burst (psi)	6330	
Joint Strength (kips)	825	
Body Strength (kips)	1005	
Collapse Safety Factor Assumes Complete Evacuation	1.96	
Burst Safety Factor Assumes No Backup at Surface	3.52	
Tensile Safety Factor	2.89	

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures. SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. **Assume any gas circulated to surface to have hydrogen sulfide potential.** Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

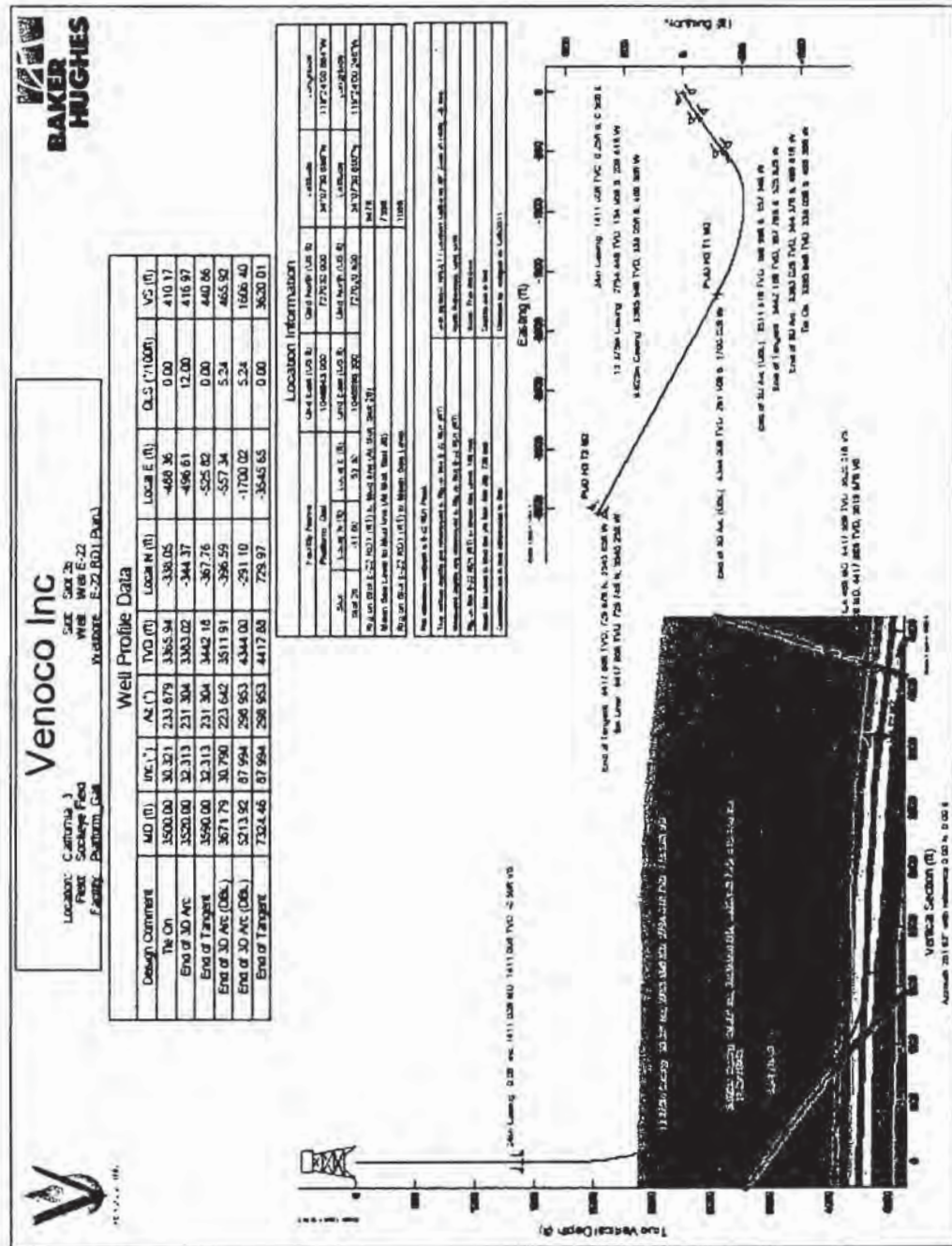
RIG SPECS



Rig #2 Specifications

<u>Drilling Range:</u>	21,000' with 5" Drillpipe.
<u>Drawworks:</u>	Skytop Brewster N-12 / 2,000 H.P. Driven by (2)-1,000 H.P. General Electric 752 DC Traction Motors With a Parkersburg V-200 Hydromatic Brake and Electronic Control Panel.
<u>Mast:</u>	Skytop Brewster 142' High, Rated at 1,250,000# GNC and 1,000,000# Static Hook Capacity.
<u>Substructure:</u>	Skytop Brewster 21' High (10' Pony Available), With 1,250,000# Capacity.
<u>Mud Pump #1:</u>	National 12P-100 Triplex, 7"x12" 1,000 H.P., Powered by (2)-1,000 H.P. General Electric 752 DC Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Mud Pump #2:</u>	National 12P-100 Triplex, 7"x12" 1,000 H.P., Powered by (2)-1,000 H.P. General Electric 752 Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Rotary Table:</u>	Continental Emsco 27-1/2" (37-1/2" Optional)
<u>Traveling System:</u>	Skytop Brewster 6 Sheave, 500 Ton Block / Hook Combination and National P-500 Ton Swivel.
<u>SCR / Power System:</u>	Ross Hill 4 Bridge, 4 Input SCR Unit With Highline Connection and G.E. Electrical Control Unit.
<u>Mud System:</u>	(2)-Pit System, 1,000 Total Barrels, With Trip. Shaker, Volume, Mud Cleaning, Suction and Pill Mixing Compartments, (6)-Lightning Mud Agitators, Submerged Guns, (2)-5x6 Centrifugal Pumps and (2)-Flowline Cleaners.
<u>B.O.P.E.:</u>	Hydril GK 13-5/8", 5,000# Annular, Shaffer LWS 13-5/8", 5,000# D-Ram, Hydril 220 Gallon Accumulator and 5,000# Choke Manifold or as Designated by Contract.
<u>Water Storage:</u>	400 BBLS.
<u>Auxiliary Equipment:</u>	(2)-Air Winches, Wireline Unit (002"), (2)-Air compressors, Upper & Lower Doghouses, Toolpusher Trailer.

DIRECTIONAL PLAN



Wellpath Report

Page 1 of 4



Planned Wellpath Report

E-22 RD1 Plan3

Page 1 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 26
Area	California_3	Well	Well E-22
Field	Sockeye Field	Wellbore	E-22 RD1
Facility	Platform Gail	Sidetrack from	AWB E-22 at 3495.06 MD

REPORT SETUP INFORMATION			
Projection System	NAD77 / Lambert California SP, Zone VI (406), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Vazqjosl
Scale	1.00005	Report Generated	12/5/2011 at 5:17:01 AM
Convergence at slot	1.73° West	Database/Source file	WA_Bakersfield/E-22_RD1.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North(ft)	East(ft)	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-11.60	53.30	1046696.30	727020.40	34°07'30.600"N	119°24'00.246"W
Facility Reference Pt			1046643.00	727032.00	34°07'30.698"N	119°24'00.884"W
Field Reference Pt			1046600.00	728640.00	34°07'47.480"N	119°23'26.305"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on Slot E-22 RD1 (RT) to Facility Vertical Datum	103.00ft
Horizontal Reference Pt	Slot	Rig on Slot E-22 RD1 (RT) to Mean Sea Level	103.00ft
Vertical Reference Pt	Rig on Slot E-22 RD1 (RT)	Rig on Slot E-22 RD1 (RT) to Mud Line at Slot (Slot 26)	847.00ft
MD Reference Pt	Rig on Slot E-22 RD1 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	281.63°

file://D:\WellArchitect\E-22_RD1.xml

12/5/2011



Planned Wellpath Report

E-22 RD1 Plan3

Page 2 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 26
Area	California 3	Well	Well E-22
Field	Sockeye Field	Wellbore	E-22 RD1
Facility	Platform Gail	Sidetrack from	AWB E-22 at 3495.00 MD

WELLPATH DATA (81 stations) τ = interpolated/extrapolated station														
MD [ft]	Latitude [°]	Longitude [°]	TVD [ft]	TVD from Plan Vert Ref [ft]	Vert Sec [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Toolface [°]	Built Rate [°/100ft]	Turn Rate [°/100ft]	Comments
-5.00	0.000	186.370	-5.00	-113.00	0.00	0.00	0.00	1046696.30	727020.40	0.00	0.00	0.00	0.00	
0.00	0.000	186.370	0.00	-108.00	0.00	0.00	0.00	1046696.30	727020.40	0.00	0.00	0.00	0.00	
347.00	0.000	236.800	847.00	739.00	0.00	0.00	0.00	1046696.30	727020.40	0.00	-173.63	0.00	0.00	
395.00	0.210	186.370	895.00	787.00	-0.01	-0.09	-0.01	1046696.29	727020.31	0.44	-82.41	0.44	0.00	
945.00	0.260	157.150	945.00	837.00	-0.08	-0.38	0.02	1046696.32	727020.12	0.36	-157.44	0.10	-58.45	
995.00	0.130	129.600	995.00	887.00	-0.20	-0.42	0.11	1046696.41	727019.98	0.31	-139.64	-0.26	-55.10	
1095.00	0.110	39.860	1095.00	987.00	-0.34	-0.42	0.26	1046696.56	727019.98	0.17	-178.40	-0.02	-89.75	
1195.00	0.080	223.650	1195.00	1087.00	-0.35	-0.40	0.27	1046696.57	727020.00	0.19	-159.16	-0.03	-176.21	
1295.00	0.230	71.600	1295.00	1187.00	-0.49	-0.39	0.42	1046696.72	727020.01	0.30	-163.19	0.13	-152.03	
1395.00	0.080	324.690	1395.00	1287.00	-0.61	-0.37	0.57	1046696.87	727020.13	0.36	108.38	-0.13	-106.91	
1575.00	0.210	46.530	1575.00	1467.00	-0.71	0.06	0.73	1046697.03	727020.46	0.12	56.17	0.02	45.41	
1665.00	0.420	78.160	1665.00	1557.00	-1.10	0.34	1.18	1046697.48	727020.64	0.29	144.12	0.23	35.13	
1765.00	0.250	142.300	1765.00	1657.00	-1.60	0.15	1.37	1046697.97	727020.55	0.38	-137.17	-0.17	64.13	
1815.00	0.210	59.150	1814.99	1706.99	-1.75	0.11	1.81	1046698.11	727020.51	0.61	169.11	-0.08	-166.30	
1870.00	1.850	226.910	1869.99	1761.99	-1.36	-0.39	1.31	1046697.61	727020.01	3.45	22.02	2.89	305.02	
1929.00	3.590	238.770	1928.92	1820.92	0.50	-1.95	-0.91	1046695.39	727018.45	3.33	0.63	3.22	20.10	
1991.00	5.660	239.000	1990.72	1882.72	4.17	-4.33	-5.19	1046691.11	727015.87	3.34	10.22	3.34	0.33	
2083.00	8.760	242.650	2081.98	1973.98	12.95	-10.08	-15.30	1046681.00	727010.31	3.40	11.16	3.37	3.93	
2149.00	10.470	244.500	2147.05	2039.05	21.64	-14.98	-25.18	1046671.12	727005.42	2.63	-27.05	2.59	2.80	
2205.00	12.000	240.800	2201.98	2093.98	30.10	-20.01	-34.85	1046661.44	727000.39	3.02	-23.54	2.73	-6.61	
2267.00	14.300	236.800	2262.35	2154.35	40.41	-27.34	-46.89	1046649.41	726993.05	3.99	17.25	3.71	-5.45	
2361.00	16.300	239.000	2353.01	2245.01	58.35	-40.50	-67.91	1046638.38	726979.90	2.72	-9.82	2.13	2.34	
2416.00	17.900	238.100	2405.58	2297.58	70.16	-48.94	-81.71	1046614.59	726971.46	2.95	-18.17	2.91	-1.64	
2447.00	19.100	236.900	2434.98	2326.98	77.22	-54.33	-90.00	1046606.30	726966.17	4.08	-4.88	3.87	-5.87	
2510.00	21.700	236.300	2494.02	2386.02	92.73	-66.32	-108.33	1046587.97	726954.03	4.14	8.78	4.13	-0.95	
2540.00	22.700	236.700	2521.80	2413.80	100.73	-72.58	-117.78	1046578.51	726947.82	5.37	10.10	3.33	7.33	
2609.00	23.600	237.100	2585.34	2477.34	120.00	-87.39	-140.50	1046555.79	726933.01	1.32	-12.66	1.30	0.58	
2701.00	26.600	235.600	2669.45	2561.45	147.73	-109.27	-173.52	1046522.97	726911.13	3.30	-16.09	3.23	-1.61	
2748.00	27.900	234.800	2710.34	2602.34	162.34	-121.29	-190.62	1046505.68	726899.10	2.94	-28.76	2.83	-1.74	
2831.00	28.600	234.000	2783.46	2675.46	188.91	-144.16	-222.56	1046473.73	726876.23	0.96	25.98	0.84	-0.96	
2924.00	29.100	234.500	2864.91	2756.91	219.30	-170.38	-258.97	1046437.31	726850.01	0.60	-90.26	0.54	0.54	
3017.00	29.100	233.900	2946.17	2838.17	249.89	-196.83	-295.56	1046400.63	726823.56	0.31	0.00	0.00	-0.63	
3111.00	29.300	233.900	3028.23	2920.23	280.74	-223.85	-332.71	1046363.57	726796.54	0.21	-63.15	0.21	0.00	
3203.00	29.400	233.500	3108.43	3000.43	310.95	-250.55	-369.05	1046327.23	726769.84	0.24	9.38	0.11	-0.43	
3296.00	29.700	233.600	3189.32	3081.32	341.39	-277.80	-405.95	1046290.33	726742.59	0.33	26.59	0.32	0.11	
3388.00	30.000	233.900	3269.12	3161.12	372.30	-304.88	-442.88	1046253.40	726715.51	0.36	0.00	0.33	0.33	
3481.00	30.300	233.900	3349.54	3241.54	403.72	-332.40	-480.62	1046215.66	726687.99	0.32	-26.85	0.32	0.00	
3500.00	30.321	233.879	3365.94	3257.94	410.17	-338.05	-488.36	1046207.91	726682.33	0.00	-35.00	0.11	-0.11	Fin Ch
3520.00	32.313	231.304	3383.02	3275.02	416.97	-344.37	-496.61	1046199.66	726676.02	12.00	0.00	9.96	-12.58	End of 3D Arc
3590.00	32.313	231.304	3442.18	3334.18	440.86	-367.76	-525.82	1046170.46	726662.62	0.00	-114.04	0.00	0.00	End of Tangent
3600.00	32.103	230.403	3450.65	3342.65	444.33	-371.13	-529.95	1046166.32	726649.26	5.24	-113.28	-2.10	-9.00	
3671.79	30.790	223.643	3511.91	3403.91	465.92	-396.59	-557.34	1046138.93	726623.79	5.24	78.32	-1.83	-9.43	End of 3D Arc (DBL)
3700.00	31.120	226.444	3536.10	3428.10	473.91	-408.84	-567.61	1046128.66	726613.54	5.24	75.92	1.17	9.93	
3800.00	32.751	235.868	3621.02	3513.02	507.56	-439.85	-608.76	1046087.52	726580.53	5.24	67.92	1.63	9.43	
3900.00	35.021	244.348	3704.07	3596.07	549.29	-467.47	-657.05	1046039.22	726552.91	5.24	60.87	2.27	8.48	



Planned Wellpath Report

E-22 RD1 Plan3

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 26
Area	California_3	Well	Well E-22
Field	Sockeye Field	Wellbore	E-22 RD1
Facility	Platform_Gail	Sidetrack from	AWB E-22 at 3495.00 MD

WELLPATH DATA (81 stations) τ = interpolated/extrapolated station														
MD [ft]	True Easting [ft]	True Northing [ft]	TVD [ft]	TVD from Plat Vert Ref [ft]	Vert Scur [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [1000]	Toolface [°]	Build Rate [°/1000]	Turn Rate [°/1000]	Comments
4000.00	37.814	251.824	3784.58	3676.58	598.75	-489.46	-712.07	1045984.19	726530.91	5.24	54.85	2.79	7.48	
4100.00	41.021	258.357	3861.85	3753.85	655.53	-505.66	-773.38	1045922.88	726514.71	5.24	49.80	3.21	6.53	
4200.00	44.551	264.063	3935.26	3827.26	719.16	-515.92	-840.46	1045855.80	726504.46	5.24	45.61	3.53	5.71	
4300.00	48.330	269.079	4004.18	3896.18	789.11	-520.15	-912.74	1045783.51	726500.23	5.24	42.15	3.78	5.01	
4400.00	52.303	273.518	4068.04	3960.04	864.78	-518.33	-989.63	1045706.62	726502.05	5.24	39.31	3.97	4.44	
4500.00	56.426	277.500	4126.31	4018.31	945.56	-510.46	-1070.48	1045625.77	726509.92	5.24	36.99	4.12	3.93	
4600.00	60.664	281.114	4178.49	4070.49	1030.75	-496.61	-1154.61	1045541.64	726513.77	5.24	35.10	4.24	3.61	
4700.00	64.992	284.436	4224.16	4116.16	1119.66	-476.90	-1241.32	1045454.92	726513.48	5.24	33.58	4.33	3.32	
4800.00	69.388	287.550	4262.93	4154.93	1211.53	-451.49	-1329.89	1045366.35	726508.89	5.24	32.38	4.40	3.08	
4900.00	73.836	290.449	4294.47	4186.47	1305.61	-420.39	-1419.58	1045276.66	726509.79	5.24	31.46	4.45	2.92	
5000.00	78.323	293.258	4318.52	4210.52	1401.09	-384.47	-1509.65	1045184.60	726515.91	5.24	30.79	4.46	2.79	
5100.00	82.835	295.939	4334.89	4226.89	1497.20	-343.42	-1599.30	1045096.93	726516.96	5.24	30.35	4.51	2.70	
5200.00	87.363	298.587	4343.44	4235.44	1593.11	-297.79	-1687.83	1045008.39	726517.00	5.24	30.12	4.53	2.65	
5213.92	87.994	298.953	4344.00	4236.00	1606.40	-291.10	-1700.03	1044996.20	726529.25	5.24	0.00	4.53	2.63	End of 3D Arc (DBL)
5300.00	87.994	298.953	4347.01	4239.01	1688.53	-249.45	-1775.30	1044920.93	726770.34	0.00	0.00	0.00	0.00	
5400.00	87.994	298.953	4350.51	4242.51	1783.93	-201.07	-1862.74	1044833.47	726819.32	0.00	0.00	0.00	0.00	
5500.00	87.994	298.953	4354.01	4246.01	1879.34	-152.69	-1950.19	1044746.01	726867.70	0.00	0.00	0.00	0.00	
5600.00	87.994	298.953	4357.51	4249.51	1974.75	-104.31	-2037.64	1044658.56	726916.08	0.00	0.00	0.00	0.00	
5700.00	87.994	298.953	4361.01	4253.01	2070.16	-55.93	-2125.09	1044571.11	726964.46	0.00	0.00	0.00	0.00	
5800.00	87.994	298.953	4364.51	4256.51	2165.56	-7.56	-2212.54	1044483.66	727012.84	0.00	0.00	0.00	0.00	
5900.00	87.994	298.953	4368.02	4260.02	2260.97	40.82	-2299.99	1044396.21	727061.23	0.00	0.00	0.00	0.00	
6000.00	87.994	298.953	4371.52	4263.52	2356.38	89.20	-2387.43	1044308.75	727109.61	0.00	0.00	0.00	0.00	
6100.00	87.994	298.953	4375.02	4267.02	2451.79	137.58	-2474.88	1044221.30	727157.99	0.00	0.00	0.00	0.00	
6200.00	87.994	298.953	4378.52	4270.52	2547.19	185.96	-2562.35	1044133.85	727206.37	0.00	0.00	0.00	0.00	
6300.00	87.994	298.953	4382.02	4274.02	2642.60	234.34	-2649.78	1044046.40	727254.75	0.00	0.00	0.00	0.00	
6400.00	87.994	298.953	4385.52	4277.52	2738.01	282.72	-2737.23	1043958.94	727303.13	0.00	0.00	0.00	0.00	
6500.00	87.994	298.953	4389.02	4281.02	2833.42	331.10	-2824.68	1043871.49	727351.51	0.00	0.00	0.00	0.00	
6600.00	87.994	298.953	4392.52	4284.52	2928.83	379.48	-2912.12	1043784.04	727399.90	0.00	0.00	0.00	0.00	
6700.00	87.994	298.953	4396.02	4288.02	3024.23	427.86	-2999.57	1043696.59	727448.28	0.00	0.00	0.00	0.00	
6800.00	87.994	298.953	4399.52	4291.52	3119.64	476.24	-3087.02	1043609.13	727496.66	0.00	0.00	0.00	0.00	
6900.00	87.994	298.953	4403.02	4295.02	3215.05	524.62	-3174.47	1043521.68	727545.04	0.00	0.00	0.00	0.00	
7000.00	87.994	298.953	4406.52	4298.52	3310.45	573.00	-3261.92	1043434.23	727593.42	0.00	0.00	0.00	0.00	
7100.00	87.994	298.953	4410.02	4302.02	3405.86	621.37	-3349.37	1043346.78	727641.80	0.00	0.00	0.00	0.00	
7200.00	87.994	298.953	4413.52	4305.52	3501.27	669.75	-3436.81	1043259.32	727690.19	0.00	0.00	0.00	0.00	
7300.00	87.994	298.953	4417.02	4309.02	3596.68	718.13	-3524.26	1043171.87	727738.57	0.00	0.00	0.00	0.00	
7324.46	87.994	298.953	4417.88	4309.88	3620.01	729.97	-3545.65	1043150.48	727750.40	0.00		0.00	0.00	End of Tangent



Planned Wellpath Report

E-22 RD1 Plan3

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 26
Area	California 3	Well	Well E-22
Field	Sockeye Field	Wellbore	E-22 RD1
Facility	Platform Gail	Sidetrack from	AWB E-22 at 3495.00 MD

HOLE & CASING SECTIONS - Ref Wellbore: E-22 RD1 Ref Wellpath: E-22 RD1 Plan3									
String Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
24in Casing	-5.00	1411.00	1416.00	-5.00	1411.00	0.00	0.00	-0.25	0.56
13 375in Casing	-5.00	2798.00	2803.00	-5.00	2754.44	0.00	0.00	-134.95	-209.81
9 625in Casing	-5.00	3500.00	3505.00	-5.00	3365.94	0.00	0.00	-338.05	-488.36
8 5in Open Hole	3500.00	7324.00	3824.00	3365.94	4417.86	-338.05	-488.36	729.74	-3545.25
5in Liner	3400.00	7324.00	3924.00	3279.51	4417.86	-308.41	-447.73	729.74	-3545.25

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) PUD H3 T1 M2	5213.92	4344.00	-291.10	-1700.02	1044996.20	728729.29	34°07'27.213"N	119°24'20.353"W	point
2) PUD H3 T2 M2	7324.46	4417.88	729.97	-3545.65	1043150.48	727750.40	34°07'36.756"N	119°24'42.664"W	point

SURVEY PROGRAM - Ref Wellbore: E-22 RD1 Ref Wellpath: E-22 RD1 Plan3					Log Name/Comment	Wellbore
Start MD [ft]	End MD [ft]	Positional Uncertainty Model				
347.00	1395.00	Unknown Tool (Standard)				AWB E-22
1395.00	3500.00	TSC/WSA MWD, Rev. 2 (Standard)				AWB E-22
3500.00	4070.00	Generic gyro - continuous (Standard)				E-22 RD1
4070.00	7324.46	OnTrak (Standard)				E-22 RD1

RP 65 Compliance Questions:

	GENERAL QUESTIONS:	
1	Have you considered the following in your well planning and drilling plan determinations: evaluation for flow potential, site selection, shallow hazards, deeper hazard contingency planning, well control planning for fluid influxes, planning for lost circulation control, regulatory issues and communications plans, planning the well, pore pressure, fracture gradient, mud weight, casing plan, cementing plan, drilling plan, wellbore hydraulics, wellbore cleaning, barrier design, and contingency planning? [API 65-2 1.5]	Yes/No
2	Have you considered the general well practices while drilling, monitoring and maintaining wellbore stability, curing and preventing lost circulation, and planning and operational considerations? [API 65-2 1.6]	Yes/No
	FLOW POTENTIAL	
3	Will a pre-spud hazard assessment be conducted for the proposed well site?	☒ No
4	List all potential flow zones within the well section to be cemented.	☒ No
5	Has the information concerning the type, location, and likelihood of potential flow zones been communicated to key parties (cementing service provider, rig contractor, or 3 rd parties)?	☒ No
	CRITICAL DRILLING FLUID PARAMETERS	
6	Are fluid densities sufficient to maintain well control without inducing lost circulation?	Yes/No
	CRITICAL WELL DESIGN PARAMETERS	
7	Will you use a cementing simulation model in the design of this well?	☒ No
7a	If yes, how is the output of this simulation model used in your decision-making process?	Describe below
7b	If no, include discussion of why a model is not being used.	Describe below
7c	Either way, include the number and placement of centralizers being used.	Describe below
8	Will you ensure the planned top of cement will be 500 feet above the shallowest potential flow zone?	☒ No
9	Have you confirmed that the hole diameter is sufficient to provide adequate centralization?	Yes/No
10	If there are any isolated annuli, how have you mitigated thermal casing pressure build-up.	☒ No
11	Will you ensure the well will be stable (no volume gain or losses, drilling fluid density equal in vs. out) before commencing cementing operations?	☒ No
12	List all annular mechanical barriers in your design.	Describe below
13	Has the rathole length been minimized or filled with drilling fluid with a density greater than the cement density?	☒ No
14a	If you have any liner top packers exposed to the production or intermediate annulus, what is the rating for differential pressure across this packer?	NA or Describe below
14b	If you have any liner top packers exposed to the production or intermediate annulus, have you confirmed that your negative test will not exceed this rating?	Yes/No ☒ No
15	What type of casing hanger lock-down mechanisms will be used?	Describe below
16	For all intermediate and production casing hangers set in subsea, HP wellhead housing, will you immediately set/energize the lock-down ring prior to performing any negative test?	☒ No
17	For all production casing hangers set in subsea, HP wellhead housing, will you set/energize the lock-down sleeve immediately after running the casing and prior to performing any negative test?	☒ No
	CRITICAL OPERATIONAL PARAMETERS	
18	Will you have 2 mechanical barriers in addition to cement in your final casing string (or liner if it is your final string)?	Yes/No
19	Do you plan to nipple down BOP in accordance with the WOC requirements in 30 CFR 250.422(a)?	Yes/No
20	Do you plan on running a cement bond log on the production and intermediate casing/liner prior to conducting the negative test on that string?	☒ No
	Are contingency plans in place for the following:	
21	Lost circulation?	Yes/No
22	Unplanned shut-down?	Yes/No
23	Unplanned rate change?	Yes/No

24	Float equipment does not hold differential pressures?	Yes/No
25	Surface Equipment issues?	Yes/No
26	Will you monitor the annulus during cementing and WOC time?	No
27	If using foam cement, is a risk assessment being conducted and incorporated into cementing plan?	No
28	If using foam cement, will the foamer, stabilizer, and nitrogen injection be controlled by an automated process system?	No
CRITICAL MUD REMOVAL PARAMETERS		
28	Have you tested your drilling fluid and cementing fluid programs for compatibility to reduce possible contamination?	Yes/No
29	Have you considered actual well conditions when determining appropriate cement volumes?	No
30	Has the spacer been modeled or designed to achieve the best possible mud removal?	No
CRITICAL CEMENT SLURRY PARAMETERS		
31	Have all appropriate cement slurry parameters been considered to ensure the highest probability of isolating all potential flow zones?	No
32	Do you plan on circulating bottom up prior to the start of the cement job?	No

If any question is answered "No", additional explanation will be needed as to why that practice is not being followed; identify the question and provide that explanation below. The follow questions are not "Yes/No" questions and will require a description (if not applicable, state "Not Applicable").

4.

7a.

7b. Completion will not be cemented. Pre-perforated liner and swell packers will be used instead.

7c.

10a.

13. Production Packer, Tubing Hanger, Production Tree

14a. Liner-top Packer is rated to 7500psi. Liner will be pre-perforated so a negative test is not applicable.

15.

June 4, 2012

Memorandum

To: Drew Mayerson, Regional Supervisor, Office of Production and Development

From: Robert Dame, Geophysicist, Office of Production and Development

Subject: Geologic Hazards Analysis for E-22 ST01 Development Well APD (Proprietary)

NOTE: THIS GEOLOGIC SAFETY ANALYSIS IS INTENDED TO ALERT THE OPERATOR AND DISTRICT ENGINEERS TO POTENTIAL GEOLOGIC HAZARDS THAT MAY BE ENCOUNTERED DURING DRILLING OPERATIONS. THIS ANALYSIS DOES NOT RELIEVE THE OPERATOR OF THE RESPONSIBILITY TO CONDUCT THEIR OWN GEOHAZARD ANALYSIS PRIOR TO AND DURING DRILLING THIS WELL. A WORST CASE DISCHARGE ANALYSIS WAS NOT REQUESTED BY THE DISTRICT OFFICE AND IS NOT INCLUDED IN THIS REVIEW.

Well No: E-22 ST01

Operator: Venoco

Unit: Santa Clara

Lease OCS-P: 0205 (bottom)

Lease OCS-P: 0205 (top)

Field: Sockeye

Platform: Gail

KB Elevation: 108 ft

Water Depth: 739 ft

Locations (est.)	LAT	LON	MD (ft)	TVD (ft)
Surface (Slot No. 26; OCS-P 0205)	-119.401	64.125	+108	0
Kick-Off Point			3,500	3,366
Monterey M1			4,266	3,981
Monterey M2			5,176	4,312
Permit TD (OCS-P 0205)	-119.412	34.127	7,324	4,417

Summary of the Planned Operation

Venoco has submitted an Approval for Permit to Drill (APD) for the proposed well E-22 ST01, within the Santa Clara Unit, Offshore Ventura, California (Figure 1). The well is a new, single completion sidetrack well originating from Platform Gail targeting production from the M2 interval of the Monterey Formation within the Sockeye Field.

1. Geohazards Review Methodology:

This APD Geohazards review was carried out using 3D seismic reflection data, mud logs from previously drilled wells within the Sockeye field, shallow hazards mapping guidelines recommended in NTL 01-P01 and by the IODP, and results from the internal BSEE Sockeye Field Study to constrain well path lithology, shallow gas potential, and fault hazards and other safety-related concerns that may impact the success of the E-22 ST01 well drilling program.

2. Existing Wells:

No existing wells lie nearby the proposed E-22 ST01 kick-off point or well path. Baker Hughes has prepared a well anti-collision report showing the proposed E-22 ST01 well path does not intersect any existing wells.

3. Potential Oil and Gas Reservoirs

The target hydrocarbon zone for the E-22 ST01 as mapped by Venoco is the Miocene Monterey Formation. The well is to be drilled northwest through the crest of a regional northwest-southeast trending anticline and completed horizontally within the Monterey M2 Formation.

4. Regional Geologic Setting

The E-22 ST01 well lies within the eastern Santa Barbara Channel region of Western Transverse Ranges (WTR) Tectonic Province. The WTR is an east-west trending tectonic province characterized by strong north-south compression and widespread high-angle thrust faults due to transform motion on the San Andreas Fault to the east. Dominant structures near the Santa Clara Unit include the Pitas Point and Oak Ridge faults. The major hydrocarbon trap within the Sockeye field is a doubly-plunging anticline bounded by two high-angle thrust faults. Hydrocarbon production is constrained to rocks of Tertiary age, including the Miocene Monterey Topanga Formations.

5. Interpreted Well Stratigraphy

Stratigraphy for the E-22 ST01 well was constrained using logs from previous Sockeye wells and 3D time-migrated seismic reflection data. The E-22 ST01 well is interpreted to pass through 3 different stratigraphic zones during drilling operations: the Pliocene Pico Formation, the Miocene M1 Monterey Formation, and the Miocene M2 Monterey Formation. A tophole prognosis chart (Figure 2) shows anticipated well lithology to the total depth of 4,417' (TVD).

6. Possible Shallow Water Flow

There have been no previous instances of shallow water flow in any adjacent wells within the Sockeye Field.

7. Possible Lost Circulation Zones

No significant events of lost circulation were noted in the mud logs the primary E-22 development well. Although the proposed drilling program for well E-22 ST01 is similar to other sidetrack wells drilled in the Sockeye Field, lost circulation is common when drilling in the Monterey Formation and proper caution should be taken by Venoco during drilling operations.

8. Faulting

The Sockeye field is bounded by two high-angle thrust faults, and while other wells drilled within the Sockeye Field have cross minor bending moment faults associated with uplift of a regional anticline, the E-22 ST01 well path does not cross any interpreted fault splay. Thus, no fault hazards are interpreted for the E-22 ST01 well.

9. Possible Shallow Gas Zones

No zones of possible shallow gas were interpreted in the 3D seismic data within the vicinity of the E-22 ST01 well path. While gas has previously been encountered within the Pliocene Upper Pico Formation, the kick-off point lies well below the zone of gas-saturated sediments. In the event of encountering shallow gas during drilling operations, Venoco maintains a contingency plan to counteract the flow of gas by keeping sufficiently heavy drilling muds on hand on Platform Gail.

10. Possible Overpressured or Depleted Zones

Venoco does not anticipate encountering overpressured zones while drilling the E-22 ST01 well, as the kick-off point lies below the gas-charged Pico Formation. However, drilling mud weights are planned to average 9.0 ppg, which is above the highest expected pore pressure of 8.5 ppg. Venoco has well control contingency plan to account for any unexpected abnormal drilling pressures.

11. Logging/Coring

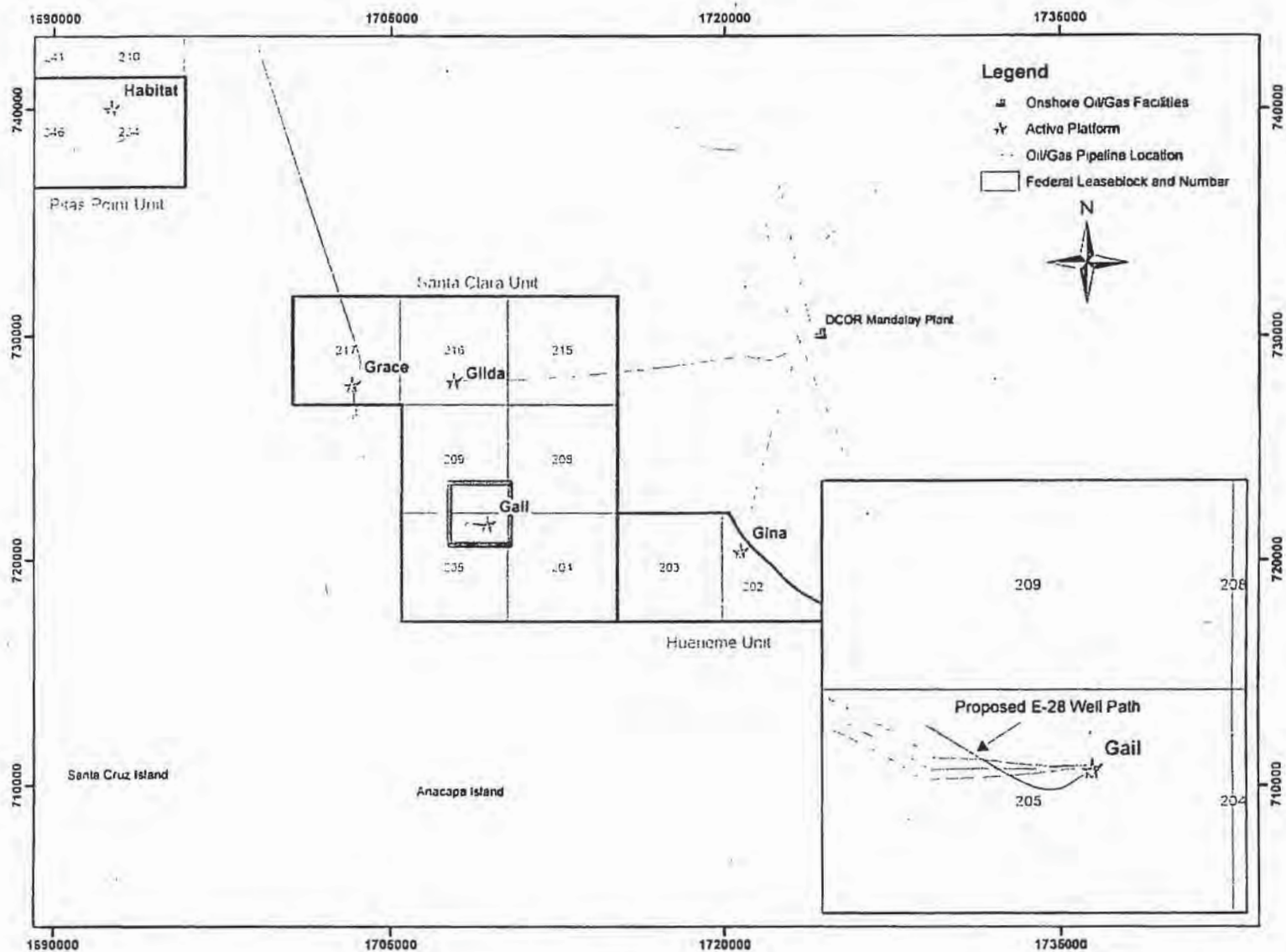
Venoco plans LWD gamma ray and Electric Logging in the entirety of the 8.5" downhole sections. Mud logging will commence with spudding of the well. Dry samples will be collected at 30' intervals within the 8.5" downhole section as well.

12. H2S Gas

The Monterey Formation has the potential to contain H2S gas. Based on the submitted APD, Venoco assumes any gas circulated to the surface will have hydrogen sulfide potential and will adhere to the BSEE approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan."

13. Worst Case Analysis

The District Supervisor did not request a worst case discharge analysis for this well. Should it be requested in the future, this would require modeling the maximum flow that could occur from an uncontrolled release of fluids derived from the uncased portion of the well within the Monterey Formation.



E-22 ST01 WELL APD LOCATION

FIGURE 1



United States Department of the Interior
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
PACIFIC OCS REGION
770 Paseo Camarillo, 2nd Floor
Camarillo, CA 93010-6064

May 30, 2012

Memorandum

To: Regional Supervisor
Office of Field Operations

From: Kenneth R. Seeley
Regional Environmental Officer *Kenneth R. Seeley*

Subject: Categorical Exclusion Review (CER) – Veneco, Inc.'s Application for Permit to Drill, Well E-22, Platform Gail, Santa Clara Unit, Pacific OCS Region

I have reviewed Veneco's Application for a Permit to Drill (APD), dated April 30, 2012, for drilling a sidetracked well (E-22) from Platform Gail in the Santa Clara Unit. The California District has determined that approval of this APD for a sidetrack well will not require a Worst Case Discharge analysis. The proposed Well E-22 does not contain sufficient pressure to bring production to the surface and will be equipped with a down-hole electric submersible pump to artificially lift production fluids to the surface. Drilling this well is therefore expected to pose little or no risk of a blowout that could result in an oil spill.

Drilling of the proposed well is consistent with Veneco's Plan of Development (POD), dated January 29, 1986. The original E-22 well was initially drilled and successfully completed in 1996. BSEE and the Bureau of Ocean Energy Management (BOEM) are currently working with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on a programmatic level to update endangered species consultations per the Endangered Species Act for current offshore development and production activities.

Approval of Veneco's APD for Well E-22 meets the definition of the Categorical Exclusion for "Approval of an Application for Permit to Drill (APD) an offshore oil and gas exploration or development well, when said well and appropriate mitigation measures are described in an approved exploration plan, development plan, production plan, or Development Operations Coordination Document" [516 DM 15.4.C (12)]. We also reviewed the extraordinary circumstances found in the Departmental regulations at 43 CFR 46.215 and found that none exist (Table I). As a result, we have determined that Veneco's APD for Well E-22 is categorically excluded from further National Environmental Policy Act review.

Table 1. Review of Extraordinary Circumstances (43 CFR 46.215) for Veneco's Application for Permit to Drill (APD) for Well E-22, Platform Gail, Santa Clara Unit. The APD has been reviewed to determine whether any of the extraordinary circumstances criteria listed below exist for the categorical exclusion of minor revisions or minor variances [516 DM 15.4.C (11)].

EXTRAORDINARY CIRCUMSTANCE CRITERIA	DO THESE EXTRAORDINARY CIRCUMSTANCES EXIST FOR THIS ACTION?
2.1 Have significant impacts on public health or safety.	No: Drilling activities will be conducted offshore under applicable safety and environmental regulations. Drilling of this well is expected to have little or no risk of a blowout that could result in an oil spill.
2.2 Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas.	No: Platform Gail is not located near natural resources considered to be ecologically, historical or culturally important.
2.3 Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA Section 102(2)(E)].	No: Controversial environmental effects or unresolved conflicts on available resources are not expected for this area of the Federal OCS.
2.4 Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks.	No: The greatest environmental concern with the proposed activity is the risk of an oil spill. Risk of an oil spill is low for this proposal and any effects of an oil spill that may occur are well documented and have been evaluated in previous environmental reviews.
2.5 Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects.	No: Proposed activities are consistent with existing, approved development and production plans for the area.
2.6 Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects.	No: Past, present or reasonably foreseeable oil and gas development in the area have been evaluated and considered in previous environmental reviews.
2.7 Have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by either the bureau or office.	No: Proposed activities will not occur in the vicinity of properties listed, or eligible for listing, on the National Register of Historic Places.
2.8 Have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for those species.	No: The proposed activity will not have significant impacts on listed species or critical habitat.
2.9 Violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment.	No: Proposed activities will be conducted in compliance with all applicable laws imposed for the protection of the environment.
2.10 Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898).	No. The proposed activity will not disproportionately affect low income or minority populations.
2.11 Limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007).	No: Proposed activities will not limit access or ceremonial use of Indian sacred sites.
2.12 Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112).	No: Proposed activities will be conducted on the Federal OCS using existing local vessels (crewboats, workboats, etc.).

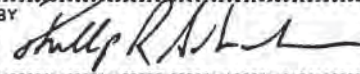
CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Manager.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells.
3. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
4. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, lost circulation during cementing, etc., shall be verbally reported immediately to the District Manager.
5. The District Manager shall be notified in advance in the event of production tests.
6. Two copies of all logs, including the mud log to date, shall be furnished to this office immediately after logging.
7. Before a completion program is commenced or the hole is abandoned, the District Manager shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
8. This APD is approved subject to the requirement that, should the well be successfully completed for production or re-completed and production resumed after being off of production more than 90 days, this office must be notified when it is placed in a producing status. Such notification may be received in this office by no later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following information items:
 - 1) Operator name.
 - 2) Platform and well name, number and location.
 - 3) Date well began or resumed production.
 - 4) The lease number and, if applicable, unit participation area to which the well's production is attributable.
13. This APD is valid for one year from the date it is approved.

U.S. Department of the Interior
Bureau of Safety and Environmental
Enforcement (BSEE)Submit original plus THREE copies,
with ONE copy marked "Public Information"OMB Control No 1010-0141
OMB Approval Expires 10/31/2014

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☒ NEW WELL ☐ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 BSEE OPERATOR NO 02309		3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013	
4 WELL NAME (CURRENT) E-28		5 SIDETRACK NO (CURRENT)		6 BYPASS NO (CURRENT)	
7 PROPOSED START DATE February 6, 2012		8 PLAN CONTROL NO (NEW WELL ONLY)			
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04311 XXXXXXX					
10 ☐ Revision		11 If revision, please list changes			
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE		
12 LEASE NO P-20 ⁴			17 LEASE NO P-205		
13 AREA NAME 6B			18 AREA NAME 6B		
14 BLOCK NO 4661			19 BLOCK NO 4661		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) 727.020.46		16 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,046.687.31		21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,046.687.31	
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME		23 TOP (MD)		24 TOP (TVD)	
25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate) Drill program includes design criteria for well, casing program, drilling prognosis, casing program, mud program, directional program and 123S - Supplemental APD information					
26 CONTACT NAME Jody Robins		27 CONTACT TELEPHONE NO 805-745-2153		28 CONTACT E-MAIL ADDRESS jody.robins@venocoinc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Larry Huskins		30 TITLE Operations Manager			
31 AUTHORIZING SIGNATURE 		32 DATE 31-JUN-2012			
THIS SPACE FOR BSEE USE ONLY					
APPROVED ☒ With Attached Conditions ☐ Without Conditions		BY 		TITLE District MGR.	
API WELL NO ASSIGNED TO THIS WELL 043112080300		DATE 2-8-12			

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☒ NO ☐ N/A	This is the 28th well drilled with the same structural pipe set depth.
D) If requesting a waiver of the conductor casing, have you submitted a log to BSEE District Office that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☒ YES ☐ NO ☐ N/A	
G) Is the calculated daily volume possible from an uncontrolled blowout of this well greater than the daily volume included in the worst case discharge scenario in the approved oil spill response plan?	☐ YES ☒ NO ☐ N/A	Approved field drilling rules.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco Inc				2) Well Name (Proposed): E-28 ST BP			
3) Bottom Hole Lease: P-0205				4) Surface Lease: P-0205			
5) API Number: 04311 XXXXXX				6) Type of Well ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): 4000'			
9) Rig Name: Kenai 2				10) SubSea BOP: ☐ Yes ☒ No			
11) Water Depth (ft): 739'		12) RKB Height (ft): 108'		13) Mineral Code:			
14) Drive Pipe Size (in): 24"		15) Drive Pipe Depth (ft): N/A		16) Anchors ☐ Yes ☒ No			

17) Well Design Information								
Interval Number: 1			Type: Conductor			Name:		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
1	24"	186	X-56	3060		1450	1400'	662
							1400'	

GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 26			Type N/A			Annular Test (psi) N/A		
Mud Weight (ppg) 8.7			Size (in)			BOP/Diverter Test (psi)		
Mud Type Code			Wellhead Rating (psi)			Mud Test Weight (ppg)		
Frac Gradient (ppg) N/A			Annular Rating (psi)			Casing/Liner Test (psi) 200		
Liner Top Depth (ft)			BOP/Diverter Rating (psi)			Formation Test (ppg)		
Cement Volume (ft ³) 1460'								

Interval Number:			Type:			Name:		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)

GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in)			Type			Annular Test (psi)		
Mud Weight (ppg)			Size (in)			BOP/Diverter Test (psi)		
Mud Type Code			Wellhead Rating (psi)			Mud Test Weight (ppg)		
Frac Gradient (ppg)			Annular Rating (psi)			Casing/Liner Test (psi)		
Liner Top Depth (ft)			BOP/Diverter Rating (psi)			Formation Test (ppg)		
Cement Volume (ft ³)								

Interval Number:			Type:			Name:		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)

GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in)			Type			Annular Test (psi)		
Mud Weight (ppg)			Size (in)			BOP/Diverter Test (psi)		
Mud Type Code			Wellhead Rating (psi)			Mud Test Weight (ppg)		
Frac Gradient (ppg)			Annular Rating (psi)			Casing/Liner Test (psi)		
Liner Top Depth (ft)			BOP/Diverter Rating (psi)			Formation Test (ppg)		
Cement Volume (ft ³)								

* NOTE* For additional casing/liner intervals, please submit an additional Form 0123S

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. BSEE uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for Forms BSEE-0123 and BSEE-0123S is estimated to average 100 hours per response. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Bureau of Safety and Environmental Enforcement, 381 Elden Street, Herndon, VA 20170.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-28 NEW WELL DRILLING PROGRAM
API# 04-311- 20XXXXX
LEASE OCS-P-0209

January 31, 2012

Attachment to BSEE Permit – Conductor Casing Program

Objective: Drill 26" hole and run and cement 24" conductor casing for well E-28.

Surface Location: OCS-P-205 - Slot No. 25 (X= 1,046,687.31' & Y= 727,020.46')

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Proposed Conductor TD: OCS-P-205, 1400' MD/1400' TVD

TD Location: 0.0' N and 0.0' W or (X= 1,046,687.31' & Y= 727,020.46')

<u>Proposed Casing:</u>	<u>MD</u>	<u>TVD</u>
24", 186# (.75" Wall), X-56, DrilQuip S-60	1400'	1400'

26" Hole Section

1. Move rig over slot #25. Install ESD station on rig floor or driller's console.
2. M/U 26" bit and BHA
3. Drill a riserless 26" hole from the ocean floor to +/-1420' (573' penetration).
 - Hole should be drilled at 75 to 100 fph rate unless WOB indicates rock is firm
 - Pump Durogel sweeps prior to each connection
 - Run a drift shot after passing through the last guide funnel before commencing to ensure the drill pipe did not get outside the guide buckets
 - Make drift checks every connection with Gyro to ensure straight hole
 - Drill the hole to fit the pipe plus 20' of rat hole
 - Review NPDES and perform all required sampling, testing and monitoring. Fill out discharge sheet daily. Mud volumes and cuttings must be accounted for and reported while drilling the riserless hole section. Report any spills immediately.
4. Circulate hole clean to mud line with seawater/50 bbl sweep at as high a rate as possible. Spot a 100+ viscosity pre-hydrated gel pill across the open hole. POOH.
5. Run 24" casing with Dril-Quip rep on location:
 - Rig up spider bowl and hand slips, 250 ton side door elevator, & power tong
 - R/U casing fill-up line. Be ready to wash down casing if necessary – 24" circulating swage is required. Test fit head prior to spud well.
 - P/U 41' joint with float shoe installed.
 - Run remaining 24" range 3, 75" wall X-56 casing with Dril-Quip S-60 connections
 - No centralizers will be run.
 - Install two anti-rotation keys per joint.
 - Pump through each joint to check the shoe floats
 - Use the crane to tail each joint to the rig floor
 - Fill joints with calculated amount of seawater.
 - P/U splash zone joint that is coated with Carboline 1207. Do not fill this joint.
 - P/U wellhead joint. This joint is coated with white System IV to prevent corrosion. Do not fill this joint.
 - Calculate approximate cut-off point of the wellhead joint and grind seam weld off of 24" casing to allow cutter and slip-lok starting wellhead to function – this should be done on the deck.
 - Land the casing with splash zone joint positioned +/- midway at MLLW. Do not fill.
6. P/U Weatherford slotted base plate designed to fit on top of the 24" with 5" bowl and slips.
7. M/U stab-in cement stinger on 5" drill pipe and TIH. Place centralizers on the bottom joint and the third joint. Space out to get as close to the rig floor as possible.
8. Stab into the shoe and rig up BJ cement line. Leave enough slack to unsting from the shoe to dump cement on top of float shoe at end of job.

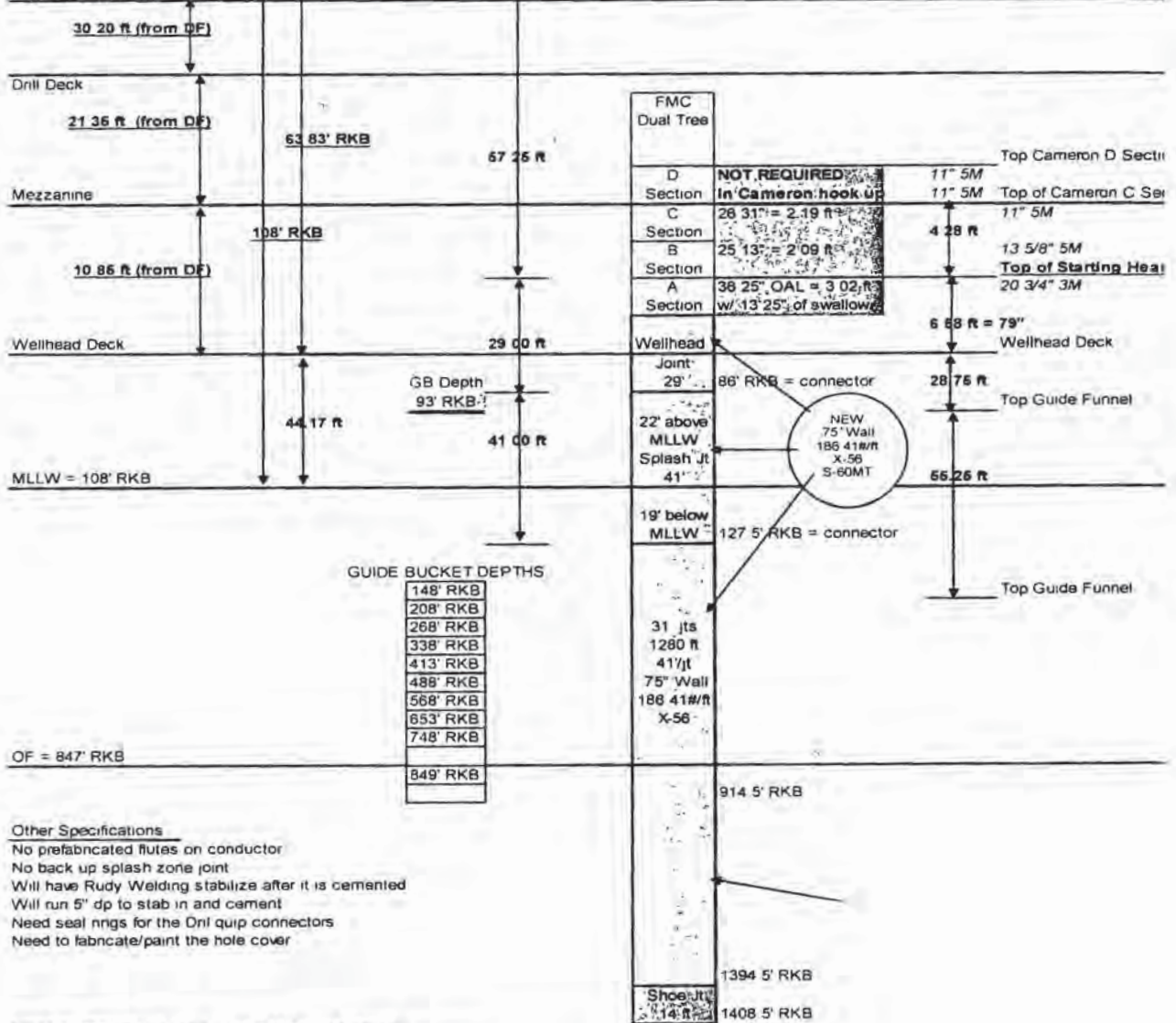
9. Pump 200+ bbl of seawater at high rate to clean the annulus and verify stinger is in place
10. Cement 24" structural pipe as per program (use 32" hole for volume calculation and no OHE). Bring cement back to the ocean floor, leaving 20 bbls in drill string. Unsting from shoe and dump cement leaving TOC +/- 40' above the shoe. Break off cement line
11. Pull out of the hole with one stand. Pump wiper ball through the drill pipe to clear any residual cement from the string. POOH.
12. Wait on cement until the cement develops 500 psi compressive strength. P/U pipe to check cement bond. If the pipe slips in the rathole, wait on cement an additional 4 hours and repeat test before releasing casing.
13. Once 24" conductor is fully supported by cement, rig up casing cutter. Cut casing at +/- 63" above the wellhead deck. Lay down cut-off and landing joint
14. Release rig and move to well E-27

PLATFORM GAIL NEW WELL STARTING HEAD AND CONDUCTOR

REV January 12, 2010

KB Kenai Rig 2 = 108'

Rig Floor Kenai Rig 2 = 108.5'



Other Specifications

- No prefabricated flutes on conductor
- No back up splash zone joint
- Will have Rudy Welding stabilize after it is cemented
- Will run 5" dp to stab in and cement
- Need seal rings for the Onl quip connectors
- Need to fabncate/paint the hole cover

Notes on Materials and Welding and Specifications

Splash Zone Joint to have Carboline 1207

Wellhead Joint to have System 4 as defined by the SP-80-2 "Protective Coatings and Painting Specification"

Guide Buckets	
Below MLLW	
Diveon Depths	108 DF to MLLW
15	-93
-40	-148
-100	-208
-160	-268
-230	-338
-305	-413
-380	-488
-460	-568
-545	-653
-640	-748

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP
Seafloor-1,400' (26" hole)	SW/Gel/Durogel Sweeps	8.6 - 8.9	<20	8.5-9.5	20-35

Sea Floor -1400' This interval will be drilled with seawater/Durogel high viscosity sweeps with returns to the sea floor. Build seawater/Durogel sweeps with PV:YP ratio of 1:4+ using high rate of dispersion. Add Soda Ash after Durogel is dispersed to extend viscosity. It is imperative to make sure the hole is clean and stable to get the casing to bottom.

Theoretical hole volume: 920 bbls

Vertical to xxxx'
Max Angle:
D F Elevation: 107'
D F. to Tubing Head: XX XX
Water Depth: 739'
Tree: Cameron Dual (Proposed)
Wellhead: Cameron

Lease: OCS-P-0204
SOCKEYE FIELD
WELL E-28 Proposed
M2 Producer

Drawing Revision jcr

Completion Date:

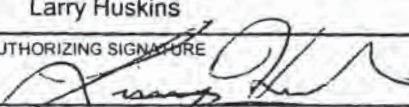
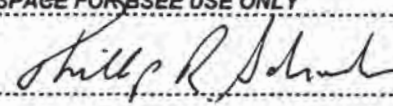


CONDITIONS OF APPROVAL TO DRILL OCS WELL

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Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☒ NEW WELL ☐ SIDETRACK ☐ BYPASS ☒ DEEPEN		2 BSEE OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013		
4 WELL NAME (CURRENT) E-28	5 SIDETRACK NO (CURRENT)	6 BYPASS NO (CURRENT)			
7 PROPOSED START DATE February 6, 2012	8 PLAN CONTROL NO (NEW WELL ONLY)				
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112080300					
10 ☒ Revision	11 If revision, please list changes Added well design and drill program beyond cementing of 24" conductor casing				
WELL AT TOTAL DEPTH (PROPOSED)		WELL AT TOTAL DEPTH (CURRENT)			
12 LEASE NO P-0209		17 LEASE NO P-0205			
13 AREA NAME 6B		18 AREA NAME 6B			
14 BLOCK NO 4671		19 BLOCK NO 4661			
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) 731,316.0		16 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,040,254.4	20 LATITUDE (☐ NAD 83 / ☒ NAD 27) 727,020.46		
21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,046,687.31					
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME Pico (1st gas)	23 TOP (MD) 2856	24 TOP (TVD) 2708	22 NAME	23 TOP (MD)	24 TOP (TVD)
M1	4926	3968			
M2	5911	4312			
25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate.) Drill program includes design criteria for well, casing program, drilling prognosis, casing program, mud program, directional program and 123S - Supplemental APD information.					
26 CONTACT NAME Jody Robins		27 CONTACT TELEPHONE NO 805-745-2153	28 CONTACT E-MAIL ADDRESS jody.robins@venoco-inc.com		
29 AUTHORIZING OFFICIAL (Type or print name) Larry Huskins		30 TITLE Operations Manager			
31 AUTHORIZING SIGNATURE 		32 DATE 22-Feb-2012			
THIS SPACE FOR BSEE USE ONLY					
APPROVED ☒ With Attached Conditions ☐ Without Conditions		BY 		TITLE District Mgr 3-26-12	
API WELL NO ASSIGNED TO THIS WELL 043112080300				DATE 3-26-12	

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☒ NO ☐ N/A	This is the 28th well drilled with the same structural pipe set depth.
D) If requesting a waiver of the conductor casing, have you submitted a log to BSEE District Office that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	The 24", 13 3/8" and 9 5/8" casing program is the same as wells E-23, E-25 and E-26
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☒ YES ☐ NO ☐ N/A	
G) Is the calculated daily volume possible from an uncontrolled blowout of this well greater than the daily volume included in the worst case discharge scenario in the approved oil spill response plan?	☐ YES ☒ NO ☐ N/A	Approved field drilling rules.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name Venoco Inc				2) Well Name (Proposed) E-28 ST BP			
3) Bottom Hole Lease P-0209				4) Surface Lease P-0205			
5) API Number 043112080300				6) Type of Well ☐ Exploratory ☒ Development			
7) H ₂ S ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft) 4000'			
9) Rig Name Kenai 2				10) SubSea BOP ☐ Yes ☒ No			
11) Water Depth (ft) 739'		12) RKB Height (ft) 108'		13) Mineral Code			
14) Drive Pipe Size (in) 24"		15) Drive Pipe Depth (ft) N/A		16) Anchors ☐ Yes ☒ No			

17) Well Design Information								
Interval Number: 1			Type: Conductor			Name:		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
1	24"	186	X-56	3060		1450	1400/1400	662
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 26			Type N/A			Annular Test (psi) N/A		
Mud Weight (ppg) 8.7			Size (in)			BOP/Diverter Test (psi)		
Mud Type Code			Wellhead Rating (psi)			Mud Test Weight (ppg)		
Frac Gradient (ppg) N/A			Annular Rating (psi)			Casing/Liner Test (psi) 200		
Liner Top Depth (ft)			BOP/Diverter Rating (psi)			Formation Test (ppg)		
Cement Volume (ft ³) 1460'								

Interval Number: 2			Type: Surface			Name:		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
2	13 3/8"	61	K-55	3090		1540	2720/2608	8.5
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 17 1/2"			Type Diverter			Annular Test (psi)		
Mud Weight (ppg) 9.1			Size (in) 21 1/4"			BOP/Diverter Test (psi) 200		
Mud Type Code			Wellhead Rating (psi) 2K			Mud Test Weight (ppg)		
Frac Gradient (ppg) 9.4			Annular Rating (psi) 2K			Casing/Liner Test (psi) 2150		
Liner Top Depth (ft)			BOP/Diverter Rating (psi) 2K			Formation Test (ppg) 11.0		
Cement Volume (ft ³) 2242								

Interval Number: 3			Type: Intermediate			Name:		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
3	9 5/8"	43.5	L-80	6330		3810	4800/3892	8.5
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 12 1/4"			Type Class III			Annular Test (psi) 2500		
Mud Weight (ppg) 9.1			Size (in) 13 5/8"			BOP/Diverter Test (psi) 2500		
Mud Type Code			Wellhead Rating (psi) 5K			Mud Test Weight (ppg)		
Frac Gradient (ppg) 11			Annular Rating (psi) 5K			Casing/Liner Test (psi) 2300		
Liner Top Depth (ft)			BOP/Diverter Rating (psi) 5K			Formation Test (ppg) 11.0		
Cement Volume (ft ³) 1475								

* NOTE* For additional casing/liner intervals, please submit an additional Form 0123S

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. BSEE uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for Forms BSEE-0123 and BSEE-0123S is estimated to average 100 hours per response. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Bureau of Safety and Environmental Enforcement, 381 Elden Street, Herndon, VA 20170.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco Inc				2) Well Name (Proposed): E-28 ST BP			
3) Bottom Hole Lease: P-0209				4) Surface Lease: P-0205			
5) API Number: 043112080300				6) Type of Well: ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): 4000'			
9) Rig Name: Kenai 2				10) SubSea BOP: ☐ Yes ☒ No			
11) Water Depth (ft): 739'		12) RKB Height (ft): 108'		13) Mineral Code:			
14) Drive Pipe Size (in): 24"		15) Drive Pipe Depth (ft): N/A		16) Anchors: ☐ Yes ☒ No			
17) Well Design Information:							
Interval Number: 1				Type: Conductor		Name:	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
1	24"	186	X-56	3060	1450	1400/1400	662
GENERAL INFORMATION				PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in): 26				Type: N/A		Annular Test (psi): N/A	
Mud Weight (ppg): 8.7				Size (in):		BOP/Diverter Test (psi):	
Mud Type Code:				Wellhead Rating (psi):		Mud Test Weight (ppg):	
Frac Gradient (ppg): N/A				Annular Rating (psi):		Casing/Liner Test (psi): 200	
Liner Top Depth (ft):				BOP/Diverter Rating (psi):		Formation Test (ppg):	
Cement Volume (ft ³): 1460'							
Interval Number: 2							
Type: Surface				Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
2	13 3/8"	61	K-55	3090	1540	2720/2608	8.5
GENERAL INFORMATION				PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in): 17 1/2"				Type: Diverter		Annular Test (psi):	
Mud Weight (ppg): 9.1				Size (in): 21 1/4"		BOP/Diverter Test (psi): 200	
Mud Type Code:				Wellhead Rating (psi): 2K		Mud Test Weight (ppg):	
Frac Gradient (ppg): 9.4				Annular Rating (psi): 2K		Casing/Liner Test (psi): 2150	
Liner Top Depth (ft):				BOP/Diverter Rating (psi): 2K		Formation Test (ppg):	
Cement Volume (ft ³): 2242							
Interval Number: 3							
Type: Intermediate				Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
3	9 5/8"	43.5	L-80	6330	3810	4800/3892	8.5
GENERAL INFORMATION				PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in): 12 1/4"				Type: Class III		Annular Test (psi): 2500	
Mud Weight (ppg): 9.1				Size (in): 13 5/8"		BOP/Diverter Test (psi): 2500	
Mud Type Code:				Wellhead Rating (psi): 5K		Mud Test Weight (ppg):	
Frac Gradient (ppg): 11				Annular Rating (psi): 5K		Casing/Liner Test (psi): 2300	
Liner Top Depth (ft):				BOP/Diverter Rating (psi): 5K		Formation Test (ppg): 11.0	
Cement Volume (ft ³): 1475							

* NOTE* For additional casing/liner intervals, please submit an additional Form 0123S

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Supplemental APD Information Sheet (Casing Design)

1) Operator Name Venoco Inc				2) Well Name (Proposed) E-28 ST BP			
3) Bottom Hole Lease P-0209				4) Surface Lease P-0205			
5) API Number 043112080300				6) Type of Well ☐ Exploratory ☒ Development			
7) H ₂ S ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft) 4000'			
9) Rig Name Kenai 2				10) SubSea BOP ☐ Yes ☒ No			
11) Water Depth (ft) 739'		12) RKB Height (ft) 108'		13) Mineral Code			
14) Drive Pipe Size (in) 24"		15) Drive Pipe Depth (ft) N/A		16) Anchors ☐ Yes ☒ No			
17) Well Design Information							
Interval Number: 4				Type: Liner		Name: Production	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
4	7"	26	L-80	7240	5410	5540/4300	8.5
	5 1/2"	17	L-80	7740	6290	10594/4703	8.5
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION	
Hole Size (in) 8 1/2"			Type Class III			Annular Test (psi) 2500	
Mud Weight (ppg) 9.1			Size (in) 13 5/8"			BOP/Diverter Test (psi) 2500	
Mud Type Code			Wellhead Rating (psi) 5K			Mud Test Weight (ppg)	
Frac Gradient (ppg) 11			Annular Rating (psi) 5K			Casing/Liner Test (psi) 2300	
Liner Top Depth (ft) 4550			BOP/Diverter Rating (psi) 5K			Formation Test (ppg) 11.0	
Cement Volume (ft ³) 0							
Interval Number:				Type:		Name:	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION	
Hole Size (in)			Type			Annular Test (psi)	
Mud Weight (ppg)			Size (in)			BOP/Diverter Test (psi)	
Mud Type Code			Wellhead Rating (psi)			Mud Test Weight (ppg)	
Frac Gradient (ppg)			Annular Rating (psi)			Casing/Liner Test (psi)	
Liner Top Depth (ft)			BOP/Diverter Rating (psi)			Formation Test (ppg)	
Cement Volume (ft ³)							
Interval Number:				Type:		Name:	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION	
Hole Size (in)			Type			Annular Test (psi)	
Mud Weight (ppg)			Size (in)			BOP/Diverter Test (psi)	
Mud Type Code			Wellhead Rating (psi)			Mud Test Weight (ppg)	
Frac Gradient (ppg)			Annular Rating (psi)			Casing/Liner Test (psi)	
Liner Top Depth (ft)			BOP/Diverter Rating (psi)			Formation Test (ppg)	
Cement Volume (ft ³)							

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February 21, 2012

Mr. Jody Robins
Drilling Engineer
Venoco Inc.
Ventura California

4567 Telephone Road
Suite 203
Ventura, CA 93003

T: +1 805 858 5600
F: +1 805 858 5605
www.interactprojects.com

Subject: **Venoco Inc. Platform Gail E-28 New Well Drilling Program Casing and Cementing Certification.**

Dear Jody:

In response to the requirements set forth in **The Code of Federal Regulations (CFR) Part 250- Oil and Gas and Sulphur Operations in The Outer Continental Shelf, Subpart A 250.420** **What well casing and cementing requirements must I meet.** InterAct provides the following verification for the Venoco Inc. Platform Gail E-28 New Well Drilling Program:

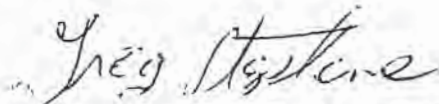
I do hereby verify that:

The Venoco, Inc. Platform Gail E-28 New Well Drilling Program (February 14, 2012) provides two independent tested barriers, including one mechanical barrier, across each flow path during the well completion activities.

Furthermore, I verify that:

The casing and cementing design of the Platform Gail E-27 New Well Drilling Program is appropriate for the expected wellbore conditions.

Sincerely,



Greg Stephens P.E. (California P 1377)

Attachment: InterAct Statement of Qualifications

InterAct Statement of Qualifications

InterAct Offers a broad range of professional engineering and project management services to the international oil and gas industry. InterAct assists operators at every stage of the field life cycle, from development through the production phase to facilities decommissioning and abandonment, both on and offshore. Key Services by InterAct are:

Drilling and production services

- Abandonment services (subsea well)
- Activity management Facility decommissioning and abandonment
- Field development concept studies
- Permitting and environmental services
- Subsea installation and intervention
- Drilling and Production Services

InterAct drilling engineers work closely with clients' geologists and reservoir engineers to prepare cost effective well designs that ensure maximum productivity. We have successfully designed and managed drilling projects for horizontal and extended reach wells, deepwater subsea wells, reservoirs with complex geological formations, and wells in urban areas. Our portfolio of services includes:

- Drilling and completion designs
- Directional design
- Testing work over and stimulation programs
- Artificial lift design and optimization
- Drilling and production services
- Rig and equipment sizing, contracting and procurement
- Well and drill site permitting
- Wellbore review and management of slot recovery programs

Website: www.interactprojects.com

Experience and Summary of Greg Stephens

Mr. Stephens is a California registered professional engineer (P-1377) with 30 years of experience with major international oil companies. Mr. Stephens' experience includes staff assignments in drilling and production operations, including the Santa Barbara Channel and senior level assignments in Operations, Project Management, Business Development / Acquisitions, and Corporate Governance for domestic and international ventures.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-28 NEW WELL DRILLING PROGRAM
API# 04-311- 2080300
LEASE OCS-P-0209
February 22, 2012

Attachment to BSEE Permit - Drilling Program

Objective: Drill development well E-28 and complete it as a horizontal well in the Monterey "M-2" Formation. Well TDs in OCS-P- 0209 Lease.

Surface Location: OCS-P-205 - Slot No. 25 (X= 1,046,687.31' & Y= 727,020.46')

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Proposed TD: OCS-P-209, 10,593.78' MD/4703' TVD

TD Location: 4295.34' N and 6433.01' W or (X = 1,040,254.00' and Y = 731,316.00')

Markers:	MD	TVD	VSS	Press	EMW	Comments
13 3/8" Casing	2720	2608	-2500			
Pico - 1 st Gas	2856	2708	-2600	1173	8.5	Estimated BHP
9 5/8" Casing	4800	3892	-3784			
Monterey M1	4926	3968	-3860	1718	8.5	Estimated BHP
Monterey M2	5911	4312	-4204	1867	8.5	Estimated BHP
TD	10,594	4703	-4595	2031	8.5	Estimated BHP

<u>Proposed Casing:</u>	<u>MD</u>	<u>TVD</u>
24", 186# (.75" Wall), X-56, DrilQuip S-60	1400'	1400'
13 3/8", 61#, K-55, Buttress	2720'	2608'
9 5/8", 43.5#, L-80, LT&C	4800'	3892'
7" 26#, L-80, FlushMax x	TOL 4550'	3712'
5 1/2", 17#, L-80, GeoConn	BOL 10,594'	4703'
NOTE: 7" will be run from 4550 – 5540, 5 1/2" from 5540 – TD		
5 1/2" casing will be pre-perforated		

26" Hole Section

1. Move rig over slot #25. Install ESD station on rig floor or driller's console.
2. M/U 26" bit and BHA with Gyro MWD tool.
3. Drill a riserless 26" hole from the ocean floor to +/-1420' (573' penetration).
 - Hole should be drilled at 75 to 100 fph rate unless WOB indicates rock is firm
 - Pump Durogel sweeps prior to each connection
 - Run a drift shot with MWD after passing through the last guide funnel before commencing to ensure the drill pipe did not get outside the guide buckets
 - Make drift checks every connection with MWD to ensure straight hole
 - Drill the hole to fit the pipe plus 20' of rat hole
 - Review NPDES and perform all required sampling, testing and monitoring. Fill out discharge sheet daily. Mud volumes and cuttings must be accounted for and reported while drilling the riserless hole section. Report any spills immediately.
4. Circulate hole clean to mud line with seawater/50 bbl sweep at as high a rate as possible. Spot a 100+ viscosity pre-hydrated gel pill across the open hole. POOH.
5. Run 24" casing with Dril-Quip rep on location:
 - Rig up spider bowl and hand slips, 250 ton side door elevator, & power tong
 - R/U casing fill-up line. Be ready to wash down casing if necessary – 24" circulating swage is required. Test fit head prior to spud well.
 - P/U 41' joint with float shoe installed.
 - Run remaining 24" range 3, 75" wall X-56 casing with Dril-Quip S-60 connections
 - No centralizers will be run.
 - Install two anti-rotation keys per joint.
 - Pump through each joint to check the shoe floats
 - Use the crane to tail each joint to the rig floor
 - Fill joints with calculated amount of seawater.
 - P/U splash zone joint that is coated with Carboline 1207. Do not fill this joint.
 - P/U wellhead joint. This joint is coated with white System IV to prevent corrosion. Do not fill this joint.
 - Calculate approximate cut-off point of the wellhead joint and grind seam weld off of 24" casing to allow cutter and slip-lok starting wellhead to function – this should be done on the deck.
 - Land the casing with splash zone joint positioned +/- midway at MLLW. Do not fill.
6. P/U Weatherford slotted base plate designed to fit on top of the 24" with 5" bowl and slips.
7. M/U stab-in cement stinger on 5" drill pipe and TIH. Place centralizers on the bottom joint and the third joint. Space out to get as close to the rig floor as possible.
8. Stab into the shoe and rig up BJ cement line. Leave enough slack to unsting from the shoe to dump cement on top of float shoe at end of job.

9. Pump 200+ bbl of seawater at high rate to clean the annulus and verify stinger is in place
10. Cement 24" structural pipe as per program (use 32" hole for volume calculation and no OHE). Bring cement back to the ocean floor, leaving 20 bbls in drill string. Unsting from shoe and dump cement leaving TOC +/- 40' above the shoe. Break off cement line
11. Pull out of the hole with one stand. Pump wiper ball through the drill pipe to clear any residual cement from the string. POOH.
12. Wait on cement until the cement develops 500 psi compressive strength. P/U pipe to check cement bond. If the pipe slips in the rat hole, wait on cement an additional 4 hours and repeat test before releasing casing.
13. Once 24" conductor is fully supported by cement, rig up casing cutter. Cut casing at +/- 63" above the wellhead deck. Lay down cut-off and landing joint
14. Nipple up and pressure test the diverter riser assembly as follows:
 - 20-3/4" 3M X 21-1/4" 2M DSA.
 - 6' X 21-1/4" 2M X 21-1/4" 2M spool.
 - 20' X 21-1/4" 2M X 21-1/4" 2M spool.
 - 2' X 21-1/4" 2M X 21-1/4" 2M diverter spool.
 - 4.375' X 21-1/4" 2M Hydril.
 - Bell nipple.
15. Install the diverter lines as per the attached schematic. The final adjustments on the diverter line stands will be made at this time.
 - **DIVERTER VALVE INSTALLATION:** Depending on availability, Venoco will either use 8" hydraulically controlled ball valves or 9" hydraulically controlled single gate shear rams for the outboard valve locations. The main valve located at the Tee under the annular will be an 8" ball valve as in previous installations.
 - **DIVERTER TESTING:** Follow BSEE regulations for pressure testing, flow testing of vent lines and actuation of the diverter system. Diverter to be flow tested at initial installation. Pressure test to 200 psi and within 7 days of previous test if still in use. Actuate once every 24 hrs and alternate stations for actuation and tests. Plan initial pressure test against the casing and cement in the shoe. If casing does not test or if follow up tests are required plan to use Cameron supplied test plug.
 - All pressure test, flow test, and actuation results shall be recorded on IADC reports
 - Perform diverter drill with each crew on tour while drilling section.

17-1/2" Hole Section

1. Install wear bushing. M/U 17-1/2" bit and directional drilling BHA (steerable assembly with gyro MWD). Run in the hole and tag top of cement. Note depth.
2. Pressure test, function test and flow test the diverter system per BSEE regulations. Pressure test the diverter and casing to 200 psi. Flow test the diverter with seawater. Subsequent flow tests are not required, but actuation test is required daily at alternating stations and pressure test every 7 days at alternating station.

- Take gyro shots while TIH to confirm bottom hole location.
3. Drill out cement with seawater. Circulate out cement and change the well over to mud. Shut off pumps. Monitor the well to confirm the fluid level is static.
 4. Directional drill 17 1/2" hole to the 13 3/8" casing point at 2720' MD / 2608' TVD as per directional plan
 - Perform and log Diverter tests on tour sheet per BSEE regulations
 - Use spider plot and anti-collision plot to monitor proximity. Continue to gyro survey until MWD surveys confirm free of interference.
 - Control drill with low mud weight to keep from losing returns. Historically mud weights over 9.1 ppg have led to losses. LCM pill should be ready in pill pit.
 - Overboard dump and dilution of mud and cuttings will be required in this hole section to maintain low mud weight. Prior to drilling, sample the mud mixed for drilling this section and send to lab for base line test. Follow all NPDES requirements for measurement, monitoring and reporting prior to dumping
 5. Circulate and condition mud for casing and POOH
 6. Rig up and run 13-3/8" casing string to +/- 2720' as follows
 - Float shoe, 2 jts 13-3/8" 61# K-55 Buttress casing, Float collar, 13-3/8" 61# K-55 Buttress to surface
 - Fill pipe while running
 - Ensure there is a swage with safety valve on rig floor (function for BSEE)
 - Baker-Lock the first four joints. Pump through float equipment to check
 - Centralize the casing with centralizers in the middle of the two shoe joints then every third joint back to the mud line (+/- 850') and every 5th joint inside the 24" casing. Do not run centralizer on top three joints below wellhead.
 - Circulate and reciprocate pipe until hole cleans up.
 7. Cement 13-3/8" per the attached cement program.
 - Displace cement with mud
 - The last 20 bbls should be seawater for pending casing cut.
 - Reciprocate the casing while cementing and displacing the cement job.
 - Bump plug with 1000 psi over final circulating pressure.
 - Bleed off pressure and check floats.
 8. Wait on cement until cement passes transition time per cement tests. Monitor annulus and casing for losses. Ensure well is static and it is safe to remove the diverter.
 - Rig down cement head and lines.
 - Drain the diverter and flush with seawater
 - Nipple down DSA and pick up the diverter system.
 - Install and set 13-3/8" casing slips.
 - Cut 13 3/8" pneumatic saw. Lay down extra joint and cut-off piece.
 - Nipple down diverter system and offload
 - Install casing head, 20-3/4", 3k x 13-5/8", 5k, per Cameron procedure.
 - Test the void/seals to 1078 psi (70% collapse of 13-3/8" 61# K-55 casing).

- Install riser and nipple up the 13 5/8", 5M BOPE with annular preventer, 2 7/8" X 5" VBR in top ram, blind shear rams, and 5" pipe rams in lower set of rams.
- Set test plug and test BOP per BSEE regs to 250/2500 ps. Pull test plug
- Install wear bushing.

12-1/4" Hole Section

1. M/U 12-1/4" bit and directional BHA. Drill out to within 30' of the 13 3/8" casing shoe. Test the casing to 2150 psi (70% of burst of 13 3/8" 61# K-55) for 30 minutes and chart.
2. Drill out shoe and 10' of new formation. Rig up cement unit and perform FIT to 11.0 ppg
3. Drill 12-1/4" hole to 9 5/8" casing point of +/-4800' MD/3892' TVD as per directional plan.
 - Overboard discharge will not be allowed in this hole section.
 - Perform and log BOP tests (2 weeks) on tour sheet per BSEE regulations. Perform and document all weekly BOP/H2S drills and all items on BSEE checklist. Fill out NPDES monitoring information daily.
 - H2S is present in this hole section. Rig up H2S equipment per BSEE approved H2S and SO2 Contingency Plan. Safety company should calibrate monitors every 12 hours and document on tour sheets. H2S drills should continue throughout operations.
 - MWD/GR will be run through this section of the hole to assist in correlation.
 - Perform flow checks and circulate bottoms up as necessary.
 - Keep fluid loss low in mud to reduce swelling/swabbing in the clay formation.
 - Make wiper trips as necessary to keep hole in good shape.
 - Notify engineer if losses occur. All LCM material to be acid soluble.
4. Short trip to shoe and back to TD. Circulate and condition the hole for logs. POOH
5. RU logging unit. Run open hole logs per attached logging program.
6. RIH with hole opener BHA after logging and condition the hole for 9 5/8" casing. POOH and rig up casing crew. Pull the wear bushing.
7. Run 9 5/8", 43.5#, L-80, LT&C casing to +/-4800' as follows:
 - Davis Lynch Auto Fill Float shoe
 - 2 joints 9-5/8" 43.5# L80 LTC
 - Davis Lynch Auto Fill Float collar
 - 9-5/8" 43.5# L80 LTC to surface
8. While running casing:
 - Ensure swage with safety valve on rig floor. Function and note for BSEE on tour sheets.
 - XO to fit the safety valve and all casing threads
 - Baker-Lock the first four joints
 - Pump through float equipment to check. Fill pipe while RIH
 - Centralize the casing with centralizers in the middle of the two shoe joints then every joint into the 13-3/8" shoe, then every 5th joint to the mud line (+/- 850').

9. Circulate and reciprocate pipe until hole cleans up.
10. Cement the 9 5/8" casing per the attached cementing program.
 - Reciprocate the casing while cementing and displacing the cement job
 - Displace cement with the cement unit using mud.
 - Bump plug with 1000 psi over final circulating pressure.
 - Bleed off pressure and check floats
11. Wait on cement until cement passes transition time per cement tests. Monitor annulus and casing for losses.
 - After WOC pressure test annulus to 800 psi and ensure annulus is static
 - Drain the BOP stack and flush with seawater (casing head valve).
 - Nipple down the 13-5/8" riser spool (4') and pick up the BOP
 - Install the 9 5/8" by 13 3/8" Cameron casing slips
 - Cut 9 5/8" casing with pneumatic saw. Lay down extra joint and cut off.
 - Remove 13-5/8" riser spacer spool.
 - Install Cameron tubing spool (13-5/8", 5k x 11", 5k)
 - Pressure test the void/seals to 2667 psi (70% collapse of 9-5/8" 43.5# L-80).
 - Install DSA (11" 5k x 13-5/8" 5k) on top of tubing spool. Nipple up 13 5/8", 5M BOPE
12. Set test plug and test BOP against 5" to 250/2500 psi per BSEE regulations and chart. Pull test plug. Install the wear bushing

8-1/2" Hole Section

1. M/U 8-1/2" bit and directional BHA. Drill out to within 30' of the 9 5/8" casing shoe. Test the casing to 2500 PSI for 30 minutes and chart.
2. Drill out shoe and 10' of new formation. Rig up cement unit and perform FIT to 11.0 ppg
13. Drill 8-1/2" horizontal hole to TD of 10,593' MD/4703' TVD as per directional plan.
 - Overboard discharge will not be allowed in this hole section.
 - Cut 30' core at +/-5090' MD and a 60' core at +/-5330' MD.
 - Perform and log BOP tests (2 weeks) on tour sheet per BSEE regulations. Perform and document all weekly BOP/H2S drills and all items on BSEE checklist. Fill out NPDES monitoring information daily.
 - H2S is present in this hole section. Safety company should calibrate H2S monitors every 12 hours and document on tour sheets. H2S drills should continue throughout operations
 - MWD/GR will be run in this hole section
 - Perform flow checks and circulate bottoms up as necessary
 - Keep fluid loss low in mud to reduce swelling/swabbing in the clay formation.
 - Make wiper trips as necessary to keep hole in good shape
 - As this is a horizontal hole section, circulating should be 3-4 BU or until mud is clean
 - Notify engineer if losses occur. All LCM material to be acid soluble.
14. Short trip to shoe and back to TD. Circulate and condition the hole 3-4 x BU for logs. POOH

15. Run in with Weatherford tubing-conveyed logging tools and log lateral. POOH.
16. RIH with clean-out BHA and condition the hole for casing. POOH
17. Rig up casing crew and pull the wear bushing.
18. Run 7", 26#, L-80 FlushMax x 5 1/2", 17#, L-80, GeoConn casing from +/-10,594' to 4550' as follows:
 - 9 5/8" x 7" Liner Hanger to be set at +/- 4550' MD
 - 7" run from liner hanger to 5540', 5 1/2" run from 5540' to TD
 - One swell packer will be set near the top of the M2
 - Spacing of packers and slotted joints to be determined from logs
 - Run liner on drill pipe and with HWDP spaced out as needed per torque and drag prediction program and if hole conditions dictate to push liner to bottom.
 - Run centralizers above and below each swell packer
 - Run in the hole slowly to avoid surging the formation.
 - A circulating swage with a safety valve will be on the rig floor.
19. Run the liner in the hole to +/-10,594'. Circulate the well until the returns are clean. Drop the setting ball and set the liner hanger and packer. Release running tool from liner hanger.
20. After setting liner hanger packer, the liner top packer and 9 5/8" casing will be pressure tested to 2800 psi (Frac Gradient + 500 psi) for 30 minutes.
21. Displace WBM to seawater. POOH with running tools
22. RIH with 7" test packer and set at 5500'. Test casing and liner lap above packer to 2300 psi for 30 minutes. POOH.

Completion Procedure

NOTE: Install a 2 1/16" 5M casing valve with a 1502 tee and pressure gauge, a check valve and high pressure hose connection below the tubing hanger. Test to 2500/250 psi for 5 minutes. It will be used to pump seawater into the well to control the well.

NOTE: BOPE testing to continue on 14 day frequency through the completion that is approved as part of the APD.

1. The well will be a single horizontal completion in the Monterey "M-2" (see attached Proposed Completion Diagram).
2. RIH with 4 3/4" bit to TD. Displace well to seawater. Acidize lateral per plan. Acid plan will be developed with log results. POOH
3. Pick up the completion equipment in following order:
 - Wireline entry guide
 - 2 7/8" Baker 'BXN' seating nipple

15. Run in with Weatherford tubing-conveyed logging tools and log lateral. POOH.
16. RIH with clean-out BHA and condition the hole for casing. POOH
17. Rig up casing crew and pull the wear bushing.
18. Run 7", 26#, L-80 FlushMax x 5 1/2", 17#, L-80, GeoConn casing from +/-10,594' to 4550' as follows:
 - 9 5/8" x 7" Liner Hanger to be set at +/- 4550' MD
 - 7" run from liner hanger to 5540', 5 1/2" run from 5540' to TD
 - One swell packer will be set near the top of the M2
 - Spacing of packers and slotted joints to be determined from logs
 - Run liner on drill pipe and with HWDP spaced out as needed per torque and drag prediction program and if hole conditions dictate to push liner to bottom.
 - Run centralizers above and below each swell packer
 - Run in the hole slowly to avoid surging the formation.
 - A circulating swage with a safety valve will be on the rig floor.
19. Run the liner in the hole to +/-10,594'. Circulate the well until the returns are clean. Drop the setting ball and set the liner hanger and packer. Release running tool from liner hanger.
20. After setting liner hanger packer, the liner top packer and 9 5/8" casing will be pressure tested to 2300 psi for 30 minutes. 11.7 + 500
21. Displace WBM to seawater. POOH with running tools
22. RIH with 7" test packer and set at 5500'. Test casing and liner lap above packer to 2300 psi for 30 minutes. POOH.

Completion Procedure

NOTE: Install a 2 1/16" 5M casing valve with a 1502 tee and pressure gauge, a check valve and high pressure hose connection below the tubing hanger. Test to 2500/250 psi for 5 minutes. It will be used to pump seawater into the well to control the well.

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1. The well will be a single horizontal completion in the Monterey "M-2" (see attached Proposed Completion Diagram).
2. RIH with 4 3/4" bit to TD. Displace well to seawater. Acidize lateral per plan. Acid plan will be developed with log results. POOH
3. Pick up the completion equipment in following order:
 - Wireline entry guide
 - 2 7/8" Baker 'BXN' seating nipple

- 1 joint of 2 7/8" EUE 8rd Tubing
 - 2 7/8" Baker 'BX' seating nipple
 - 1 joints of 2 7/8" EUE 8rd Tubing
 - Baker 7" HS Packer w/ 6' pup joints made up to the top and bottom of the packer
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" GLM with live valve run in place
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" GLM with live valve run in place
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" Baker TE-5 TRSSSV
 - XX joints of 2 7/8" EUE 8rd Tubing
 - Cameron Tubing Hanger
4. After pick up TRSSSV, install control line and pressure test to 7000 psi. Run in hole with tubing and control line banding the line to the tubing with 2 bands per joint. Run in to landing depth, pick up and install Cameron tubing hanger and install control line and pressure test to 7000 psi. Pump XX bbls packer fluid and place from packer set depth to above the bottom GLM. Get up and down weight prior to landing. Follow Cameron procedure for landing tubing hanger. At no time will hanger hold down pin be removed. Pressure test tubing hanger void.
 5. After tubing hanger is landed and tested, RU slickline and set tbg plug in XN nipple.
 6. Pressure up tubing to 3000 psi in 500 psi increments to set the HS packer and hold 3000 psi on tubing for 15 minutes. Slowly bleed pressure off of tubing.
 7. Bleed off control line pressure to close TRSSSV
 8. Pressure up on annulus and pressure test the packer, annulus, tubing plug, and TRSSSV to 1000 psi. Bleed pressure off of annulus (Note: live gas lift valves will be run)
 9. Pressure up tubing to 1100psi and open TRSSSV to release pressure trapped b/w TRSSSV and tubing plug. Close TRSSSV.
- NOTE:** Tubing plug and TRSSSV will constitute our 2 tested barriers.
10. Install BPV into tubing hanger. ND BOPE and NU Cameron 3 1/2" tree with adapter. Install blanking plug and pressure test bonnet void and tree to 3000 psi. Remove blanking plug.
 11. Release rig and turn well over to production.

Requested Waivers

- 1) Sec 250.423 (a) (3): Test production casing to a minimum test pressure of 70% of minimum internal yield

Request: Test production casing to the maximum anticipated surface pressure (MASP) that the string will be subject to. (Note: Casing is designed so that the MASP is less than 70% of the rated casing burst pressure.)

- 2) Sec 250.448 (b): BOP high-pressure tests

Request: Revise the high-pressure test for ram-type BOP's, annular type BOP's, the choke manifold, and other BOP components to be 500 psi greater than the calculated MASP for the applicable section of hole as indicated in the APD.

- 3) Sec 250.431(a): 10" Diverter

Request: As per the Gail field drilling rules, a variance to use an 8" diverter system instead of a 10" system. The 8" system has been in place and used previously for all 27 wells drilled from the platform without incident.

Other Data

Please see the E-4ST5 APD for the following material:

- BSR shear test data and calculations
- Detailed choke manifold schematics
- BOP control schematics

Requested Waivers

- 1) Sec 250.423 (a) (3): Test production casing to a minimum test pressure of 70% of minimum internal yield

Request: Test production casing to the maximum anticipated surface pressure (MASP) that the string will be subject to. (Note: Casing is designed so that the MASP is less than 70% of the rated casing burst pressure.)

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Request: Revise the high-pressure test for ram-type BOP's, annular type BOP's, the choke manifold, and other BOP components to be 500 psi greater than the calculated MASP for the applicable section of hole as indicated in the APD.

Other Data

Please see the E-4ST5 APD for the following material:

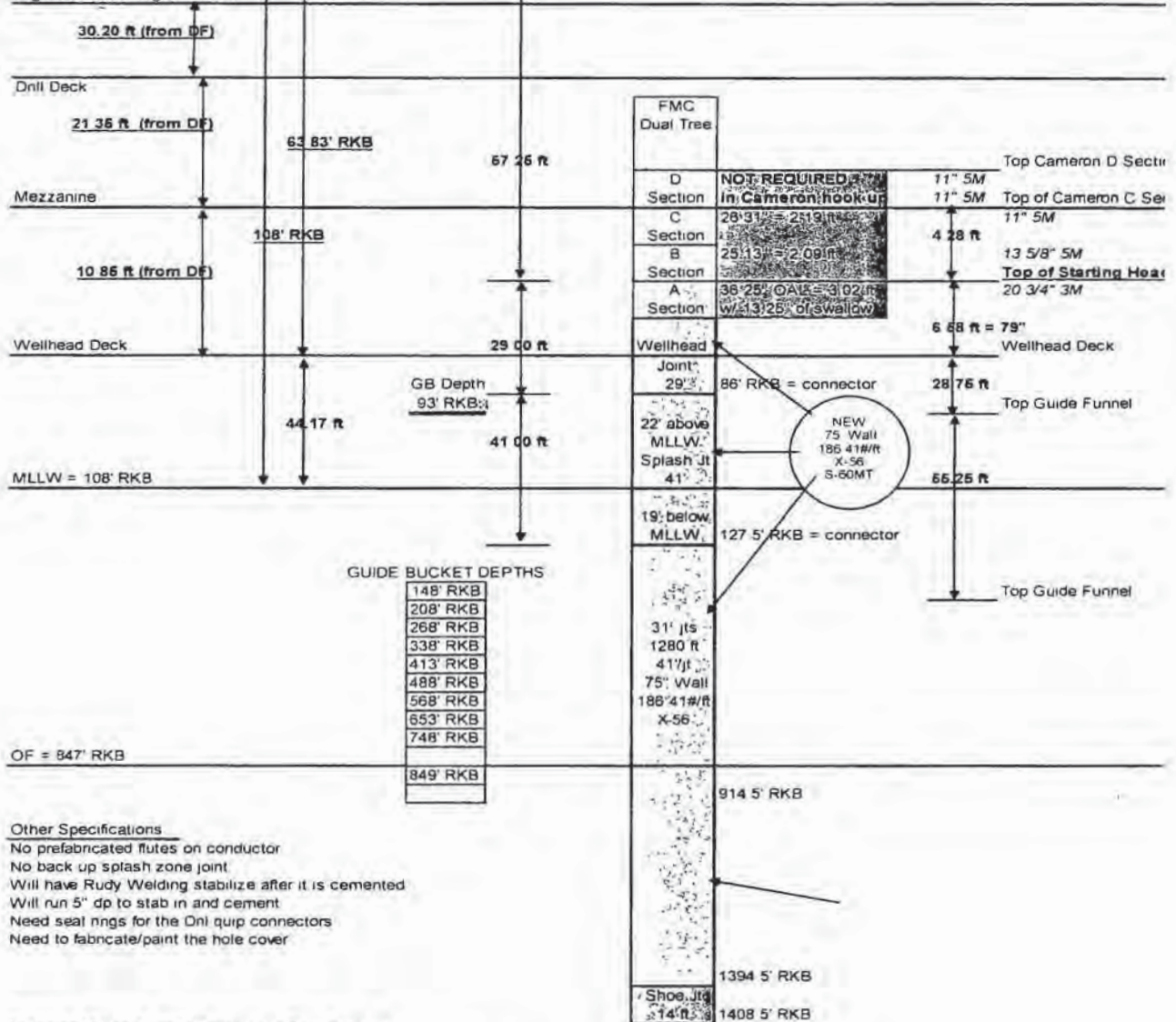
- BSR shear test data and calculations
- Detailed choke manifold schematics
- BOP control schematics

PLATFORM GAIL NEW WELL STARTING HEAD AND CONDUCTOR

REV January 12, 2010

KB Kenai Rig 2 = 108

Rig Floor Kenai Rig 2 = 106 5'



Vertical to XXXX'
 Max Angle 20 deg @ XXXX'
 D F Elevation 107'
 D F to Tubing Head: XX XX'
 Water Depth 739'
 Wellhead: Cameron
 Tree: Cameron

SOCKEYE FIELD WELL E-28

Lease: OCS-P-0209

Drawing Revision 2/14/2012 LCR

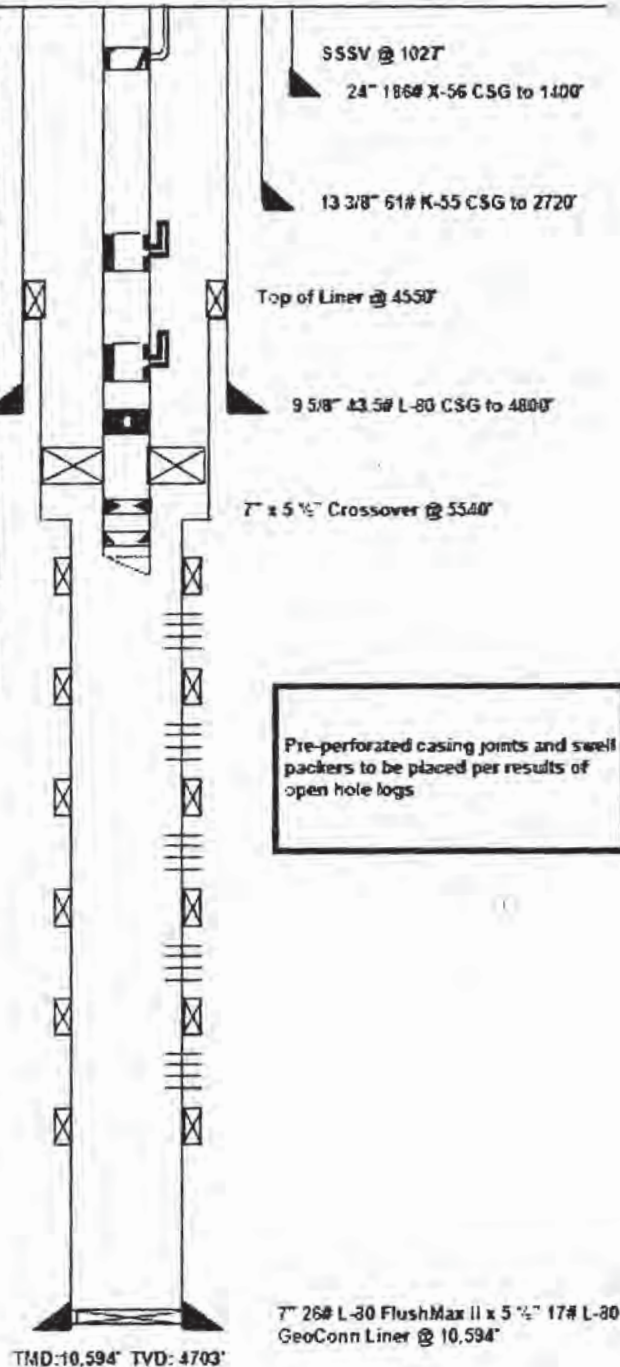
Completion Date

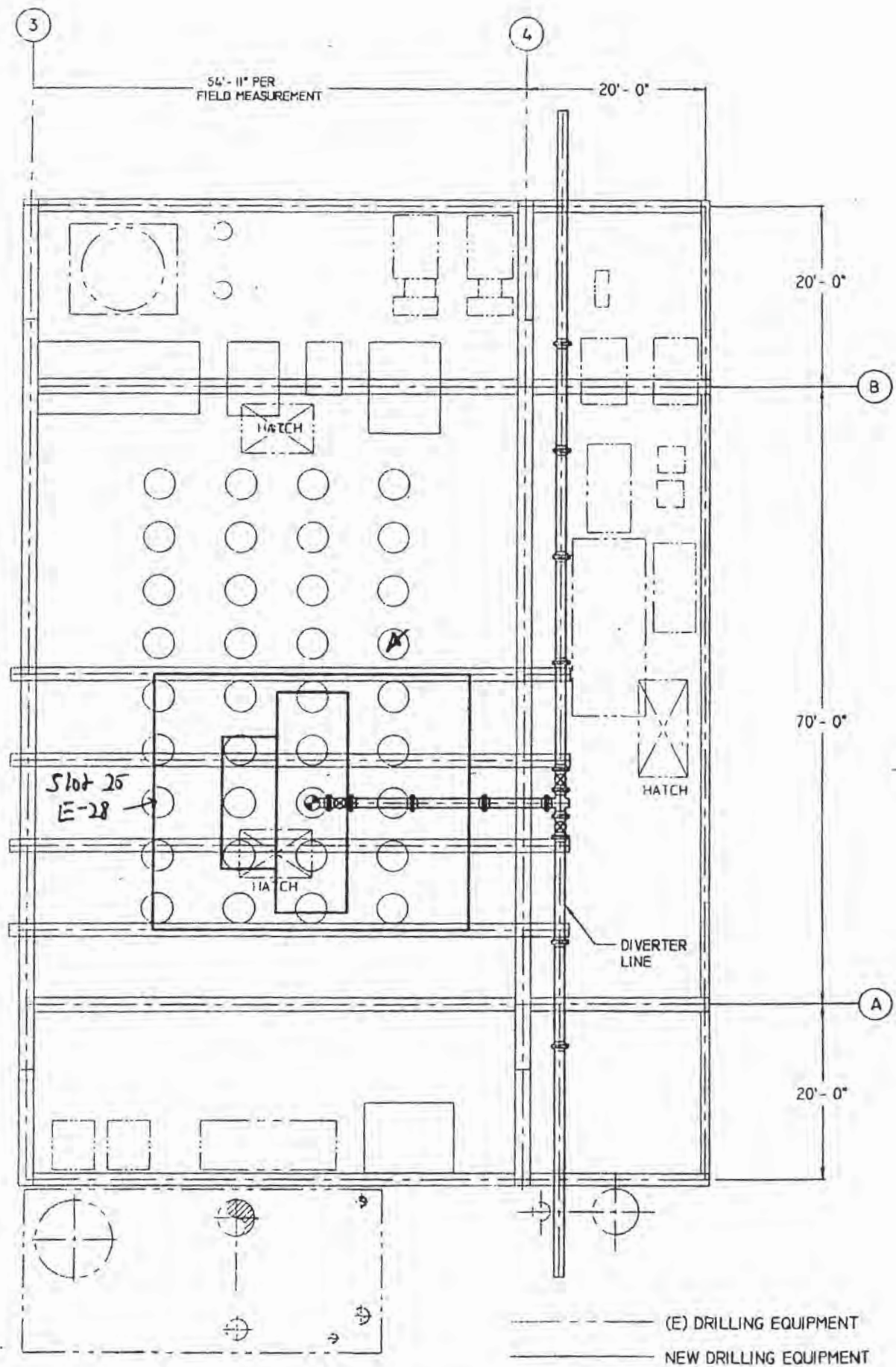
Single Completion M2 Producer

Description	ID	LENGTH	DEPTH
PFKB		51.80	0
Cameron Tubing Hanger		5.75	51.80
2-7/8" 5.5# L-80 eue End pup joint	2.411	2.58	53.85
31 joints 2-7/8" 5.5# L-80 eue End pup joint	2.411	554.72	56.10
2-7/8" 5.5# L-80 eue End pup joint	2.411	5.95	1026.82
Baker 2-7/8" TE-5 TRSSSV	2.513	5.19	1035.79
2-7/8" 5.5# L-80 eue End pup joint	2.411	4.03	1039.98
XX joints 2-7/8" 5.5# L-80 eue End pup joint	2.411	3000.00	1036.01
2-7/8" 5.5# L-80 eue End pup joint	2.411	4.10	1235.01
BST GLMA-1 Mandrel	2.411	7.33	1242.11
2-7/8" 5.5# L-80 eue End pup joint	2.411	3.69	1247.44
XX joints 2-7/8" 5.5# L-80 eue End pup joint	2.411	1200.00	1259.13
2-7/8" 5.5# L-80 eue End pup joint	2.411	4.08	1459.13
BST GLMA-1 Mandrel	2.411	7.31	1465.22
2-7/8" 5.5# L-80 eue End pup joint	2.411	3.68	1468.53
1 joint 2-7/8" 5.5# L-80 eue End pup joint	2.411	31.00	1496.21
Baker CMD Sealing Sleeve	2.513	4.00	1497.21
2-7/8" 5.5# L-80 eue End pup joint	2.411	4.04	1501.21
Baker 7" HS Hydraulic Packer	2.591	5.88	1507.25
2-7/8" 5.5# L-80 eue End pup joint	2.411	4.03	1513.15
1 joint 2-7/8" 5.5# L-80 eue End pup joint	2.411	31.43	1547.17
2-7/8" 5.5# L-80 eue End pup joint	2.411	4.00	1548.60
2-7/8" BXN Nipple	2.313	4.15	1552.60
1 joint 2-7/8" 5.5# L-80 eue End pup joint	2.411	31.00	1553.75
2-7/8" BXN Nipple	2.205	4.15	1558.75
2-7/8" 5.5# L-80 eue End pup joint	2.411	5.12	1555.90
Wireline re-entry guide	2.411	2.38	1552.02
Tubing Tail			1552.40

Formation Tops

M1 XXXX
 M2 XXXX
 TD XXXX





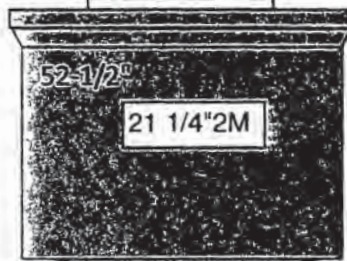
DIVERTER LINE LAYOUT
 PLATFORM GAIL MAIN DECK PLAN
 O.S. = 76'-6"

ROTARY BEAM

RX-73

WELL # E-28

WEATHERFORD
PITCHER NIPPLE FLANGE
SN# 8420



WEATHERFORD
HYDRIL
SN# 236859

RX-73 RING

48"

WEATHERFORD
DIVERTER SPOOL
SN# 72241

RX-73 RING

BOP DECK

240"

WEATHERFORD
RISER
SN# 265622

RX-73 RING

72"

WEATHERFORD
SPOOL
SN# 83831

RX-73 RING

4-1/2"

WEATHERFORD
DSA
SN# 54713

RX-73 RING

Wellhead flange

6'-4 1/2"



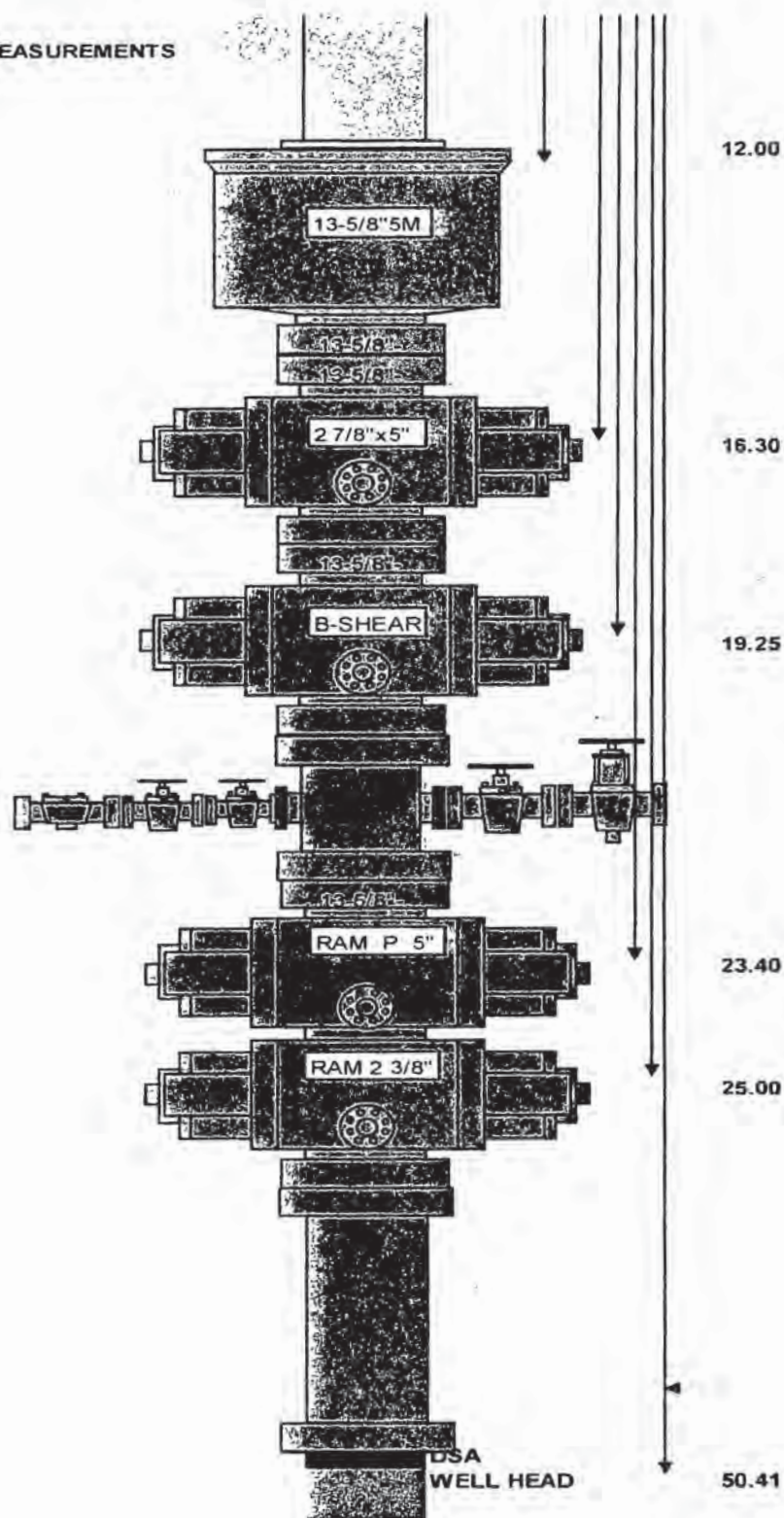
FMC WELLHEAD

24"

COND.

LOWER WELLHEAD DECK

**KENAI BOPE
RIG FLOOR MEASUREMENTS**



EVALUATION PROGRAM

1) MUD LOGGING

12 1/4" Hole Section – Continuous mud logging shall be performed from drilling out the shoe of the 13 3/8" casing to total depth. Collect dry samples at 30' intervals.

2) **CORING** – one 30' core to be cut at +/-5090' md and one 60' core at +/-5330' md

3) LOGGING WHILE DRILLING

12 1/4" Hole Section – MWD/GR

8 1/2" Hole Section – MWD/GR/Rhob to 5360' (for picking core points). MWD/GR from 5360' to TD

4) ELECTRIC LOGGING

12 1/4" Hole Section - None

12 1/4" Hole Section

Run #1 – Triple Combo/CMI

Run #2 – Dipole Sonic

Notify Geologist to witness all logs.
Primary Geologist: Monica Carlsen
805-745-2115 office
805-448-5622 cell

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP
Seafloor-1,400' (26" hole)	SW/Gel/Durogel Sweeps	8.6 - 8.9	<20	8.5-9.5	20-35
1400'-2720' (17-1/2" hole)	SW/Gel/Gelite/ Polypac	8.7 - 9.1	<8	8.5-9.0	18-30
2720'-4800' (12-1/4" hole)	UltraDril WBM	8.7 - 9.8	<6	8.0-9.5	18-25
4377'-10,594' (8-1/2" hole)	UltraDril WBM	8.7 - 9.5	<6	8.0-9.5	18-25

- Sea Floor -1400'** This interval will be drilled with seawater/Durogel high viscosity sweeps with returns to the sea floor. Build seawater/Durogel sweeps with PV:YP ratio of 1:4+ using high rate of dispersion. Add Soda Ash after Durogel is dispersed to extend viscosity. It is imperative to make sure the hole is clean and stable to get the casing to bottom.
- 1400'-2720'** The objective in this interval is to drill a 17 1/2" hole from the 24" casing shoe to 2720' and run 13 3/8" casing. The fluid system recommended is a Seawater/Gel/Gelite/Polypac system. It is planned to ocean discharge the 17 1/2" hole section per the approved NPDES Permit.
- 2720'-4800'** The objective in this interval is to drill an 12 1/4" hole from the 13 3/8" casing shoe to 6820' and run 9 5/8" casing. The fluid system recommended is MI's UltraDril system. There will be no overboard discharge in this hole section.
- 4800'-10,594'** The objective in this interval is to drill an 8 1/2" hole from the 9 5/8" shoe to 10,594' and run a 7" x 5 1/2" liner from 10,594' to 4550'. The fluid system recommended is MI's UltraDril system. There will be no overboard discharge in this hole section.

Notes:

- 1) Operate solids control equipment to maintain drill solids as low as possible.
- 2) **Maintain 2 bbls of ZnO₂** onboard to treat out H₂S. 2 bbls can treat 1040 bbls of mud.
- 3) A minimum of **500 sx** of barite shall be kept on the platform at all times to raise the mud weight 0.5 ppg

Hydrogen Sulfide Considerations:

Both the Monterey, Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the BSEE approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	24"	13 3/8"	9 5/8"	7"	5 1/2"
2	Setting Depth (feet - TVD)	1400	2608	3892	4300	4703
3	Expected Leak Off Test EMW at shoe (ppg)	9.4	11	11.3	11.5	11.5
4	Depth of next Casing (feet - TVD)	2608	3892	3892	4703	4703
5	Maximum Expected Formation Pressure (psi)	1153	1720	1720	2079	2079
6	Expected Mud Weight (ppg)	9.1	9.4	9.4	9.4	9.4
7	Formation Equivalent Mud Weight (ppg)	8.5	8.5	8.5	8.5	8.5
8	Expected Hydrostatic Pressure at TD (psi)	1234	1902	1902	2299	2299
9	Amount of Overbalance at TD (psi)	81	182	182	220	220
10	Fracture Gradient at shoe (psi/ft)	Diverter	0.57	0.59	0.60	0.60
11	Fracture Pressure at shoe (psi)	Diverter	1492	2287	2571	2812
12	Hydrostatic Pressure at shoe (psi)	662	1275	1902	2102	2299
13	Margin between Mud Weight and LOT (psi)	Diverter	217	385	470	514

Maximum Anticipated Surface Pressures

1	Casing Size (in)	24"	13 3/8"	9 5/8"	7"	5 1/2"
2	Setting Depth (feet - TVD)	1400	2608	3892	4300	4703
3	Expected Leak Off Test EMW at shoe (ppg)	9.4	11	11.3	11.5	11.5
4	Expected Mud Weight (ppg)	9.1	9.4	9.4	9.4	9.4
5	Depth of next Casing (feet - TVD)	2608	3892	4703	4703	4703
6	Maximum Expected Formation Pressure (psi)	1153	1720	2079	2079	2079
7	Expected gas gradient (psi/ft)	0.05	0.05	0.05	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.5	8.5	8.5	8.5	8.5
	Max Pressures using 100% Gas to Surface					
9	Max Surface Pressure neglecting shoe (psi)	1022	1526	1844	1844	1844
10	Fracture Gradient at shoe (psi/ft)	Diverter	0.57	0.59	0.60	0.60
11	Fracture Pressure at shoe (psi)	Diverter	1492	2287	2571	2812
12	Surface pressure to break down shoe (psi)	Diverter	1361	2092	2356	2577
13	Maximum Anticipated Surface Pressure (psi)	Diverter	1361	1844	1844	1844

CASING PROGRAM

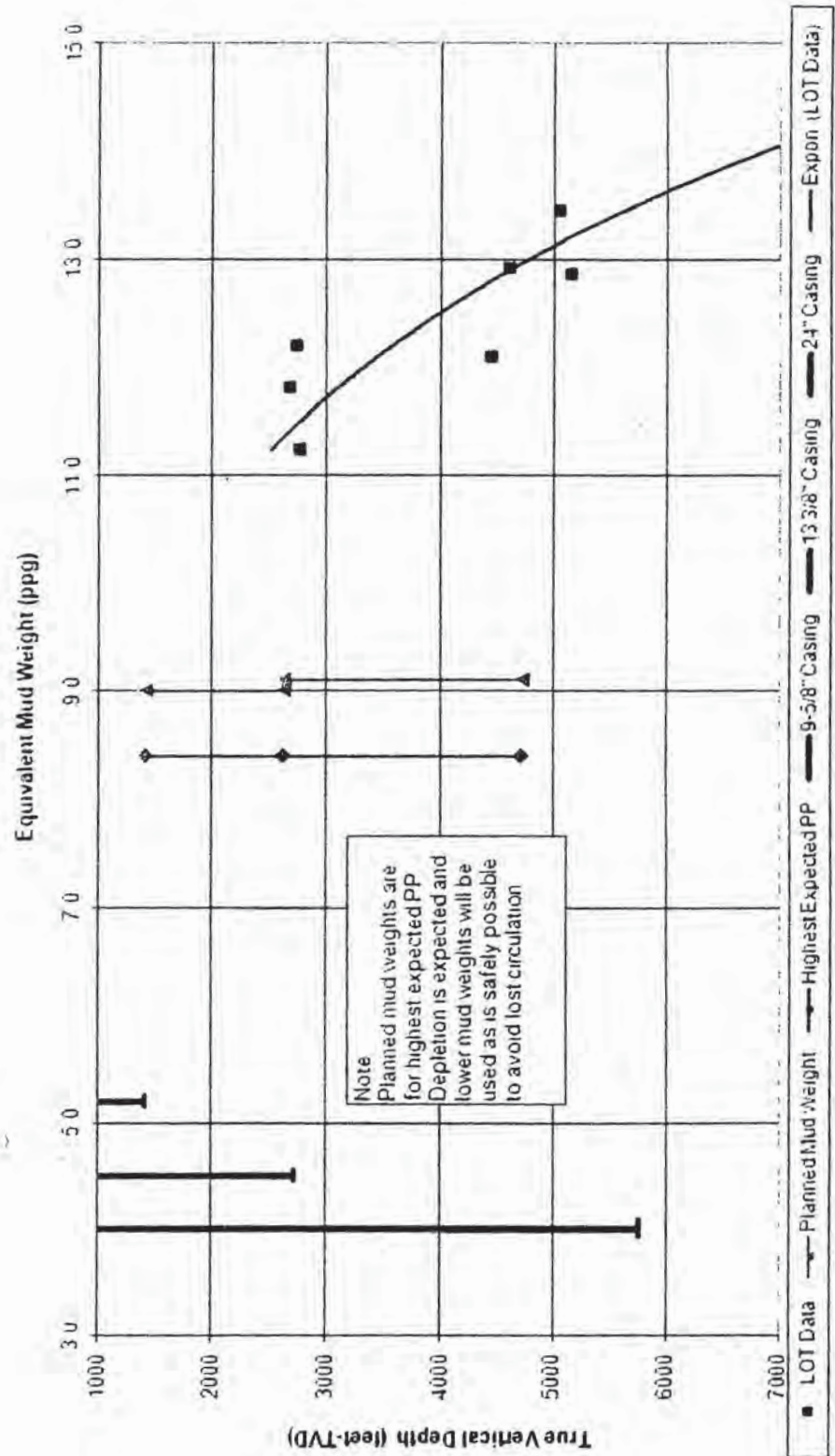
Note: The 7" x 5 1/2" liner will be pre-perforated, thus only the Tensile Safety Factor is applicable. However, I have included the calculations for informational purposes.

Hole Section	26"	13 3/8"	12 1/4"	8 1/2"	8 1/2"
Mud Weight	9.1	9.4	9.4	9.4	9.4
Buoyancy Factor	0.861	0.856	0.856	0.856	0.856
MASP (psi)	200	1526	1844	1844	1844
Gas Lift Pressure (psi)	0	0	1800	1800	1800
Casing Size (in)	24"	13.375"	9.625"	7"	5 1/2"
Setting Depth, MD (ft)	1400	2720	4800	5,540	10,594
Setting Depth, TVD (ft)	1400	2608	3892	4300	4703
Top of Casing, MD (ft)	0	0	0	4550	4550
Weight (lb/ft)	186	61	43.5	26	17
Grade	X-56	K-55	L-80	L-80	L-80
Threads	DQ S-60 MT	BTC	LTC	FlushMax	GeoConn
ID (in)	22.5	12.515	8.755	6.276	4.892
Drift diameter (in)		12.359	8.599	6.151	4.767
Collapse (psi)	1450	1540	3810	5410	6290
Burst (psi)	3060	3090	6330	7240	7740
Joint Strength (kips)	3068	633	825	362	428
Body Strength (kips)	3068	962	1005	604	397
Collapse Safety Factor	2.19	1.21	2.00	2.57	2.74
Burst Safety Factor	15.30	2.03	3.43	3.93	4.20
Tensile Safety Factor	9.46	2.61	2.96	3.29	2.11

Notes:

- 1) Burst is calculated on the greater of MASP or gas lift pressure.
- 2) Collapse is based on mud outside of an evacuated casing string.
- 3) Tension is based on buoyed weight of casing string + 100 kips overpull.

Platform Gail Well E-28 Pore Pressure, Mud Weight & Fracture Pressure



SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. **Assume any gas circulated to surface to have hydrogen sulfide potential.** Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

CEMENTING PROGRAM

24" Structural Casing

Objective: Cement 24" casing as an anchor for the diverter system and provide drilling fluid returns to surface. The 24" will be cemented back to the mud line. 40 feet of cement will be left inside the 24" casing on top of the stab-in guide shoe.

General information:

24", 186#, X-56 Casing 0' - 1400' (22.50" ID)

5", 19.5#, S-135 DP 0' - 1400' (4.276" ID)

Open Hole Size: 26" drilled, 32" assumed for volume calculations

Open Hole Volume Factor is 2.44 CF/FT (for 32" hole)

Shoe Joint Volume Factor is 2.76 CF/FT

Open Hole Excess 0% over estimated 32" hole

24" Conductor Pipe

Well Data

Casing Size: 24"

Open Hole: 32"

Depth: 1400'/MD/ 1400' TVD

Mud Line: 847'

TOC 847'

BHST: 70 deg. F BHCT: 70 deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Tail Volume			
24" Conductor Pipe in 32" O.H.	553	2.44	= 1350 cft
Shoe Joint	40	2.76	= 110 cft
			= 1460 cft

Cement System & Volumes

Preflush: 50 bbls Sea water

Class G with 30 gal/100 sx CaCl₂, 2 gal/100 sx FP-6L, 10 gal/100 sx CD-32L mix in seawater.

Tail Cement Volume: 1270 sks

Mix Weight: 16.0 ppg

Yield: 1.15 cft/sk

Total Liquid: 4.60 gps

Mix Water Seawater

Thickening Time TBD

24 hrs C. S. TBD

48 hrs C. S. TBD

Note: Lab and field blend tests will be performed to verify slurry properties

13 3/8" Surface Casing

Objective: Set and cement 13 3/8" casing prior to drilling oil or gas bearing zones. The shoe of the 13 3/8" casing will provide a fracture gradient sufficient to drill through the zones of interest safely. A formation integrity or leak off test will be conducted after drilling out this shoe. The 13-3/8" will be cemented back to the mud line.

General Information:

13 3/8", 61#, K-55 Casing @ 2720' MD / 2608' TVD (12.415" ID)

24", 186#, X-56 Casing (22.5" ID) Shoe at 1400'

Open Hole Size: 17 1/2"

Open Hole Excess 30% over theoretical

13 3/8" Surface Pipe

Well Data

Casing Size: 13 3/8" 61#

Open Hole: 17 1/2"

Depth: 2720'

Mud Line: 847'

TOC 847'

BHST: 106 deg. F BHCT: 90 deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Lead Volume			
13 3/8" Csg in 24" Casing	550	1.7855	= 982.0 cft
13 3/8" Csg in 17 1/2 Open Hole	920	0.6946	= 639.0 cft
Excess 30%			= 191.7 cft
			= 1812.7 cft
Tail Volume			
13 3/8" Csg in 17 1/2 Open Hole	400	0.6946	= 277.8 cft
Excess 30%			= 83.4 cft
Shoe Joint	80	0.8543	= 68.3 cft
			= 429.5 cft

Cement System & Volumes

Preflush: 20 bbls 8.4 ppg weighted spacer

Lead: +/- 632 sks Class G cement with additives to be determined

Cement Volume 632 sks

Mix Weight 11.6 ppg

Yield: 2.87 cuft/sk → 1814 ft³

Mix Water SEAWATER

Tail: +/- 373 sks Class G cement with additives to be determined

Cement Volume 373 sks

Mix Weight 16.0 ppg

Yield: 1.15 cuft/sk → 429

Mix Water SEAWATER

9 5/8" Production Casing

Objective: Cement 9 5/8" casing at Total Depth of the well. This casing string will be cemented back to the mud line and will be exposed to gas lift pressure.

General Information:

9-5/8" 43.5# L-80 Casing @ 4800' MD / 3892' TVD (8.755" ID)

13 3/8", 61#, L-80 Casing (12.515" ID) Shoe at 2720' MD

Lap Volume Factor is 0.349 CF/FT

Open Hole Size: 12 1/4"

Open Hole Excess 25% over theoretical or 10% over caliper log

9 5/8" Production Pipe

Well Data First Stage

Additives and Pre-flush to be determined through BJ Services lab testing

Casing Size: 9 5/8" 43.5 #

Open Hole: 12 1/4"

Depth: 4800' MD/3892' TVD

Mud Line: 847'

Temperatures BHST XXX deg. F BHCT: XXX deg. F

Volume Calculations	Depth	Volume Factor	Total Volume
Lead Volume	ft.	cu.ft./ft.	cu. ft.
9 5/8" Csg in 13 3/8' Csg	1873	0.3354	= 628.2 cft
9 5/8" Casing in 12 1/4" Open Hole	1580	0.3132	= 494.9 cft
Excess 25%			= 123.7 cft
			=1246.8 cft
Tail Volume			
9 5/8" Casing in 12 1/4" Open Hole	500	0.3132	= 156.6 cft
Excess 25%			= 39.2 cft
Shoe Joint	80	0.4181	= 33.4 cft
			= 229.2 cft

Cement System & Volumes

Preflush: 40 bbls 8.4 ppg weighted spacer

Lead: +/-450 sks Lightweight cement with additives to be determined

Cement Volume 450 sks

Mix Weight 10.5 ppg

Yield: 2.77 cuft/sk

Mix Water SEAWATER

-9 1246.5

Tail: +/-196 sks Class G cement with additives to be determined

Cement Volume 196 sks

Mix Weight 15.8 ppg

Yield: 1.17 cuft/sk

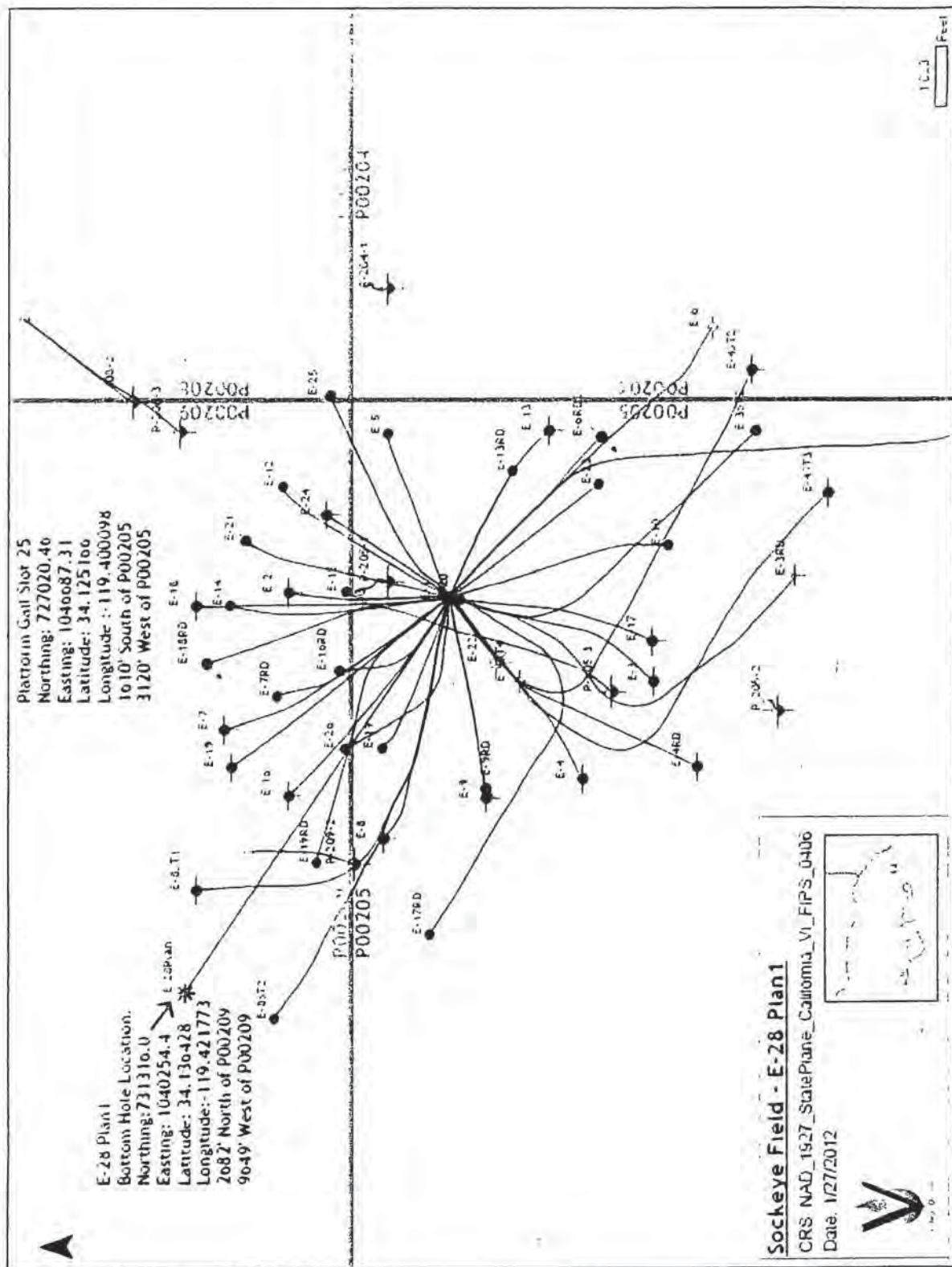
Mix Water SEAWATER

-9 229.2



Rig #2 Specifications

<u>Drilling Range:</u>	21,000' with 5" Drillpipe.
<u>Drawworks:</u>	Skytop Brewster N-12 / 2,000 H.P. Driven by (2)-1,000 H.P. General Electric 752 DC Traction Motors With a Parkersburg V-200 Hydromatic Brake and Electronic Control Panel.
<u>Mast:</u>	Skytop Brewster 142' High. Rated at 1,250,000# GNC and 1,000,000# Static Hook Capacity.
<u>Substructure:</u>	Skytop Brewster 21' High (10' Pony Available), With 1,250,000# Capacity.
<u>Mud Pump #1:</u>	National 12P-100 Triplex. 7"x12" 1,000 H.P., Powered by (2)-1,000 H.P. General Electric 752 DC Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Mud Pump #2:</u>	National 12P-100 Triplex. 7"x12" 1,000 H.P., Powered by (2)-1,000 H.P. General Electric 752 Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Rotary Table:</u>	Continental Emsco 27'-1/2" (37'-1/2" Optional)
<u>Traveling System:</u>	Skytop Brewster 6 Sheave, 500 Ton Block-Hook Combination and National P-500 Ton Swivel.
<u>SCR Power System:</u>	Ross Hill 4 Bridge, 4 Input SCR Unit With Highline Connection and G.E. Electrical Control Unit.
<u>Mud System:</u>	(2)-Pir System, 1,000 Total Barrels, With Trip. Shaker, Volume, Mud Cleaning, Suction and Pill Mixing Compartments, (6)-Lightning Mud Agitators, Submerged Guns, (2)-5x6 Centrifugal Pumps and (2)-Flowline Cleaners.
<u>B.O.P.E.:</u>	Hydri GK 13-5/8", 5,000# Annular. Shaffer LWS 13-5/8", 5,000# D-Ram. Hydri 220 Gallon Accumulator and 5,000# Choke Manifold or as Designated by Contract.
<u>Water Storage:</u>	400 BBLS.
<u>Auxiliary Equipment:</u>	(2)-Air Winches, Wireline Unit (1,002"), (2)-Air compressors, Upper & Lower Doghouses, Toolpusher Trailer.





Venoco Inc

Location: California Slot: Slot 25
Field: Sockeye Field Well: E-28
Facility: Platform Gail Wellbore: E-28 Plan1



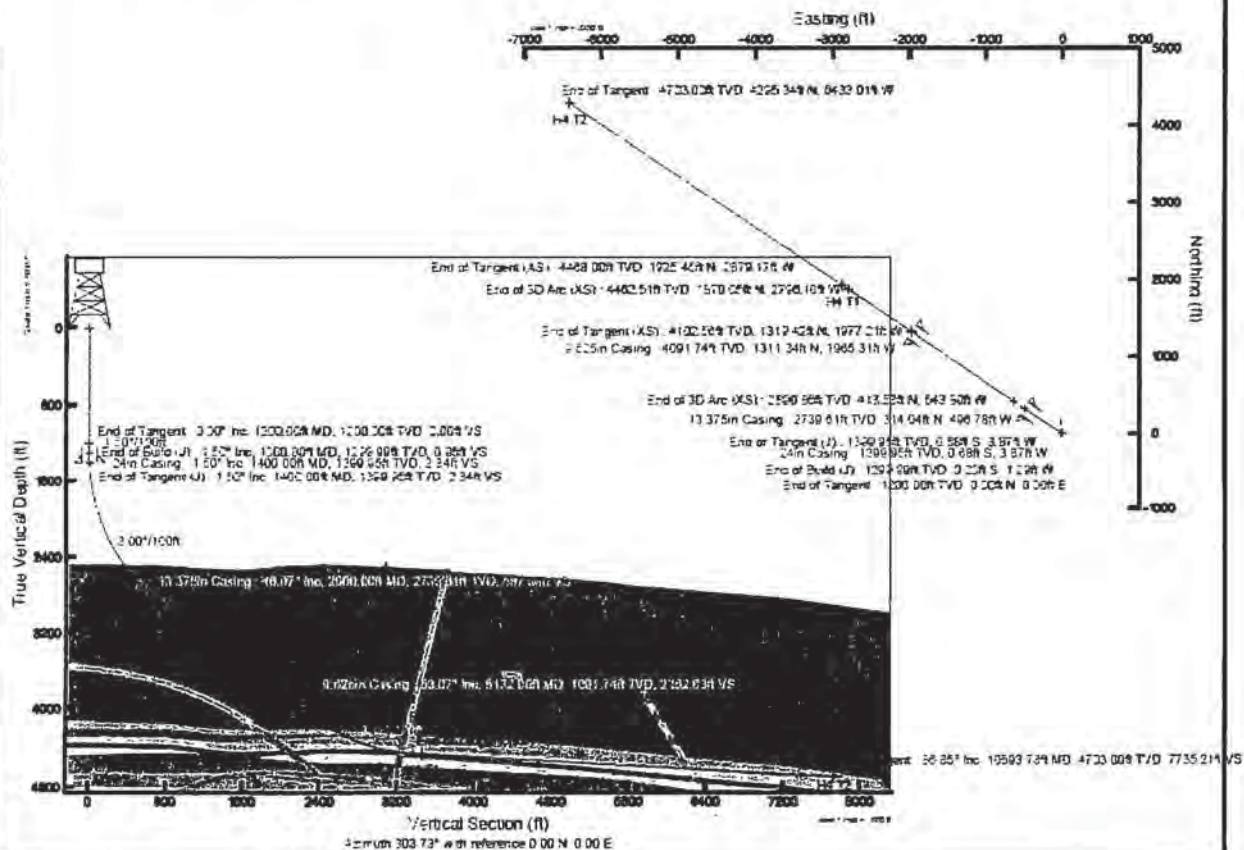
Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	ELS (ft) (1000)	VS (ft)
Tie On	0.00	0.000	300.000	0.00	0.00	0.00	0.00	0.00
End of Tangent	1200.00	0.000	290.000	1200.00	0.00	0.00	0.00	0.00
End of Build (U)	1300.00	1.500	290.000	1299.99	-0.23	-1.29	1.50	0.95
End of Tangent (U)	1400.00	1.500	290.000	1399.95	-0.88	-3.37	0.00	2.84
End of 3D Arc (XS)	3133.38	53.089	304.191	2990.88	-413.53	-543.50	3.00	755.95
End of Tangent (XS)	5120.00	53.089	304.191	-4102.56	1319.42	-1977.21	0.00	2377.32
End of 3D Arc (XS)	9315.77	28.851	303.658	-4482.51	1870.05	-2728.10	3.17	1363.92
End of Tangent (XS)	9315.77	28.851	303.658	-4488.00	1825.45	-2579.17	0.00	1483.87
End of Tangent	10593.78	28.851	303.658	-4703.00	-4295.34	-5433.01	0.00	7735.21

Location Information

Location Information						
Facility Name		End East (US ft)		End North (US ft)		
Platform: Gail		1048843.000		727032.000		Latitude Longitude
Slot	Local N (ft)	Local E (ft)	End East (US ft)	End North (US ft)	Latitude	Longitude
Slot 25	-11.54	-44.31	1048831.460	727020.460	24°07'30.597"N	112°24'00.353"W
Rig on Slot 25 (RT) to Mud line (At Slot: Slot 25)					247ft	
Mean Sea Level to Mud line (At Slot: Slot 25)					738ft	
Rig on Slot 25 (RT) to Mean Sea Level					1039ft	

Reference wellpath is E-28 Plan1	
True vertical depths are referenced to Rig on Slot 25 (RT)	Grid System: NAD83 / Lambert California SP Zone 11 4081 US Feet
Measured depths are referenced to Rig on Slot 25 (RT)	North Reference: Grid north
Rig on Slot 25 (RT) to Mean Sea Level 108 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot 25) 738 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: Jauges on 1/19/2012





Planned Wellpath Report

E-28 Plan1

Page 1 of 5



REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform_Gail		

REPORT SETUP INFORMATION			
Projection System	NAD27 / Lambert California SP, Zone VI (406), US feet	Software System	WellArchitect 8.3.0.0
North Reference	Grid	User	Vazqjosl
Scale	1.00005	Report Generated	1/19/2012 at 7:12:51 AM
Convergence at slot	1.73° West	Database Source file	Venoco_12_S_11/E-28_Plan1.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-11.54	-44.31	1046687.31	727020.46	34°07'30.597"N	119°24'00.353"W
Facility Reference Pt			1046643.00	727032.00	34°07'30.698"N	119°24'00.884"W
Field Reference Pt			1049600.00	728640.00	34°07'47.480"N	119°23'26.305"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on Slot 25 (RT) to Facility Vertical Datum	108.00ft
Horizontal Reference Pt	Slot	Rig on Slot 25 (RT) to Mean Sea Level	108.00ft
Vertical Reference Pt	Rig on Slot 25 (RT)	Rig on Slot 25 (RT) to Mud Line at Slot (Slot 25)	847.00ft
MID Reference Pt	Rig on Slot 25 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	203.73°



Planned Wellpath Report

E-28 Plan1

Page 2 of 5



REFERENCE WELLPATH IDENTIFICATION				
Operator	Venoco Inc	Slot	Slot 25	
Area	California	Well	E-28	
Field	Sockeye Field	Wellbore	E-28 Plan1	
Facility	Platform_Gail			

WELL PATH DATA (111 stations) † = interpolated/extrapolated station														
MD [ft]	Inclin [°]	Azimuth [°]	TVD [ft]	TVD from Fld Vert Ref [ft]	Vert Sec [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00	0.000	260.000	0.00	-138.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	Tie On
100.00†	0.000	260.000	100.00	-3.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
200.00†	0.000	260.000	200.00	92.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
300.00†	0.000	260.000	300.00	292.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
400.00†	0.000	260.000	400.00	292.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
500.00†	0.000	260.000	500.00	392.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
600.00†	0.000	260.000	600.00	492.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
700.00†	0.000	260.000	700.00	592.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
800.00†	0.000	260.000	800.00	592.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
900.00†	0.000	260.000	900.00	792.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
1000.00†	0.000	260.000	1000.00	892.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
1100.00†	0.000	260.000	1100.00	892.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
1200.00†	0.000	260.000	1200.00	1092.00	0.00	0.00	0.00	1046687.31	727020.46	0.00	-100.00	0.00	0.00	End of Tangent
1300.00	1.500	260.000	1299.99	1191.99	0.95	-0.23	-1.29	1046686.02	727020.23	1.50	0.00	1.50	0.00	End of Build (D)
1400.00	1.500	260.000	1399.95	1291.95	2.84	-0.68	-3.87	1046683.44	727019.78	0.00	45.00	0.00	0.00	End of Tangent (D)
1500.00†	-4.197	290.378	1499.83	1391.83	7.34	0.37	-8.59	1046678.72	727020.83	3.00	14.65	2.70	30.38	
1600.00†	7.140	296.496	1599.33	1491.33	17.07	4.41	-17.58	1046669.73	727024.87	3.00	8.57	2.34	6.11	
1700.00†	10.116	299.033	1698.13	1590.13	31.99	11.45	-30.82	1046656.48	727031.91	3.00	6.05	2.98	2.54	
1800.00†	13.103	300.427	1796.13	1688.13	52.07	21.45	-48.28	1046639.03	727041.91	3.00	4.68	2.99	1.39	
1900.00†	16.095	301.310	1892.89	1784.89	77.24	34.40	-69.90	1046617.40	727054.86	3.00	3.83	2.99	0.88	
2000.00†	19.089	301.922	1988.20	1880.20	107.44	50.25	-95.63	1046591.67	727070.72	3.00	3.25	2.99	0.61	
2100.00†	22.085	302.374	2081.80	1973.80	142.58	68.97	-125.39	1046561.91	727089.43	3.00	2.82	3.00	0.45	
2200.00†	25.082	302.722	2173.44	2065.44	182.58	90.50	-159.11	1046528.19	727110.96	3.00	2.50	3.00	0.35	
2300.00†	28.078	303.009	2262.86	2154.86	227.31	114.78	-196.69	1046490.61	727135.24	3.00	2.25	3.00	0.28	
2400.00†	31.077	303.229	2349.82	2241.82	276.67	141.75	-238.03	1046449.27	727162.21	3.00	2.06	3.00	0.23	
2500.00†	34.075	303.421	2434.08	2326.08	330.50	171.33	-283.01	1046404.29	727191.79	3.00	1.89	3.00	0.19	
2600.00†	37.074	303.585	2515.41	2407.41	388.67	203.44	-331.51	1046355.78	727223.91	3.00	1.76	3.00	0.16	
2700.00†	40.072	303.728	2593.58	2485.58	451.01	237.99	-383.40	1046303.89	727258.46	3.00	1.65	3.00	0.14	
2800.00†	43.071	303.854	2668.38	2560.38	517.36	274.89	-438.54	1046248.75	727295.37	3.00	1.55	3.00	0.13	
2900.00†	46.070	303.967	2739.61	2631.61	587.53	314.04	-496.78	1046190.51	727334.52	3.00	1.47	3.00	0.11	
3000.00†	49.069	304.069	2807.07	2699.07	661.33	355.33	-557.95	1046129.34	727375.81	3.00	1.40	3.00	0.10	
3100.00†	52.068	304.162	2870.58	2762.58	738.56	398.65	-621.89	1046065.39	727419.13	3.00	1.35	3.00	0.09	
3133.36	53.069	304.191	2890.86	2782.86	765.05	413.53	-643.80	1046043.48	727434.01	3.00	0.00	3.00	0.09	End of 3D Arc (XS)
3200.00†	53.069	304.191	2930.90	2822.90	818.32	443.46	-687.86	1045999.41	727463.95	0.00	0.00	0.00	0.00	
3300.00†	53.069	304.191	2990.98	2882.98	898.25	488.39	-753.98	1045933.29	727508.87	0.00	0.00	0.00	0.00	
3400.00†	53.069	304.191	3051.07	2943.07	978.18	533.31	-820.10	1045867.17	727553.79	0.00	0.00	0.00	0.00	
3500.00†	53.069	304.191	3111.15	3003.15	1058.12	578.23	-896.22	1045801.04	727598.71	0.00	0.00	0.00	0.00	
3600.00†	53.069	304.191	3171.24	3063.24	1138.05	623.15	-952.34	1045734.92	727643.64	0.00	0.00	0.00	0.00	
3700.00†	53.069	304.191	3231.32	3123.32	1217.99	668.07	-1018.47	1045668.80	727688.56	0.00	0.00	0.00	0.00	
3800.00†	53.069	304.191	3291.41	3183.41	1297.92	712.99	-1084.59	1045602.67	727733.48	0.00	0.00	0.00	0.00	
3900.00†	53.069	304.191	3351.49	3243.49	1377.85	757.91	-1150.71	1045536.55	727778.41	0.00	0.00	0.00	0.00	
4000.00†	53.069	304.191	3411.58	3303.58	1457.79	802.83	-1216.83	1045470.43	727823.33	0.00	0.00	0.00	0.00	
4100.00†	53.069	304.191	3471.66	3363.66	1537.72	847.75	-1282.95	1045404.30	727868.25	0.00	0.00	0.00	0.00	
4200.00†	53.069	304.191	3531.75	3423.75	1617.65	892.67	-1349.07	1045338.18	727913.18	0.00	0.00	0.00	0.00	
4300.00†	53.069	304.191	3591.83	3483.83	1697.59	937.59	-1415.19	1045272.06	727958.10	0.00	0.00	0.00	0.00	



Planned Wellpath Report

E-28 Plan1

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REFERENCE WELLPATH IDENTIFICATION				
Operator	Venoco Inc	Slot	Slot 25	
Area	California	Well	E-28	
Field	Sockeye Field	Wellbore	E-28 Plan1	
Facility	Platform Gail			

WELLPATH DATA (111 stations) * = interpolated/extrapolated station														
MD [ft]	Inclinometer [°]	Azimuth [°]	TVD [ft]	TVD from Fid Vert Ref [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
4400.00	53.068	304.191	3651.92	3543.92	1777.52	982.52	-1481.31	1045205.93	728003.02	0.00	0.00	0.00	0.00	
4500.00	53.068	304.191	3712.00	3604.00	1857.45	1027.44	-1547.43	1045139.81	728047.95	0.00	0.00	0.00	0.00	
4600.00	53.068	304.191	3772.09	3664.09	1937.39	1072.56	-1613.55	1045073.69	728092.87	0.00	0.00	0.00	0.00	
4700.00	53.068	304.191	3832.17	3724.17	2017.32	1117.28	-1679.67	1045007.56	728137.79	0.00	0.00	0.00	0.00	
4800.00	53.068	304.191	3892.26	3784.26	2097.25	1162.20	-1745.79	1044941.44	728182.71	0.00	0.00	0.00	0.00	
4900.00	53.068	304.191	3952.34	3844.34	2177.19	1207.12	-1811.91	1044875.32	728227.64	0.00	0.00	0.00	0.00	
5000.00	53.068	304.191	4012.43	3904.43	2257.12	1252.04	-1878.03	1044809.19	728272.56	0.00	0.00	0.00	0.00	
5100.00	53.068	304.191	4072.52	3964.52	2337.05	1296.96	-1944.15	1044743.07	728317.48	0.00	0.00	0.00	0.00	
5150.00	53.068	304.191	4102.56	3994.56	2377.02	1319.42	-1977.21	1044710.01	728339.95	0.00	-0.89	0.00	0.00	End of Tangent (XS)
5200.00	54.654	304.161	4132.04	4024.04	2417.40	1342.11	-2010.61	1044676.60	728362.63	3.17	-0.87	3.17	-0.06	
5300.00	57.824	304.105	4187.61	4079.61	2500.52	1388.75	-2079.42	1044607.79	728409.27	3.17	-0.84	3.17	-0.06	
5400.00	60.993	304.052	4238.50	4130.50	2586.59	1436.97	-2150.71	1044536.50	728457.50	3.17	-0.81	3.17	-0.05	
5500.00	64.163	304.002	4284.54	4176.54	2675.54	1486.64	-2224.27	1044462.94	728507.17	3.17	-0.79	3.17	-0.05	
5600.00	67.333	303.953	4325.61	4217.61	2766.50	1537.59	-2299.86	1044387.34	728558.12	3.17	-0.77	3.17	-0.05	
5700.00	70.503	303.910	4361.58	4253.58	2859.80	1589.66	-2377.27	1044309.93	728610.20	3.17	-0.75	3.17	-0.05	
5800.00	73.673	303.866	4392.33	4284.33	2954.94	1642.71	-2456.25	1044230.94	728663.25	3.17	-0.74	3.17	-0.04	
5900.00	76.843	303.824	4417.78	4309.78	3051.63	1696.57	-2536.56	1044150.63	728717.11	3.17	-0.73	3.17	-0.04	
6000.00	80.013	303.783	4437.84	4329.84	3149.59	1751.06	-2617.96	1044069.23	728771.61	3.17	-0.72	3.17	-0.04	
6100.00	83.183	303.743	4452.45	4344.45	3248.50	1806.04	-2700.19	1043987.00	728826.58	3.17	-0.71	3.17	-0.04	
6200.00	86.353	303.704	4461.57	4353.57	3348.07	1861.32	-2783.00	1043904.18	728881.86	3.17	-0.71	3.17	-0.04	
6215.77	86.851	303.698	4462.51	4354.51	3363.82	1870.05	-2796.10	1043891.08	728890.60	3.17	0.00	3.17	-0.04	End of 3D Arc (XS)
6300.00	86.851	303.698	4467.13	4359.13	3447.92	1916.71	-2866.07	1043821.10	728937.76	0.00	0.00	0.00	0.00	
6315.77	86.851	303.698	4468.00	4360.00	3463.67	1925.45	-2879.17	1043808.00	728946.00	0.00	0.00	0.00	0.00	End of Tangent (XS)
6400.00	86.851	303.698	4472.63	4364.63	3547.77	1972.11	-2949.14	1043738.03	728992.66	0.00	0.00	0.00	0.00	
6500.00	86.851	303.698	4478.12	4370.12	3647.61	2027.50	-3032.21	1043654.95	729048.06	0.00	0.00	0.00	0.00	
6600.00	86.851	303.698	4483.61	4375.61	3747.46	2082.90	-3115.29	1043571.88	729103.46	0.00	0.00	0.00	0.00	
6700.00	86.851	303.698	4489.11	4381.11	3847.31	2138.30	-3198.36	1043488.80	729158.86	0.00	0.00	0.00	0.00	
6800.00	86.851	303.698	4494.60	4386.60	3947.16	2193.70	-3281.43	1043405.72	729214.26	0.00	0.00	0.00	0.00	
6900.00	86.851	303.698	4500.09	4392.09	4047.01	2249.09	-3364.50	1043322.65	729269.66	0.00	0.00	0.00	0.00	
7000.00	86.851	303.698	4505.59	4397.59	4146.86	2304.49	-3447.58	1043239.57	729325.06	0.00	0.00	0.00	0.00	
7100.00	86.851	303.698	4511.08	4403.08	4246.71	2359.89	-3530.65	1043156.50	729380.46	0.00	0.00	0.00	0.00	
7200.00	86.851	303.698	4516.57	4408.57	4346.56	2415.28	-3613.72	1043073.42	729435.86	0.00	0.00	0.00	0.00	
7300.00	86.851	303.698	4522.07	4414.07	4446.41	2470.68	-3696.79	1042990.34	729491.26	0.00	0.00	0.00	0.00	
7400.00	86.851	303.698	4527.56	4419.56	4546.26	2526.08	-3779.86	1042907.27	729546.66	0.00	0.00	0.00	0.00	
7500.00	86.851	303.698	4533.05	4425.05	4646.10	2581.48	-3862.94	1042824.19	729602.06	0.00	0.00	0.00	0.00	
7600.00	86.851	303.698	4538.55	4430.55	4745.95	2636.87	-3946.01	1042741.11	729657.46	0.00	0.00	0.00	0.00	
7700.00	86.851	303.698	4544.04	4436.04	4845.80	2692.27	-4029.08	1042658.04	729712.86	0.00	0.00	0.00	0.00	
7800.00	86.851	303.698	4549.53	4441.53	4945.65	2747.67	-4112.15	1042574.96	729768.26	0.00	0.00	0.00	0.00	
7900.00	86.851	303.698	4555.02	4447.02	5045.50	2803.06	-4195.23	1042491.89	729823.66	0.00	0.00	0.00	0.00	
8000.00	86.851	303.698	4560.52	4452.52	5145.35	2858.46	-4278.30	1042408.81	729879.06	0.00	0.00	0.00	0.00	
8100.00	86.851	303.698	4566.01	4458.01	5245.20	2913.86	-4361.37	1042325.73	729934.46	0.00	0.00	0.00	0.00	
8200.00	86.851	303.698	4571.50	4463.50	5345.05	2969.25	-4444.44	1042242.66	729989.86	0.00	0.00	0.00	0.00	
8300.00	86.851	303.698	4577.00	4469.00	5444.90	3024.65	-4527.51	1042159.58	730045.25	0.00	0.00	0.00	0.00	
8400.00	86.851	303.698	4582.49	4474.49	5544.75	3080.05	-4610.59	1042076.51	730100.65	0.00	0.00	0.00	0.00	
8500.00	86.851	303.698	4587.98	4479.98	5644.59	3135.45	-4693.66	1041993.43	730156.05	0.00	0.00	0.00	0.00	



Planned Wellpath Report

E-28 Plan1

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform Gail		

WELLPATH DATA (111 stations) ± = interpolated-extrapolated station														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVD from Fld Vert Ref [ft]	Vert Sec [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Toolface [°]	Buid Rate [°/100ft]	Turn Rate [°/100ft]	Comments
3500.00	36.851	303.698	4593.48	4485.48	5744.44	3190.84	-4776.73	1041910.35	730211.45	0.00	0.00	0.00	0.00	
3700.00	36.851	303.698	4598.97	4490.97	5844.29	3246.24	-4859.80	1041827.28	730266.85	0.00	0.00	0.00	0.00	
3800.00	36.851	303.698	4604.46	4496.46	5944.14	3301.64	-4942.88	1041744.20	730322.25	0.00	0.00	0.00	0.00	
3900.00	36.851	303.698	4609.96	4501.96	6043.99	3357.03	-5025.95	1041661.12	730377.65	0.00	0.00	0.00	0.00	
9000.00	36.851	303.698	4615.45	4507.45	6143.84	3412.43	-5109.02	1041578.05	730433.05	0.00	0.00	0.00	0.00	
9100.00	36.851	303.698	4620.94	4512.94	6243.69	3467.83	-5192.09	1041494.97	730488.45	0.00	0.00	0.00	0.00	
9200.00	36.851	303.698	4626.44	4518.44	6343.54	3523.23	-5275.16	1041411.90	730543.85	0.00	0.00	0.00	0.00	
9300.00	36.851	303.698	4631.93	4523.93	6443.39	3578.62	-5358.24	1041328.82	730599.25	0.00	0.00	0.00	0.00	
9400.00	36.851	303.698	4637.42	4529.42	6543.24	3634.02	-5441.31	1041245.74	730654.65	0.00	0.00	0.00	0.00	
9500.00	36.851	303.698	4642.92	4534.92	6643.08	3689.42	-5524.38	1041162.67	730710.05	0.00	0.00	0.00	0.00	
9600.00	36.851	303.698	4648.41	4540.41	6742.93	3744.81	-5607.45	1041079.59	730765.45	0.00	0.00	0.00	0.00	
9700.00	36.851	303.698	4653.90	4545.90	6842.78	3800.21	-5690.53	1040996.52	730820.85	0.00	0.00	0.00	0.00	
9800.00	36.851	303.698	4659.40	4551.40	6942.63	3855.61	-5773.60	1040913.44	730876.25	0.00	0.00	0.00	0.00	
9900.00	36.851	303.698	4664.89	4556.89	7042.48	3911.00	-5856.67	1040830.36	730931.65	0.00	0.00	0.00	0.00	
10000.00	36.851	303.698	4670.38	4562.38	7142.33	3966.40	-5939.74	1040747.29	730987.05	0.00	0.00	0.00	0.00	
10100.00	36.851	303.698	4675.88	4567.88	7242.18	4021.80	-6022.81	1040664.21	731042.45	0.00	0.00	0.00	0.00	
10200.00	36.851	303.698	4681.37	4573.37	7342.03	4077.20	-6105.89	1040581.13	731097.85	0.00	0.00	0.00	0.00	
10300.00	36.851	303.698	4686.86	4578.86	7441.88	4132.59	-6188.96	1040498.06	731153.25	0.00	0.00	0.00	0.00	
10400.00	36.851	303.698	4692.36	4584.36	7541.73	4187.99	-6272.03	1040414.98	731208.65	0.00	0.00	0.00	0.00	
10500.00	36.851	303.698	4697.85	4589.85	7641.57	4243.39	-6355.10	1040331.91	731264.05	0.00	0.00	0.00	0.00	
10593.78	36.851	303.698	4703.00	4595.00	7735.21	4295.34	-6433.01	1040254.00	731316.00	0.00		0.00	0.00	End of Tangent

HOLE & CASING SECTIONS - Ref Wellbore: E-28 Plan1 Ref Wellpath: E-28 Plan1									
String Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
26m Open Hole	0.00	1400.00	1400.00	0.00	1399.95	0.00	0.00	-0.68	-3.87
24in Casing	0.00	1400.00	1400.00	0.00	1399.95	0.00	0.00	-0.68	-3.87
17.5m Open Hole	1400.00	2900.00	1500.00	1399.95	2739.61	-0.68	-3.87	314.04	-496.78
13.375in Casing	0.00	2900.00	2900.00	0.00	2739.61	0.00	0.00	314.04	-496.78
12.25m Open Hole	2900.00	5132.00	2232.00	2739.61	4091.74	314.04	-496.78	1311.34	-1265.31
9.625in Casing	0.00	5132.00	5132.00	0.00	4091.74	0.00	0.00	1311.34	-1265.31
8.5in Open Hole	5132.00	10583.00	5451.00	4091.74	4702.41	1311.34	-1265.31	4289.37	-6424.05



Planned Wellpath Report

E-28 Plan1

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform_Gail		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) H4 T1	6315.77	4468.00	1925.45	-2879.17	1043808.00	723946.00	34°07'48.774"N	119°24'35.277"W	point
2) H4 T2	10593.78	4703.00	4295.34	-6433.01	1040254.00	731316.00	34°08'11.140"N	119°25'18.389"W	point

SURVEY PROGRAM - Ref Wellbore: E-28 Plan1 Ref Wellpath: E-28 Plan1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
347.00	1400.00	SDI Keeper		E-28 Plan1
1400.00	2900.00	OnTrak (Standard)		E-28 Plan1
2900.00	5132.00	OnTrak (Standard)		E-28 Plan1
5132.00	10593.78	OnTrak (Standard)		E-28 Plan1



Clearance Summary Report

E-28 Plan1-Closest Approach
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform Gail		

REPORT SETUP INFORMATION			
Projection System	NAD27 - Lambert California SP. Zone VI (406). US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Vazqjosi
Scale	1.00005	Report Generated	1/19/2012 at 7:45:17 AM
Convergence at slot	1.73° West	Database Source file	Venoco_12_9_11/E-28_Plan1_CR.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North(ft)	East(ft)	Easting(US ft)	Northing(US ft)	Latitude	Longitude
Slot Location	-11.54	44.31	1046687.31	727020.46	34°07'30.597"N	119°24'00.353"W
Facility Reference Pt			1046643.00	727032.00	34°07'30.698"N	119°24'00.884"W
Field Reference Pt			1049600.00	728640.00	34°07'47.480"N	119°23'26.305"W

WELLPATH DATUM			
Calculation method	Minimum Curvature	Rig on Slot 25 (RT) to Facility Vertical Datum	108.00ft
Horizontal Reference Pt	Slot	Rig on Slot 25 (RT) to Mean Sea Level	108.00ft
Vertical Reference Pt	Rig on Slot 25 (RT)	Rig on Slot 25 (RT) to Mud Line at Slot (Slot 25)	347.00ft
MD Reference Pt	Rig on Slot 25 (RT)		
Field Vertical Reference	Mean Sea Level		

POSITIONAL UNCERTAINTY CALCULATION SETTINGS					
Ellipse Confidence Limit	3.00 Std Dev	Ellipse Start MD	347.00ft	Surface Position Uncertainty	Included
Declination	12.73° East of TN	Dip Angle	58.67°	Mag Field Strength	47241 nT
Slot Surface Uncertainty @1SD		Horizontal	0.500ft	Vertical	0.500ft
Facility Surface Uncertainty @1SD		Horizontal	3.000ft	Vertical	0.500ft

ANTI-COLLISION RULE			
Rule Name	R-type Start Clearance Monitoring, Closest Approach w Hole & Casing Limit: 1.5, StdDev: 3.00 w Surface Uncert R=(D-HnC)/PU	Rule Based On	Ratio
Plane of Rule	Closest Approach	Threshold Value	1.50
Subtract Casing & Hole Size	yes	Apply Cone of Safety	no



Clearance Summary Report

E-28 Plan1-Closest Approach

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform_Gail		

HOLE & CASING SECTIONS - Ref Wellbore: E-28 Plan1 Ref Wellpath: E-28 Plan1									
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
26in Open Hole	0.00	1400.00	1400.00	0.00	1399.95	0.00	0.00	-0.68	-3.87
24in Casing	0.00	1400.00	1400.00	0.00	1399.95	0.00	0.00	-0.68	-3.87
17.5in Open Hole	1400.00	2900.00	1500.00	1399.95	2739.61	-0.68	-3.87	314.04	-496.78
13.375in Casing	0.00	2900.00	2900.00	0.00	2739.61	0.00	0.00	314.04	-496.78
12.25in Open Hole	2900.00	5132.00	2232.00	2739.61	4091.74	314.04	-496.78	1311.34	-1965.31
9.625in Casing	0.00	5132.00	5132.00	0.00	4091.74	0.00	0.00	1311.34	-1965.31
8.5in Open Hole	5132.00	10583.00	5451.00	4091.74	4702.41	1311.34	-1965.31	4289.37	-6424.05

SURVEY PROGRAM - Ref Wellbore: E-28 Plan1 Ref Wellpath: E-28 Plan1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
347.00	1400.00	SDI Keeper		E-28 Plan1
1400.00	2900.00	OnTrak (Standard)		E-28 Plan1
2900.00	5132.00	OnTrak (Standard)		E-28 Plan1
5132.00	10593.75	OnTrak (Standard)		E-28 Plan1



Clearance Summary Report

E-28 Plan1-C Closest Approach

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REFERENCE WELLPATH IDENTIFICATION

Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform_Gail		

CALCULATION RANGE & CUTOFF

From 847.00ft MD	To 10593.80ft MD	C-C Cutoff: (none)
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OFFSET WELL CLEARANCE SUMMARY (52 Offset Wellpaths selected) Ratios are calculated in Closest Approach plane

Offset Facility	Offset Slot	Offset Well	Offset Wellbore	Offset Wellpath	C-C Clearance Distance			ACR Separation Ratio			
					Ref MD [ft]	Min C-C Clear Dist [ft]	Diverging from MD [ft]	Ref MD of Min Ratio [ft]	Min Ratio	Min Ratio Dvrg from [ft]	ACR Status
Platform_Cal	Slot 21	Well E-9	AWB E-9	AWP E-9	979.39	5.34	1157.45	1157.45	0.47	5000.00	FAIL
Platform_Cal	Slot 21 RD	Well E-9RD	AWB E-9RD	AWP E-9RD	978.40	5.34	1153.45	1153.45	0.50	5000.00	FAIL
Platform_Cal	Slot 10	Well E-16	AWB E-16	AWP E-16	1210.00	24.85	4190.00	4190.00	0.64	4500.00	FAIL
Platform_Cal	Slot 26	Well E-22	AWB E-22	AWP E-22	900.00	3.28	900.00	1208.44	0.85	2298.44	FAIL
Platform_Cal	Slot 22	Well E-20	AWB E-20	AWP E-20	1074.73	10.38	1074.73	1209.70	1.02	2259.70	FAIL
Platform_Cal	Slot 30	Well E-4	AWB E-4	AWP E-4	969.76	10.70	1252.57	1252.57	1.09	9390.00	FAIL
Platform_Cal	Slot 33	Well E-3	AWB E-3	AWP E-3	1553.90	11.56	1551.50	1599.97	1.10	1359.97	FAIL
Platform_Cal	Slot 17	Well E-8	AWB E-8	AWP E-8	1085.40	11.05	1085.40	1231.94	1.12	7300.00	FAIL
Platform_Cal	Slot 50 ST2	Well E-4ST2	AWB E-4ST2	AWP E-4ST2	971.14	10.70	971.14	980.17	1.15	5000.00	FAIL
Platform_Cal	Slot 50 RD	Well E-4RD	AWB E-4RD	AWP E-4RD	971.14	10.70	971.14	980.17	1.15	5000.00	FAIL
Platform_Cal	Slot 50 ST5	Well E-4ST5	AWB E-4ST5	AWP E-4ST5	971.14	10.70	971.14	980.17	1.15	7500.00	FAIL
Platform_Cal	Slot 50 ST4	Well E-4ST4	AWB E-4ST4	AWP E-4ST4	971.14	10.70	971.14	980.17	1.15	5800.00	FAIL
Platform_Cal	Slot 50 ST3	Well E-4ST3	AWB E-4ST3	AWP E-4ST3	971.14	10.70	971.14	980.17	1.15	7500.00	FAIL
Platform_Cal	Slot 53 ST2	Well E-3ST2	AWB E-3ST2	AWP E-3ST2	1349.77	11.25	1349.77	1591.29	1.17	1591.29	FAIL
Platform_Cal	Slot 53 RD	Well E-3RD	AWB E-3RD	AWP E-3RD	1349.77	11.25	1349.77	1591.29	1.17	2591.29	FAIL
Platform_Cal	Slot 17 ST2	Well E-8ST2	AWB E-8ST2	AWP E-8ST2	1080.16	11.54	1090.00	1230.53	1.25	10500.00	FAIL
Platform_Cal	Slot 17 ST1	Well E-8ST1	AWB E-8ST1	AWP E-8ST1	1080.00	11.54	1400.00	1230.57	1.25	3500.00	FAIL
Platform_Cal	Slot P-209-2	Well P-209-2	AWB P-209-2	AWP P-209-2	7587.50	359.85	7587.50	7500.00	1.40	7500.00	FAIL
Platform_Cal	Slot 18	Well E-26	AWB E-26	AWP E-26	958.62	14.36	5300.00	1200.00	1.69	5150.00	PASS
Platform_Cal	Slot 27	Well E-23	AWB E-23	AWP E-23	1203.15	15.45	1203.15	1234.40	1.85	2214.40	PASS
Platform_Cal	Slot 13 RD	Well E-19RD	AWB E-19RD	AWP E-19RD	1000.00	17.00	5700.00	1100.00	2.01	7000.00	PASS
Platform_Cal	Slot 13	Well E-19	AWB E-19	AWP E-19	1000.00	18.01	5100.00	1113.45	2.02	7400.00	PASS
Platform_Cal	Slot 14	Well E-11	AWB E-11	AWP E-11	964.29	19.29	964.29	1225.15	2.22	5300.00	PASS
Platform_Cal	Slot 35	Well E-17	AWB E-17	AWP E-17	922.95	20.80	922.95	1225.45	2.53	4235.45	PASS
Platform_Cal	Slot 31	Well E-10	AWB E-10	AWP E-10	900.00	18.04	1200.00	1251.24	2.28	1251.24	PASS
Platform_Cal	Slot 35 RD	Well E-17RD	AWB E-17RD	AWP E-17RD	923.25	20.80	5600.00	1224.24	2.49	8500.00	PASS
Platform_Cal	Slot 10 RD	Well E-16RD	AWB E-16RD	AWP E-16RD	1211.05	24.83	1211.05	1245.78	2.80	3500.00	PASS
Platform_Cal	Slot 24	Well E-13	AWB E-13	AWP E-13	1150.45	25.41	1160.45	1217.57	2.99	7000.00	PASS
Platform_Cal	Slot P-205-3	Well P-205-3	AWB P-205-3	AWP P-205-3	5122.55	457.09	5122.55	5509.62	3.15	5509.62	PASS
Platform_Cal	Slot 24 RD	Well E-13RD	AWB E-13RD	AWP E-13RD	1160.50	26.41	1160.50	1211.42	3.14	1211.42	PASS
Platform_Cal	Slot 5 RD	Well E-18RD	AWB E-18RD	AWP E-18RD	1227.02	23.61	1227.02	1706.39	3.18	5500.00	PASS
Platform_Cal	Slot 5	Well E-18	AWB E-18	AWP E-18	1227.22	23.62	1227.22	1501.33	3.20	9700.00	PASS
Platform_Cal	Slot 20	Well E-6	AWB E-6	AWP E-6	960.20	23.60	960.20	1215.52	3.20	1215.52	PASS
Platform_Cal	Slot 6	Well E-14	AWB E-14	AWP E-14	1087.23	30.97	1087.23	1248.60	3.46	5150.00	PASS
Platform_Cal	Slot 20 RD	Well E-6RD	AWB E-6RD	AWP E-6RD	951.17	23.60	951.17	1206.73	3.48	4256.73	PASS
Platform_Cal	Slot 20 RD2	Well E-6RD2	AWB E-6RD2	AWP E-6RD2	951.17	23.60	951.17	1206.73	3.48	4206.73	PASS
Platform_Cal	Slot 1	Well E-7	AWB E-7	AWP E-7	1162.28	35.62	1162.28	1600.00	3.73	5200.00	PASS
Platform_Cal	Slot 16 ST1	Well E-24ST1	AWB E-24ST1	AWP E-24ST1	926.99	31.49	1200.00	1223.55	3.68	6000.00	PASS
Platform_Cal	Slot 16	Well E-24	AWB E-24	AWP E-24	926.99	31.49	1200.00	1223.55	3.68	6000.00	PASS
Platform_Cal	Slot 1 RD	Well E-7RD	AWB E-7RD	AWP E-7RD	1162.28	35.62	1162.28	1600.00	3.99	5100.00	PASS



Clearance Summary Report E-28 Plan1-Closest Approach Page 4 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform_Gail		

CALCULATION RANGE & CUTOFF		
From 547.00ft MD	To: 10593.80ft MD	C-C Cutoff: (none)

OFFSET WELL CLEARANCE SUMMARY (52 Offset Wellpaths selected) Ratios are calculated in Closest Approach plane											
Offset Facility	Offset Slot	Offset Well	Offset Wellbore	Offset Wellpath	C-C Clearance Distance			ACR Separation Ratio			
					Ref MD [ft]	Min C-C Clear Dist [ft]	Diverging from MD [ft]	Ref MD of Min Ratio [ft]	Min Ratio	Min Ratio Dvrg from [ft]	ACR Status
Platform_Gail	Slot 12	Well E-21	AWB E-21	AWP E-21	1100.00	35.24	1125.22	1234.76	4.06	5515.77	PASS
Platform_Gail	Slot 15	Well E-1	AWB E-1	AWP E-1	1200.00	24.52	1200.00	1453.61	4.16	1453.61	PASS
Platform_Gail	Slot 7	Well E-5	AWB E-5	AWP E-5	300.00	37.90	300.00	300.00	4.65	300.00	PASS
Platform_Gail	Slot 3 E-15	Well E-15	AWB E-15	AWP E-15	251.87	39.59	251.87	1225.91	4.73	1225.91	PASS
Platform_Gail	Slot 3 E-2	Well E-2	AWB E-2	AWP E-2	341.87	39.59	251.87	1225.91	4.73	1225.91	PASS
Platform_Gail	Slot 4	Well E-12	AWB E-12	AWP E-12	341.43	42.76	341.43	1240.18	5.08	4190.00	PASS
Platform_Gail	Slot 8	Well E-25	AWB E-25	AWP E-25	1220.55	38.73	1220.55	1454.61	7.13	1454.61	PASS
Platform_Gail	Slot P-205-1	Well P-205-1	AWB P-205-1	AWP P-205-1	5023.50	1501.16	5023.50	5637.12	3.85	5637.12	PASS
Platform_Gail	Slot P-208-3	Well P-208-3	AWB P-208-3	AWP P-208-3	4862.50	1683.50	4862.50	5900.00	16.30	5900.00	PASS
Platform_Gail	Slot P-208-2	Well P-208-2	AWB P-208-2	AWP P-208-2	3975.00	1551.27	3975.00	5500.00	19.45	5500.00	PASS
Platform_Gail	Slot P-205-2	Well P-205-2	AWB P-205-2	AWP P-205-2	1475.00	5419.42	1475.00	5207.60	41.36	5207.60	PASS
Platform_Gail	Slot P-204-1	Well P-204-1	AWB P-204-1	AWP P-204-1	3242.50	5237.94	3242.50	5487.37	74.77	5000.00	PASS

	GENERAL QUESTIONS:	
1	Have you considered the following in your well planning and drilling plan determinations: evaluation for flow potential, site selection, shallow hazards, deeper hazard contingency planning, well control planning for fluid influxes, planning for lost circulation control, regulatory issues and communications plans, planning the well, pore pressure, fracture gradient, mud weight, casing plan, cementing plan, drilling plan, wellbore hydraulics, wellbore cleaning, barrier design, and contingency planning? [API 65-2 1.5]	Yes/No
2	Have you considered the general well practices while drilling, monitoring and maintaining wellbore stability, curing and preventing lost circulation, and planning and operational considerations? [API 65-2 1.6]	Yes/No
	FLOW POTENTIAL	
3	Will a pre-spud hazard assessment be conducted for the proposed well site?	Yes/No
4	List all potential flow zones within the well section to be cemented.	Describe below
5	Has the information concerning the type, location, and likelihood of potential flow zones been communicated to key parties (cementing service provider, rig contractor, or 3 rd parties)?	Yes/No
	CRITICAL DRILLING FLUID PARAMETERS	
6	Are fluid densities sufficient to maintain well control without inducing lost circulation?	Yes/No
	CRITICAL WELL DESIGN PARAMETERS	
7	Will you use a cementing simulation model in the design of this well?	Yes/No
7a	If yes, how is the output of this simulation model used in your decision-making process?	Describe below
7b	If no, include discussion of why a model is not being used.	Describe below
7c	Either way, include the number and placement of centralizers being used.	Describe below
8	Will you ensure the planned top of cement will be 500 feet above the shallowest potential flow zone?	Yes/No
9	Have you confirmed that the hole diameter is sufficient to provide adequate centralization?	Yes/No
10	If there are any isolated annuli, how have you mitigated thermal casing pressure build-up.	NA or Describe below
11	Will you ensure the well will be stable (no volume gain or losses, drilling fluid density equal in vs out) before commencing cementing operations?	Yes/No
12	List all annular mechanical barriers in your design.	Describe below
13	Has the rat hole length been minimized or filled with drilling fluid with a density greater than the cement density?	Yes/No
14a	If you have any liner top packers exposed to the production or intermediate annulus, what is the rating for differential pressure across this packer?	NA or Describe below
14b	If you have any liner top packers exposed to the production or intermediate annulus, have you confirmed that your negative test will not exceed this rating?	Yes/No/NA
15	What type of casing hanger lock-down mechanisms will be used?	Describe below
16	For all intermediate and production casing hangers set in subsea, HP wellhead housing, will you immediately set/energize the lock-down ring prior to performing any negative test?	Yes/No NA
17	For all production casing hangers set in subsea, HP wellhead housing, will you set/energize the lock-down sleeve immediately after running the casing and prior to performing any negative test?	Yes/No NA
	CRITICAL OPERATIONAL PARAMETERS	
18	Will you have 2 mechanical barriers in addition to cement in your final casing string (or liner if it is your final string)?	Yes/No
19	Do you plan to nipple down BOP in accordance with the WOC requirements in 30 CFR 250.422(a)?	Yes/No
20	Do you plan on running a cement bond log on the production and intermediate casing/liner prior to conducting the negative test on that string?	Yes/No
	Are contingency plans in place for the following:	
21	Lost circulation?	Yes/No
22	Unplanned shut-down?	Yes/No
23	Unplanned rate change?	Yes/No
24	Float equipment does not hold differential pressures?	Yes/No
25	Surface Equipment issues?	Yes/No
26	Will you monitor the annulus during cementing and WOC time?	Yes/No

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Manager.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells.
3. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
4. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, lost circulation during cementing, etc., shall be verbally reported immediately to the District Manager.
5. The District Manager shall be notified in advance in the event of production tests.
6. Two copies of all logs, including the mud log to date, shall be furnished to this office immediately after logging.
7. Before a completion program is commenced or the hole is abandoned, the District Manager shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
8. This APD is approved subject to the requirement that, should the well be successfully completed for production or re-completed and production resumed after being off of production more than 90 days, this office must be notified when it is placed in a producing status. Such notification may be received in this office by no later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following information items:
 - 1) Operator name.
 - 2) Platform and well name, number and location.
 - 3) Date well began or resumed production.
 - 4) The lease number and, if applicable, unit participation area to which the well's production is attributable.
13. This APD is valid for one year from the date it is approved.

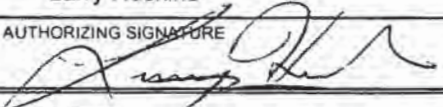
U.S. Department of the Interior
Bureau of Safety and Environmental
Enforcement (BSEE)

Submit original plus THREE copies,
with ONE copy marked "Public Information."

Releasable to public
Name: SLA Date: 5/13/13

OMB Control No 1010-0141
OMB Approval Expires 10/31/2014

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☒ NEW WELL ☐ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 BSEE OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013	
4 WELL NAME (CURRENT) E-28	5 SIDETRACK NO (CURRENT)	6 BYPASS NO (CURRENT)		
7 PROPOSED START DATE February 6, 2012	8 PLAN CONTROL NO (NEW WELL ONLY)			
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112080300				
10 ☒ Revision	11 If revision, please list changes Added well design and drill program beyond cementing of 24" conductor casing			
12 LEASE NO P-0209 204 ^{KE}			17 LEASE NO P-0205	
13 AREA NAME 6B			18 AREA NAME 6B	
14 BLOCK NO 4671			19 BLOCK NO 4661	
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) 731,316.0			20 LATITUDE (☐ NAD 83 / ☒ NAD 27) 727 020 46	
16 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,040,254.4			21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,046,687.31	
LIST OF SIGNIFICANT MARKERS ANTICIPATED				
22 NAME Pico (1st gas)	23 TOP (MD) 2856	24 TOP (TVD) 2708	22 NAME	23 TOP (MD) 24 TOP (TVD)
M1	4926	3968		
M2	5911	4312		
25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate) Drill program includes design criteria for well, casing program, drilling prognosis, casing program, mud program, directional program and 123S - Supplemental APD information				
26 CONTACT NAME Jody Robins		27 CONTACT TELEPHONE NO 805-745-2153	28 CONTACT E-MAIL ADDRESS jody.robins@venoco-inc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Larry Huskins		30 TITLE Operations Manager		
31 AUTHORIZING SIGNATURE 		32 DATE 22-Feb-2012		
THIS SPACE FOR BSEE USE ONLY				
APPROVED ☒ With Attached Conditions ☐ Without Conditions		BY 		TITLE District MGR
API WELL NO ASSIGNED TO THIS WELL 043112080300		DATE 3-26-12		

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☒ NO ☐ N/A	This is the 28th well drilled with the same structural pipe set depth.
D) If requesting a waiver of the conductor casing, have you submitted a log to BSEE District Office that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	The 24", 13 3/8" and 9 5/8" casing program is the same as wells E-23, E-25 and E-26
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☒ YES ☐ NO ☐ N/A	
G) Is the calculated daily volume possible from an uncontrolled blowout of this well greater than the daily volume included in the worst case discharge scenario in the approved oil spill response plan?	☐ YES ☒ NO ☐ N/A	Approved field drilling rules.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name Venoco Inc				2) Well Name (Proposed) E-28 ST BP			
3) Bottom Hole Lease P-0209				4) Surface Lease P-0205			
5) API Number 043112080300				6) Type of Well ☐ Exploratory ☒ Development			
7) H ₂ S ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft) 4000'			
9) Rig Name Kenai 2				10) SubSea BOP ☐ Yes ☒ No			
11) Water Depth (ft) 739'		12) RKB Height (ft) 108'		13) Mineral Code			
14) Drive Pipe Size (in) 24"		15) Drive Pipe Depth (ft) N/A		16) Anchors ☐ Yes ☒ No			

17) Well Design Information																													
Interval Number: 1			Type: Conductor			Name:																							
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)																					
1	24"	186	X-56	3060		1450	1400/1400	662																					
<table border="1"> <tr> <th>GENERAL INFORMATION</th> <th>PREVENTER INFORMATION</th> <th>TEST INFORMATION</th> </tr> <tr> <td>Hole Size (in) 26</td> <td>Type N/A</td> <td>Annular Test (psi) N/A</td> </tr> <tr> <td>Mud Weight (ppg) 8.7</td> <td>Size (in)</td> <td>BOP/Diverter Test (psi)</td> </tr> <tr> <td>Mud Type Code</td> <td>Wellhead Rating (psi)</td> <td>Mud Test Weight (ppg)</td> </tr> <tr> <td>Frac Gradient (ppg) N/A</td> <td>Annular Rating (psi)</td> <td>Casing/Liner Test (psi) 200</td> </tr> <tr> <td>Liner Top Depth (ft)</td> <td>BOP/Diverter Rating (psi)</td> <td>Formation Test (ppg)</td> </tr> <tr> <td>Cement Volume (ft³) 1460'</td> <td></td> <td></td> </tr> </table>									GENERAL INFORMATION	PREVENTER INFORMATION	TEST INFORMATION	Hole Size (in) 26	Type N/A	Annular Test (psi) N/A	Mud Weight (ppg) 8.7	Size (in)	BOP/Diverter Test (psi)	Mud Type Code	Wellhead Rating (psi)	Mud Test Weight (ppg)	Frac Gradient (ppg) N/A	Annular Rating (psi)	Casing/Liner Test (psi) 200	Liner Top Depth (ft)	BOP/Diverter Rating (psi)	Formation Test (ppg)	Cement Volume (ft ³) 1460'		
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Liner Top Depth (ft)	BOP/Diverter Rating (psi)	Formation Test (ppg)																											
Cement Volume (ft ³) 1460'																													
Interval Number: 2			Type: Surface			Name:																							
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)																					
2	13 3/8"	61	K-55	3090		1540	2720/2608	8.5																					
<table border="1"> <tr> <th>GENERAL INFORMATION</th> <th>PREVENTER INFORMATION</th> <th>TEST INFORMATION</th> </tr> <tr> <td>Hole Size (in) 17 1/2"</td> <td>Type Diverter</td> <td>Annular Test (psi)</td> </tr> <tr> <td>Mud Weight (ppg) 9.1</td> <td>Size (in) 21 1/4"</td> <td>BOP/Diverter Test (psi) 200</td> </tr> <tr> <td>Mud Type Code</td> <td>Wellhead Rating (psi) 2K</td> <td>Mud Test Weight (ppg)</td> </tr> <tr> <td>Frac Gradient (ppg) 9.4</td> <td>Annular Rating (psi) 2K</td> <td>Casing/Liner Test (psi) 2150</td> </tr> <tr> <td>Liner Top Depth (ft)</td> <td>BOP/Diverter Rating (psi) 2K</td> <td>Formation Test (ppg) 11.0</td> </tr> <tr> <td>Cement Volume (ft³) 2242</td> <td></td> <td></td> </tr> </table>									GENERAL INFORMATION	PREVENTER INFORMATION	TEST INFORMATION	Hole Size (in) 17 1/2"	Type Diverter	Annular Test (psi)	Mud Weight (ppg) 9.1	Size (in) 21 1/4"	BOP/Diverter Test (psi) 200	Mud Type Code	Wellhead Rating (psi) 2K	Mud Test Weight (ppg)	Frac Gradient (ppg) 9.4	Annular Rating (psi) 2K	Casing/Liner Test (psi) 2150	Liner Top Depth (ft)	BOP/Diverter Rating (psi) 2K	Formation Test (ppg) 11.0	Cement Volume (ft ³) 2242		
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Liner Top Depth (ft)	BOP/Diverter Rating (psi) 2K	Formation Test (ppg) 11.0																											
Cement Volume (ft ³) 2242																													
Interval Number: 3			Type: Intermediate			Name:																							
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)																					
3	9 5/8"	43.5	L-80	6330		3810	4800/3892	8.5																					
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Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco Inc				2) Well Name (Proposed): E-28 ST BP			
3) Bottom Hole Lease: P-0209				4) Surface Lease: P-0205			
5) API Number: 043112080300				6) Type of Well: ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): 4000'			
9) Rig Name: Kenar 2				10) SubSea BOP: ☐ Yes ☒ No			
11) Water Depth (ft): 739'		12) RKB Height (ft): 108'		13) Mineral Code:			
14) Drive Pipe Size (in): 24"		15) Drive Pipe Depth (ft): N/A		16) Anchors: ☐ Yes ☒ No			

17) Well Design Information																													
Interval Number: 1			Type: Conductor			Name:																							
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)																					
1	24"	186	X-56	3060		1450	1400/1400	662																					
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Interval Number: 2			Type: Surface			Name:																							
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)																					
2	13 3/8"	61	K-55	3090		1540	2720/2608	8.5																					
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Interval Number: 3			Type: Intermediate			Name:																							
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)																					
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* NOTE* For additional casing/liner intervals, please submit an additional Form 0123S

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Supplemental APD Information Sheet (Casing Design)

1) Operator Name Venoco Inc				2) Well Name (Proposed) E-28 ST BP			
3) Bottom Hole Lease P-0209				4) Surface Lease P-0205			
5) API Number 043112080300				6) Type of Well ☐ Exploratory ☒ Development			
7) H ₂ S ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft) 4000'			
9) Rig Name Kenai 2				10) SubSea BOP ☐ Yes ☒ No			
11) Water Depth (ft) 739'				12) RKB Height (ft) 108'		13) Mineral Code	
14) Drive Pipe Size (in) 24"				15) Drive Pipe Depth (ft) N/A		16) Anchors ☐ Yes ☒ No	

17) Well Design Information							
Interval Number: 4		Type: Liner		Name: Production			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
4	7"	25	L-80	7240	5410	5540/4300	8.5
	5 1/2"	17	L-80	7740	6290	10594/4703	8.5

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in) 8 1/2"		Type Class III		Annular Test (psi) 2500	
Mud Weight (ppg) 9.1		Size (in) 13 5/8"		BOP/Diverter Test (psi) 2500	
Mud Type Code		Wellhead Rating (psi) 5K		Mud Test Weight (ppg)	
Frac Gradient (ppg) 11		Annular Rating (psi) 5K		Casing/Liner Test (psi) 2300	
Liner Top Depth (ft) 4550		BOP/Diverter Rating (psi) 5K		Formation Test (ppg) 11.0	
Cement Volume (ft ³) 0					

Interval Number:		Type:		Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
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Cement Volume (ft ³)					

Interval Number:		Type:		Name:			
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InterAct

February 21, 2012

Mr. Jody Robins
Drilling Engineer
Venoco Inc.
Ventura California

4567 Telephone Road
Suite 203
Ventura, CA 93003

T: +1 805 858 5600
F: +1 805 858 5605
www.interactprojects.com

Subject: **Venoco Inc. Platform Gail E-28 New Well Drilling Program Casing and Cementing Certification.**

Dear Jody:

In response to the requirements set forth in **The Code of Federal Regulations (CFR) Part 250- Oil and Gas and Sulphur Operations in The Outer Continental Shelf, Subpart A 250.420 What well casing and cementing requirements must I meet.** InterAct provides the following verification for the Venoco Inc. Platform Gail E-28 New Well Drilling Program:

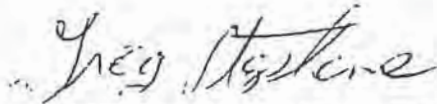
I do hereby verify that:

The Venoco, Inc. Platform Gail E-28 New Well Drilling Program (February 14, 2012) provides two independent tested barriers, including one mechanical barrier, across each flow path during the well completion activities.

Furthermore, I verify that:

The casing and cementing design of the Platform Gail E-27 New Well Drilling Program is appropriate for the expected wellbore conditions.

Sincerely,



Greg Stephens P.E. (California P 1377)

Attachment: InterAct Statement of Qualifications

InterAct Statement of Qualifications

InterAct Offers a broad range of professional engineering and project management services to the international oil and gas industry. InterAct assists operators at every stage of the field life cycle, from development through the production phase to facilities decommissioning and abandonment, both on and offshore. Key Services by InterAct are:

Drilling and production services

- Abandonment services (subsea well)
- Activity management Facility decommissioning and abandonment
- Field development concept studies
- Permitting and environmental services
- Subsea installation and intervention
- Drilling and Production Services

InterAct drilling engineers work closely with clients' geologists and reservoir engineers to prepare cost effective well designs that ensure maximum productivity. We have successfully designed and managed drilling projects for horizontal and extended reach wells, deepwater subsea wells, reservoirs with complex geological formations, and wells in urban areas. Our portfolio of services includes:

- Drilling and completion designs
- Directional design
- Testing work over and stimulation programs
- Artificial lift design and optimization
- Drilling and production services
- Rig and equipment sizing, contracting and procurement
- Well and drill site permitting
- Wellbore review and management of slot recovery programs

Website: www.interactprojects.com

Experience and Summary of Greg Stephens

Mr. Stephens is a California registered professional engineer (P-1377) with 30 years of experience with major international oil companies. Mr. Stephens' experience includes staff assignments in drilling and production operations, including the Santa Barbara Channel and senior level assignments in Operations, Project Management, Business Development / Acquisitions, and Corporate Governance for domestic and international ventures.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-28 NEW WELL DRILLING PROGRAM
API# 04-311- 2080300
LEASE OCS-P-0209

February 22, 2012

Attachment to BSEE Permit - Drilling Program

Objective: Drill development well E-28 and complete it as a horizontal well in the Monterey "M-2" Formation. Well TDs in OCS-P- 0209 Lease.

Surface Location: OCS-P-205 - Slot No. 25 (X= 1,046,687.31' & Y= 727,020.46')

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Proposed TD: OCS-P-209, 10,593.78' MD/4703' TVD

TD Location: 4295.34' N and 6433.01' W or (X = 1,040,254.00' and Y = 731,316.00')

Markers:	MD	TVD	VSS	Press	EMW	Comments
13 3/8" Casing	2720	2608	-2500			
Pico - 1 st Gas	2856	2708	-2600	1173	8.5	Estimated BHP
9 5/8" Casing	4800	3892	-3784			
Monterey M1	4926	3968	-3860	1718	8.5	Estimated BHP
Monterey M2	5911	4312	-4204	1867	8.5	Estimated BHP
TD	10,594	4703	-4595	2031	8.5	Estimated BHP

<u>Proposed Casing:</u>	<u>MD</u>	<u>TVD</u>
24", 186# (.75" Wall), X-56, DrilQuip S-60	1400'	1400'
13 3/8", 61#, K-55, Buttress	2720'	2608'
9 5/8", 43.5#, L-80, LT&C	4800'	3892'
7" 26#, L-80, FlushMax x	TOL 4550'	3712'
5 1/2", 17#, L-80, GeoConn	BOL 10,594'	4703'

NOTE: 7" will be run from 4550 – 5540, 5 1/2" from 5540 – TD
5 1/2" casing will be pre-perforated

26" Hole Section

1. Move rig over slot #25. Install ESD station on rig floor or driller's console.
2. M/U 26" bit and BHA with Gyro MWD tool.
3. Drill a riserless 26" hole from the ocean floor to +/-1420' (573' penetration).
 - Hole should be drilled at 75 to 100 fph rate unless WOB indicates rock is firm
 - Pump Durogel sweeps prior to each connection
 - Run a drift shot with MWD after passing through the last guide funnel before commencing to ensure the drill pipe did not get outside the guide buckets
 - Make drift checks every connection with MWD to ensure straight hole
 - Drill the hole to fit the pipe plus 20' of rat hole
 - Review NPDES and perform all required sampling, testing and monitoring. Fill out discharge sheet daily. Mud volumes and cuttings must be accounted for and reported while drilling the riserless hole section. Report any spills immediately.
4. Circulate hole clean to mud line with seawater/50 bbl sweep at as high a rate as possible. Spot a 100+ viscosity pre-hydrated gel pill across the open hole. POOH.
5. Run 24" casing with Dril-Quip rep on location:
 - Rig up spider bowl and hand slips, 250 ton side door elevator, & power tong
 - R/U casing fill-up line. Be ready to wash down casing if necessary – 24" circulating swage is required. Test fit head prior to spud well.
 - P/U 41' joint with float shoe installed.
 - Run remaining 24" range 3, 75" wall X-56 casing with Dril-Quip S-60 connections
 - No centralizers will be run.
 - Install two anti-rotation keys per joint.
 - Pump through each joint to check the shoe floats
 - Use the crane to tail each joint to the rig floor
 - Fill joints with calculated amount of seawater.
 - P/U splash zone joint that is coated with Carboline 1207. Do not fill this joint.
 - P/U wellhead joint. This joint is coated with white System IV to prevent corrosion. Do not fill this joint.
 - Calculate approximate cut-off point of the wellhead joint and grind seam weld off of 24" casing to allow cutter and slip-lok starting wellhead to function – this should be done on the deck.
 - Land the casing with splash zone joint positioned +/- midway at MLLW. Do not fill.
6. P/U Weatherford slotted base plate designed to fit on top of the 24" with 5" bowl and slips.
7. M/U stab-in cement stinger on 5" drill pipe and TIH. Place centralizers on the bottom joint and the third joint. Space out to get as close to the rig floor as possible.
8. Stab into the shoe and rig up BJ cement line. Leave enough slack to unsting from the shoe to dump cement on top of float shoe at end of job.

9. Pump 200+ bbl of seawater at high rate to clean the annulus and verify stinger is in place
10. Cement 24" structural pipe as per program (use 32" hole for volume calculation and no OHE). Bring cement back to the ocean floor, leaving 20 bbls in drill string. Unsting from shoe and dump cement leaving TOC +/- 40' above the shoe. Break off cement line
11. Pull out of the hole with one stand. Pump wiper ball through the drill pipe to clear any residual cement from the string. POOH.
12. Wait on cement until the cement develops 500 psi compressive strength. P/U pipe to check cement bond. If the pipe slips in the rathole, wait on cement an additional 4 hours and repeat test before releasing casing.
13. Once 24" conductor is fully supported by cement, rig up casing cutter. Cut casing at +/- 63" above the wellhead deck. Lay down cut-off and landing joint
14. Nipple up and pressure test the diverter riser assembly as follows:
 - 20-3/4" 3M X 21-1/4" 2M DSA.
 - 6' X 21-1/4" 2M X 21-1/4" 2M spool.
 - 20' X 21-1/4" 2M X 21-1/4" 2M spool.
 - 2' X 21-1/4" 2M X 21-1/4" 2M diverter spool.
 - 4.375' X 21-1/4" 2M Hydril.
 - Bell nipple.
15. Install the diverter lines as per the attached schematic. The final adjustments on the diverter line stands will be made at this time.
 - **DIVERTER VALVE INSTALLATION:** Depending on availability, Venoco will either use 8" hydraulically controlled ball valves or 9" hydraulically controlled single gate shear rams for the outboard valve locations. The main valve located at the Tee under the annular will be an 8" ball valve as in previous installations.
 - **DIVERTER TESTING:** Follow BSEE regulations for pressure testing, flow testing of vent lines and actuation of the diverter system. Diverter to be flow tested at initial installation. Pressure test to 200 psi and within 7 days of previous test if still in use. Actuate once every 24 hrs and alternate stations for actuation and tests. Plan initial pressure test against the casing and cement in the shoe. If casing does not test or if follow up tests are required plan to use Cameron supplied test plug.
 - All pressure test, flow test, and actuation results shall be recorded on IADC reports
 - Perform diverter drill with each crew on tour while drilling section.

17-1/2" Hole Section

1. Install wear bushing. M/U 17-1/2" bit and directional drilling BHA (steerable assembly with gyro MWD). Run in the hole and tag top of cement. Note depth.
2. Pressure test, function test and flow test the diverter system per BSEE regulations. Pressure test the diverter and casing to 200 psi. Flow test the diverter with seawater. Subsequent flow tests are not required, but actuation test is required daily at alternating stations and pressure test every 7 days at alternating station.

- Take gyro shots while TIH to confirm bottom hole location.
3. Drill out cement with seawater. Circulate out cement and change the well over to mud. Shut off pumps. Monitor the well to confirm the fluid level is static.
 4. Directional drill 17 1/2" hole to the 13 3/8" casing point at 2720' MD / 2608' TVD as per directional plan
 - Perform and log Diverter tests on tour sheet per BSEE regulations
 - Use spider plot and anti-collision plot to monitor proximity. Continue to gyro survey until MWD surveys confirm free of interference.
 - Control drill with low mud weight to keep from losing returns. Historically mud weights over 9.1 ppg have led to losses. LCM pill should be ready in pill pit.
 - Overboard dump and dilution of mud and cuttings will be required in this hole section to maintain low mud weight. Prior to drilling, sample the mud mixed for drilling this section and send to lab for base line test. Follow all NPDES requirements for measurement, monitoring and reporting prior to dumping
 5. Circulate and condition mud for casing and POOH
 6. Rig up and run 13-3/8" casing string to +/- 2720' as follows
 - Float shoe, 2 jts 13-3/8" 61# K-55 Buttress casing, Float collar, 13-3/8" 61# K-55 Buttress to surface
 - Fill pipe while running
 - Ensure there is a swage with safety valve on rig floor (function for BSEE)
 - Baker-Lock the first four joints. Pump through float equipment to check
 - Centralize the casing with centralizers in the middle of the two shoe joints then every third joint back to the mud line (+/- 850') and every 5th joint inside the 24" casing. Do not run centralizer on top three joints below wellhead.
 - Circulate and reciprocate pipe until hole cleans up.
 7. Cement 13-3/8" per the attached cement program.
 - Displace cement with mud
 - The last 20 bbls should be seawater for pending casing cut.
 - Reciprocate the casing while cementing and displacing the cement job.
 - Bump plug with 1000 psi over final circulating pressure.
 - Bleed off pressure and check floats.
 8. Wait on cement until cement passes transition time per cement tests. Monitor annulus and casing for losses. Ensure well is static and it is safe to remove the diverter.
 - Rig down cement head and lines.
 - Drain the diverter and flush with seawater
 - Nipple down DSA and pick up the diverter system.
 - Install and set 13-3/8" casing slips.
 - Cut 13 3/8" pneumatic saw. Lay down extra joint and cut-off piece.
 - Nipple down diverter system and offload
 - Install casing head, 20-3/4", 3k x 13-5/8", 5k, per Cameron procedure.
 - Test the void/seals to 1078 psi (70% collapse of 13-3/8" 61# K-55 casing).

- Install riser and nipple up the 13 5/8", 5M BOPE with annular preventer, 2 7/8" X 5" VBR in top ram, blind shear rams, and 5" pipe rams in lower set of rams.
- Set test plug and test BOP per BSEE regs to 250/2500 ps. Pull test plug
- Install wear bushing.

12-1/4" Hole Section

1. M/U 12-1/4" bit and directional BHA. Drill out to within 30' of the 13 3/8" casing shoe. Test the casing to 2150 psi (70% of burst of 13 3/8" 61# K-55) for 30 minutes and chart.
2. Drill out shoe and 10' of new formation. Rig up cement unit and perform FIT to 11.0 ppg
3. Drill 12-1/4" hole to 9 5/8" casing point of +/-4800' MD/3892' TVD as per directional plan.
 - Overboard discharge will not be allowed in this hole section.
 - Perform and log BOP tests (2 weeks) on tour sheet per BSEE regulations. Perform and document all weekly BOP/H2S drills and all items on BSEE checklist. Fill out NPDES monitoring information daily.
 - H2S is present in this hole section. Rig up H2S equipment per BSEE approved H2S and SO2 Contingency Plan. Safety company should calibrate monitors every 12 hours and document on tour sheets. H2S drills should continue throughout operations.
 - MWD/GR will be run through this section of the hole to assist in correlation.
 - Perform flow checks and circulate bottoms up as necessary.
 - Keep fluid loss low in mud to reduce swelling/swabbing in the clay formation.
 - Make wiper trips as necessary to keep hole in good shape.
 - Notify engineer if losses occur. All LCM material to be acid soluble.
4. Short trip to shoe and back to TD. Circulate and condition the hole for logs. POOH
5. RU logging unit. Run open hole logs per attached logging program.
6. RIH with hole opener BHA after logging and condition the hole for 9 5/8" casing. POOH and rig up casing crew. Pull the wear bushing.
7. Run 9 5/8", 43.5#, L-80, LT&C casing to +/-4800' as follows:
 - Davis Lynch Auto Fill Float shoe
 - 2 joints 9-5/8" 43.5# L80 LTC
 - Davis Lynch Auto Fill Float collar
 - 9-5/8" 43.5# L80 LTC to surface
8. While running casing:
 - Ensure swage with safety valve on rig floor. Function and note for BSEE on tour sheets.
 - XO to fit the safety valve and all casing threads
 - Baker-Lock the first four joints
 - Pump through float equipment to check. Fill pipe while RIH
 - Centralize the casing with centralizers in the middle of the two shoe joints then every joint into the 13-3/8" shoe, then every 5th joint to the mud line (+/- 850').

9. Circulate and reciprocate pipe until hole cleans up.
10. Cement the 9 5/8" casing per the attached cementing program.
 - Reciprocate the casing while cementing and displacing the cement job
 - Displace cement with the cement unit using mud.
 - Bump plug with 1000 psi over final circulating pressure.
 - Bleed off pressure and check floats
11. Wait on cement until cement passes transition time per cement tests. Monitor annulus and casing for losses.
 - After WOC pressure test annulus to 800 psi and ensure annulus is static
 - Drain the BOP stack and flush with seawater (casing head valve).
 - Nipple down the 13-5/8" riser spool (4') and pick up the BOP
 - Install the 9 5/8" by 13 3/8" Cameron casing slips
 - Cut 9 5/8" casing with pneumatic saw. Lay down extra joint and cut off.
 - Remove 13-5/8" riser spacer spool.
 - Install Cameron tubing spool (13-5/8", 5k x 11", 5k)
 - Pressure test the void/seals to 2667 psi (70% collapse of 9-5/8" 43.5# L-80).
 - Install DSA (11" 5k x 13-5/8" 5k) on top of tubing spool. Nipple up 13 5/8", 5M BOPE
12. Set test plug and test BOP against 5" to 250/2500 psi per BSEE regulations and chart. Pull test plug. Install the wear bushing

8-1/2" Hole Section

1. M/U 8-1/2" bit and directional BHA. Drill out to within 30' of the 9 5/8" casing shoe. Test the casing to 2500 PSI for 30 minutes and chart.
2. Drill out shoe and 10' of new formation. Rig up cement unit and perform FIT to 11.0 ppg
13. Drill 8-1/2" horizontal hole to TD of 10,593' MD/4703' TVD as per directional plan.
 - Overboard discharge will not be allowed in this hole section.
 - Cut 30' core at +/-5090' MD and a 60' core at +/-5330' MD.
 - Perform and log BOP tests (2 weeks) on tour sheet per BSEE regulations. Perform and document all weekly BOP/H2S drills and all items on BSEE checklist. Fill out NPDES monitoring information daily.
 - H2S is present in this hole section. Safety company should calibrate H2S monitors every 12 hours and document on tour sheets. H2S drills should continue throughout operations
 - MWD/GR will be run in this hole section
 - Perform flow checks and circulate bottoms up as necessary
 - Keep fluid loss low in mud to reduce swelling/swabbing in the clay formation.
 - Make wiper trips as necessary to keep hole in good shape
 - As this is a horizontal hole section, circulating should be 3-4 BU or until mud is clean
 - Notify engineer if losses occur. All LCM material to be acid soluble.
14. Short trip to shoe and back to TD. Circulate and condition the hole 3-4 x BU for logs. POOH

15. Run in with Weatherford tubing-conveyed logging tools and log lateral. POOH.
16. RIH with clean-out BHA and condition the hole for casing. POOH
17. Rig up casing crew and pull the wear bushing.
18. Run 7", 26#, L-80 FlushMax x 5 1/2", 17#, L-80, GeoConn casing from +/-10,594' to 4550' as follows:
 - 9 5/8" x 7" Liner Hanger to be set at +/- 4550' MD
 - 7" run from liner hanger to 5540', 5 1/2" run from 5540' to TD
 - One swell packer will be set near the top of the M2
 - Spacing of packers and slotted joints to be determined from logs
 - Run liner on drill pipe and with HWDP spaced out as needed per torque and drag prediction program and if hole conditions dictate to push liner to bottom.
 - Run centralizers above and below each swell packer
 - Run in the hole slowly to avoid surging the formation.
 - A circulating swage with a safety valve will be on the rig floor.
19. Run the liner in the hole to +/-10,594'. Circulate the well until the returns are clean. Drop the setting ball and set the liner hanger and packer. Release running tool from liner hanger.
20. After setting liner hanger packer, the liner top packer and 9 5/8" casing will be pressure tested to 2800 psi (Frac Gradient + 500 psi) for 30 minutes.
21. Displace WBM to seawater. POOH with running tools
22. RIH with 7" test packer and set at 5500'. Test casing and liner lap above packer to 2300 psi for 30 minutes. POOH.

Completion Procedure

NOTE: Install a 2 1/16" 5M casing valve with a 1502 tee and pressure gauge, a check valve and high pressure hose connection below the tubing hanger. Test to 2500/250 psi for 5 minutes. It will be used to pump seawater into the well to control the well.

NOTE: BOPE testing to continue on 14 day frequency through the completion that is approved as part of the APD.

1. The well will be a single horizontal completion in the Monterey "M-2" (see attached Proposed Completion Diagram).
2. RIH with 4 3/4" bit to TD. Displace well to seawater. Acidize lateral per plan. Acid plan will be developed with log results. POOH
3. Pick up the completion equipment in following order:
 - Wireline entry guide
 - 2 7/8" Baker 'BXN' seating nipple

15. Run in with Weatherford tubing-conveyed logging tools and log lateral. POOH.
16. RIH with clean-out BHA and condition the hole for casing. POOH
17. Rig up casing crew and pull the wear bushing.
18. Run 7", 26#, L-80 FlushMax x 5 1/2", 17#, L-80, GeoConn casing from +/-10,594' to 4550' as follows:
 - 9 5/8" x 7" Liner Hanger to be set at +/- 4550' MD
 - 7" run from liner hanger to 5540', 5 1/2" run from 5540' to TD
 - One swell packer will be set near the top of the M2
 - Spacing of packers and slotted joints to be determined from logs
 - Run liner on drill pipe and with HWDP spaced out as needed per torque and drag prediction program and if hole conditions dictate to push liner to bottom.
 - Run centralizers above and below each swell packer
 - Run in the hole slowly to avoid surging the formation.
 - A circulating swage with a safety valve will be on the rig floor.
19. Run the liner in the hole to +/-10,594'. Circulate the well until the returns are clean. Drop the setting ball and set the liner hanger and packer. Release running tool from liner hanger.
20. After setting liner hanger packer, the liner top packer and 9 5/8" casing will be pressure tested to 2300 psi for 30 minutes.
21. Displace WBM to seawater. POOH with running tools
22. RIH with 7" test packer and set at 5500'. Test casing and liner lap above packer to 2300 psi for 30 minutes. POOH.

Completion Procedure

NOTE: Install a 2 1/16" 5M casing valve with a 1502 tee and pressure gauge, a check valve and high pressure hose connection below the tubing hanger. Test to 2500/250 psi for 5 minutes. It will be used to pump seawater into the well to control the well.

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1. The well will be a single horizontal completion in the Monterey "M-2" (see attached Proposed Completion Diagram).
2. RIH with 4 3/4" bit to TD. Displace well to seawater. Acidize lateral per plan. Acid plan will be developed with log results. POOH
3. Pick up the completion equipment in following order:
 - Wireline entry guide
 - 2 7/8" Baker 'BXN' seating nipple

- 1 joint of 2 7/8" EUE 8rd Tubing
 - 2 7/8" Baker 'BX' seating nipple
 - 1 joints of 2 7/8" EUE 8rd Tubing
 - Baker 7" HS Packer w/ 6' pup joints made up to the top and bottom of the packer
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" GLM with live valve run in place
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" GLM with live valve run in place
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" Baker TE-5 TRSSSV
 - XX joints of 2 7/8" EUE 8rd Tubing
 - Cameron Tubing Hanger
4. After pick up TRSSSV, install control line and pressure test to 7000 psi. Run in hole with tubing and control line banding the line to the tubing with 2 bands per joint. Run in to landing depth, pick up and install Cameron tubing hanger and install control line and pressure test to 7000 psi. Pump XX bbls packer fluid and place from packer set depth to above the bottom GLM. Get up and down weight prior to landing. Follow Cameron procedure for landing tubing hanger. At no time will hanger hold down pin be removed. Pressure test tubing hanger void.
 5. After tubing hanger is landed and tested, RU slickline and set tbg plug in XN nipple.
 6. Pressure up tubing to 3000 psi in 500 psi increments to set the HS packer and hold 3000 psi on tubing for 15 minutes. Slowly bleed pressure off of tubing.
 7. Bleed off control line pressure to close TRSSSV
 8. Pressure up on annulus and pressure test the packer, annulus, tubing plug, and TRSSSV to 1000 psi. Bleed pressure off of annulus (Note: live gas lift valves will be run)
 9. Pressure up tubing to 1100psi and open TRSSSV to release pressure trapped b/w TRSSSV and tubing plug. Close TRSSSV.
- NOTE:** Tubing plug and TRSSSV will constitute our 2 tested barriers.
10. Install BPV into tubing hanger. ND BOPE and NU Cameron 3 1/2" tree with adapter. Install blanking plug and pressure test bonnet void and tree to 3000 psi. Remove blanking plug.
 11. Release rig and turn well over to production.

Requested Waivers

- 1) Sec 250.423 (a) (3): Test production casing to a minimum test pressure of 70% of minimum internal yield

Request: Test production casing to the maximum anticipated surface pressure (MASP) that the string will be subject to. (Note: Casing is designed so that the MASP is less than 70% of the rated casing burst pressure.)

- 2) Sec 250.448 (b): BOP high-pressure tests

Request: Revise the high-pressure test for ram-type BOP's, annular type BOP's, the choke manifold, and other BOP components to be 500 psi greater than the calculated MASP for the applicable section of hole as indicated in the APD.

- 3) Sec 250.431(a): 10" Diverter

Request: As per the Gail field drilling rules, a variance to use an 8" diverter system instead of a 10" system. The 8" system has been in place and used previously for all 27 wells drilled from the platform without incident.

Other Data

Please see the E-4ST5 APD for the following material:

- BSR shear test data and calculations
- Detailed choke manifold schematics
- BOP control schematics

Requested Waivers

- 1) Sec 250.423 (a) (3): Test production casing to a minimum test pressure of 70% of minimum internal yield

Request: Test production casing to the maximum anticipated surface pressure (MASP) that the string will be subject to. (Note: Casing is designed so that the MASP is less than 70% of the rated casing burst pressure.)

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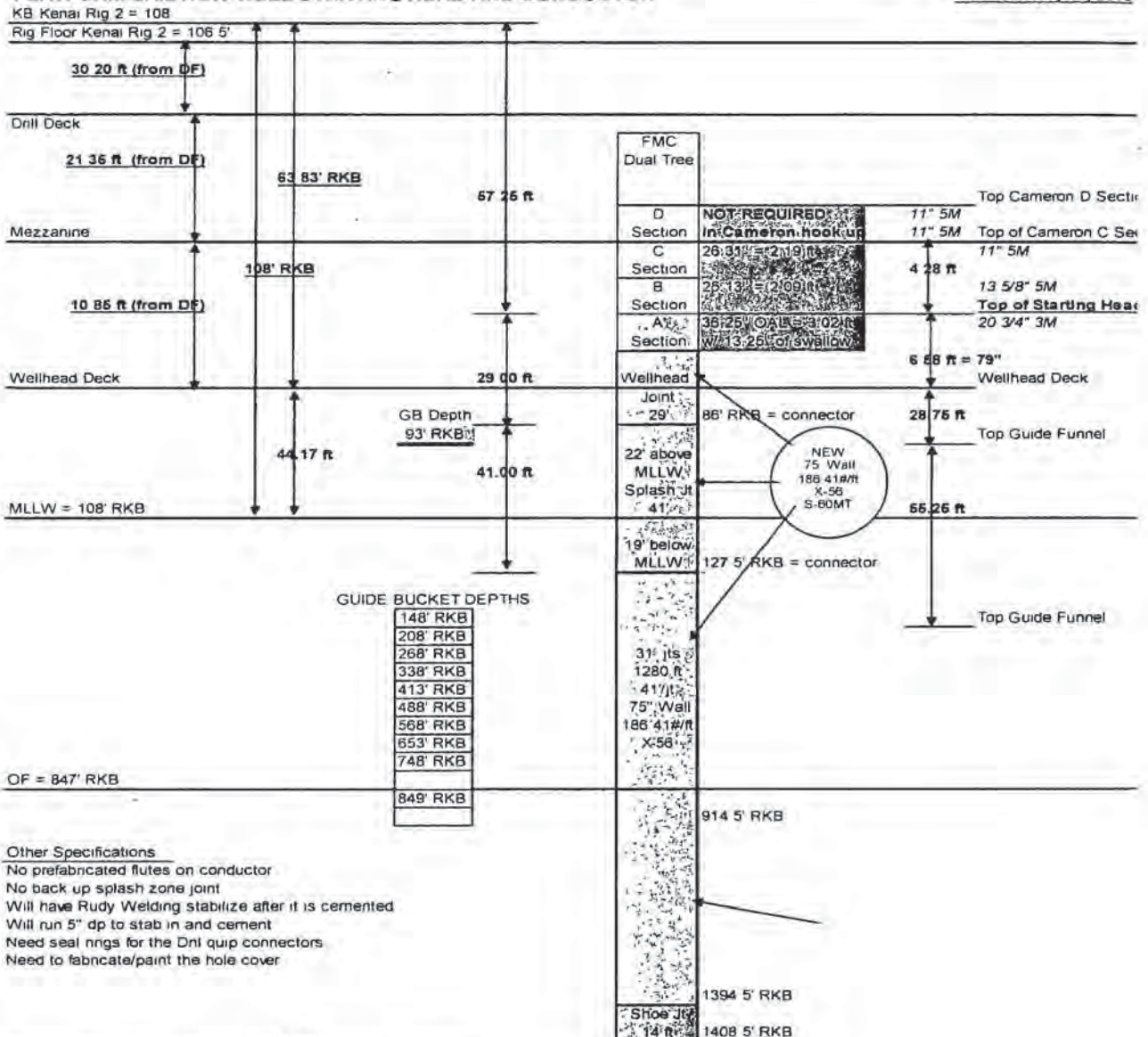
Other Data

Please see the E-4ST5 APD for the following material:

- BSR shear test data and calculations
- Detailed choke manifold schematics
- BOP control schematics

PLATFORM GAIL NEW WELL STARTING HEAD AND CONDUCTOR

REV January 12, 2010



Other Specifications

- No prefabricated flutes on conductor
- No back up splash zone joint
- Will have Rudy Welding stabilize after it is cemented
- Will run 5" dp to stab in and cement
- Need seal rings for the Dri quip connectors
- Need to fabricate/paint the hole cover

Notes on Materials and Welding and Specifications

- Splash Zone Joint to have Carboline 1207
- Wellhead Joint to have System 4 as defined by the SP-80-2 "Protective Coatings and Painting Specification"

Guide Buckets	
Below MLLW	
Divecon Depths	108 OF to MLLW
15	-93
-40	-148
-100	-208
-160	-268
-230	-338
-305	-413
-380	-488
-460	-568
-545	-653
-640	-748

Vertical to 1000'
 Max Angle: 90 deg @ 1000'
 D.F. Elevator: 107'
 D.F. to Tubing Head: 1000'
 Water Depth: 738'
 Wellhead: Cameron
 Tree: Cameron

SOCKEYE FIELD **WELL E-28** Lease: OCS-P-0209 **Single Completion M2 Producer**

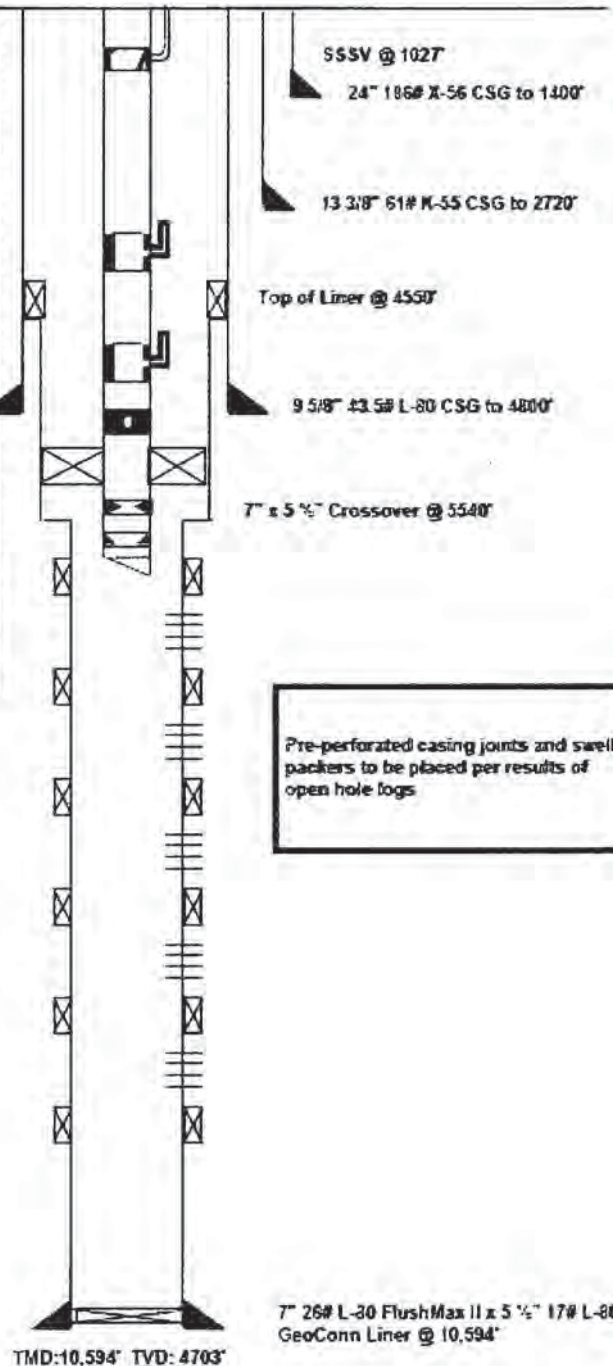
Drawing Revision 2/14/2012 JCR

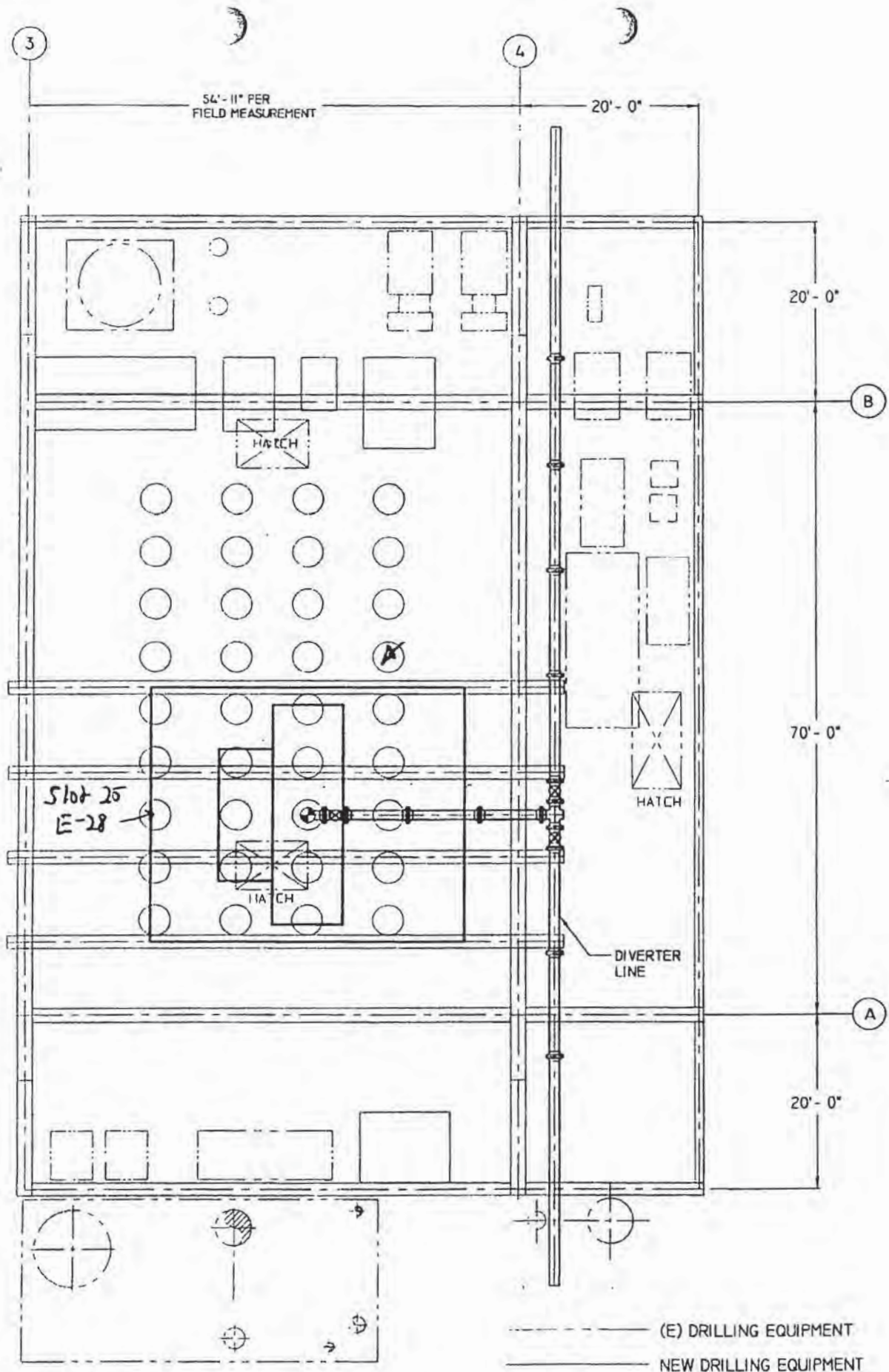
Completion Date

Description	ID	LENGTH	DEPTH
RFKB		51.80	0
Cameron Tubing Hanger		0.75	51.80
2-7/8" 5.5# L-80 eue 5rd pop joint	2.411	2.55	52.55
3x Joints 2-7/8" 5.5# L-80 eue 5rd bbg	2.411	954.72	56.10
2-7/8" 5.5# L-80 eue 5rd pop joint	2.411	5.97	1026.82
Baker 2-7/8" TE-5 FRSSSV	2.513	5.19	1036.79
2-7/8" 5.5# L-80 eue 5rd pop joint	2.411	4.03	1039.98
1x Joints 2-7/8" 5.5# L-80 eue 5rd bbg	2.411	3002.00	1036.01
2-7/8" 5.5# L-80 eue 5rd pop joint	2.411	4.10	1236.01
BST GLMA-1 Mandrel	2.411	7.33	1240.11
2-7/8" 5.5# L-80 eue 5rd pop joint	2.411	2.69	1247.44
1x Joints 2-7/8" 5.5# L-80 eue 5rd bbg	2.411	1200.00	1251.13
2-7/8" 5.5# L-80 eue 5rd pop joint	2.411	4.09	1451.13
BST GLMA-1 Mandrel	2.411	7.31	1455.22
2-7/8" 5.5# L-80 eue 5rd pop joint	2.411	2.68	1458.63
1 joint 2-7/8" 5.5# L-80 eue 5rd bbg	2.411	31.00	1466.21
Baker CMD Sliding Sleeve	2.513	4.00	1469.21
2-7/8" 5.5# L-80 eue 5rd pop joint	2.411	2.04	1469.21
Baker 7" HS Hydraulic Packoff	2.591	5.69	1469.25
2-7/8" 5.5# L-80 eue 5rd pop joint	2.411	4.03	1469.14
1 joint 2-7/8" 5.5# L-80 eue 5rd bbg	2.411	31.43	1469.17
2-7/8" 5.5# L-80 eue 5rd pop joint	2.411	4.00	1469.60
2-7/8" BX Nipple	2.315	1.15	1469.60
1 Joints 2-7/8" 5.5# L-80 eue 5rd bbg	2.411	31.00	1469.75
2-7/8" BXN Nipple	2.205	1.15	1469.75
2-7/8" 5.5# L-80 eue 5rd pop joint	2.411	5.12	1469.90
Wireline re-entry guide	2.411	2.38	1469.02
Tubing Tail			1469.40

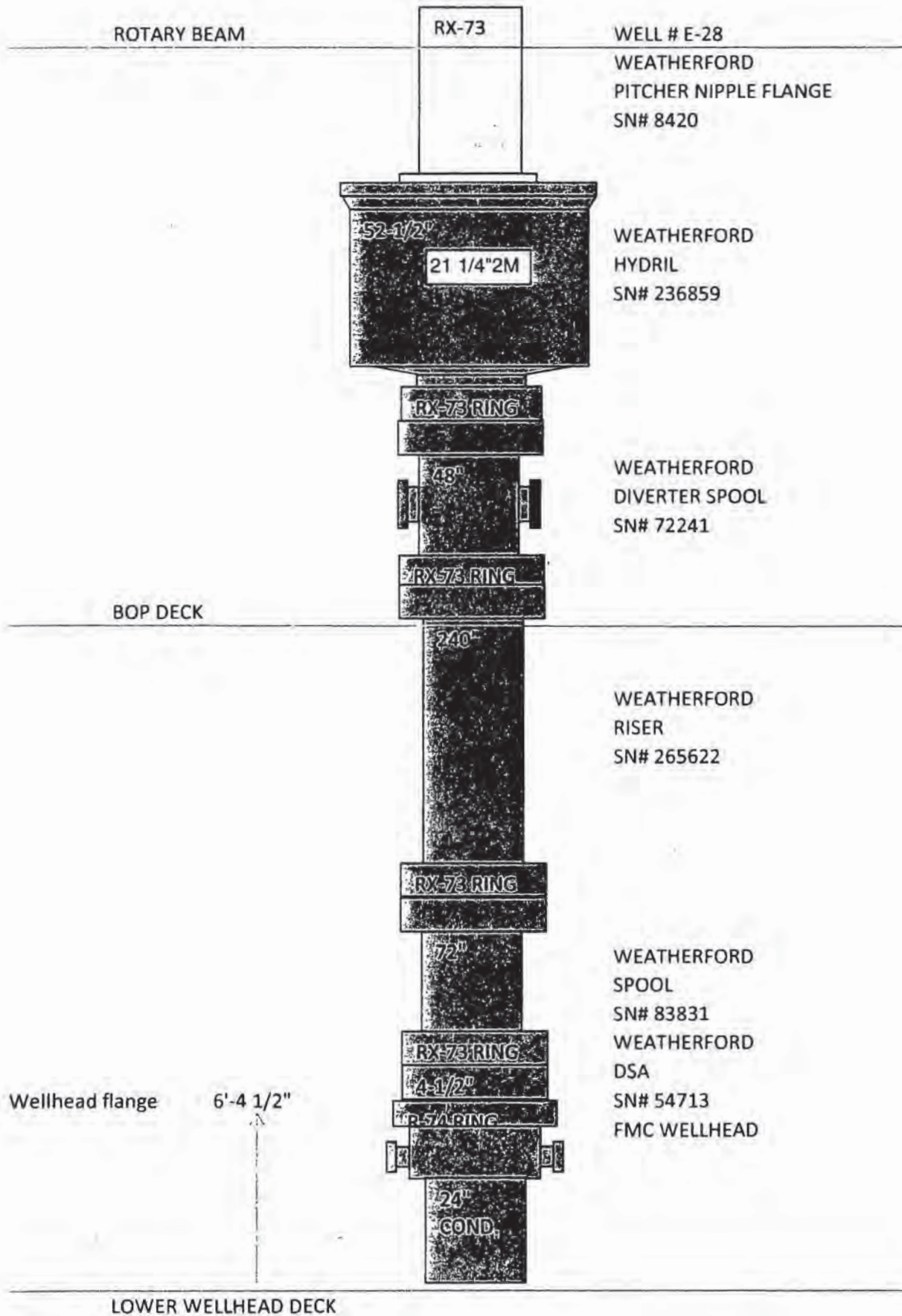
Formation Tops

M1 XXXX
 M2 XXXX
 TD XXXX

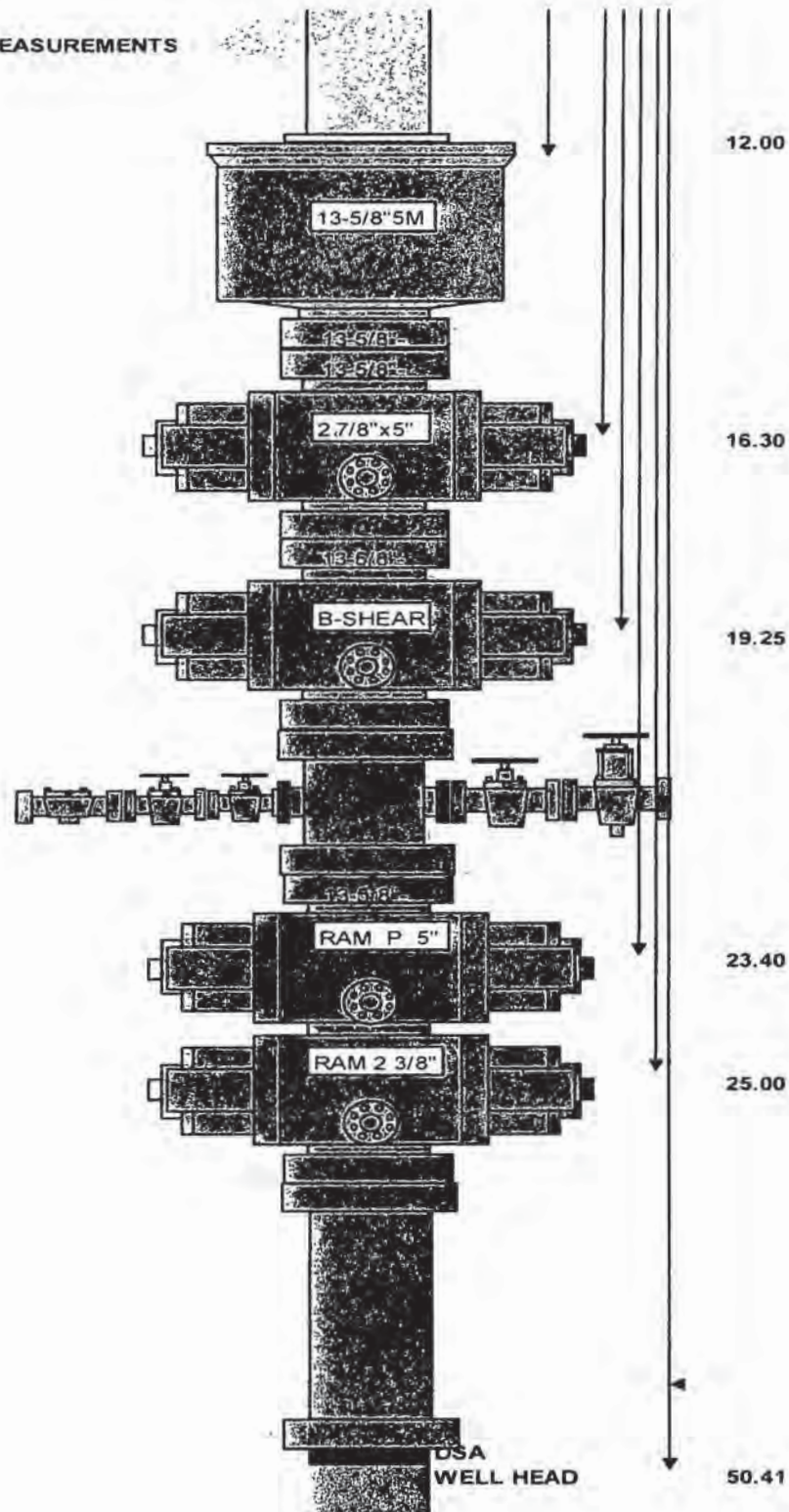




DIVERTER LINE LAYOUT
 PLATFORM GAIL MAIN DECK PLAN
 N.O.S. = 76'-6"



**KENAI BOPE
RIG FLOOR MEASUREMENTS**



EVALUATION PROGRAM

1) MUD LOGGING

12 1/4" Hole Section – Continuous mud logging shall be performed from drilling out the shoe of the 13 3/8" casing to total depth. Collect dry samples at 30' intervals.

2) **CORING** – one 30' core to be cut at +/-5090' md and one 60' core at +/-5330' md

3) LOGGING WHILE DRILLING

12 1/4" Hole Section – MWD/GR

8 1/2" Hole Section – MWD/GR/Rhob to 5360' (for picking core points). MWD/GR from 5360' to TD

4) ELECTRIC LOGGING

12 1/4" Hole Section - None

12 1/4" Hole Section

Run #1 – Triple Combo/CMI

Run #2 – Dipole Sonic

Notify Geologist to witness all logs.
Primary Geologist: Monica Carlsen
805-745-2115 office
805-448-5622 cell

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP
Seafloor-1,400' (26" hole)	SW/Gel/Durogel Sweeps	8.6 - 8.9	<20	8.5-9.5	20-35
1400'-2720' (17-1/2" hole)	SW/Gel/Gelite/Polypac	8.7 - 9.1	<8	8.5-9.0	18-30
2720'-4800' (12-1/4" hole)	UltraDril WBM	8.7 - 9.8	<6	8.0-9.5	18-25
4377'-10,594' (8-1/2" hole)	UltraDril WBM	8.7 - 9.5	<6	8.0-9.5	18-25

Sea Floor -1400'

This interval will be drilled with seawater/Durogel high viscosity sweeps with returns to the sea floor. Build seawater/Durogel sweeps with PV:YP ratio of 1:4+ using high rate of dispersion. Add Soda Ash after Durogel is dispersed to extend viscosity. It is imperative to make sure the hole is clean and stable to get the casing to bottom.

1400'-2720'

The objective in this interval is to drill a 17 1/2" hole from the 24" casing shoe to 2720' and run 13 3/8" casing. The fluid system recommended is a Seawater/Gel/Gelite/Polypac system. It is planned to ocean discharge the 17 1/2" hole section per the approved NPDES Permit.

2720'-4800'

The objective in this interval is to drill an 12 1/4" hole from the 13 3/8" casing shoe to 6820' and run 9 5/8" casing. The fluid system recommended is MI's UltraDril system. There will be no overboard discharge in this hole section.

4800'-10,594'

The objective in this interval is to drill an 8 1/2" hole from the 9 5/8" shoe to 10,594' and run a 7" x 5 1/2" liner from 10,594' to 4550'. The fluid system recommended is MI's UltraDril system. There will be no overboard discharge in this hole section.

Notes:

- 1) Operate solids control equipment to maintain drill solids as low as possible.
- 2) **Maintain 2 bbls of ZnO₂** onboard to treat out H₂S. 2 bbls can treat 1040 bbls of mud.
- 3) A minimum of **500 sx** of barite shall be kept on the platform at all times to raise the mud weight 0.5 ppg

Hydrogen Sulfide Considerations:

Both the Monterey, Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the BSEE approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	24"	13 3/8"	9 5/8"	7"	5 1/2"
2	Setting Depth (feet - TVD)	1400	2608	3892	4300	4703
3	Expected Leak Off Test EMW at shoe (ppg)	9.4	11	11.3	11.5	11.5
4	Depth of next Casing (feet - TVD)	2608	3892	3892	4703	4703
5	Maximum Expected Formation Pressure (psi)	1153	1720	1720	2079	2079
6	Expected Mud Weight (ppg)	9.1	9.4	9.4	9.4	9.4
7	Formation Equivalent Mud Weight (ppg)	8.5	8.5	8.5	8.5	8.5
8	Expected Hydrostatic Pressure at TD (psi)	1234	1902	1902	2299	2299
9	Amount of Overbalance at TD (psi)	81	182	182	220	220
10	Fracture Gradient at shoe (psi/ft)	Diverter	0.57	0.59	0.60	0.60
11	Fracture Pressure at shoe (psi)	Diverter	1492	2287	2571	2812
12	Hydrostatic Pressure at shoe (psi)	662	1275	1902	2102	2299
13	Margin between Mud Weight and LOT (psi)	Diverter	217	385	470	514

Maximum Anticipated Surface Pressures

1	Casing Size (in)	24"	13 3/8"	9 5/8"	7"	5 1/2"
2	Setting Depth (feet - TVD)	1400	2608	3892	4300	4703
3	Expected Leak Off Test EMW at shoe (ppg)	9.4	11	11.3	11.5	11.5
4	Expected Mud Weight (ppg)	9.1	9.4	9.4	9.4	9.4
5	Depth of next Casing (feet - TVD)	2608	3892	4703	4703	4703
6	Maximum Expected Formation Pressure (psi)	1153	1720	2079	2079	2079
7	Expected gas gradient (psi/ft)	0.05	0.05	0.05	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.5	8.5	8.5	8.5	8.5
	Max Pressures using 100% Gas to Surface					
9	Max Surface Pressure neglecting shoe (psi)	1022	1526	1844	1844	1844
10	Fracture Gradient at shoe (psi/ft)	Diverter	0.57	0.59	0.60	0.60
11	Fracture Pressure at shoe (psi)	Diverter	1492	2287	2571	2812
12	Surface pressure to break down shoe (psi)	Diverter	1361	2092	2356	2577
13	Maximum Anticipated Surface Pressure (psi)	Diverter	1361	1844	1844	1844

CASING PROGRAM

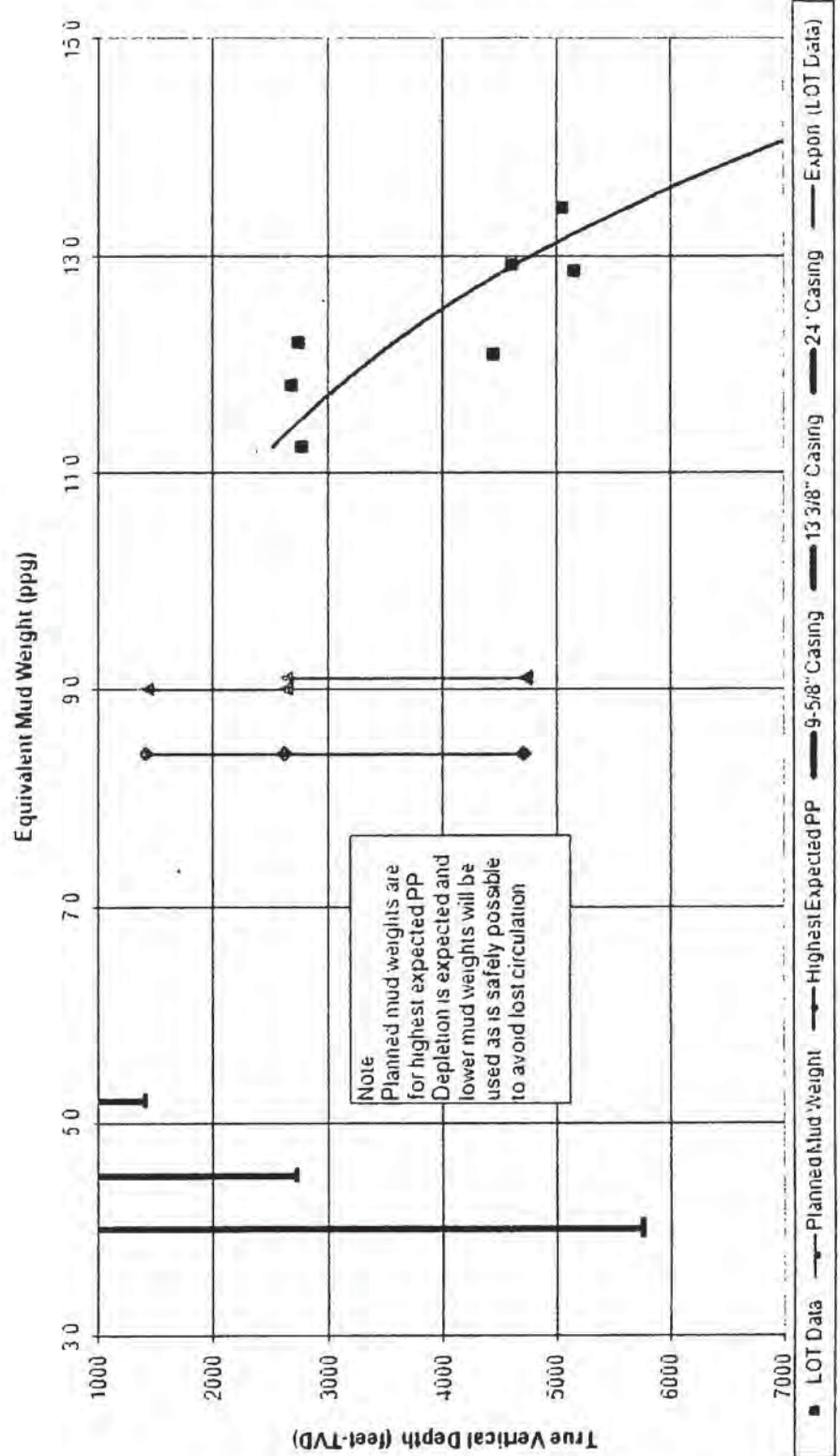
Note: The 7" x 5 1/2" liner will be pre-perforated, thus only the Tensile Safety Factor is applicable. However, I have included the calculations for informational purposes.

Hole Section	26"	13 3/8"	12 1/4"	8 1/2"	8 1/2"
Mud Weight	9.1	9.4	9.4	9.4	9.4
Buoyancy Factor	0.861	0.856	0.856	0.856	0.856
MASP (psi)	200	1526	1844	1844	1844
Gas Lift Pressure (psi)	0	0	1800	1800	1800
Casing Size (in)	24"	13.375"	9.625"	7"	5 1/2"
Setting Depth, MD (ft)	1400	2720	4800	5,540	10,594
Setting Depth, TVD (ft)	1400	2608	3892	4300	4703
Top of Casing, MD (ft)	0	0	0	4550	4550
Weight (lb/ft)	186	61	43.5	26	17
Grade	X-56	K-55	L-80	L-80	L-80
Threads	DQ S-60 MT	BTC	LTC	FlushMax	GeoConn
ID (in)	22.5	12.515	8.755	6.276	4.892
Drift diameter (in)		12.359	8.599	6.151	4.767
Collapse (psi)	1450	1540	3810	5410	6290
Burst (psi)	3060	3090	6330	7240	7740
Joint Strength (kips)	3068	633	825	362	428
Body Strength (kips)	3068	962	1005	604	397
Collapse Safety Factor	2.19	1.21	2.00	2.57	2.74
Burst Safety Factor	15.30	2.03	3.43	3.93	4.20
Tensile Safety Factor	9.46	2.61	2.96	3.29	2.11

Notes:

- 1) Burst is calculated on the greater of MASP or gas lift pressure.
- 2) Collapse is based on mud outside of an evacuated casing string.
- 3) Tension is based on buoyed weight of casing string + 100 kips overpull.

Platform Gail Well E-28 Pore Pressure, Mud Weight & Fracture Pressure



SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. **Assume any gas circulated to surface to have hydrogen sulfide potential.** Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

CEMENTING PROGRAM

24" Structural Casing

Objective: Cement 24" casing as an anchor for the diverter system and provide drilling fluid returns to surface. The 24" will be cemented back to the mud line. 40 feet of cement will be left inside the 24" casing on top of the stab-in guide shoe.

General information:

24", 186#, X-56 Casing 0' - 1400' (22.50" ID)

5", 19.5#, S-135 DP 0' - 1400' (4.276" ID)

Open Hole Size: 26" drilled, 32" assumed for volume calculations

Open Hole Volume Factor is 2.44 CF/FT (for 32" hole)

Shoe Joint Volume Factor is 2.76 CF/FT

Open Hole Excess 0% over estimated 32" hole

24" Conductor Pipe

Well Data

Casing Size: 24"

Open Hole: 32"

Depth: 1400'/MD/ 1400' TVD

Mud Line: 847'

TOC 847'

BHST: 70 deg. F BHCT: 70 deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Tail Volume			
24" Conductor Pipe in 32" O.H.	553	2.44	= 1350 cft
Shoe Joint	40	2.76	= 110 cft
			= 1460 cft

Cement System & Volumes

Preflush: 50 bbls Sea water

Class G with 30 gal/100 sx CaCl₂, 2 gal/100 sx FP-6L, 10 gal/100 sx CD-32L mix in seawater.

Tail Cement Volume: 1270 sks

Mix Weight: 16.0 ppg

Yield: 1.15 cft/sk

Total Liquid: 4.60 gps

Mix Water Seawater

Thickening Time TBD

24 hrs C. S. TBD

48 hrs C. S. TBD

Note: Lab and field blend tests will be performed to verify slurry properties

13 3/8" Surface Casing

Objective: Set and cement 13 3/8" casing prior to drilling oil or gas bearing zones. The shoe of the 13 3/8" casing will provide a fracture gradient sufficient to drill through the zones of interest safely. A formation integrity or leak off test will be conducted after drilling out this shoe. The 13-3/8" will be cemented back to the mud line.

General Information:

13 3/8", 61#, K-55 Casing @ 2720' MD / 2608' TVD (12.415" ID)

24", 186#, X-56 Casing (22.5" ID) Shoe at 1400'

Open Hole Size: 17 1/2"

Open Hole Excess 30% over theoretical

13 3/8" Surface Pipe

Well Data

Casing Size: 13 3/8" 61#

Open Hole: 17 1/2"

Depth: 2720'

Mud Line: 847'

TOC 847'

BHST:106 deg. F BHCT: 90 deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Lead Volume			
13 3/8" Csg in 24" Casing	550	1.7855	= 982.0 cft
13 3/8" Csg in 17 1/2 Open Hole	920	0.6946	= 639.0 cft
Excess 30%			= 191.7 cft
			= 1812.7 cft
Tail Volume			
13 3/8" Csg in 17 1/2 Open Hole	400	0.6946	= 277.8 cft
Excess 30%			= 83.4 cft
Shoe Joint	80	0.8543	= 68.3 cft
			= 429.5 cft

Cement System & Volumes

Preflush: 20 bbls 8.4 ppg weighted spacer

Lead: +/- 632 sks Class G cement with additives to be determined

Cement Volume 632 sks

Mix Weight 11.6 ppg

Yield: 2.87 cuft/sk

Mix Water SEAWATER

Tail: +/- 373 sks Class G cement with additives to be determined

Cement Volume 373 sks

Mix Weight 16.0 ppg

Yield: 1.15 cuft/sk

Mix Water SEAWATER

9 5/8" Production Casing

Objective: Cement 9 5/8" casing at Total Depth of the well. This casing string will be cemented back to the mud line and will be exposed to gas lift pressure.

General Information:

9-5/8" 43.5# L-80 Casing @ 4800' MD / 3892' TVD (8.755" ID)

13 3/8", 61#, L-80 Casing (12.515" ID) Shoe at 2720' MD

Lap Volume Factor is 0.349 CF/FT

Open Hole Size: 12 1/4"

Open Hole Excess 25% over theoretical or 10% over caliper log

9 5/8" Production Pipe

Well Data First Stage

Additives and Pre-flush to be determined through BJ Services lab testing

Casing Size: 9 5/8" 43.5 #

Open Hole: 12 1/4"

Depth: 4800' MD/3892' TVD

Mud Line: 847'

Temperatures BHST XXX deg. F BHCT: XXX deg. F

Volume Calculations	Depth	Volume Factor	Total Volume
Lead Volume	ft.	cu.ft./ft.	cu. ft.
9 5/8" Csg in 13 3/8' Csg	1873	0.3354	= 628.2 cft
9 5/8" Casing in 12 1/4" Open Hole	1580	0.3132	= 494.9 cft
Excess 25%			= 123.7 cft
			=1246.8 cft
Tail Volume			
9 5/8" Casing in 12 1/4" Open Hole	500	0.3132	= 156.6 cft
Excess 25%			= 39.2 cft
Shoe Joint	80	0.4181	= 33.4 cft
			= 229.2 cft

Cement System & Volumes

Preflush: 40 bbls 8.4 ppg weighted spacer

Lead: +/-450 sks Lightweight cement with additives to be determined

Cement Volume 450 sks

Mix Weight 10.5 ppg

Yield: 2.77 cuft/sk

Mix Water SEAWATER

Tail: +/-196 sks Class G cement with additives to be determined

Cement Volume 196 sks

Mix Weight 15.8 ppg

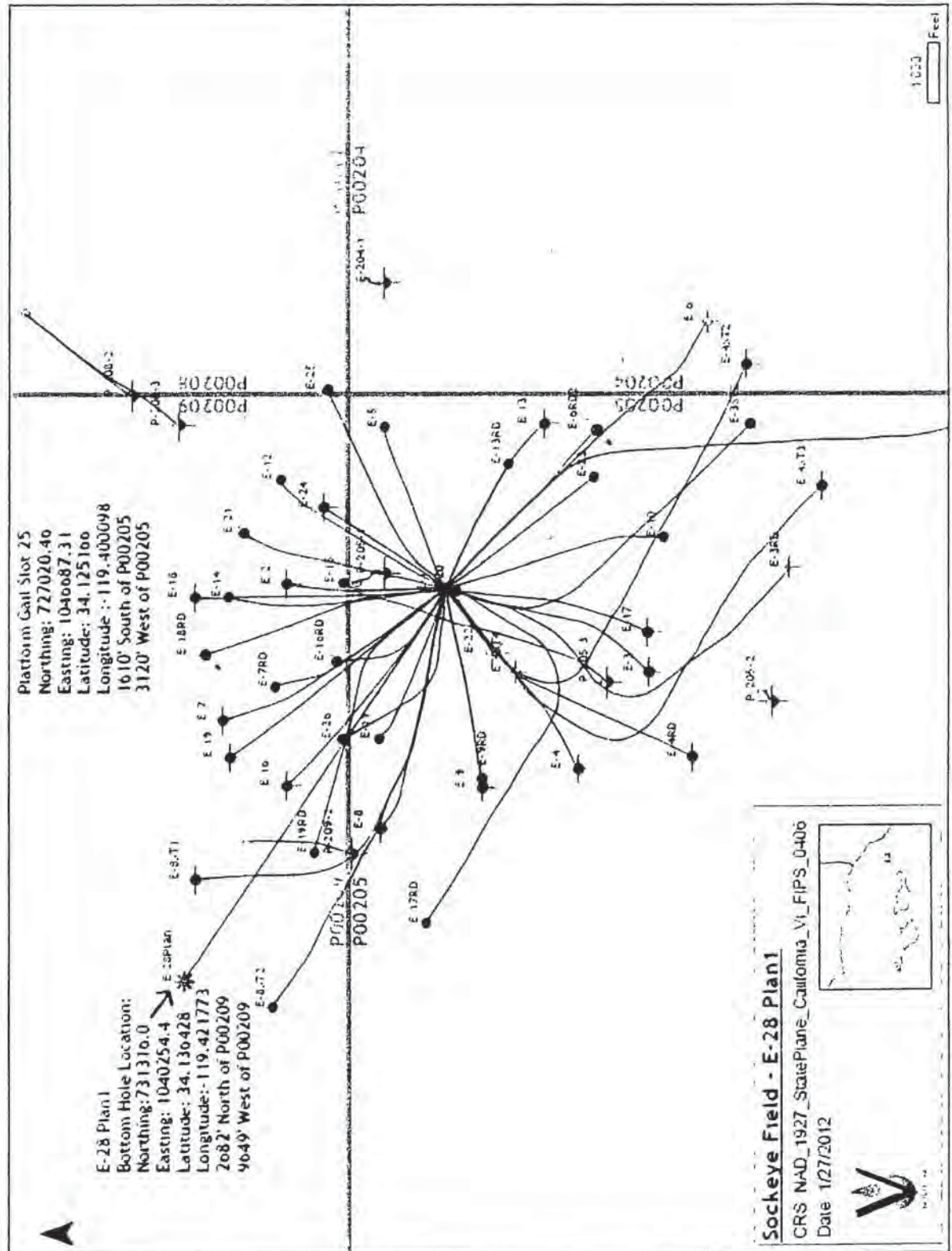
Yield: 1.17 cuft/sk

Mix Water SEAWATER



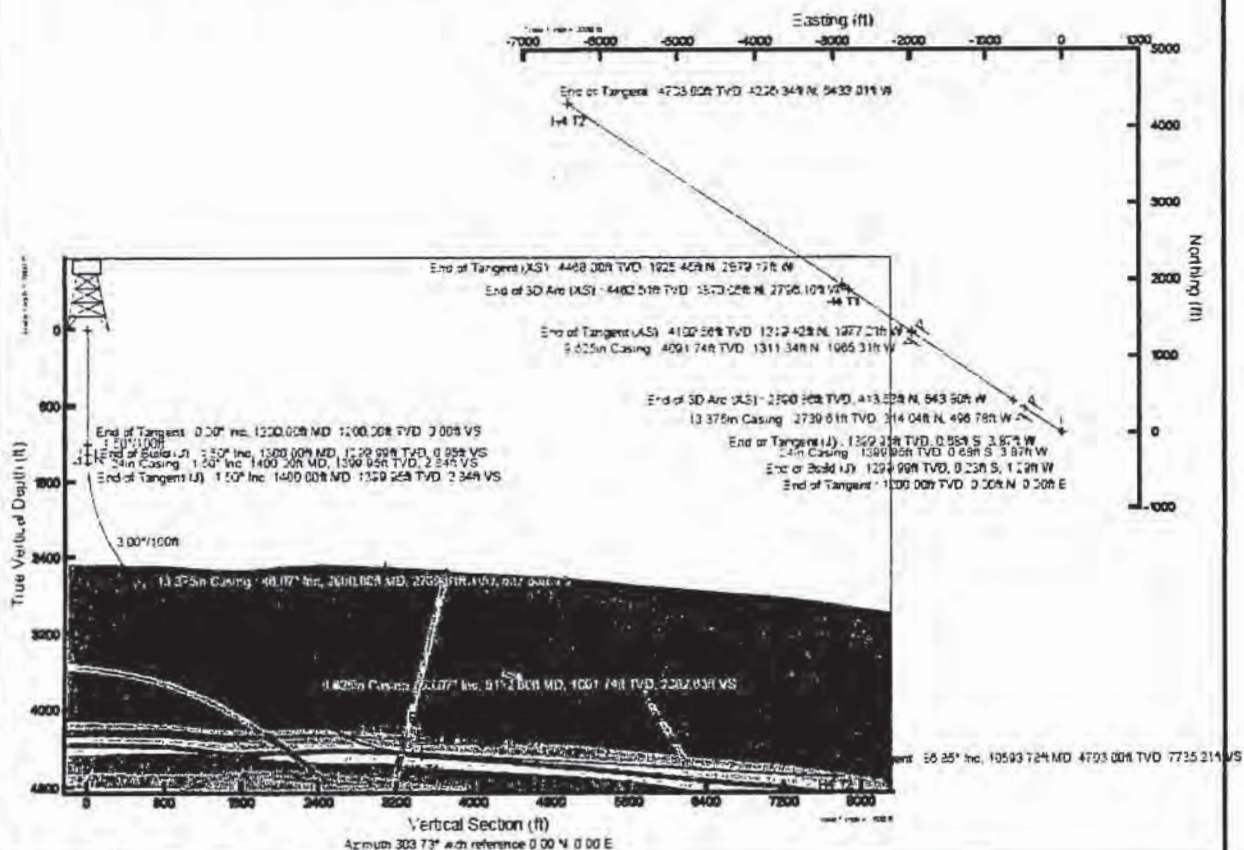
Rig #2 Specifications

<u>Drilling Range:</u>	21,000' with 5" Drillpipe.
<u>Drawworks:</u>	Skytop Brewster N-12 / 2,000 H.P. Driven by (2)-1,000 H.P. General Electric 752 DC Traction Motors With a Parkersburg V-200 Hydromatic Brake and Electronic Control Panel.
<u>Mast:</u>	Skytop Brewster 142' High, Rated at 1,250,000# GNC and 1,000,000# Static Hook Capacity.
<u>Substructure:</u>	Skytop Brewster 21' High (10' Pony Available), With 1,250,000# Capacity.
<u>Mud Pump #1:</u>	National 12P-160 Triplex, 7"x12" 1,000 H.P., Powered by (2)-1,000 H.P. General Electric 752 DC Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Mud Pump #2:</u>	National 12P-160 Triplex, 7"x12" 1,000 H.P., Powered by (2)-1,000 H.P. General Electric 752 Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Rotary Table:</u>	Continental Emsco 27'-6" (37'-6" Optional)
<u>Traveling System:</u>	Skytop Brewster 6 Sheave, 500 Ton Block/Hook Combination and National P-500 Ton Swivel.
<u>SCR Power System:</u>	Ross Hill 4 Bridge, 4 Input SCR Unit With Highline Connection and G.E. Electrical Control Unit.
<u>Mud System:</u>	(2)-Pit System, 1,000 Total Barrels, With Trip, Shaker, Volume, Mud Cleaning, Suction and Pill Mixing Compartments, (6)-Lightning Mud Agitators, Submerged Guns, (2)-5x6 Centrifugal Pumps and (2)-Flowline Cleaners.
<u>B.O.P.E.:</u>	Hydri GK 13-5/8", 5,000# Annular, Shaffer LWS 13-5/8", 5,000# D-Ram, Hydri 220 Gallon Accumulator and 5,000# Choke Manifold or as Designated by Contract.
<u>Water Storage:</u>	100 BBLS.
<u>Auxiliary Equipment:</u>	(2)-Air Winches, Wireline Unit (092"), (2)-Air compressors, Upper & Lower Doghouses, Toolpusher Trailer.



Well Profile Data								
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	CAL S (ft/100ft)	W S (ft)
Top Dr	0.00	0.000	330.000	0.00	3.00	0.00	0.00	0.00
End of Tangent	1200.00	0.000	330.000	1200.00	3.00	0.00	0.00	0.00
End of Build (J)	1600.00	1.500	330.000	1000.00	-0.23	1.23	1.30	0.05
End of Tangent (J)	1400.00	1.500	330.000	1300.00	-0.28	-0.37	0.00	0.04
End of 2D Arc (KS)	3123.38	53.068	334.191	2890.00	-413.55	-143.50	3.00	-06.35
End of Tangent (KS)	5170.00	53.059	334.191	4102.58	-319.42	-1977.21	0.00	2377.32
End of 3D Arc (KS)	9215.77	36.851	333.658	4462.51	1970.05	-1736.10	3.17	-363.82
End of Tangent (KS)	9315.77	36.851	333.658	4468.00	1225.45	-1979.17	0.00	-1483.87
End of Tangent	13093.78	36.851	333.658	4703.00	-4235.34	-5433.01	0.00	7795.21

Location Information						
Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Platform (Oil)			1046843.000	737932.000	24°07'20.562"N	112°24'00.884"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot 25	-11.54	44.31	1046837.310	737920.480	24°07'20.567"N	112°24'00.353"W
Rig on Slot 25 (RT) to Mid line (At Slot: Slot 25)					147%	
Mean Sea Level to Mud line (At Slot: Slot 25)					7.2%	
Rig on Slot 25 (RT) to Mean Sea Level					135%	
Foot reference is/west to E-23 Plant						
True vertical depths are referenced to Rig on Slot 25 (RT)			Grid System: NAD83 - Lambert California SP, Zone 11 @ 981 US feet			
Measured depths are referenced to Rig on Slot 25 (RT)			North Reference: Grid north			
Rig on Slot 25 (RT) to Mean Sea Level: 108 feet			Scale: True distance			
Mean Sea Level to Mud line: At Slot: Slot 25: 730 feet			Depths are in feet			
Coordinates are in feet referenced to Slot			Created by: kuzupol on 01/10/2012			





Planned Wellpath Report

E-28 Plan1

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform_Gail		

REPORT SETUP INFORMATION			
Projection System	NAD27 / Lambert California SP. Zone VI (406). US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Vazqjosl
Scale	1.00005	Report Generated	1/19/2012 at 7:12:51 AM
Convergence at slot	1.73° West	Database Source file	Venoco_12_S_11/E-28_Plan1.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North(ft)	East(ft)	Easting(US ft)	Northing(US ft)	Latitude	Longitude
Slot Location	-11.54	-44.31	1046687.31	727020.46	34°07'30.597"N	119°24'00.353"W
Facility Reference Pt			1046643.00	727032.00	34°07'30.698"N	119°24'00.884"W
Field Reference Pt			1049600.00	728640.00	34°07'47.480"N	119°23'26.305"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on Slot 25 (RT) to Facility Vertical Datum	108.00ft
Horizontal Reference Pt	Slot	Rig on Slot 25 (RT) to Mean Sea Level	108.00ft
Vertical Reference Pt	Rig on Slot 25 (RT)	Rig on Slot 25 (RT) to Mud Line at Slot (Slot 25)	847.00ft
MD Reference Pt	Rig on Slot 25 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	303.73°



Planned Wellpath Report

E-28 Plan1

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REFERENCE WELLPATH IDENTIFICATION				
Operator	Venoco Inc	Slot	Slot 25	
Area	California	Well	E-28	
Field	Sockeye Field	Wellbore	E-28 Plan1	
Facility	Platform Gail			

WELLPATH DATA (111 stations) + = interpolated/extrapolated station														
MD [m]	Inclination [°]	Azimuth [°]	TVD [m]	TVD from Fld Vert Ref [m]	Vert Sec [m]	North [m]	East [m]	Grid East [U.S. ft]	Grid North [U.S. ft]	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0.00	0.000	260.000	0.00	-3.08 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	Tie On
100.00	0.000	260.000	100.00	-3.00 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
200.00	0.000	260.000	200.00	-2.00 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
300.00	0.000	260.000	300.00	-1.92 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
400.00	0.000	260.000	400.00	-2.92 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
500.00	0.000	260.000	500.00	-3.92 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
600.00	0.000	260.000	600.00	-4.92 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
700.00	0.000	260.000	700.00	-5.92 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
800.00	0.000	260.000	800.00	-6.92 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
900.00	0.000	260.000	900.00	-7.92 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
1000.00	0.000	260.000	1000.00	-8.92 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
1100.00	0.000	260.000	1100.00	-9.92 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	0.00	0.00	0.00	
1200.00	0.000	260.000	1200.00	-10.92 00	0.00	0.00	0.00	1046687.31	727020.46	0.00	-100.00	0.00	0.00	End of Tangent
1300.00	1.500	260.000	1299.99	1191.99	0.95	-0.23	-1.29	1046686.02	727020.23	1.50	0.00	1.50	0.00	End of Build (J)
1400.00	1.500	260.000	1399.95	1291.95	2.84	-0.68	-3.87	1046683.44	727019.78	0.00	45.00	0.00	0.00	End of Tangent (J)
1500.00	4.197	290.376	1499.83	1391.83	7.34	0.37	-8.59	1046678.72	727020.83	3.00	14.65	2.70	30.38	
1600.00	7.140	296.490	1599.33	1491.33	17.07	4.41	-17.53	1046669.73	727024.87	3.00	8.57	2.34	6.11	
1700.00	10.116	299.033	1698.13	1590.13	31.99	11.45	-30.82	1046656.48	727031.91	3.00	6.05	2.38	2.54	
1800.00	13.103	300.427	1796.13	1688.13	52.07	21.45	-48.28	1046639.03	727041.91	3.00	4.68	2.39	1.39	
1900.00	16.095	301.310	1892.89	1784.89	77.24	34.40	-69.90	1046617.40	727054.86	3.00	3.83	2.39	0.88	
2000.00	19.089	301.922	1988.20	1880.20	107.44	50.25	-95.63	1046591.67	727070.72	3.00	3.25	2.39	0.61	
2100.00	22.083	302.374	2081.80	1973.80	142.58	68.97	-125.39	1046561.91	727089.43	3.00	2.32	3.00	0.45	
2200.00	25.082	302.722	2173.44	2066.44	182.58	90.50	-159.11	1046528.19	727110.96	3.00	2.50	3.00	0.35	
2300.00	28.079	303.006	2262.86	2154.86	227.31	114.78	-196.69	1046490.61	727135.24	3.00	2.25	3.00	0.28	
2400.00	31.077	303.229	2349.82	2241.82	276.67	141.75	-238.03	1046449.27	727162.21	3.00	2.06	3.00	0.23	
2500.00	34.075	303.421	2434.08	2326.08	330.50	171.33	-283.01	1046404.29	727191.79	3.00	1.89	3.00	0.19	
2600.00	37.074	303.583	2515.41	2407.41	388.67	203.44	-331.51	1046355.78	727223.91	3.00	1.76	3.00	0.16	
2700.00	40.072	303.728	2593.58	2485.58	451.01	237.99	-383.40	1046303.89	727258.46	3.00	1.65	3.00	0.14	
2800.00	43.071	303.854	2668.38	2560.38	517.36	274.89	-438.54	1046248.75	727295.37	3.00	1.55	3.00	0.13	
2900.00	46.070	303.963	2739.61	2631.61	587.53	314.04	-496.78	1046190.51	727334.52	3.00	1.47	3.00	0.11	
3000.00	49.069	304.069	2807.07	2699.07	661.33	355.33	-557.95	1046129.34	727375.81	3.00	1.40	3.00	0.10	
3100.00	52.068	304.163	2870.58	2762.58	738.56	398.65	-621.89	1046065.39	727419.13	3.00	1.35	3.00	0.09	
3133.36	53.669	304.191	2890.86	2782.86	765.05	413.53	-643.80	1046043.48	727434.01	3.00	0.00	3.00	0.09	End of 3D Arc (NS)
3200.00	53.069	304.191	2930.90	2822.90	818.32	443.46	-687.86	1045999.41	727463.95	0.00	0.00	0.00	0.00	
3300.00	53.069	304.191	2990.98	2882.98	898.25	488.39	-753.98	1045933.29	727508.87	0.00	0.00	0.00	0.00	
3400.00	53.069	304.191	3051.07	2943.07	978.18	533.31	-820.10	1045867.17	727553.79	0.00	0.00	0.00	0.00	
3500.00	53.069	304.191	3111.15	3003.15	1058.12	578.23	-886.22	1045801.04	727598.71	0.00	0.00	0.00	0.00	
3600.00	53.069	304.191	3171.24	3063.24	1138.05	623.15	-952.34	1045734.92	727643.64	0.00	0.00	0.00	0.00	
3700.00	53.069	304.191	3231.32	3123.32	1217.99	668.07	-1018.47	1045668.80	727688.56	0.00	0.00	0.00	0.00	
3800.00	53.069	304.191	3291.41	3183.41	1297.92	712.99	-1084.59	1045602.67	727733.48	0.00	0.00	0.00	0.00	
3900.00	53.069	304.191	3351.49	3243.49	1377.85	757.91	-1150.71	1045536.55	727778.41	0.00	0.00	0.00	0.00	
4000.00	53.069	304.191	3411.58	3303.58	1457.79	802.83	-1216.83	1045470.43	727823.33	0.00	0.00	0.00	0.00	
4100.00	53.069	304.191	3471.66	3363.66	1537.72	847.75	-1282.95	1045404.30	727868.25	0.00	0.00	0.00	0.00	
4200.00	53.069	304.191	3531.75	3423.75	1617.65	892.67	-1349.07	1045338.18	727913.18	0.00	0.00	0.00	0.00	
4300.00	53.069	304.191	3591.83	3483.83	1697.59	937.59	-1415.19	1045272.06	727958.10	0.00	0.00	0.00	0.00	



Planned Wellpath Report

E-28 Plan1

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform Gail		

WELLPATH DATA (111 stations) + = interpolated/extrapolated station														Comments
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVD from Fid Vert Ref [ft]	Vert Sec [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	
4400.001	53.068	304.191	3651.92	5543.92	1777.52	982.52	-1481.31	1045205.93	728003.02	0.00	0.00	0.00	0.00	
4500.001	53.068	304.191	3712.00	5604.00	1857.45	1027.44	-1547.43	1045139.81	728047.95	0.00	0.00	0.00	0.00	
4600.001	53.068	304.191	3772.09	5664.09	1937.39	1072.36	-1613.55	1045073.69	728092.87	0.00	0.00	0.00	0.00	
4700.001	53.068	304.191	3832.17	5724.17	2017.32	1117.28	-1679.67	1045007.56	728137.79	0.00	0.00	0.00	0.00	
4800.001	53.068	304.191	3892.26	5784.26	2097.25	1162.20	-1745.79	1044941.44	728182.71	0.00	0.00	0.00	0.00	
4900.001	53.068	304.191	3952.34	5844.34	2177.19	1207.12	-1811.91	1044875.32	728227.64	0.00	0.00	0.00	0.00	
5000.001	53.068	304.191	4012.43	5904.43	2257.12	1252.04	-1878.03	1044809.19	728272.56	0.00	0.00	0.00	0.00	
5100.001	53.068	304.191	4072.52	5964.52	2337.05	1296.96	-1944.15	1044743.07	728317.48	0.00	0.00	0.00	0.00	
5150.00	53.068	304.191	4102.56	5994.56	2377.02	1319.42	-1977.21	1044710.01	728339.95	0.00	-0.89	0.00	0.00	End of Tangent (XS)
5200.001	54.654	304.161	4132.04	6024.04	2417.40	1342.11	-2010.61	1044676.60	728362.63	3.17	-0.87	3.17	-0.06	
5300.001	57.824	304.105	4187.61	6079.61	2500.52	1388.75	-2079.42	1044607.79	728409.27	3.17	-0.84	3.17	-0.06	
5400.001	60.993	304.052	4238.50	6130.50	2586.59	1436.97	-2150.71	1044536.50	728457.50	3.17	-0.81	3.17	-0.05	
5500.001	64.163	304.002	4284.54	6176.54	2675.34	1486.64	-2224.27	1044462.94	728507.17	3.17	-0.79	3.17	-0.05	
5600.001	67.333	303.955	4325.61	6217.61	2766.50	1537.59	-2299.86	1044387.34	728558.12	3.17	-0.77	3.17	-0.05	
5700.001	70.503	303.910	4361.58	6253.58	2859.80	1589.66	-2377.27	1044309.93	728610.20	3.17	-0.75	3.17	-0.05	
5800.001	73.673	303.866	4392.33	6284.33	2954.94	1642.71	-2456.25	1044230.94	728663.25	3.17	-0.74	3.17	-0.04	
5900.001	76.843	303.824	4417.78	6309.78	3051.63	1696.57	-2536.56	1044150.63	728717.11	3.17	-0.73	3.17	-0.04	
6000.001	80.013	303.783	4437.84	6329.84	3149.59	1751.06	-2617.96	1044069.23	728771.61	3.17	-0.72	3.17	-0.04	
6100.001	83.183	303.743	4452.45	6344.45	3248.50	1806.04	-2700.19	1043987.00	728826.58	3.17	-0.71	3.17	-0.04	
6200.001	86.353	303.704	4461.57	6353.57	3348.07	1861.32	-2783.00	1043904.18	728881.86	3.17	-0.71	3.17	-0.04	
6215.77	86.851	303.698	4462.51	6354.51	3363.82	1870.05	-2796.10	1043891.08	728890.60	3.17	0.00	3.17	-0.04	End of 3D Arc (XS)
6300.001	86.851	303.698	4467.13	6359.13	3447.92	1916.71	-2866.07	1043821.10	728937.26	0.00	0.00	0.00	0.00	
6315.77	86.851	303.698	4468.00	6360.00	3463.67	1925.45	-2879.17	1043808.00	728946.00	0.00	0.00	0.00	0.00	End of Tangent (XS)
6400.001	86.851	303.698	4472.63	6364.63	3547.77	1972.11	-2949.14	1043738.03	728992.66	0.00	0.00	0.00	0.00	
6500.001	86.851	303.698	4478.12	6370.12	3647.61	2027.50	-3032.21	1043654.95	729048.06	0.00	0.00	0.00	0.00	
6600.001	86.851	303.698	4483.61	6375.61	3747.46	2082.90	-3115.29	1043571.88	729103.46	0.00	0.00	0.00	0.00	
6700.001	86.851	303.698	4489.11	6381.11	3847.31	2138.30	-3198.36	1043488.80	729158.86	0.00	0.00	0.00	0.00	
6800.001	86.851	303.698	4494.60	6386.60	3947.16	2193.70	-3281.43	1043405.72	729214.26	0.00	0.00	0.00	0.00	
6900.001	86.851	303.698	4500.09	6392.09	4047.01	2249.09	-3364.50	1043322.65	729269.66	0.00	0.00	0.00	0.00	
7000.001	86.851	303.698	4505.59	6397.59	4146.86	2304.49	-3447.58	1043239.57	729325.06	0.00	0.00	0.00	0.00	
7100.001	86.851	303.698	4511.08	6403.08	4246.71	2359.89	-3530.65	1043156.50	729380.46	0.00	0.00	0.00	0.00	
7200.001	86.851	303.698	4516.57	6408.57	4346.56	2415.28	-3613.72	1043073.42	729435.86	0.00	0.00	0.00	0.00	
7300.001	86.851	303.698	4522.07	6414.07	4446.41	2470.68	-3696.79	1042990.34	729491.26	0.00	0.00	0.00	0.00	
7400.001	86.851	303.698	4527.56	6419.56	4546.26	2526.08	-3779.86	1042907.27	729546.66	0.00	0.00	0.00	0.00	
7500.001	86.851	303.698	4533.05	6425.05	4646.10	2581.48	-3862.94	1042824.19	729602.06	0.00	0.00	0.00	0.00	
7600.001	86.851	303.698	4538.55	6430.55	4745.95	2636.87	-3946.01	1042741.11	729657.46	0.00	0.00	0.00	0.00	
7700.001	86.851	303.698	4544.04	6436.04	4845.80	2692.27	-4029.08	1042658.04	729712.86	0.00	0.00	0.00	0.00	
7800.001	86.851	303.698	4549.53	6441.53	4945.65	2747.67	-4112.15	1042574.96	729768.26	0.00	0.00	0.00	0.00	
7900.001	86.851	303.698	4555.02	6447.02	5045.50	2803.06	-4195.23	1042491.89	729823.66	0.00	0.00	0.00	0.00	
8000.001	86.851	303.698	4560.52	6452.52	5145.35	2858.46	-4278.30	1042408.81	729879.06	0.00	0.00	0.00	0.00	
8100.001	86.851	303.698	4566.01	6458.01	5245.20	2913.86	-4361.37	1042325.73	729934.46	0.00	0.00	0.00	0.00	
8200.001	86.851	303.698	4571.50	6463.50	5345.05	2969.25	-4444.44	1042242.66	729989.86	0.00	0.00	0.00	0.00	
8300.001	86.851	303.698	4577.00	6469.00	5444.90	3024.65	-4527.51	1042159.58	730045.25	0.00	0.00	0.00	0.00	
8400.001	86.851	303.698	4582.49	6474.49	5544.75	3080.05	-4610.59	1042076.51	730100.65	0.00	0.00	0.00	0.00	
8500.001	86.851	303.698	4587.98	6479.98	5644.59	3135.45	-4693.66	1041993.43	730156.05	0.00	0.00	0.00	0.00	



Planned Wellpath Report

E-28 Plan1

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform_Gail		

WELLPATH DATA (111 stations) † = interpolated/extrapolated station														
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVD from Fid Vert Ref [ft]	Vert Sec [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Toolface [°]	Budd Rate [°/100ft]	Turn Rate [°/100ft]	Comments
3600.00†	36.851	303.698	4593.48	4485.48	5744.44	3190.84	-4776.73	1041910.35	730211.45	0.00	0.00	0.00	0.00	
3700.00†	36.851	303.698	4598.97	4490.97	5844.29	3246.24	-4859.80	1041827.28	730266.85	0.00	0.00	0.00	0.00	
3800.00†	36.851	303.698	4604.46	4496.46	5944.14	3301.64	-4942.88	1041744.20	730322.25	0.00	0.00	0.00	0.00	
3900.00†	36.851	303.698	4609.96	4501.96	6043.99	3357.03	-5025.95	1041661.12	730377.65	0.00	0.00	0.00	0.00	
4000.00†	36.851	303.698	4615.45	4507.45	6143.84	3412.43	-5109.02	1041578.05	730433.05	0.00	0.00	0.00	0.00	
4100.00†	36.851	303.698	4620.94	4512.94	6243.69	3467.83	-5192.09	1041494.97	730488.45	0.00	0.00	0.00	0.00	
4200.00†	36.851	303.698	4626.44	4518.44	6343.54	3523.23	-5275.16	1041411.90	730543.85	0.00	0.00	0.00	0.00	
4300.00†	36.851	303.698	4631.93	4523.93	6443.39	3578.62	-5358.24	1041328.82	730599.25	0.00	0.00	0.00	0.00	
4400.00†	36.851	303.698	4637.42	4529.42	6543.24	3634.02	-5441.31	1041245.74	730654.65	0.00	0.00	0.00	0.00	
4500.00†	36.851	303.698	4642.92	4534.92	6643.08	3689.42	-5524.38	1041162.67	730710.05	0.00	0.00	0.00	0.00	
4600.00†	36.851	303.698	4648.41	4540.41	6742.93	3744.81	-5607.45	1041079.59	730765.45	0.00	0.00	0.00	0.00	
4700.00†	36.851	303.698	4653.90	4545.90	6842.78	3800.21	-5690.53	1040996.52	730820.85	0.00	0.00	0.00	0.00	
4800.00†	36.851	303.698	4659.40	4551.40	6942.63	3855.61	-5773.60	1040913.44	730876.25	0.00	0.00	0.00	0.00	
4900.00†	36.851	303.698	4664.89	4556.89	7042.48	3911.00	-5856.67	1040830.36	730931.65	0.00	0.00	0.00	0.00	
5000.00†	36.851	303.698	4670.38	4562.38	7142.33	3966.40	-5939.74	1040747.29	730987.05	0.00	0.00	0.00	0.00	
5100.00†	36.851	303.698	4675.88	4567.88	7242.18	4021.80	-6022.81	1040664.21	731042.45	0.00	0.00	0.00	0.00	
5200.00†	36.851	303.698	4681.37	4573.37	7342.03	4077.20	-6105.89	1040581.13	731097.85	0.00	0.00	0.00	0.00	
5300.00†	36.851	303.698	4686.86	4578.86	7441.88	4132.59	-6188.96	1040498.06	731153.25	0.00	0.00	0.00	0.00	
5400.00†	36.851	303.698	4692.36	4584.36	7541.73	4187.99	-6272.03	1040414.98	731208.65	0.00	0.00	0.00	0.00	
5500.00†	36.851	303.698	4697.85	4589.85	7641.57	4243.39	-6355.10	1040331.91	731264.05	0.00	0.00	0.00	0.00	
10593.78	36.851	303.698	4703.00	4595.00	7735.21	4295.34	-6433.01	1040254.00	731316.00	0.00		0.00	0.00	End of Tangent

HOLE & CASING SECTIONS - Ref Wellbore: E-28 Plan1									
String Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
26m Open Hole	0.00	1400.00	1400.00	0.00	1399.95	0.00	0.00	-0.58	-3.87
24m Casing	0.00	1400.00	1400.00	0.00	1399.95	0.00	0.00	-0.58	-3.87
17.5m Open Hole	1400.00	2900.00	1500.00	1399.95	2739.61	-0.68	-3.87	314.04	-496.78
13.375m Casing	0.00	2900.00	2900.00	0.00	2739.61	0.00	0.00	314.04	-496.78
12.25m Open Hole	2900.00	5132.00	2232.00	2739.61	4091.74	314.04	-496.78	1311.34	-1965.31
9.625m Casing	0.00	5132.00	5132.00	0.00	4091.74	0.00	0.00	1311.34	-1965.31
8.5m Open Hole	5132.00	10583.00	5451.00	4091.74	4702.41	1311.34	-1965.31	4289.37	-6424.05



Planned Wellpath Report

E-28 Plan1

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REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sokeye Field	Wellbore	E-28 Plan1
Facility	Platform_Gail		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) H4 T1	6315.77	4468.00	1925.45	-2879.17	1043808.00	728946.00	34°07'48.774"N	119°24'35.277"W	point
2) H4 T2	10593.78	4703.00	4295.34	-6433.01	1040254.00	731316.00	34°08'11.140"N	119°25'18.389"W	point

SURVEY PROGRAM - Ref Wellbore: E-28 Plan1 Ref Wellpath: E-28 Plan1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
347.00	1400.00	SDI Keeper		E-28 Plan1
1400.00	2900.00	OnTrak (Standard)		E-28 Plan1
2900.00	5132.00	OnTrak (Standard)		E-28 Plan1
5132.00	10593.78	OnTrak (Standard)		E-28 Plan1



Clearance Summary Report

E-28 Plan1-Closest Approach
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REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform Gail		

REPORT SETUP INFORMATION			
Projection System	NAD27 - Lambert California SP, Zone VI (406), U.S feet	Software System	WellArchitect 8.3.0.0
North Reference	Grid	User	Vazqjosi
Scale	1.00005	Report Generated	1/19/2012 at 7:45:17 AM
Convergence at slot	1.73° West	Database/Source file	Venoco_12_S_11.E-28_Plan1_CR.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-11.54	44.31	1046687.31	727020.46	34°07'30.597"N	119°24'00.353"W
Facility Reference Pt			1046643.00	727032.00	34°07'30.698"N	119°24'00.884"W
Field Reference Pt			1049600.00	728640.00	34°07'47.480"N	119°23'26.305"W

WELLPATH DATUM			
Calculation method	Minimum Curvature	Rig on Slot 25 (RT) to Facility Vertical Datum	108.00ft
Horizontal Reference Pt	Slot	Rig on Slot 25 (RT) to Mean Sea Level	108.00ft
Vertical Reference Pt	Rig on Slot 25 (RT)	Rig on Slot 25 (RT) to Mud Line at Slot (Slot 25)	347.00ft
MD Reference Pt	Rig on Slot 25 (RT)		
Field Vertical Reference	Mean Sea Level		

POSITIONAL UNCERTAINTY CALCULATION SETTINGS					
Ellipse Confidence Limit	3.00 Std Dev	Ellipse Start MD	847.00ft	Surface Position Uncertainty	included
Declination	12.73° East of TN	Dip Angle	58.67°	Mag Field Strength	47241 nT
Slot Surface Uncertainty @1SD		Horizontal	0.500ft	Vertical	0.500ft
Facility Surface Uncertainty @1SD		Horizontal	3.000ft	Vertical	0.500ft

ANTI-COLLISION RULE			
Rule Name	R-type Start Clearance Monitoring, Closest Approach w/Hole & Csg Limit: 1.5, StdDev: 3.00 w/Surface Uncert R=(D-HnC)/PU	Rule Based On	Ratio
Plane of Rule	Closest Approach	Threshold Value	1.50
Subtract Casing & Hole Size	yes	Apply Cone of Safety	no



Clearance Summary Report E-28 Plan1-Closest Approach Page 2 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform_Gail		

HOLE & CASING SECTIONS - Ref Wellbore: E-28 Plan1 Ref Wellpath: E-28 Plan1									
String Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
26in Open Hole	0.00	1400.00	1400.00	0.00	1399.95	0.00	0.00	-0.68	-3.87
24in Casing	0.00	1400.00	1400.00	0.00	1399.95	0.00	0.00	-0.68	-3.87
17 5in Open Hole	1400.00	2900.00	1500.00	1399.95	2739.61	-0.68	-3.87	314.04	-496.78
13 3/8in Casing	0.00	2900.00	2900.00	0.00	2739.61	0.00	0.00	314.04	-496.78
12 25in Open Hole	2900.00	5132.00	2232.00	2739.61	4091.74	314.04	-496.78	1311.34	-1965.31
9 625in Casing	0.00	5132.00	5132.00	0.00	4091.74	0.00	0.00	1311.34	-1965.31
8 5in Open Hole	5132.00	10583.00	5451.00	4091.74	4702.41	1311.34	-1965.31	4289.37	-6424.05

SURVEY PROGRAM - Ref Wellbore: E-28 Plan1 Ref Wellpath: E-28 Plan1				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name Comment	Wellbore
347.00	1400.00	SDI Keeper		E-28 Plan1
1400.00	2900.00	OnTrak (Standard)		E-28 Plan1
2900.00	5132.00	OnTrak (Standard)		E-28 Plan1
5132.00	10593.75	OnTrak (Standard)		E-28 Plan1



Clearance Summary Report E-28 Plan1-Closest Approach Page 3 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform_Gail		

CALCULATION RANGE & CUTOFF

From: 847.00ft MD	To: 10593.80ft MD	C-C Cutoff: (none)
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OFFSET WELL CLEARANCE SUMMARY (52 Offset Wellpaths selected) Ratios are calculated in Closest Approach plane											
Offset Facility	Offset Slot	Offset Well	Offset Wellbore	Offset Wellpath	C-C Clearance Distance			ACR Separation Ratio			
					Ref MD [ft]	Min C-C Clear Dist [ft]	Diverging from MD [ft]	Ref MD of Min Ratio [ft]	Min Ratio	Min Ratio Dvrg from [ft]	ACR Status
Platform_Gail	Slot 21	Well E-9	AWB E-9	AWP E-9	979.39	7.34	1167.45	1167.45	0.47	5000.00	FAIL
Platform_Gail	Slot 23 RD	Well E-9RD	AWB E-9RD	AWP E-9RD	978.40	5.24	1165.45	1165.45	0.50	5000.00	FAIL
Platform_Gail	Slot 10	Well E-15	AWB E-15	AWP E-15	1210.00	24.85	4100.00	4500.00	0.64	4500.00	FAIL
Platform_Gail	Slot 26	Well E-22	AWB E-22	AWP E-22	900.00	3.58	200.00	1208.44	0.68	1208.44	FAIL
Platform_Gail	Slot 22	Well E-20	AWB E-20	AWP E-20	1074.73	10.28	1074.73	1209.70	1.02	1209.70	FAIL
Platform_Gail	Slot 30	Well E-4	AWB E-4	AWP E-4	959.76	10.70	1252.57	1252.57	1.09	3500.00	FAIL
Platform_Gail	Slot 33	Well E-3	AWB E-3	AWP E-3	1353.20	31.50	1353.20	1599.97	1.10	1599.97	FAIL
Platform_Gail	Slot 17	Well E-8	AWB E-8	AWP E-8	1085.40	21.08	1435.46	1211.96	1.12	1300.00	FAIL
Platform_Gail	Slot 50 S72	Well E-45T2	AWB E-45T2	AWP E-45T2	973.14	10.70	973.14	230.17	1.15	500.00	FAIL
Platform_Gail	Slot 30 RD	Well E-4RD	AWB E-4RD	AWP E-4RD	973.14	10.70	973.14	230.17	1.15	500.00	FAIL
Platform_Gail	Slot 50 S75	Well E-45T5	AWB E-45T5	AWP E-45T5	973.14	10.70	973.14	230.17	1.15	7500.00	FAIL
Platform_Gail	Slot 50 S74	Well E-45T4	AWB E-45T4	AWP E-45T4	973.14	10.70	973.14	230.17	1.15	1800.00	FAIL
Platform_Gail	Slot 50 S13	Well E-45T3	AWB E-45T3	AWP E-45T3	973.14	10.70	973.14	230.17	1.15	7500.00	FAIL
Platform_Gail	Slot 33 S72	Well E-35T2	AWB E-35T2	AWP E-35T2	1549.77	11.25	1549.77	1591.29	1.17	1591.29	FAIL
Platform_Gail	Slot 33 RD	Well E-3RD	AWB E-3RD	AWP E-3RD	1549.77	11.25	1549.77	1591.29	1.17	1591.29	FAIL
Platform_Gail	Slot 17 S72	Well E-35T2	AWB E-35T2	AWP E-35T2	1080.16	11.56	10100.00	1210.55	1.25	10500.00	FAIL
Platform_Gail	Slot 17 S71	Well E-35T1	AWB E-35T1	AWP E-35T1	1080.00	11.78	8400.00	1210.57	1.25	3500.00	FAIL
Platform_Gail	Slot P-209-2	Well P-209-2	AWB P-209-2	AWP P-209-2	7587.50	359.87	7587.50	7500.00	1.46	7500.00	FAIL
Platform_Gail	Slot 18	Well E-26	AWB E-26	AWP E-26	958.62	24.86	5300.00	1200.00	1.59	5150.00	PASS
Platform_Gail	Slot 27	Well E-23	AWB E-23	AWP E-23	1203.15	26.45	1203.15	1274.40	1.82	1214.40	PASS
Platform_Gail	Slot 12 RD	Well E-15RD	AWB E-15RD	AWP E-15RD	1000.00	17.80	5700.00	1160.00	2.01	7500.00	PASS
Platform_Gail	Slot 13	Well E-19	AWB E-19	AWP E-19	1000.00	13.91	5100.00	1145.45	2.02	7400.00	PASS
Platform_Gail	Slot 14	Well E-11	AWB E-11	AWP E-11	964.28	19.39	964.28	1225.15	2.22	1300.00	PASS
Platform_Gail	Slot 35	Well E-17	AWB E-17	AWP E-17	922.95	20.80	222.95	1225.45	2.35	1225.45	PASS
Platform_Gail	Slot 31	Well E-10	AWB E-10	AWP E-10	900.00	13.04	1200.00	1251.24	2.38	1251.24	PASS
Platform_Gail	Slot 35 RD	Well E-17RD	AWB E-17RD	AWP E-17RD	925.22	20.80	5500.00	1235.24	2.49	5500.00	PASS
Platform_Gail	Slot 10 RD	Well E-15RD	AWB E-15RD	AWP E-15RD	1211.05	24.83	1211.05	1245.79	2.80	5500.00	PASS
Platform_Gail	Slot 24	Well E-13	AWB E-13	AWP E-13	1160.45	26.41	1160.45	1237.57	2.98	7200.00	PASS
Platform_Gail	Slot P-205-3	Well P-205-3	AWB P-205-3	AWP P-205-3	3122.63	457.06	3122.63	3509.62	3.13	3509.62	PASS
Platform_Gail	Slot 24 RD	Well E-13RD	AWB E-13RD	AWP E-13RD	1160.50	26.41	1160.50	1231.42	3.14	1211.42	PASS
Platform_Gail	Slot 3 RD	Well E-18RD	AWB E-18RD	AWP E-18RD	1227.02	23.61	1227.02	1506.39	3.18	5500.00	PASS
Platform_Gail	Slot 5	Well E-18	AWB E-18	AWP E-18	1227.22	23.52	1227.22	1501.33	3.20	9700.00	PASS
Platform_Gail	Slot 20	Well E-6	AWB E-6	AWP E-6	960.20	23.50	960.20	1215.52	3.20	1215.52	PASS
Platform_Gail	Slot 6	Well E-14	AWB E-14	AWP E-14	1087.23	50.07	1087.23	1248.60	3.46	1150.00	PASS
Platform_Gail	Slot 20 RD	Well E-6RD	AWB E-6RD	AWP E-6RD	951.17	23.60	951.17	1206.73	3.48	1206.73	PASS
Platform_Gail	Slot 20 RD2	Well E-6RD2	AWB E-6RD2	AWP E-6RD2	951.17	23.60	951.17	1206.73	3.48	1206.73	PASS
Platform_Gail	Slot 1	Well E-7	AWB E-7	AWP E-7	1162.28	55.52	1162.28	1600.00	3.75	1500.00	PASS
Platform_Gail	Slot 16 S71	Well E-24S71	AWB E-24S71	AWP E-24S71	926.99	51.49	1200.00	1223.55	3.66	6000.00	PASS
Platform_Gail	Slot 16	Well E-24	AWB E-24	AWP E-24	926.99	51.49	1200.00	1223.55	3.66	6000.00	PASS
Platform_Gail	Slot 1 RD	Well E-7RD	AWB E-7RD	AWP E-7RD	1162.28	55.62	1162.28	1600.00	3.99	1500.00	PASS



Clearance Summary Report **E-28 Plan1-Closest Approach** Page 4 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 Plan1
Facility	Platform_Gail		

CALCULATION RANGE & CUTOFF		
From 847.00ft MD	To 10593.30ft MD	C-C Cutoff: (none)

OFFSET WELL CLEARANCE SUMMARY (52 Offset Wellpaths selected) Ratios are calculated in Closest Approach plane											
Offset Facility	Offset Slot	Offset Well	Offset Wellbore	Offset Wellpath	C-C Clearance Distance			ACR Separation Ratio			
					Ref MD (ft)	Min C-C Clear Dist (ft)	Diverging from MD (ft)	Ref MD of Min Ratio (ft)	Min Ratio	Min Ratio Diverg from (ft)	ACR Status
Platform_Gail	Slot 12	Well E-21	AWB E-21	AWP E-21	1100.00	35.24	1123.22	1234.76	4.66	5315.73	PASS
Platform_Gail	Slot 15	Well E-1	AWB E-1	AWP E-1	1200.00	24.52	1200.00	1433.61	4.15	1433.61	PASS
Platform_Gail	Slot 7	Well E-5	AWB E-5	AWP E-5	500.00	37.50	500.00	500.00	4.63	500.00	PASS
Platform_Gail	Slot 3 E-15	Well E-15	AWB E-15	AWP E-15	451.87	39.59	451.87	1225.91	4.73	1225.91	PASS
Platform_Gail	Slot 3 E-2	Well E-2	AWB E-2	AWP E-2	351.87	39.59	351.87	1225.91	4.73	1225.91	PASS
Platform_Gail	Slot 4	Well E-12	AWB E-12	AWP E-12	241.43	42.76	241.43	1240.18	5.98	1100.00	PASS
Platform_Gail	Slot 8	Well E-25	AWB E-25	AWP E-25	1220.55	38.73	1220.55	1434.01	5.13	1434.01	PASS
Platform_Gail	Slot P-205-1	Well P-205-1	AWB P-205-1	AWP P-205-1	5027.50	1501.16	5027.50	5637.12	3.85	5637.12	PASS
Platform_Gail	Slot P-208-3	Well P-208-3	AWB P-208-3	AWP P-208-3	4862.50	1683.70	4862.50	5900.00	16.30	5900.00	PASS
Platform_Gail	Slot P-208-2	Well P-208-2	AWB P-208-2	AWP P-208-2	5975.00	1351.27	5975.00	5900.00	19.45	7700.00	PASS
Platform_Gail	Slot P-205-2	Well P-205-2	AWB P-205-2	AWP P-205-2	1435.00	5419.42	475.00	5207.50	41.36	1207.60	PASS
Platform_Gail	Slot P-204-1	Well P-204-1	AWB P-204-1	AWP P-204-1	1242.50	5237.94	1242.50	5487.87	74.77	5000.00	PASS

	GENERAL QUESTIONS.	
1	Have you considered the following in your well planning and drilling plan determinations. evaluation for flow potential, site selection, shallow hazards, deeper hazard contingency planning, well control planning for fluid influxes, planning for lost circulation control, regulatory issues and communications plans, planning the well, pore pressure, fracture gradient, mud weight, casing plan, cementing plan, drilling plan, wellbore hydraulics, wellbore cleaning, barrier design, and contingency planning? [API 65-2 1 5]	Yes/No
2	Have you considered the general well practices while drilling, monitoring and maintaining wellbore stability, curing and preventing lost circulation, and planning and operational considerations? [API 65-2 1 6]	Yes/No
	FLOW POTENTIAL	
3	Will a pre-spud hazard assessment be conducted for the proposed well site?	Yes/No
4	List all potential flow zones within the well section to be cemented.	Describe below
5	Has the information concerning the type, location, and likelihood of potential flow zones been communicated to key parties (cementing service provider, rig contractor, or 3 rd parties)?	Yes/No
	CRITICAL DRILLING FLUID PARAMETERS	
6	Are fluid densities sufficient to maintain well control without inducing lost circulation?	Yes/No
	CRITICAL WELL DESIGN PARAMETERS	
7	Will you use a cementing simulation model in the design of this well?	Yes/No
7a	If yes, how is the output of this simulation model used in your decision-making process?	Describe below
7b	If no, include discussion of why a model is not being used.	Describe below
7c	Either way, include the number and placement of centralizers being used.	Describe below
8	Will you ensure the planned top of cement will be 500 feet above the shallowest potential flow zone?	Yes/No
9	Have you confirmed that the hole diameter is sufficient to provide adequate centralization?	Yes/No
10	If there are any isolated annuli, how have you mitigated thermal casing pressure build-up.	NA or Describe below
11	Will you ensure the well will be stable (no volume gain or losses, drilling fluid density equal in vs out) before commencing cementing operations?	Yes/No
12	List all annular mechanical barriers in your design.	Describe below
13	Has the rat hole length been minimized or filled with drilling fluid with a density greater than the cement density?	Yes/No
14a	If you have any liner top packers exposed to the production or intermediate annulus, what is the rating for differential pressure across this packer?	NA or Describe below
14b	If you have any liner top packers exposed to the production or intermediate annulus, have you confirmed that your negative test will not exceed this rating?	Yes/No/NA
15	What type of casing hanger lock-down mechanisms will be used?	Describe below
16	For all intermediate and production casing hangers set in subsea, HP wellhead housing, will you immediately set/energize the lock-down ring prior to performing any negative test?	Yes/No NA
17	For all production casing hangers set in subsea, HP wellhead housing, will you set/energize the lock-down sleeve immediately after running the casing and prior to performing any negative test?	Yes/No NA
	CRITICAL OPERATIONAL PARAMETERS	
18	Will you have 2 mechanical barriers in addition to cement in your final casing string (or liner if it is your final string)?	Yes/No
19	Do you plan to nipple down BOP in accordance with the WOC requirements in 30 CFR 250.422(a)?	Yes/No
20	Do you plan on running a cement bond log on the production and intermediate casing/liner prior to conducting the negative test on that string?	Yes/No
	Are contingency plans in place for the following:	
21	Lost circulation?	Yes/No
22	Unplanned shut-down?	Yes/No
23	Unplanned rate change?	Yes/No
24	Float equipment does not hold differential pressures?	Yes/No
25	Surface Equipment issues?	Yes/No
26	Will you monitor the annulus during cementing and WOC time?	Yes/No

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Manager.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells.
3. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
4. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, lost circulation during cementing, etc., shall be verbally reported immediately to the District Manager.
5. The District Manager shall be notified in advance in the event of production tests.
6. Two copies of all logs, including the mud log to date, shall be furnished to this office immediately after logging.
7. Before a completion program is commenced or the hole is abandoned, the District Manager shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
8. This APD is approved subject to the requirement that, should the well be successfully completed for production or re-completed and production resumed after being off of production more than 90 days, this office must be notified when it is placed in a producing status. Such notification may be received in this office by no later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following information items:
 - 1) Operator name.
 - 2) Platform and well name, number and location.
 - 3) Date well began or resumed production.
 - 4) The lease number and, if applicable, unit participation area to which the well's production is attributable.
13. This APD is valid for one year from the date it is approved.



January 31, 2012

Mr. Philip Schroeder
Bureau of Safety and Environmental Enforcement
770 Paseo Camarillo
Camarillo, CA 93010

Subject: Request to batch set 24" conductor casing for Platform Gail wells
E-27 and E-28

Dear Mr. Schroeder:

I am requesting approval to batch set the 24" conductor casing for Platform Gail wells E-27 and E-28. You have previously approved the APD for E-27, so this specifically concerns E-28. Venoco is planning to drill E-28 immediately following E-27, but have not yet submitted the APD. We are asking for approval to set the 24" conductor casing for E-28 before beginning operations on E-27. Handling 24" is not a routine operation. We believe that running the two strings of 24" concurrently will greatly increase operational safety and efficiency.

This operation will be identical to how the 24" conductor was set in the E-26 well, drilled in February of 2010. A riserless 26" vertical hole will be drilled to +/-1400'. Seawater and gel sweeps will be utilized for drilling fluid, and returns will be taken at the sea floor.

Unfortunately, we do not have time to submit a full APD for E-28, as we plan on starting drilling operations as early as Monday, February 6th. Please find the E-28 conductor casing APD attached and contact me with any questions.

Sincerely,

Jody C Robins
Senior Drilling Engineer

Attachment: E-28 Conductor Casing APD

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☒ NEW WFL ☐ S/DETRACK ☐ BYPASS ☐ DEEPEN		2 BSEE OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpintera Ave Carpinteria, CA 93013		
4 WELL NAME (CURRENT) E-28		5 SIDETRACK NO (CURRENT)	6 BYPASS NO (CURRENT)		
7 PROPOSED START DATE February 6, 2012		8 PLAN CONTROL NO (NEW WELL ONLY)			
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04311 XXXXXXX					
10 ☐ Revision		11 If revision, please list changes			
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE		
12 LEASE NO P-205			17 LEASE NO P-205		
13 AREA NAME 6B			18 AREA NAME 6B		
14 BLOCK NO 4661			19 BLOCK NO 4661		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) 727.020.46		16 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,046,687.31	20 LATITUDE (☐ NAD 83 / ☒ NAD 27) 727.020.46	21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,046,687.31	
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME	23 TOP (MD)	24 TOP (TVD)	22 NAME	23 TOP (MD)	24 TOP (TVD)
25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate) Drill program includes design criteria for well, casing program, drilling prognosis, casing program, mud program, directional program and 123S - Supplemental APD information					
26 CONTACT NAME Jody Robins		27 CONTACT TELEPHONE NO 805-745-2153		28 CONTACT E-MAIL ADDRESS jody.robins@venocoinc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Larry Huskins		30. TITLE Operations Manager			
31 AUTHORIZING SIGNATURE 		32. DATE 31-JUN-2012			
THIS SPACE FOR BSEE USE ONLY					
APPROVED: ☐ With Attached Conditions ☐ Without Conditions		BY		TITLE	
API WELL NO ASSIGNED TO THIS WELL				DATE	

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☒ NO ☐ N/A	This is the 28th well drilled with the same structural pipe set depth.
D) If requesting a waiver of the conductor casing, have you submitted a log to BSEE District Office that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☒ YES ☐ NO ☐ N/A	
G) Is the calculated daily volume possible from an uncontrolled blowout of this well greater than the daily volume included in the worst case discharge scenario in the approved oil spill response plan?	☐ YES ☒ NO ☐ N/A	Approved field drilling rules.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco Inc.				2) Well Name (Proposed): E-28 ST BP			
3) Bottom Hole Lease: P-0205				4) Surface Lease: P-0205			
5) API Number: 04311 XXXXXX				6) Type of Well: ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): 4000'			
9) Rig Name: Kora 2				10) SubSea BOP: ☐ Yes ☒ No			
11) Water Depth (ft): 739'		12) RKB Height (ft): 108'		13) Mineral Code:			
14) Drive Pipe Size (in): 24"		15) Drive Pipe Depth (ft): N/A		16) Anchors: ☐ Yes ☒ No			

17) Well Design Information																													
Interval Number: 1			Type: Conductor			Name:																							
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)																					
1	24"	185	X-56	3060		1450	1400' 1400'	862																					
<table border="1"> <tr> <th>GENERAL INFORMATION</th> <th>PREVENTER INFORMATION</th> <th>TEST INFORMATION</th> </tr> <tr> <td>Hole Size (in): 26</td> <td>Type: N/A</td> <td>Annular Test (psi): N/A</td> </tr> <tr> <td>Mud Weight (ppg): 8.7</td> <td>Size (in):</td> <td>BOP/Diverter Test (psi):</td> </tr> <tr> <td>Mud Type Code:</td> <td>Wellhead Rating (psi):</td> <td>Mud Test Weight (ppg):</td> </tr> <tr> <td>Frac Gradient (ppg): N/A</td> <td>Annular Rating (psi):</td> <td>Casing/Liner Test (psi): 200</td> </tr> <tr> <td>Liner Top Depth (ft):</td> <td>BOP/Diverter Rating (psi):</td> <td>Formation Test (ppg):</td> </tr> <tr> <td>Cement Volume (ft³): 1460'</td> <td></td> <td></td> </tr> </table>									GENERAL INFORMATION	PREVENTER INFORMATION	TEST INFORMATION	Hole Size (in): 26	Type: N/A	Annular Test (psi): N/A	Mud Weight (ppg): 8.7	Size (in):	BOP/Diverter Test (psi):	Mud Type Code:	Wellhead Rating (psi):	Mud Test Weight (ppg):	Frac Gradient (ppg): N/A	Annular Rating (psi):	Casing/Liner Test (psi): 200	Liner Top Depth (ft):	BOP/Diverter Rating (psi):	Formation Test (ppg):	Cement Volume (ft ³): 1460'		
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Type:			Name:																										
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)																					
<table border="1"> <tr> <th>GENERAL INFORMATION</th> <th>PREVENTER INFORMATION</th> <th>TEST INFORMATION</th> </tr> <tr> <td>Hole Size (in):</td> <td>Type:</td> <td>Annular Test (psi):</td> </tr> <tr> <td>Mud Weight (ppg):</td> <td>Size (in):</td> <td>BOP/Diverter Test (psi):</td> </tr> <tr> <td>Mud Type Code:</td> <td>Wellhead Rating (psi):</td> <td>Mud Test Weight (ppg):</td> </tr> <tr> <td>Frac Gradient (ppg):</td> <td>Annular Rating (psi):</td> <td>Casing/Liner Test (psi):</td> </tr> <tr> <td>Liner Top Depth (ft):</td> <td>BOP/Diverter Rating (psi):</td> <td>Formation Test (ppg):</td> </tr> <tr> <td>Cement Volume (ft³):</td> <td></td> <td></td> </tr> </table>									GENERAL INFORMATION	PREVENTER INFORMATION	TEST INFORMATION	Hole Size (in):	Type:	Annular Test (psi):	Mud Weight (ppg):	Size (in):	BOP/Diverter Test (psi):	Mud Type Code:	Wellhead Rating (psi):	Mud Test Weight (ppg):	Frac Gradient (ppg):	Annular Rating (psi):	Casing/Liner Test (psi):	Liner Top Depth (ft):	BOP/Diverter Rating (psi):	Formation Test (ppg):	Cement Volume (ft ³):		
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Cement Volume (ft ³):																													

* NOTE * For additional casing/liner intervals, please submit an additional Form 0123S.

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. BSEE uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for Forms BSEE-0123 and BSEE-0123S is estimated to average 100 hours per response. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Bureau of Safety and Environmental Enforcement, 381 Elden Street, Herndon, VA 20170.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-28 NEW WELL DRILLING PROGRAM
API# 04-311- 20XXXXX
LEASE OCS-P-0209

January 31, 2012

Attachment to BSEE Permit – Conductor Casing Program

Objective: Drill 26" hole and run and cement 24" conductor casing for well E-28.

Surface Location: OCS-P-205 - Slot No. 25 (X= 1,046,687.31' & Y= 727,020.46')

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Proposed Conductor TD: OCS-P-205, 1400' MD/1400' TVD

TD Location: 0.0' N and 0.0' W or (X= 1,046,687.31' & Y= 727,020.46')

Proposed Casing:

MD

TVD

24", 186# (75" Wall), X-56, DrilQuip S-60

1400'

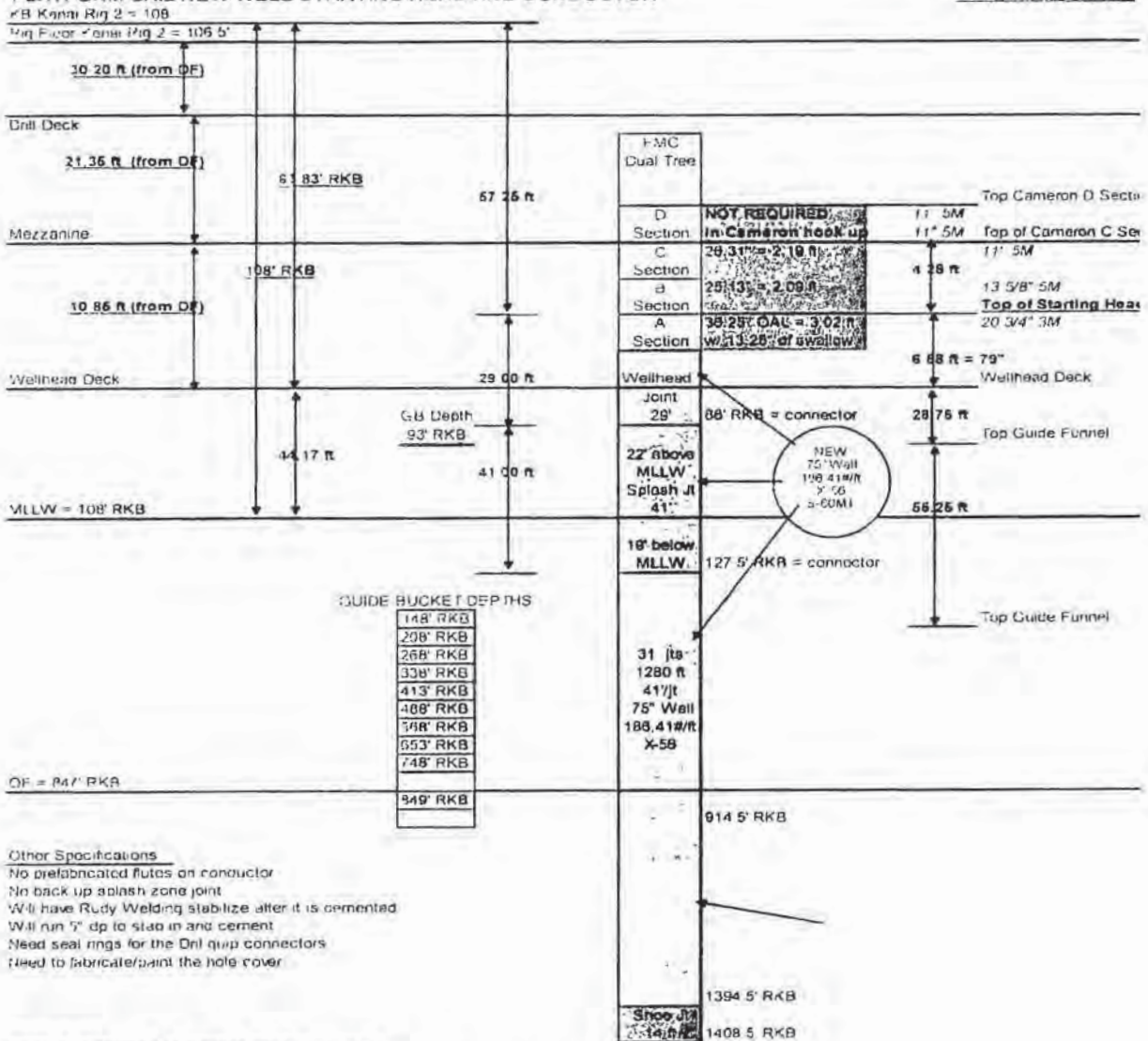
1400'

26" Hole Section

1. Move rig over slot #25. Install ESD station on rig floor or driller's console.
2. M/U 26" bit and BHA
3. Drill a riserless 26" hole from the ocean floor to +/-1420' (573' penetration).
 - Hole should be drilled at 75 to 100 fph rate unless WOB indicates rock is firm
 - Pump Durogel sweeps prior to each connection
 - Run a drift shot after passing through the last guide funnel before commencing to ensure the drill pipe did not get outside the guide buckets
 - Make drift checks every connection with Gyro to ensure straight hole
 - Drill the hole to fit the pipe plus 20' of rat hole
 - Review NPDES and perform all required sampling, testing and monitoring. Fill out discharge sheet daily. Mud volumes and cuttings must be accounted for and reported while drilling the riserless hole section. Report any spills immediately.
4. Circulate hole clean to mud line with seawater/50 bbl sweep at as high a rate as possible. Spot a 100+ viscosity pre-hydrated gel pill across the open hole. POOH.
5. Run 24" casing with Dril-Quip rep on location:
 - Rig up spider bowl and hand slips, 250 ton side door elevator, & power tong
 - R/U casing fill-up line. Be ready to wash down casing if necessary – 24" circulating swage is required. Test fit head prior to spud well.
 - P/U 41' joint with float shoe installed.
 - Run remaining 24" range 3, 75" wall X-56 casing with Dril-Quip S-60 connections
 - No centralizers will be run.
 - Install two anti-rotation keys per joint.
 - Pump through each joint to check the shoe floats
 - Use the crane to tail each joint to the rig floor
 - Fill joints with calculated amount of seawater.
 - P/U splash zone joint that is coated with Carboline 1207. Do not fill this joint.
 - P/U wellhead joint. This joint is coated with white System IV to prevent corrosion. Do not fill this joint.
 - Calculate approximate cut-off point of the wellhead joint and grind seam weld off of 24" casing to allow cutter and slip-lok starting wellhead to function – this should be done on the deck.
 - Land the casing with splash zone joint positioned +/- midway at MLLW. Do not fill.
6. P/U Weatherford slotted base plate designed to fit on top of the 24" with 5" bowl and slips.
7. M/U stab-in cement stinger on 5" drill pipe and TIH. Place centralizers on the bottom joint and the third joint. Space out to get as close to the rig floor as possible.
8. Stab into the shoe and rig up BJ cement line. Leave enough slack to unsting from the shoe to dump cement on top of float shoe at end of job.

PLATFORM GAIL NEW WELL STARTING HEAD AND CONDUCTOR

REV January 12, 2010



MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP
Seafloor-1,400' (26" hole)	SW/Gel/Durogel Sweeps	8.6 - 8.9	<20	8.5-9.5	20-35

Sea Floor -1400' This interval will be drilled with seawater/Durogel high viscosity sweeps with returns to the sea floor. Build seawater/Durogel sweeps with PV:YP ratio of 1:4+ using high rate of dispersion. Add Soda Ash after Durogel is dispersed to extend viscosity. It is imperative to make sure the hole is clean and stable to get the casing to bottom.

Theoretical hole volume: 920 bbls

Vertical to xxxx'

Max Angle:

D.F. Elevation: 107'

D.F. to Tubing Head: XX XX

Water Depth: 739'

Tree: Cameron Dual (Proposed)

Wellhead: Cameron

Lease: OCS-P-0204
SOCKEYE FIELD
WELL E-28 Proposed
M2 Producer

Drawing Revision for

Completion Date.



24" 186# X-56 CSG to 1400'

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☒ NEW WELL ☐ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 BSEE OPERATOR NO 02309		3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013	
4 WELL NAME (CURRENT) E-28		5 SIDETRACK NO (CURRENT)		6 BYPASS NO (CURRENT)	
7 PROPOSED START DATE February 6, 2012		8 PLAN CONTROL NO. (NEW WELL ONLY)			
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04311 XXXXXXX					
10 ☐ Revision		11 If revision please list changes			
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE		
12 LEASE NO			17 LEASE NO.		
13 AREA NAME			18 AREA NAME		
14 BLOCK NO			19 BLOCK NO		
15 LATITUDE (☐ NAD 83 / ☐ NAD 27)		16 LONGITUDE (☐ NAD 83 / ☐ NAD 27)		21 LONGITUDE (☐ NAD 83 / ☐ NAD 27)	
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME		23 TOP (MD)		24 TOP (TVD)	
25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate.) Drill program includes design criteria for well, casing program, drilling prognosis, casing program, mud program, directional program and 123S - Supplemental APD information.					
26 CONTACT NAME Jody Robins		27 CONTACT TELEPHONE NO 805-745-2153		28 CONTACT E-MAIL ADDRESS jody.robins@venocoinc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Larry Huskins		30 TITLE Operations Manager			
31 AUTHORIZING SIGNATURE 		32 DATE 31-JAN-2012			
THIS SPACE FOR BSEE USE ONLY					
APPROVED ☐ With Attached Conditions ☐ Without Conditions		BY		TITLE	
API WELL NO ASSIGNED TO THIS WELL				DATE	

Application for Permit to Drill (APD) Information Sheet

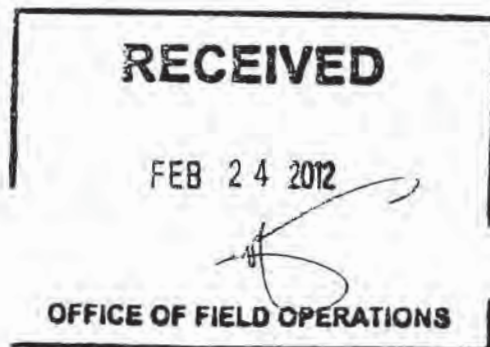
33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☐ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☐ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☐ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to BSEE District Office that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☐ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☐ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☐ NO ☐ N/A	
G) Is the calculated daily volume possible from an uncontrolled blowout of this well greater than the daily volume included in the worst case discharge scenario in the approved oil spill response plan?	☐ YES ☐ NO ☐ N/A	



VENOCO, INC

February 23, 2012

Mr. Phil Schroeder
District Manager
Bureau of Safety and Environmental Enforcement, Pacific OCS Region
770 Paseo Camarillo
Camarillo, CA 93010



RE: Platform Gail E-28 Blowout and Worst Case Discharge

Pursuant to NTL No. 2010-N06, a potential blowout for E-28 and worst case discharge (WCD) for Platform Gail in OCS P-0209 in the Santa Barbara Channel has been calculated to be 3,126 barrels of oil. The associated details for this calculation are presented on the following pages.

If you have any questions concerning this calculation, please do not hesitate to contact me at (805) 745-2198.

Regards,

A handwritten signature in dark ink, appearing to read "Jon Snyder", written in a cursive style.

Jon Snyder

Petroleum Engineer

A. BACKGROUND

E-28 will be a horizontal well at Platform Gail in the Santa Barbara Channel offshore California in OCS P-0209 in the H03 PUD location targeting the Monterey M2 formation.

B. VOLUME

The worst case blowout while drilling E-28 has been calculated to be 0 barrels of oil. In addition, the worst case discharge for Platform Gail and associated pipelines has been calculated to be 3,126 barrels of oil. The summation of these two components is 3,126 barrels of oil (see Table B-1). For comparison, Venoco Inc.'s *Santa Clara Oil Spill and Gas Contingency Plan* has a total worst case spill volume of 3,776 barrels of oil.

In the unlikely event a blowout occurs, Venoco including its OSRO (Clean Seas) and contracted response resources maintain on-water recovery capability of approximately 61,207 bbls.

C. RELIEF WELL TIMING

Since the worst case blowout while drilling E-28 has been calculated to be 0 barrels of oil per day (BOPD), a relief well is not needed.

D. BLOWOUT PREVENTION

All drilling operations will conform to BSEE regulations and NTL-05.

E-28 will be drilled with mud weights ranging from 8.7 ppg to 9.6 ppg. Anticipated formation pressures are 8.4 ppg equivalent or less. Therefore, the well will be drilled with enough mud weight to control and prevent any flow. In addition, a 5,000 psi rated blowout preventer (BOP) will be used. The BOP will include a BSEE-approved blind shear ram to shear any drill pipe if an unexpected blowout occurs.

E: GENERAL INFORMATION

Please refer to appendix.

Appendix: Assumptions, Calculations, Tables & Figures

A. BACKGROUND

No additional information for this section.

B. VOLUME

The worst case blowout and discharge scenario assumes a blowout occurs on the ocean floor and Platform Gail is not able to control a blowout from E-28.

B.1 Discussion of Calculations

Platform Gail Worst Case Discharge

Please refer to appendix H of Venoco, Inc.'s *Santa Clara Unit Oil Spill and Gas Contingency Plan*.

E-28 Ocean Floor Blowout Scenario

In the unlikely event Platform Gail is incapable of controlling a blowout from E-28; seawater would overpressure the under pressured Monterey M2 formation.

Utilizing nodal analysis, the E-28 blowout scenario was calculated to flow 0 BOPD at a water depth of 739 ft (see Figure B-1).

Nodal Analysis Discussion

All nodal analysis calculations were performed using *Petroleum Experts IPM 7.5 Prosper* software.

In order to model E-28, a productivity index (PI) for the Monterey M2 formation was needed. This PI was calculated after modeling inflow performance relationship (IPR) and vertical lift performance (VLP) curves for analogous well E-17. These curves were matched to downhole pressure surveys and separator test rates.

- Downhole Pressure Survey: In May 2010, a pressure gradient survey and pressure buildup was conducted on Monterey M2 well E-08ST2 indicating reservoir pressure less than 1,500 psia. Due to the purpose of calculating a worst case scenario, a higher pressure measurement from E-17RD was chosen.

A pressure gradient survey and pressure buildup was conducted on E-17RD in late April 2007 through early May 2007 (see Table B-2). Based on that survey, and using a hydrostatic pressure gradient of 0.439 psi/ft, static bottomhole pressure (BHP) was calculated to be 1,740 psia at a datum of 4,600 ft true vertical depth (TVD) subsea.

- Separator Test Flow Rates: A separator flow test from April 23, 2007 before the downhole pressure survey and following pressure buildup was used to calculate a PI (see Table B-3).

- Productivity Index Result: After matching pressure and flow rate data, the IPR curve was modeled with a PI of 0.28754 STB/day/psi.
- VLR Curve: The vertical lift performance curve was calculated using a *Petroleum Experts 2* correlation.

Table B-1: E-28 Blowout and Platform Gail WCD

DISCHARGE COMPONENT	VOLUME (barrels of oil)
Platform vessels and piping	2,068
Diesel storage	890
Pipelines M-28 & M-30 at Gail	168
E-28 ocean floor blowout	0
TOTAL	3,126

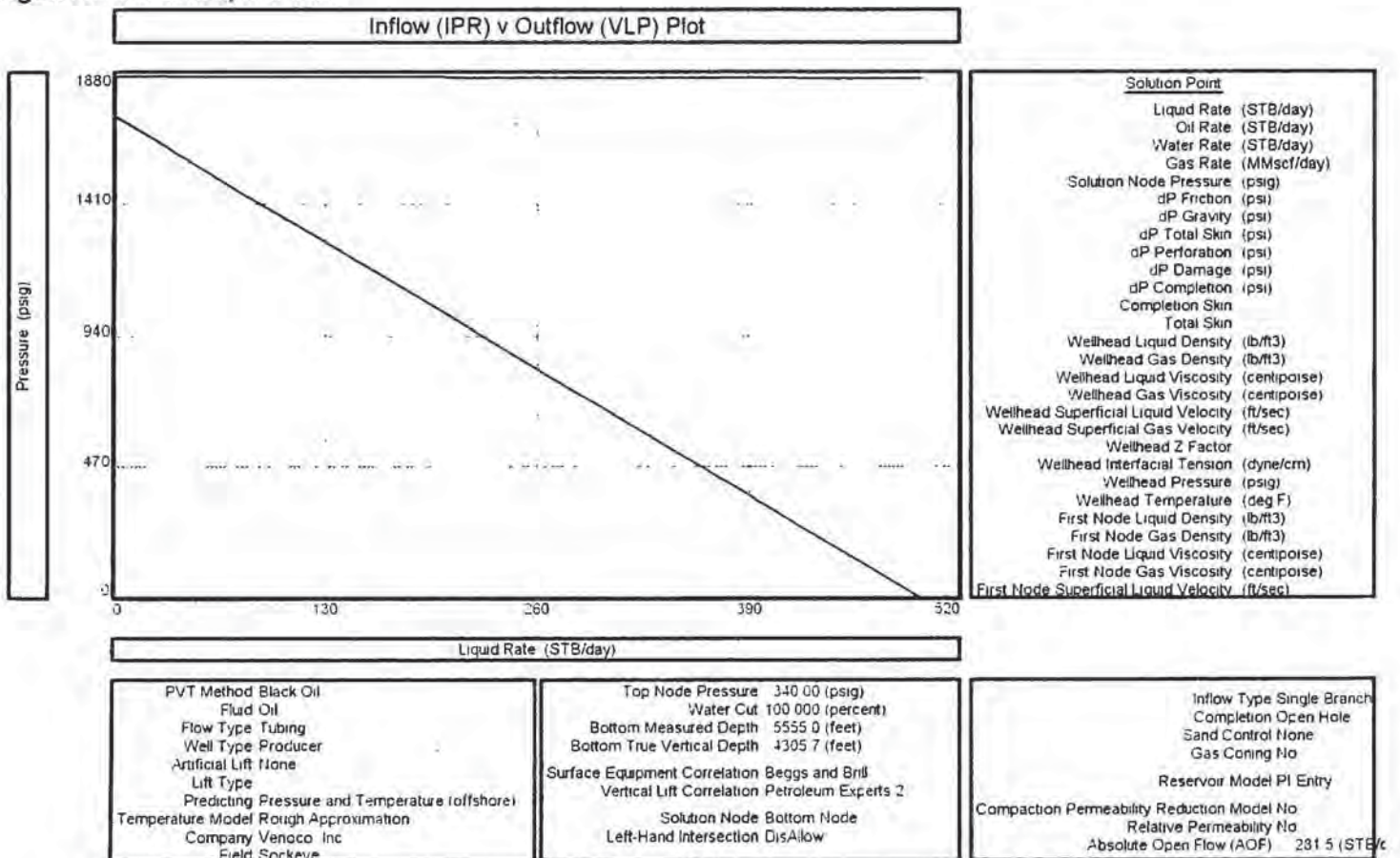
Table B-2: E-17RD Downhole Pressure Survey

START DATE	END DATE	GAUGE DEPTH (MD)	GAUGE DEPTH (TVD Subsea)	INITIAL FLOWING PRESSURE (psia)	FINAL STATIC PRESSURE (psig)
4/27/2007	5/14/2007	4,367	4,220	660	1,573

Table B-3: E-17RD Separator Test Rate

DATE	OIL (BOPD)	Water (BWPD)	GAS (MCFD)	FLUID (BFPD)	H ₂ O CUT (%)	GAS LIFT (MCFD)	TBG (psi)	CSG (psi)	CHOKE (1/64 in)
4/23/2007	176	44	971	220	20	271	150	850	192

Figure B-1: E-28 IPR/VLP Plot



C. RELIEF WELL TIMING

Since the calculated flow rate of a blowout from E-28 is 0 BOPD, a relief well is not needed.

E: GENERAL INFORMATION

Table E-1: Location

PLATFORM	OCS AREA	OCS BLOCK	WELL NAME
Gail	Pacific	P-0205	E-28

Table E-2: Wellbore Data

Kelly bushing elevation (ft):					107			
Water depth at proposed location (ft):					739			
Pressure at ocean floor (psia)					340			
CASING DATA								
INTERVAL NUMBER	HOLE SIZE (in)	CASING SIZE (in)	WEIGHT	GRADE	SETTING DEPTH			
					MD (ft)	TVD (ft)		
1	26	24	186	X-56	1,400	1,400		
2	17-1/2	13-3/8	61.0	K-55	2,720	2,608		
3	12-1/4	9-5/8	43.5	L-80	4,800	3,892		
LINER DATA								
					TOP	BASE	TOP	BASE
1	8-1/2	7	26.0	L-80	4,550	5,540	3,712	
2	8-1/2	5-1/2	11.6	L-80	5,540	10,594		4,703

*See attached wellbore diagram

Table E-3: Directional Plan

MD (ft)	INCLINATION (deg)	AZIMUTH (deg)	TVD (ft)	N/S (ft)	E/W (ft)	Vertical Section (ft)
0.00	0.00	260.000	0.00	0.00	0.00	0.00
1200.00	0.00	260.000	1200.00	0.00	0.00	0.00
1300.00	1.500	260.000	1299.99	-0.23	-1.29	0.95
1400.00	1.500	260.000	1399.95	-0.68	-3.87	2.84
3133.36	53.069	304.191	2890.86	413.53	-643.8	765.05
5150.00	53.069	304.191	4102.56	1319.42	-1977.21	2377.02
6215.77	56.851	303.698	4462.51	1870.05	-2796.10	3363.82
6315.77	86.851	303.698	4468.00	1925.45	-2879.17	3463.67
10593.78	86.851	303.698	4703.00	4295.34	-6433.01	7735.21

Table E-4: Geologic Data

IDENTIFY OPEN HOLE INTERVAL USED IN WCD CALCULATION						TOP MD	BASE MD
						5,555	10,583
FORMATION NAME	TOP		BASE		HEIGHT (interface in wellbore)	FORMATION THICKNESS (tvt)	USED IN WCD? (Y or N)
	MD	TVD	MD	TVD			
Monterey M1	4,918	3,968	5,555	4,312	637	344	N
Monterey M2	5,555	4,312	10,583	4,703	5,028	*70	Y

*Wellbore to remain in top 70 ft of formation. Gross thickness ~250 ft.

Table E-5: Reservoir Data

FORMATION NAME	Monterey M2
INITIAL PRESSURE	1,740 psia
INITIAL TEMPERATURE	140° F
PERMEABILITY	2-200 mD
MD THICKNESS OF FORMATION	250 ft gross/ 50 ft nett
DRIVE MECHANISM	Solution Gas

Table E-6: FLUID DATA

CHARACTERISTIC	CHARACTERISTIC VALUE	ANALOG USED
BUBBLE POINT PRESSURE, P_b (PSI)	2,006	E-1S Monterey M4
INITIAL FORMATION VOLUME FACTOR, B_{oi} (BBL/STB)	1.15	E-1S Monterey M4
OIL VISCOSITY, μ_o (CP)	18.4	E-1S Monterey M4
OIL COMPRESSIBILITY, c_o (1/PSI)	6.42E-6	E-1S Monterey M4
OIL API GRAVITY, ρ_{oil} (°API)	17.7	E-1S Monterey M4
STATIC OIL GRADIENT, G_{oil} (PSI/FT)	0.411	E-1S Monterey M4
INITIAL SOLUTION GAS-OIL RATIO, R_{si} (SCF/STB)	304	E-1S Monterey M4
GAS SPECIFIC GRAVITY, γ_g	0.813	E-1S Monterey M4
WATER CUT (%)	91	E-25S Monterey M4
WATER SALINITY (ppm)	30,000	

Figure E-1: E-28 Proposed Wellbore Diagram

Vertical to xxxx'
 Max Angle: 20 deg @ xxxx'
 D.F. Elevation: 1027'
 D.F. to Tubing Head: xxxx'
 Water Depth: 730'
 Wellhead: Cameron
 Tree: Cameron

SOCKEYE FIELD
WELL E-28
 Lease: OCS-P-0209
Single Completion M2 Producer

Drawing Revision 2/14/2012 JCR

Completion Date:

Description	ID	LENGTH	DEPTH
RFKB		51.30	2
Cameron Tubing Hanger		2.75	51.80
2-7/8" 5.5# L-80 eue 8rd pup joint	2.411	3.55	52.55
31 joints 2-7/8" 5.5# L-80 eue 8rd bg	2.411	354.72	56.10
2-7/8" 5.5# L-80 eue 8rd pup joint	2.411	5.37	1020.82
Baker 2-7/8" TE-5 TRSSSV	2.313	5.19	1026.79
2-7/8" 5.5# L-80 eue 8rd pup joint	2.411	4.03	1031.98
XX joints 2-7/8" 5.5# L-80 eue 8rd bg	2.411	3200.00	1036.01
2-7/8" 5.5# L-80 eue 8rd pup joint	2.411	4.10	1036.01
BST GLMA-1 Mandrel	2.411	7.33	1040.11
2-7/8" 5.5# L-80 eue 8rd pup joint	2.411	3.69	1047.44
XX joints 2-7/8" 5.5# L-80 eue 8rd bg	2.411	1200.00	10251.13
2-7/8" 5.5# L-80 eue 8rd pup joint	2.411	4.09	5451.13
BST GLMA-1 Mandrel	2.411	7.31	5455.22
2-7/8" 5.5# L-80 eue 8rd pup joint	2.411	3.68	5462.53
1 joint 2-7/8" 5.5# L-80 eue 8rd bg	2.411	31.00	5466.21
Baker CMD Sliding Sleeve	2.313	4.00	5497.21
2-7/8" 5.5# L-80 eue 8rd pup joint	2.411	5.04	5501.21
Baker 7" HS Hydraulic Packer	2.991	5.89	5507.25
2-7/8" 5.5# L-80 eue 8rd pup joint	2.411	4.03	5513.14
1 joint 2-7/8" 5.5# L-80 eue 8rd bg	2.411	31.43	5517.17
2-7/8" 5.5# L-80 eue 8rd pup joint	2.411	4.00	5548.60
2-7/8" BX Nipple	2.313	1.15	5552.60
1 joints 2-7/8" 5.5# L-80 eue 8rd bg	2.411	31.00	5553.75
2-7/8" BXN Nipple	2.205	1.15	5584.75
2-7/8" 5.5# L-80 eue 8rd pup joint	2.411	5.12	5585.90
Vitrene re-entry guide	2.411	0.38	5592.02
Tubing Tail			5592.40

Formation Tops	
M1	XXXX
M2	XXXX
TD	XXXX

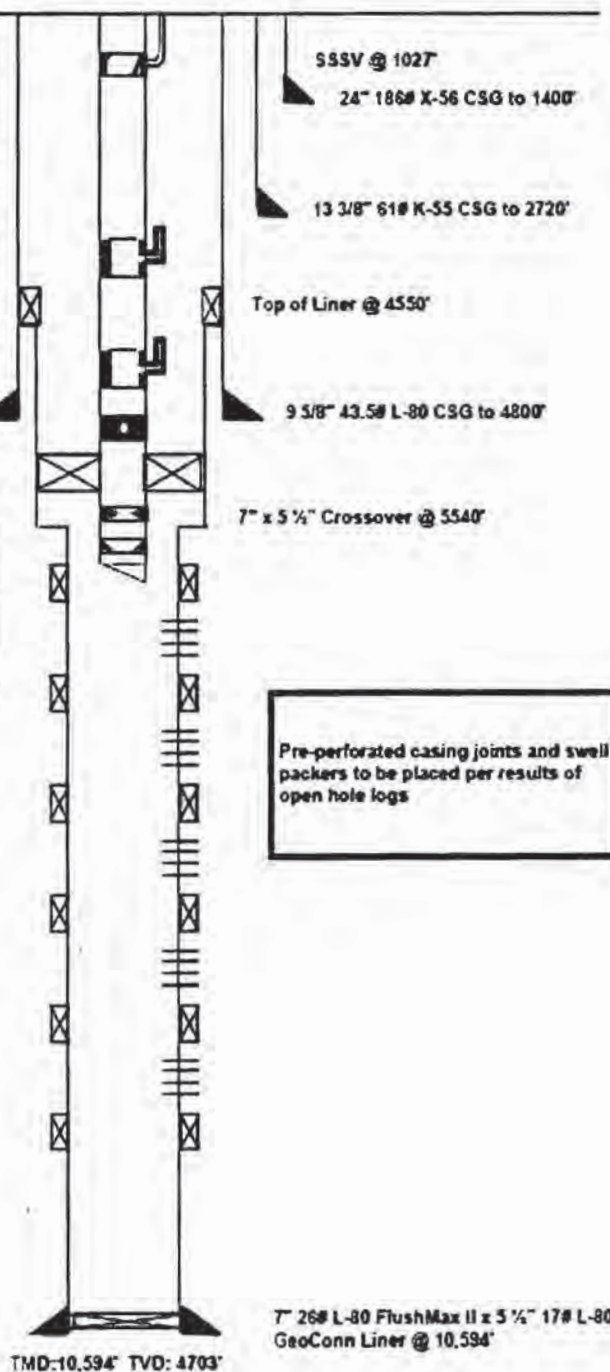


Figure E-3: Monterey M4 Structure-Contour Map

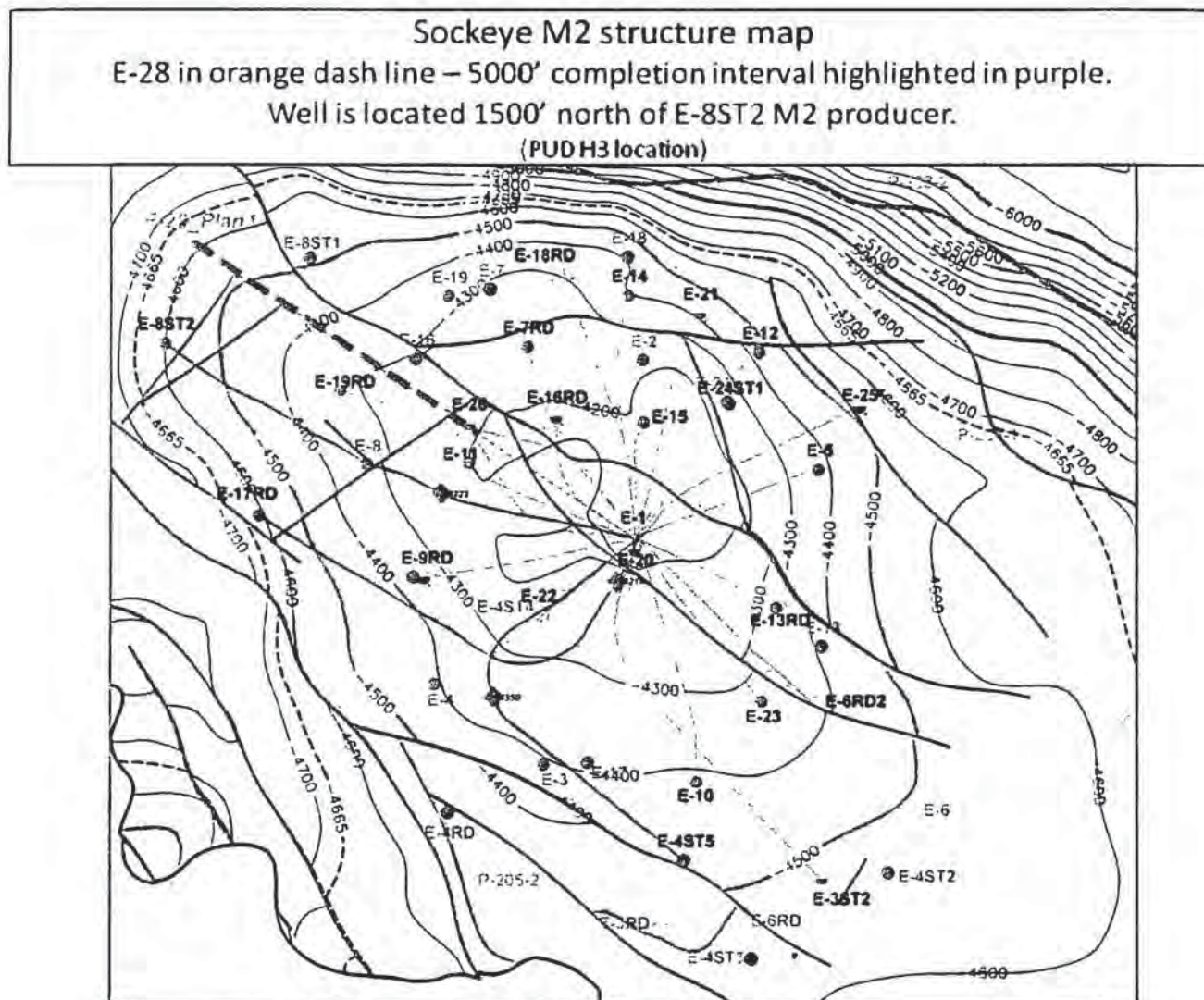
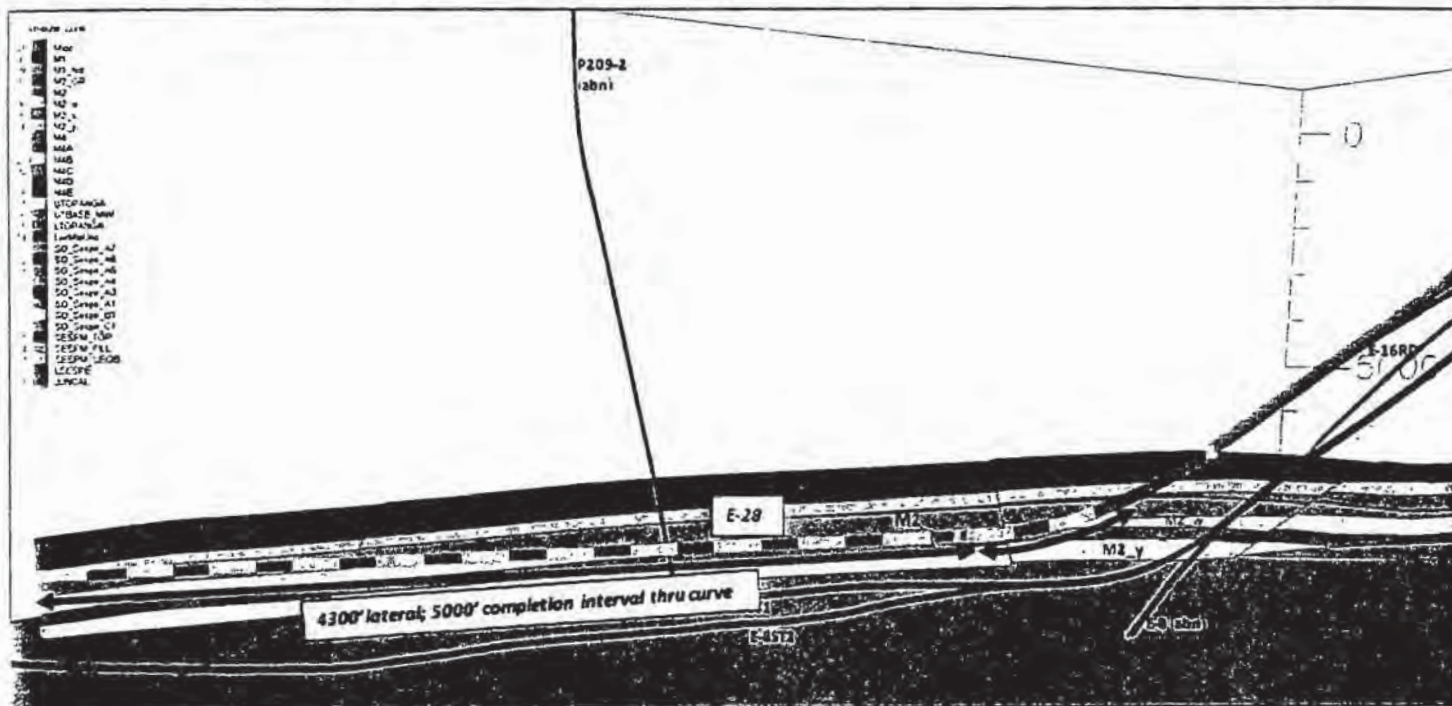


Figure E-5: Proposed E-28 Well Path

E-28 Prop1 (in blue): 4300' M2 lateral to the NW of the platform; TD's 1500' north of E-8ST2; ~88 degree dogleg well lands ~70' below top M2 and gradually cuts up-section to TD.

Completion interval will be from top M2 penetration to TD (dashed orange, 5000').





United States Department of the Interior
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
WASHINGTON, DC 20240-0001

FEB 08 2012

Memorandum

To: Regional Director
Bureau of Safety and Environmental Enforcement
Pacific Outer Continental Shelf Region

From: Charles B. Barbee
Chief, Environmental Enforcement Division

Subject: Categorical Exclusion Review (CER) – Venoco, Inc., Conductor Casing
Application for Permits to Drill, Wells E-27 and E-28, Platform Gail, Santa Clara
Unit, Pacific OCS Region, Offshore Ventura County, California

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The Bureau of Ocean Energy Management (BOEM) Office of the Environment, on behalf of the Bureau of Safety and Environmental Enforcement (BSEE) Environmental Enforcement Division, has reviewed Venoco's Application for a Permit to Drill (APD), dated January 31, 2011, for setting the 24" conductor casing for new Wells E-27 and E-28 from Platform Gail in the Santa Clara Unit¹. A riserless vertical hole will be drilled to +/- 1400 ft. to set the conductor casings. All drilling muds, cuttings and cement will be accounted for and returned to the seafloor per Platform Gail's current NPDES permit requirements. Because no hydrocarbons are anticipated to be encountered during these shallow drilling operations to set the conductor casings, no oil spills are expected to occur. Drilling these wells is therefore expected to pose little or no risk of a blowout that could result in an oil spill. Please be aware that this approval only applies to the setting of the requested conductor casings, and the environmental review for the drilling of Well E-28 will be conducted following submission of a revised APD by Venoco.

Setting of the conductor casing of the proposed wells is consistent with Venoco's approved Development and Production Plan (DPP), dated January 29, 1986. The environmental effects of this DPP were evaluated in a Minerals Management Service Environmental Assessment dated June 19, 1986. Endangered species consultations with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) were concluded in June 1986 with a determination that implementation of the DPP would not jeopardize the existence of endangered or threatened species. The BOEM is currently working with FWS and NMFS to update this and other endangered species consultations on a programmatic level while current offshore development and production activities continue.

Approval of Venoco's APD for setting conductor casings for Wells E-27 and E-28 meet the definition of the Categorical Exclusion for "Approval of an Application for Permit to Drill (APD) an offshore oil and gas exploration or development well, when said well and appropriate

¹ This office provided a CER for Well E-27 on January 14, 2012, which covered the entirety of the well. Because the current cover material for the Well E-28 APD also noted the conductor installation for Well E-27, we included that portion of Well E-27 in this CER.

mitigation measures are described in an approved exploration plan, development plan, production plan, or Development Operations Coordination Document." [516 DM 15.4.C (12)]. We additionally reviewed the extraordinary circumstances found in the Departmental regulations at 43 CFR 46.215 and found that none exist (Table 1). As a result, we have determined that Venoco's conductor casing APD for Wells E-27 and E-28 is categorically excluded from further National Environmental Policy Act review.

Attachment

Table 1. Review of Extraordinary Circumstances (43 CFR 46.215) for Venoco's Conductor Casing Application for Permit to Drill (APD) for Wells E-27 and E-28, Platform Gail, Santa Clara Unit, Offshore Ventura County, California.

The APD has been reviewed to determine whether any of the extraordinary circumstances criteria listed below exist for the categorical exclusion of minor revisions or minor variances [516 DM 15.4.C (11)]. An environmental document must be prepared for actions which may represent an extraordinary circumstance (516 DM Appendix 2, revised June 21, 2005).

EXTRAORDINARY CIRCUMSTANCE CRITERIA	DO THESE EXTRAORDINARY CIRCUMSTANCE EXIST FOR THIS ACTION?
2.1 Have significant impacts on public health or safety.	No: Drilling activities will be conducted offshore under applicable safety and environmental regulations. Drilling of these wells is expected to have little or no risk of a blowout that could result in an oil spill.
2.2 Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990), floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas.	No: Platform Gail is near the Channel Islands National Park and Marine Sanctuary but the proposed activities are not expected to have an impact on resources in these areas.
2.3 Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA Section 102(2)(E)].	No: Unresolved conflicts are not expected for this area of the Federal OCS.
2.4 Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks.	No: Of greatest environmental concern is the risk of an oil spill. Risk of an oil spill is low for this proposal and any effects of an oil spill that may occur are well documented and evaluated in previous environmental reviews. All activities will comply with existing NPDES permit requirements.
2.5 Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects.	No: The activities proposed are consistent with existing, approved development and production plans for the area.
2.6 Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects.	No: Past, present or reasonably foreseeable oil and gas development in the area have been evaluated and considered in previous environmental reviews.
2.7 Have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by either the bureau or office.	No: Proposed activities will not occur in the vicinity of properties listed, or eligible for listing, on the National Register of Historic Places.
2.8 Have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species.	No: Previous consultations with FWS and NMFS have concluded that the proposed activity will not result in jeopardy to any listed species.
2.9 Violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment.	No: Proposed activities will be conducted in compliance with all applicable laws imposed for the protection of the environment.
2.10 Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898).	No: The proposed activities will not disproportionately affect low income or minority populations.
2.11 Limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007).	No: Proposed activities will not limit access or ceremonial use of Indian sacred sites.
2.12 Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive	No: Proposed activities will be conducted on the Federal OCS using existing local vessels (crewboats, workboats, etc.).

SUMMARY OF DOCUMENT CONTENTS (if a revision, give rationale for change)

3 ORIGINATOR			
ORGANIZATION	NAME AND TITLE	TELEPHONE NUMBER	DATE
Chief, EED	Charlotte Bennett, secretary	(703)787-1702	02-07-2012

44-228 (Rev 12/79)



United States Department of the Interior

BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT

PACIFIC OCS REGION

770 Paseo Camarillo, 2nd Floor

Camarillo, CA 93010-6064

March 14, 2012

Memorandum

To: Regional Director, Bureau of Safety and Environmental Enforcement, Pacific Outer Continental Shelf Region

From: Kenneth Seeley
Regional Environmental Officer *Kenneth Seeley*

Subject: Categorical Exclusion Review (CER) – Venoco, Inc., Application for Permit to Drill, Well E-28, Platform Gail, Santa Clara Unit, Pacific OCS Region, Offshore Ventura County, California

The Bureau of Ocean Energy Management (BOEM) Office of the Environment, on behalf of the Bureau of Safety and Environmental Enforcement (BSEE) Environmental Enforcement Division, has reviewed Venoco's Application for a Permit to Drill (APD), dated February 22, 2012, for drilling Well E-28 from Platform Gail in the Santa Clara Unit¹. The California District has determined that approval of this APD will result in a "no-flow" well—a well that will not flow without stimulation, in-well pumping, or other artificial lift. Drilling this well is therefore expected to pose little or no risk of a blowout that could result in an oil spill.

Drilling of the proposed well is consistent with Venoco's approved Development and Production Plan (DPP), dated January 29, 1986. The environmental effects of this DPP were evaluated in a Minerals Management Service (MMS) Environmental Assessment dated June 19, 1986. Endangered species consultations with the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS) were concluded in June 1986 with a determination that implementation of the DPP would not jeopardize the existence of endangered or threatened species. The BOEM and the BSEE are currently working with FWS and NMFS to update this and other endangered species consultations on a programmatic level while current offshore development and production activities continue.

Approval of Venoco's APD for Well E-28 meets the definition of BSEE's Categorical Exclusion for "Approval of an Application for Permit to Drill (APD) an offshore oil and gas exploration or development well, when said well and appropriate mitigation measures are described in an approved exploration plan, development plan, production plan, or Development Operations Coordination Document" [516 DM 15.4.C (12)]. The extraordinary circumstances found in the Departmental regulations at 43 CFR 46.215 and found that none exist (Table I, attached) were also reviewed. An environmental document must be prepared for actions which may represent an extraordinary circumstance (516 DM Appendix 2, revised June 21, 2005). As a result, we have determined that Venoco's APD for Well E-28 is categorically excluded from further National Environmental Policy Act review.

Attachment

¹ This office provided a CER for the setting of conductor casing for Wells E-27 and E-28 on February 8, 2012.

Table 1. Review of Extraordinary Circumstances (43 CFR 46.215) for Venoco's APD for Well E-28, Platform Gail, Santa Clara Unit, Offshore Ventura County, California.

EXTRAORDINARY CIRCUMSTANCES Will the proposal...	FINDING
(a) Have significant impacts on public health or safety.	No: Drilling activities will be conducted offshore under applicable safety and environmental regulations. Drilling of these wells is expected to have little or no risk of a blowout that could result in an oil spill.
(b) Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas.	No: Platform Gail is near the Channel Islands National Park and Marine Sanctuary but the proposed activities are not expected to have an impact on resources in these areas.
(c) Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA Section 102(2)(E)].	No: Unresolved conflicts are not expected for this area of the Federal OCS.
(d) Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks.	No: Of greatest environmental concern is the risk of an oil spill. Risk of an oil spill is low for this proposal and any effects of an oil spill that may occur are well-documented and evaluated in previous environmental reviews.
(e) Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects.	No: The activities proposed are consistent with existing, approved development and production plans for the area.
(f) Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects.	No: Past, present or reasonably foreseeable oil and gas development in the area have been evaluated and considered in previous environmental reviews.
(g) Have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by either the bureau or office.	No: The proposed activities will not occur in the vicinity of properties listed, or eligible for listing, on the National Register of Historic Places.
(h) Have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species.	No: Previous consultations with FWS and NMFS have concluded that the proposed activity will not result in jeopardy to any listed species.
(i) Violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment.	No: The proposed activities will be conducted in compliance with all applicable laws imposed for the protection of the environment.
(j) Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898).	No: The proposed activities will not disproportionately affect low income or minority populations.
(k) Limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007).	No: The proposed activities will not limit access to or prevent the ceremonial use of Indian sacred sites.
(l) Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112).	No: The proposed activities will be conducted on the Federal OCS using existing local vessels (crewboats, workboats, etc.).

bcc: 1001-03(b) Minor Environmental Analysis Files (HQ) w/ attach.
1703-02a(3) (OLE) Santa Clara Unit (POCSR vault) w/ attach.
Chron (POCSR OE) w/ attach.

ecc: Electronic File: 1102-01 b-Field Development (by name) (POCSR BOEM) w/ attach
BSEE Pacific RD w/ attach.
BSEE Pacific Chief, ROS w/ attach.
District Manager, California District w/ attach.
BSEE Chief EED w/ attach.
BOEM Pacific, RS/OE w/ attach.
BOEM Pacific, Chief EAS w/ attach.
J. Kaiser w/attach.

March 15, 2012

Memorandum

To: Drew Mayerson, Regional Supervisor, Office of Production and Development

From: Robert Dame, Geophysicist, Office of Production and Development

Subject: Geologic Hazards Analysis for E-28 Development Well APD (Proprietary)

NOTE: THIS GEOHAZARDS ANALYSIS IS INTENDED TO ALERT THE OPERATOR AND DISTRICT ENGINEERS TO POTENTIAL GEOLOGIC HAZARDS THAT MAY BE ENCOUNTERED DURING DRILLING OPERATIONS. THIS ANALYSIS DOES NOT RELIEVE THE OPERATOR OF THE RESPONSIBILITY TO CONDUCT THEIR OWN GEOHAZARD ANALYSIS PRIOR TO AND DURING THE DRILLING OF THIS WELL. A WORST CASE DISCHARGE ANALYSIS WAS NOT REQUESTED FOR THIS REVIEW.

Well No: E-28

Operator: Venoco

Unit: Santa Clara

Lease OCS-P: 0209 (bottom)

Lease OCS-P: 0205 (top)

Field: Sockeye

Platform: Gail

KB Elevation: 107 ft

Water Depth: 739 ft

Locations (est.)	X (ft)	Y (ft)	MD (ft)	TVD (ft)
Surface (Slot No. 25; OCS-P 0205)	1,046,687	727,020	+107	0
Pico			2,856	2,708
Monterey M1			4,926	3,968
Monterey M2			5,911	4,312
Permit TD (OCS-P 0209)	1,040,254	731,316	10,594	4,703

Summary of the Planned Operation

Venoco has submitted an Approval for Permit to Drill (APD) for the proposed well E-28, within the Santa Clara Unit, Offshore Ventura, California (Figure 1). The well is a new deviated well originating from Platform Gail which will pass through two active lease blocks, OCS-P 0205 and OCS-P 0209. According to the APD, the well will be a single completion well targeting production from the Monterey M2 Formation.

1. Geohazards Review Methodology:

This APD Geohazards review was carried out using 3D seismic reflection data, mud logs from previously drilled wells within the Sockeye field, shallow hazards mapping guidelines recommended in NTL 01-P01 and by the IODP, and results from the internal BSEE Sockeye Field Study to constrain well path lithology, shallow gas potential, and fault hazards and other safety-related concerns that may impact the success of the E-28 well drilling program.

2. Existing Wells:

Two existing wells lie nearby the proposed E-28 well path. Well E-11 lies about 280 feet northwest in lease block OCS-P 0205, and well E-16 lies about 1,250 feet southwest in lease block OCS-P 0205. Baker Hughes has prepared a well anti-collision report showing the proposed E-28 well path does not intersect any existing wells.

3. Potential Oil and Gas Reservoirs

The hydrocarbon zone of interest as mapped by Venoco is the Monterey. The well is to be drilled northwest through the crest of a regional northwest-southeast trending anticline and completed horizontally within the Monterey M2 Formation.

4. Regional Geologic Setting

The E-28 well lies within the eastern Santa Barbara Channel region of Western Transverse Ranges (WTR) Tectonic Province. The WTR is an east-west trending tectonic province characterized by strong north-south compression and widespread high-angle thrust faults due to transform motion on the San Andreas Fault to the east. Dominant structures near the Santa Clara Unit include the Pitas Point and Oak Ridge faults. The major hydrocarbon trap within the Sockeye field is a doubly-plunging anticline bounded by two high-angle thrust faults. Hydrocarbon production is constrained to rocks of Tertiary age, including the Miocene Monterey Topanga Formations.

5. Interpreted Well Stratigraphy

Stratigraphy for the E-28 well was constrained using logs from previous Sockeye wells and 3D time-migrated seismic reflection data. The E-28 well is interpreted to pass through 4 different stratigraphic zones during drilling operations ranging in age from Quaternary marine sediments to the Middle Miocene Monterey Formation. A tophole prognosis chart (Figure 2) shows anticipated well lithology to the total depth of 4,703' (TVD).

6. Possible Shallow Water Flow

There have been no previous instances of shallow water flow in any adjacent wells within the Sockeye Field.

7. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud logs of wells E-11 or E-16. Although the proposed drilling program for well E-28 is similar to nearby wells, lost circulation is common when drilling in the Monterey Formation and proper caution should be taken by the Operator during drilling operations.

8. Faulting

The Sockeye field is bounded by two high-angle thrust faults. The E-28 well path crosses a minor bending moment fault at approximately 4,500' TVD associated with uplift of a regional anticline. This fault is not interpreted to be capable of independent rupture or pose a hazard to the E-28 well.

9. Possible Shallow Gas Zones

Shallow gas may be encountered during drilling operations for the E-28 well. Gas has previously been encountered within the Pliocene Pico formation in other wells drilled in the Sockeye Field. The well, as planned, may pass through a localized zone of possible shallow gas at depths of around 2,708' TVD (Figure 2). It is recommended that the operator keep drilling mud of appropriate weight on hand to counteract any change in downhole pressure that may occur as a result of penetrating into gas-charged sediments.

10. Possible Overpressured or Depleted Zones

Venoco anticipates potentially encountering overpressured zones within the Pico Formation, beginning at 2,708' TVD. Drilling mud weights will range from about 9.0 to 9.4 ppg, which are above the highest expected pore pressure of 8.5 ppg. Venoco has included a well control contingency plan for abnormal drilling pressures.

11. Logging/Coring

Venoco plans LWD gamma ray and Electric Logging in the intermediate and production sections of the borehole (12.25" and 8.5" hole sections). Mud logging will commence with spudding of the well. Additionally, Venoco plans on taking a 30' core at depths of about 5,090' MD and 5,330' MD.

12. H₂S Gas

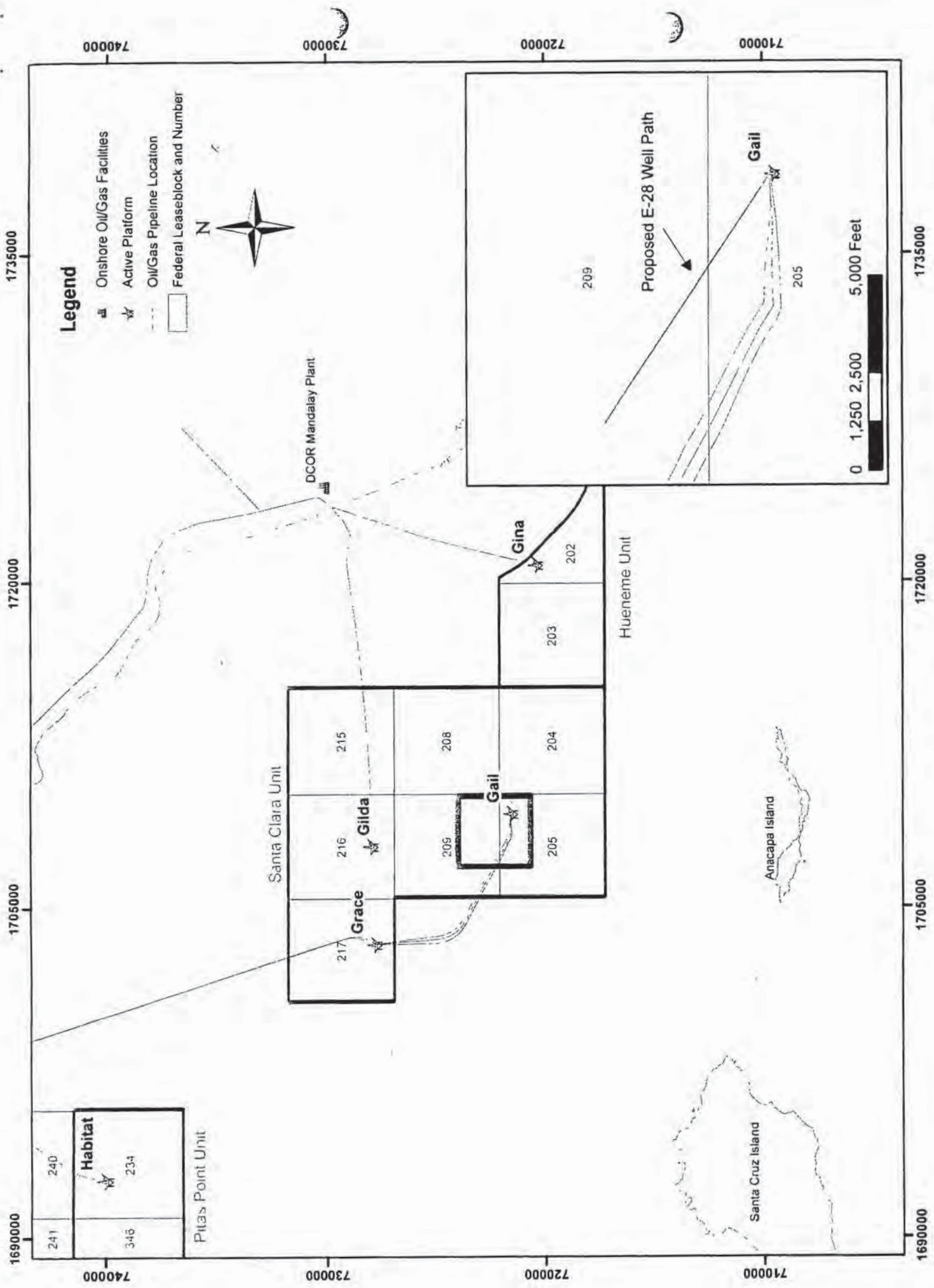
The Monterey Formation has the potential to contain H₂S gas. Based on the submitted APD, Venoco assumes any gas circulated to the surface will have hydrogen sulfide potential and will adhere to the BSEE approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan."

13. Worst Case Analysis

The District Supervisor did not request a worst case discharge analysis for this well. Should it be requested in the future, this would require modeling the maximum flow that could occur from an uncontrolled release of fluids derived from the uncased portion of the well within the Monterey Formation.

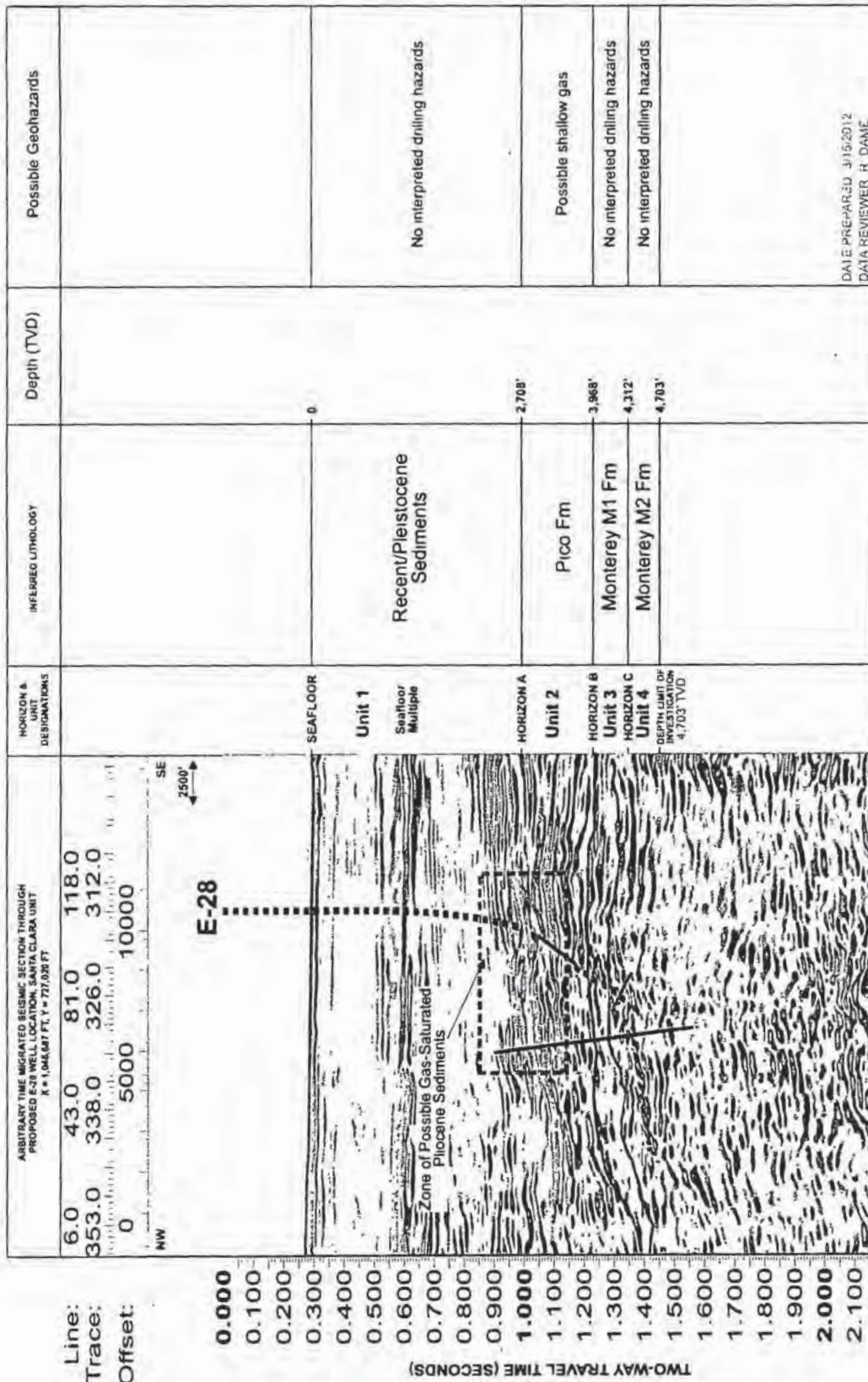
14. Conclusions and Recommendations

The E-28 development well appears favorable for development. No significant safety hazards are interpreted within the vicinity of the proposed well path. As stated previously, it is recommended the operator keep drilling mud of appropriate weight on hand to counteract any change in downhole pressure that may occur as a result of penetrating into Pliocene/Pico Formation gas-charged sediments at depths of around 2,708' TVD.



E-28 WELL APD LOCATION

FIGURE 1



TOPHOLE PROGNOSIS CHART
E-28 Sockeye Wellsite Assessment
Venoco Santa Clara Unit, Offshore Southern California

U.S. Department of the Interior
Bureau of Safety and Environmental
Enforcement (BSEE)

Submit original plus THREE copies,
with ONE copy marked "Public Information"

OMB Control No 1010-0141
OMB Approval Expires 10/31/2014

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☐ SIDETRACK ☒ BYPASS ☐ DEEPEN		2 BSEE OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013	
4 WELL NAME (CURRENT) E-28		5 SIDETRACK NO (CURRENT)	6 BYPASS NO (CURRENT)	
7 PROPOSED START DATE May 8, 2012		8 PLAN CONTROL NO (NEW WELL ONLY)		
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112080300				
10 ☒ Revision	11 If revision, please list changes Plugback and bypass of E-28 original hole to correct directional path			
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE	
12 LEASE NO P-205 <u>4</u>			17 LEASE NO P-205	
13 AREA NAME 6B			18 AREA NAME 6B	
14 BLOCK NO 4671			19 BLOCK NO 4661	
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) 731,316			20 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,040,254	
21 LATITUDE (☐ NAD 83 / ☒ NAD 27) 727,020,46			22 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,046,687.31	
LIST OF SIGNIFICANT MARKERS ANTICIPATED				
23 NAME	23 TOP (MD)	24 TOP (TVD)	25 NAME	25 TOP (MD)
26 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate)				
None				
26 CONTACT NAME Dana Billings		27 CONTACT TELEPHONE NO 805-745-2139		28 CONTACT E-MAIL ADDRESS dbillings@venocoinc.com
29 AUTHORIZING OFFICIAL (Type or print name) Larry Huskins		30 TITLE Operations Manager		
31 AUTHORIZING SIGNATURE 		32 DATE 8-MAY-2012		
THIS SPACE FOR BSEE USE ONLY				
APPROVED ☒ With Attached Conditions ☐ Without Conditions		BY ORIG. SGD. BY: Dan Knowlson		TITLE District Manager California District
API WELL NO ASSIGNED TO THIS WELL 043112080301		DATE 5/9/2012		

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☒ NO ☐ N/A	This is the 28th well drilled with the same structural pipe set depth.
D) If requesting a waiver of the conductor casing, have you submitted a log to BSEE District Office that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	Approved field drilling rules
G) Is the calculated daily volume possible from an uncontrolled blowout of this well greater than the daily volume included in the worst case discharge scenario in the approved oil spill response plan?	☐ YES ☒ NO ☐ N/A	

Dana Billings

From: Dana Billings
Sent: Wednesday, May 09, 2012 4:07 PM
To: 'Knowlson, Daniel'; 'Kaiser, John P'
Cc: Derek J. Paulgaard; Monica Carlsen; Tiffany Tapp
Subject: Venoco Platform Gail _ OCS - P - 0209 Well E-28 - UPDATE ON FAILED E-28 BYPASS #1 ATTEMPT AND PLAN FOR E-28 BYPASS #2
Attachments: E-28_ST2_Plan1_Wellpath Report.pdf; E-28_ST2_Plan1 Page Plot.pdf

Dan, John,

Here is a rundown of events and approvals the past few days,

Summary of Work on E-28 Well

Unable to get the proper build rate for drilling the horizontal section in the E-28 well and stopped drilling at depth of 5899'.

Received approval from John Kaiser to plug back from 5899' to 5340' and drill E-28 Bypass #1 from 5340' to the E-28 original hole bottom hole location at 10568'MD/4703' TVD.

1. Ran in with OE tubing tail to 5899' and set cement plug from 5899', pulled up to 5340' and circulated excess cement from well.
2. 9 5/8" casing has been previously cemented at 4828' MD
3. Pull out with OE pipe
4. Pick up and run in hole with directional drilling assembly
5. Ran in hole and tagged cement at 5439', low of planned KOP
6. Pulled to shoe to consider options.

Summary of Work on E-28 Bypass #1

1. Ran in hole and tagged up at 5226' (tagged high of previous tag at 5439')
2. Attempted to wash and slide through bridge, continue to wash down, surveyed and survey indicated that had inadvertently sidetracked early, presumably at 5226'
3. Decision to drill to 5682', circulate bottoms up and pull to shoe to confirm whether re-entry into sidetracked hole would be successful
4. Ran in hole from shoe and set down at 5490', took directional survey which confirmed we had re-entered E-28 original hole.
5. At this point there are two open 8 1/2" holes with junction at 5226'.

Received approval from Dan Knowlson to plug back from 5490' to 4739' and drill E-28 Bypass #2 from shoe of 9 5/8" at 4828' to the E-28 original hole bottom hole location at 10568'MD/4703' TVD.

Planned work to plug E-28 BP #1 and drill E-28 BP#2

1. Run in with OE pipe balance plug and plugback 8 1/2" hole from 5490' to 4739' into 9 5/8" casing set at 4828'.
2. Polish off cement plug in 9 5/8" casing to +/- 4828'
3. Run in with directional tools and drill E-28 Bypass #2 from 4828' to the E-28 original hole bottom hole location at 10568'MD/4703' TVD.
4. All other aspects of the approved planned program remain unchanged.
5. Attached is directional plan for E-28 Bypass #2 named as E-28 ST2 Plan 1 dated 5/9/12 from Baker-Hughes.

Venoco will submit an APD by mail for each:

E-28 BP #1

E-28 BP #2 with attachment directional

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☐ SIDETRACK ☒ BYPASS ☐ DEEPEN		2 BSEE OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013
4 WELL NAME (CURRENT) E-28	5 SIDETRACK NO (CURRENT)	6 BYPASS NO (CURRENT) 01	
7 PROPOSED START DATE May 9, 2012	8 PLAN CONTROL NO (NEW WELL ONLY)		
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112080301			

10 ☒ Revision	11 If revision, please list changes Plugback and bypass of E-28 Bypass #1 to correct directional path
---	--

WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE	
12 LEASE NO P-209 / 4	17 LEASE NO P-205	RECEIVED MAY 11 2012	
13 AREA NAME 6B	18 AREA NAME 6B		
14 BLOCK NO 4671	19 BLOCK NO 4661	OFFICE OF FIELD OPERATIONS	
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) 731,316	16 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,040,254		
20 LATITUDE (☐ NAD 83 / ☒ NAD 27) 727,020.46	21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,046,687.31		

LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME	23 TOP (MD)	24 TOP (TVD)	22 NAME	23 TOP (MD)	24 TOP (TVD)

25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate)

See revised directional attached

26 CONTACT NAME Dana Billings	27 CONTACT TELEPHONE NO 805-745-2139	28 CONTACT E-MAIL ADDRESS dbillings@venoco-inc.com
29 AUTHORIZING OFFICIAL (Type or print name) Larry Huskins	30 TITLE Operations Manager	
31 AUTHORIZING SIGNATURE 	32 DATE 9-MAY-2012	

THIS SPACE FOR BSEE USE ONLY			
APPROVED ☒ With Attached Conditions ☐ Without Conditions	ORIG. SGD. BY: Dan Knowlson District Manager California District	TITLE District Manager California District	DATE 5/10/2012
API WELL NO ASSIGNED TO THIS WELL 043112080302			

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☒ NO ☐ N/A	This is the 28th well drilled with the same structural pipe set depth.
D) If requesting a waiver of the conductor casing, have you submitted a log to BSEE District Office that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain	☐ YES ☒ NO ☐ N/A	Approved field drilling rules
G) Is the calculated daily volume possible from an uncontrolled blowout of this well greater than the daily volume included in the worst case discharge scenario in the approved oil spill response plan?	☐ YES ☒ NO ☐ N/A	

Dana Billings

From: Dana Billings
Sent: Wednesday, May 09, 2012 4:07 PM
To: 'Knowlson, Daniel'; 'Kaiser, John P'
Cc: Derek J. Paulgaard; Monica Carlsen; Tiffany Tapp
Subject: Venoco Platform Gail _ OCS - P - 0209 Well E-28 - UPDATE ON FAILED E-28 BYPASS #1 ATTEMPT AND PLAN FOR E-28 BYPASS #2
Attachments: E-28_ST2_Plan1_Wellpath Report.pdf; E-28_ST2_Plan1 Page Plot.pdf

Dan, John,
Here is a rundown of events and approvals the past few days,

Summary of Work on E-28 Well

Unable to get the proper build rate for drilling the horizontal section in the E-28 well and stopped drilling at depth of 5899'.

Received approval from John Kaiser to plug back from 5899' to 5340' and drill E-28 Bypass #1 from 5340' to the E-28 original hole bottom hole location at 10568'MD/4703' TVD.

1. Ran in with OE tubing tail to 5899' and set cement plug from 5899', pulled up to 5340' and circulated excess cement from well.
2. 9 5/8" casing has been previously cemented at 4828' MD
3. Pull out with OE pipe
4. Pick up and run in hole with directional drilling assembly
5. Ran in hole and tagged cement at 5439', low of planned KOP
6. Pulled to shoe to consider options.

Summary of Work on E-28 Bypass #1

1. Ran in hole and tagged up at 5226' (tagged high of previous tag at 5439')
2. Attempted to wash and slide through bridge, continue to wash down, surveyed and survey indicated that had inadvertently sidetracked early, presumably at 5226'
3. Decision to drill to 5682', circulate bottoms up and pull to shoe to confirm whether re-entry into sidetracked hole would be successful
4. Ran in hole from shoe and set down at 5490', took directional survey which confirmed we had re-entered E-28 original hole.
5. At this point there are two open 8 1/2" holes with junction at 5226'.

Received approval from Dan Knowlson to plug back from 5490' to 4739' and drill E-28 Bypass #2 from shoe of 9 5/8" at 4828' to the E-28 original hole bottom hole location at 10568'MD/4703' TVD.

Planned work to plug E-28 BP #1 and drill E-28 BP#2

1. Run in with OE pipe balance plug and plugback 8 1/2" hole from 5490' to 4739' into 9 5/8" casing set at 4828'.
2. Polish off cement plug in 9 5/8" casing to +/- 4828'
3. Run in with directional tools and drill E-28 Bypass #2 from 4828' to the E-28 original hole bottom hole location at 10568'MD/4703' TVD.
4. All other aspects of the approved planned program remain unchanged.
5. Attached is directional plan for E-28 Bypass #2 named as E-28 ST2 Plan 1 dated 5/9/12 from Baker-Hughes.

Venoco will submit an APD by mail for each:

E-28 BP #1

E-28 BP #2 with attachment directional



Planned Wellpath Report

E-28 ST2 Plan1

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REFERENCE WELLPATH IDENTIFICATION

Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 ST2 Plan1
Facility	Platform_Gail	Sidetrack from	AWB E-28 at 4828.00 MD

REPORT SETUP INFORMATION

Projection System	NAD27 / Lambert California SP, Zone VI (406), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Vazqjosi
Scale	1.00005	Report Generated	5/9/2012 at 11:26:54 AM
Convergence at slot	1.73° West	Database/Source file	Venoco_ /E-28_ST2_Plan1.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-11.54	44.31	1046687.31	727020.46	34°07'30.597"N	119°24'00.353"W
Facility Reference Pt			1046643.00	727032.00	34°07'30.698"N	119°24'00.884"W
Field Reference Pt			1049600.00	728640.00	34°07'47.480"N	119°23'26.305"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on Slot 25 (RT) to Facility Vertical Datum	108.00ft
Horizontal Reference Pt	Slot	Rig on Slot 25 (RT) to Mean Sea Level	108.00ft
Vertical Reference Pt	Rig on Slot 25 (RT)	Rig on Slot 25 (RT) to Mud Line at Slot (Slot 25)	847.00ft
MD Reference Pt	Rig on Slot 25 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	303.73°



Planned Wellpath Report

E-28 ST2 Plan1

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REFERENCE WELLPATH IDENTIFICATION

Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 ST2 Plan1
Facility	Platform Gail	Sidetrack from	AWB E-28 at 4828.00 MD

WELLPATH DATA (125 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVD from Fid Vert Ref [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
0 00	0 000	142 110	0 00	-108 00	0 00	0 00	0 00	1046687 31	727020 46	0 00	0 00	0 00	0 00	
847 00	0 000	142 110	847 00	739 00	0 00	0 00	0 00	1046687 31	727020 46	0 00	142 11	0 00	0 00	
950 00	0 290	142 110	950 00	842 00	-0 25	-0 21	0 16	1046687 47	727020 25	0 28	-161 97	0 28	0 00	
975 00	0 110	105 450	975 00	867 00	-0 33	-0 26	0 22	1046687 53	727020 20	0 85	-145 55	-0 72	-146 64	
1000 00	0 080	10 950	1000 00	892 00	-0 35	-0 25	0 25	1046687 56	727020 21	0 56	-70 67	-0 12	-378 00	
1025 00	0 170	326 640	1025 00	917 00	-0 31	-0 20	0 23	1046687 54	727020 26	0 50	71 43	0 36	-177 24	
1050 00	0 320	7 830	1050 00	942 00	-0 24	-0 10	0 22	1046687 53	727020 36	0 89	148 23	0 60	164 76	
1075 00	0 170	58 410	1075 00	967 00	-0 23	-0 01	0 26	1046687 57	727020 45	1 00	-55 70	-0 60	202 32	
1100 00	0 180	53 990	1100 00	992 00	-0 25	0 03	0 33	1046687 64	727020 49	0 07	159 08	0 04	-17 68	
1125 00	0 080	86 520	1125 00	1017 00	-0 28	0 05	0 37	1046687 68	727020 51	0 48	-153 50	-0 40	-130 12	
1150 00	0 050	105 570	1150 00	1042 00	-0 31	0 05	0 40	1046687 71	727020 51	0 15	78 22	-0 12	76 20	
1175 00	0 070	139 420	1175 00	1067 00	-0 33	0 04	0 42	1046687 73	727020 50	0 16	-160 75	0 08	135 40	
1200 00	0 100	352 020	1200 00	1092 00	-0 33	0 05	0 43	1046687 74	727020 51	0 65	-3 71	0 12	-589 60	
1225 00	0 180	350 370	1225 00	1117 00	-0 29	0 11	0 42	1046687 73	727020 57	0 32	9 67	0 32	-6 60	
1250 00	0 280	353 840	1250 00	1142 00	-0 22	0 21	0 41	1046687 72	727020 67	0 40	-141 21	0 40	-13 88	
1275 00	0 180	32 100	1275 00	1167 00	-0 18	0 30	0 42	1046687 73	727020 76	0 71	-23 06	-0 40	153 04	
1300 00	0 340	21 010	1300 00	1192 00	-0 17	0 40	0 47	1046687 78	727020 86	0 67	110 40	0 64	-44 36	
1325 00	0 320	46 620	1325 00	1217 00	-0 17	0 52	0 55	1046687 86	727020 98	0 59	167 51	-0 08	102 44	
1350 00	0 160	59 760	1350 00	1242 00	-0 20	0 58	0 63	1046687 94	727021 04	0 67	-70 42	-0 64	52 56	
1375 00	0 220	32 590	1375 00	1267 00	-0 21	0 64	0 68	1046687 99	727021 10	0 43	-73 67	0 24	-108 68	
1400 00	0 250	16 540	1400 00	1292 00	-0 19	0 74	0 72	1046688 03	727021 20	0 29	-114 56	0 12	-64 20	
1452 00	2 140	268 080	1451 99	1343 99	0 63	0 81	-0 21	1046687 10	727021 27	4 29	-0 53	3 63	-208 58	
1530 00	4 500	267 800	1529 85	1421 85	4 29	0 65	-4 73	1046682 58	727021 11	3 03	39 08	3 03	-0 36	
1608 00	7 800	285 600	1607 40	1499 40	11 80	1 95	-12 89	1046674 42	727022 41	4 84	40 85	4 23	22 82	
1702 00	13 890	305 060	1699 70	1591 70	29 16	10 16	-28 28	1046659 02	727030 62	7 47	9 08	6 48	20 70	
1799 00	20 440	308 040	1792 33	1684 33	57 73	27 30	-51 18	1046636 13	727047 76	6 81	0 22	6 75	3 07	
1850 00	21 400	308 050	1839 97	1731 97	75 88	38 53	-65 52	1046621 79	727058 99	1 88	26 58	1 88	0 02	
1924 00	23 790	310 980	1908 29	1800 29	104 16	56 64	-87 42	1046599 88	727077 10	3 57	-53 38	3 23	3 96	
1988 00	24 750	307 990	1966 63	1858 63	130 32	73 35	-107 73	1046579 58	727093 81	2 44	-58 34	1 50	-4 67	
2031 00	25 370	305 710	2005 59	1897 59	148 51	84 27	-122 30	1046565 00	727104 73	2 67	-81 55	-1 44	-5 30	
2084 00	25 650	302 060	2053 42	1945 42	171 32	96 98	-141 25	1046546 06	727117 45	3 01	-23 52	0 53	-6 89	
2150 00	28 940	299 130	2112 07	2004 07	201 53	112 35	-167 31	1046519 99	727132 81	5 38	12 59	4 98	-4 44	
2209 00	32 220	300 500	2162 86	2054 86	231 47	127 28	-193 34	1046493 96	727147 75	5 68	-9 70	5 56	2 32	
2274 00	34 300	299 870	2217 21	2109 21	267 05	145 20	-224 15	1046463 15	727165 67	3 24	64 03	3 20	-0 97	
2330 00	35 860	304 960	2263 04	2155 04	299 20	162 46	-251 29	1046436 01	727182 93	5 92	-14 16	2 79	9 09	
2401 00	37 730	304 190	2319 89	2211 89	341 72	186 59	-286 30	1046400 99	727207 06	2 71	7 06	2 63	-1 08	
2463 00	40 070	304 640	2368 14	2260 14	380 64	208 59	-318 42	1046368 88	727229 06	3 80	0 36	3 77	0 73	
2619 00	48 410	304 710	2479 81	2371 81	489 37	270 46	-407 84	1046279 45	727290 93	5 35	-137 18	5 35	0 04	
2752 00	47 860	304 020	2568 57	2460 57	588 41	326 37	-489 60	1046197 69	727346 85	0 57	-38 47	-0 41	-0 52	
2877 00	49 430	302 390	2651 16	2543 16	682 22	377 74	-568 11	1046119 18	727398 22	1 59	99 18	1 26	-1 30	
2973 00	49 390	302 720	2713 62	2605 62	755 11	416 97	-629 55	1046057 73	727437 45	0 26	9 54	-0 04	0 34	
3065 00	50 260	302 910	2772 97	2664 97	825 39	455 06	-688 63	1045998 65	727475 54	0 96	54 27	0 95	0 21	
3157 00	50 550	303 430	2831 61	2723 61	896 28	493 85	-747 97	1045939 30	727514 33	0 54	-117 44	0 32	0 57	
3251 00	50 210	302 570	2891 55	2783 55	968 68	533 28	-808 69	1045878 58	727553 77	0 79	-123 05	-0 36	-0 91	
3346 00	49 660	301 450	2952 70	2844 70	1041 35	571 82	-870 34	1045816 93	727592 31	1 07	90 00	-0 58	-1 18	



Planned Wellpath Report

E-28 ST2 Plan1

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**BAKER
HUGHES**

REFERENCE WELLPATH IDENTIFICATION

Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 ST2 Plan1
Facility	Platform Gail	Sidetrack from	AWB E-28 at 4828.00 MD

WELLPATH DATA (125 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	TVD from Fld Vert Ref [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
3441.00	49.660	301.460	3014.20	2906.20	1113.71	609.61	-932.11	1045755.16	727630.10	0.01	158.43	0.00	0.01	
3533.00	48.580	302.030	3074.41	2966.41	1183.22	646.21	-991.26	1045696.00	727666.70	1.26	66.05	-1.17	0.62	
3625.00	49.210	303.860	3134.89	3026.89	1252.53	683.91	-1049.43	1045637.83	727704.40	1.65	38.69	0.68	1.99	
3720.00	50.910	305.600	3195.88	3087.88	1325.35	725.41	-1109.28	1045577.98	727745.90	2.27	-51.50	1.79	1.83	
3814.00†	51.620	304.470	3254.70	3146.70	1398.66	767.50	-1169.32	1045517.94	727788.00	1.20	102.43	0.76	-1.20	
3909.00	51.400	303.150	3313.83	3205.83	1473.01	808.87	-1231.10	1045456.15	727829.37	1.11	170.08	-0.23	-1.39	
4004.00	51.000	303.240	3373.36	3265.36	1547.04	849.41	-1293.05	1045394.20	727869.91	0.43	-157.27	-0.42	0.09	
4098.00	49.250	302.270	3433.62	3325.62	1619.17	888.44	-1353.71	1045333.53	727908.95	2.02	166.50	-1.86	-1.03	
4192.00	46.880	303.050	3496.43	3388.43	1689.08	926.17	-1412.58	1045274.66	727946.67	2.60	123.80	-2.52	0.83	
4286.00	46.710	303.400	3560.79	3452.79	1757.59	963.71	-1469.90	1045217.34	727984.22	0.33	74.67	-0.18	0.37	
4382.00	47.040	304.990	3626.42	3518.42	1827.65	1003.09	-1527.85	1045159.39	728023.60	1.26	129.59	0.34	1.66	
4477.00	46.740	305.490	3691.34	3583.34	1896.98	1043.11	-1584.49	1045102.74	728063.62	0.50	28.37	-0.32	0.53	
4571.00	48.610	306.830	3754.63	3646.63	1966.41	1084.12	-1640.59	1045046.64	728104.63	2.25	82.05	1.99	1.43	
4666.00	48.690	307.570	3817.39	3709.39	2037.59	1127.24	-1697.40	1044989.83	728147.75	0.59	-31.59	0.08	0.78	
4738.00†	49.370	307.020	3864.60	3756.60	2091.85	1160.18	-1740.64	1044946.58	728180.69	1.11	-24.80	0.94	-0.76	
4778.00	49.850	306.730	3890.52	3782.52	2122.27	1178.46	-1765.02	1044922.21	728198.97	1.32	-101.86	1.20	-0.73	
4828.00	49.763	306.182	3922.79	3814.79	2160.42	1201.15	-1795.74	1044891.49	728221.67	0.00	-60.00	-0.17	-1.10	Tie On
4888.00	51.312	302.853	3960.93	3852.93	2206.73	1227.38	-1833.90	1044853.32	728247.90	5.00	0.00	2.58	-5.55	End of 3D Arc
4900.00†	51.312	302.853	3968.43	3860.43	2216.09	1232.46	-1841.77	1044845.45	728252.98	0.00	0.00	0.00	0.00	
4988.00†	51.312	302.853	4023.44	3915.44	2284.77	1269.72	-1899.47	1044787.75	728290.24	0.00	-3.61	0.00	0.00	End of Tangent
5000.00†	51.671	302.882	4030.91	3922.91	2294.16	1274.82	-1907.36	1044779.86	728295.34	3.00	3.60	2.99	0.24	
5100.00†	54.665	303.113	4090.85	3982.85	2374.19	1318.41	-1974.48	1044712.74	728338.93	3.00	3.46	2.99	0.23	
5200.00†	57.660	303.327	4146.53	4038.53	2457.24	1363.91	-2043.96	1044643.26	728384.44	3.00	3.34	2.99	0.21	
5300.00†	60.655	303.527	4197.79	4089.79	2543.08	1411.20	-2115.60	1044571.61	728431.73	3.00	3.24	3.00	0.20	
5400.00†	63.650	303.716	4244.49	4136.49	2631.49	1460.16	-2189.22	1044497.98	728480.69	3.00	3.15	3.00	0.19	
5500.00†	66.646	303.895	4286.52	4178.52	2722.22	1510.64	-2264.61	1044422.59	728531.17	3.00	3.07	3.00	0.18	
5600.00†	69.642	304.066	4323.74	4215.74	2815.02	1562.51	-2341.56	1044345.63	728583.04	3.00	3.01	3.00	0.17	
5699.82	72.632	304.231	4356.01	4248.01	2909.47	1615.53	-2419.73	1044267.46	728636.07	3.00	0.00	3.00	0.16	End of 3D Arc (S)
5700.00†	72.632	304.231	4356.06	4248.06	2909.64	1615.62	-2419.87	1044267.33	728636.16	0.00	0.00	0.00	0.00	
5792.77†	72.632	304.231	4383.75	4275.75	2998.18	1665.43	-2493.07	1044194.12	728685.97	0.00	-2.17	0.00	0.00	End of Tangent (S)
5800.00†	72.849	304.222	4385.90	4277.90	3005.08	1669.31	-2498.78	1044188.41	728689.85	3.00	-2.17	3.00	-0.12	
5900.00†	75.847	304.106	4412.88	4304.88	3101.36	1723.38	-2578.45	1044108.74	728743.92	3.00	-2.13	3.00	-0.12	
6000.00†	78.845	303.992	4434.78	4326.78	3198.92	1778.00	-2659.28	1044027.90	728798.55	3.00	-2.11	3.00	-0.11	
6100.00†	81.843	303.880	4451.55	4343.55	3297.49	1833.03	-2741.06	1043946.12	728853.58	3.00	-2.09	3.00	-0.11	
6200.00†	84.841	303.771	4463.14	4355.14	3396.80	1888.32	-2823.57	1043863.61	728908.87	3.00	-2.08	3.00	-0.11	
6267.04	86.851	303.698	4468.00	4360.00	3463.67	1925.45	-2879.17	1043808.00	728946.00	3.00	0.00	3.00	-0.11	End of 3D Arc (S)
6300.00†	86.851	303.698	4469.81	4361.81	3496.57	1943.71	-2906.55	1043780.62	728964.26	0.00	0.00	0.00	0.00	
6400.00†	86.851	303.698	4475.30	4367.30	3596.42	1999.10	-2989.62	1043697.54	729019.66	0.00	0.00	0.00	0.00	
6500.00†	86.851	303.698	4480.80	4372.80	3696.27	2054.50	-3072.70	1043614.47	729075.06	0.00	0.00	0.00	0.00	
6600.00†	86.851	303.698	4486.29	4378.29	3796.12	2109.90	-3155.77	1043531.39	729130.46	0.00	0.00	0.00	0.00	
6700.00†	86.851	303.698	4491.78	4383.78	3895.97	2165.29	-3238.84	1043448.32	729185.86	0.00	0.00	0.00	0.00	
6800.00†	86.851	303.698	4497.28	4389.28	3995.82	2220.69	-3321.91	1043365.24	729241.26	0.00	0.00	0.00	0.00	
6900.00†	86.851	303.698	4502.77	4394.77	4095.67	2276.09	-3404.99	1043282.16	729296.66	0.00	0.00	0.00	0.00	
7000.00†	86.851	303.698	4508.26	4400.26	4195.52	2331.49	-3488.06	1043199.09	729352.06	0.00	0.00	0.00	0.00	
7100.00†	86.851	303.698	4513.76	4405.76	4295.37	2386.88	-3571.13	1043116.01	729407.46	0.00	0.00	0.00	0.00	



Planned Wellpath Report

E-28 ST2 Plan1

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REFERENCE WELLPATH IDENTIFICATION

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Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 ST2 Plan1
Facility	Platform_Gail	Sidetrack from	AWB E-28 at 4828.00 MD

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7200.00†	86.851	303.698	4519.25	4411.25	4395.22	2442.28	-3654.20	1043032.93	729462.86	0.00	0.00	0.00	0.00	
7300.00†	86.851	303.698	4524.74	4416.74	4495.06	2497.68	-3737.27	1042949.86	729518.26	0.00	0.00	0.00	0.00	
7400.00†	86.851	303.698	4530.24	4422.24	4594.91	2553.07	-3820.35	1042866.78	729573.65	0.00	0.00	0.00	0.00	
7500.00†	86.851	303.698	4535.73	4427.73	4694.76	2608.47	-3903.42	1042783.71	729629.05	0.00	0.00	0.00	0.00	
7600.00†	86.851	303.698	4541.22	4433.22	4794.61	2663.87	-3986.49	1042700.63	729684.45	0.00	0.00	0.00	0.00	
7700.00†	86.851	303.698	4546.72	4438.72	4894.46	2719.27	-4069.56	1042617.55	729739.85	0.00	0.00	0.00	0.00	
7800.00†	86.851	303.698	4552.21	4444.21	4994.31	2774.66	-4152.64	1042534.48	729795.25	0.00	0.00	0.00	0.00	
7900.00†	86.851	303.698	4557.70	4449.70	5094.16	2830.06	-4235.71	1042451.40	729850.65	0.00	0.00	0.00	0.00	
8000.00†	86.851	303.698	4563.20	4455.20	5194.01	2885.46	-4318.78	1042368.33	729906.05	0.00	0.00	0.00	0.00	
8100.00†	86.851	303.698	4568.69	4460.69	5293.86	2940.85	-4401.85	1042285.25	729961.45	0.00	0.00	0.00	0.00	
8200.00†	86.851	303.698	4574.18	4466.18	5393.71	2996.25	-4484.92	1042202.17	730016.85	0.00	0.00	0.00	0.00	
8300.00†	86.851	303.698	4579.67	4471.67	5493.55	3051.65	-4568.00	1042119.10	730072.25	0.00	0.00	0.00	0.00	
8400.00†	86.851	303.698	4585.17	4477.17	5593.40	3107.04	-4651.07	1042036.02	730127.65	0.00	0.00	0.00	0.00	
8500.00†	86.851	303.698	4590.66	4482.66	5693.25	3162.44	-4734.14	1041952.94	730183.05	0.00	0.00	0.00	0.00	
8600.00†	86.851	303.698	4596.15	4488.15	5793.10	3217.84	-4817.21	1041869.87	730238.45	0.00	0.00	0.00	0.00	
8700.00†	86.851	303.698	4601.65	4493.65	5892.95	3273.24	-4900.29	1041786.79	730293.85	0.00	0.00	0.00	0.00	
8800.00†	86.851	303.698	4607.14	4499.14	5992.80	3328.63	-4983.36	1041703.72	730349.25	0.00	0.00	0.00	0.00	
8900.00†	86.851	303.698	4612.63	4504.63	6092.65	3384.03	-5066.43	1041620.64	730404.65	0.00	0.00	0.00	0.00	
9000.00†	86.851	303.698	4618.13	4510.13	6192.50	3439.43	-5149.50	1041537.56	730460.05	0.00	0.00	0.00	0.00	
9100.00†	86.851	303.698	4623.62	4515.62	6292.35	3494.82	-5232.57	1041454.49	730515.45	0.00	0.00	0.00	0.00	
9200.00†	86.851	303.698	4629.11	4521.11	6392.20	3550.22	-5315.65	1041371.41	730570.85	0.00	0.00	0.00	0.00	
9300.00†	86.851	303.698	4634.61	4526.61	6492.04	3605.62	-5398.72	1041288.34	730626.25	0.00	0.00	0.00	0.00	
9400.00†	86.851	303.698	4640.10	4532.10	6591.89	3661.02	-5481.79	1041205.26	730681.65	0.00	0.00	0.00	0.00	
9500.00†	86.851	303.698	4645.59	4537.59	6691.74	3716.41	-5564.86	1041122.18	730737.05	0.00	0.00	0.00	0.00	
9600.00†	86.851	303.698	4651.09	4543.09	6791.59	3771.81	-5647.94	1041039.11	730792.45	0.00	0.00	0.00	0.00	
9700.00†	86.851	303.698	4656.58	4548.58	6891.44	3827.21	-5731.01	1040956.03	730847.85	0.00	0.00	0.00	0.00	
9800.00†	86.851	303.698	4662.07	4554.07	6991.29	3882.60	-5814.08	1040872.96	730903.25	0.00	0.00	0.00	0.00	
9900.00†	86.851	303.698	4667.57	4559.57	7091.14	3938.00	-5897.15	1040789.88	730958.65	0.00	0.00	0.00	0.00	
10000.00†	86.851	303.698	4673.06	4565.06	7190.99	3993.40	-5980.22	1040706.80	731014.05	0.00	0.00	0.00	0.00	
10100.00†	86.851	303.698	4678.55	4570.55	7290.84	4048.79	-6063.30	1040623.73	731069.45	0.00	0.00	0.00	0.00	
10200.00†	86.851	303.698	4684.05	4576.05	7390.69	4104.19	-6146.37	1040540.65	731124.85	0.00	0.00	0.00	0.00	
10300.00†	86.851	303.698	4689.54	4581.54	7490.53	4159.59	-6229.44	1040457.57	731180.25	0.00	0.00	0.00	0.00	
10400.00†	86.851	303.698	4695.03	4587.03	7590.38	4214.99	-6312.51	1040374.50	731235.65	0.00	0.00	0.00	0.00	
10500.00†	86.851	303.698	4700.53	4592.53	7690.23	4270.38	-6395.59	1040291.42	731291.04	0.00	0.00	0.00	0.00	
10545.05†	86.851	303.698	4703.00	4595.00	7735.21	4295.34	-6433.01	1040254.00	731316.00	0.00	0.00	0.00	0.00	End of Tangent



Planned Wellpath Report

E-28 ST2 Plan1

Page 5 of 5



REFERENCE WELLPATH IDENTIFICATION

Operator	Venoco Inc	Slot	Slot 25
Area	California	Well	E-28
Field	Sockeye Field	Wellbore	E-28 ST2 Plan1
Facility	Platform_Gail	Sidetrack from	AWB E-28 at 4828.00 MD

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) H4 T1	6267.04	4468.00	1925.45	-2879.17	1043808.00	728946.00	34°07'48.774"N	119°24'35.277"W	point
2) H4 T2	10545.05	4703.00	4295.34	-6433.01	1040254.00	731316.00	34°08'11.140"N	119°25'18.389"W	point

SURVEY PROGRAM - Ref Wellbore: E-28 ST2 Plan1 Ref Wellpath: E-28 ST2 Plan1

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
847.00	2463.00	SDI Keeper		AWB E-28
2463.00	2619.00	SDI Keeper		AWB E-28
2619.00	4778.00	OnTrak (Standard)		AWB E-28
4778.00	10545.05	OnTrak (Standard)		E-28 ST2 Plan1

U.S. Department of the Interior
Minerals Management Service (MMS)Submit ORIGINAL plus THREE copies,
with ONE copy marked "Public Information"OMB Control Number 1010-0044
OMB Approval Expires 10/31/2005

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309		3 OPERATOR NAME and ADDRESS (Submitting Office) Venoco, Inc. 6267 Carpinteria Ave., SU 100 Carpinteria, CA 93013	
4 WELL NAME (Current) E-6		5 SIDETRACK NO (Current) 00		6 BYPASS NO (Current) 00	
7 PROPOSED START DATE January 29, 2006		8 PLAN CONTROL NO (New Well Only)			
9 API WELL NO (Current Sidetrack / Bypass) (12 Digits) 043112067100					
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE		
10 LEASE NO P-0204			15 LEASE NO P-0205		
11 AREA NAME 6B			16 AREA NAME 6B		
12 BLOCK NO 4660			17 BLOCK NO 4661		
13 LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)		14 LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)		18 LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)	
				19 LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)	
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
20 NAME Monterey (Top)		21 TOP (MD) 11,800'		20 NAME Monterey M2	
				21 TOP (MD) 12,260'	
Monterey M4		12450'		Upper Topanga	
				13,777'	
Lower Topanga/Sespe		14,480'		Sespe C1	
				15,615'	
22 LIST ALL ATTACHMENTS (Attach Complete Well Prognosis and Attachments Required by 30 CFR 250 414(B) through (G) or 30 CFR 250 1617(C) and (D), As Appropriate) Redrill Program (includes: design criteria for well, BOPE, casing program, drilling prognosis), cementing program, drilling mud program, direction program and surface/subsurface well location plat map, Supplemental APD Information Sheet					
23 AUTHORIZING OFFICIAL (Type or Print Name) Roger Hamson			24 TITLE V. P. Southern Assets		
25 AUTHORIZING SIGNATURE <i>[Signature]</i> for Roger Hamson			26 DATE January 17, 2006		

THIS SPACE FOR MMS USE ONLY

APPROVED ☒ With Attached Conditions ☐ Without Conditions	BY <i>[Signature]</i>	TITLE for: District Manager
API WELL NO ASSIGNED TO THIS WELL 043112067101		DATE 1/27/06

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT The PRA (44 U.S.C. 3501 *et seq.*) Requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 2 1/4 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, N.W., Washington, DC 20240.

Supplemental APD Information Sheet

1 OPERATOR NAME Venoco, Inc		5 WELL NAME (Proposed) E-6 RD		6 TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11 WATER DEPTH 739'		12 ELEVATION AT KB 107'	
2 API WELL NO (Proposed) (12 Digits) 043112067101		3 BOTTOM LEASE NO (Proposed) P-0204		8 BYPASS NO (Proposed) 00		13 H ₂ S DESIGNATION ☒ KNOWN ☐ UNKNOWN ☐ ABSENT			
4 TOTAL DEPTH (Proposed) MD 16265'		9 RIG NAME Kenai Drilling Rig No. 2		10 RIG TYPE PF		14 H ₂ S ACTIVATION PLAN DEPTH FT (TVD) 5400' MD / 4131' TVD (Kick off Point)			

15. ENGINEERING DATA

Hole Size (in)	Casing Size (in)	Weight (lb/ft)	Burst Rating (psi)	Type of Connection	MASP (psi)	Safety Factors			Top of Line	Casing Shoe (ft)			Well-head Rating (psi)	BGP Size (in)	Test Pressures			Casing Fluid Type (Oil Base Water Base Synthetic)
						B	C	T		MD	TVD	PP			MW	FG	Annular/ Disrupt (psi)	
26	24	201							MD	1401								
		X-52								existing								
22	18 5/8	117								2419								
		K-55								Existing								
17.5	13 3/8	68								5355								
		K-55								Existing								
12 25	9 5/8	40/47	5750		2398	2 40	1 55	1 75	Surf	5400				13 5/8				
		L-80	3090							4131								
		26	7240		2398	3 02	1 80	1 29	5200	16265				13 5/8				
		L-80	5410							6200								
16 CONTACT NAME: John Hood 17 CONTACT PHONE NO: (805) 745-2164 18 CONTACT E-MAIL ADDRESS: jhood@venoco.com																		

19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more? ☒ YES ☐ NO

20. REMARKS:

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: This PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain well status, well and casing test, and well casing configuration data. MMS uses this information to have accurate data and information on all wells under its jurisdiction and to ensure compliance with approved plans. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 1 1/2 hour per response, including the time for reviewing instructions, gathering and maintaining the data needed, reviewing existing data, and completing and reviewing the form. Direct comments regarding this burden estimate or any other aspect of this form to the Information Collection Chairman Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-6 REDRILL PROGRAM
API# 04-311-20671-01
LEASE OCS-P-0204
January 17, 2006 (attach to MMS APD)

Objective: The redrill of E-6 is designed to sidetrack into South Sockeye main fold to test the M4 and prospective sandstone targets. Any completion will be based on log analysis, with the most likely case being to complete the M4 and one sandstone reservoir. Upper Topanga injector in main fault block is a contingent completion.

Surface Location: OCS-P-205, Slot No. 20 (X= 1,046,713.33' & Y= 727,032.42')

Elevation: 739' WD, 107' Above MLLW, 846' Ocean Floor to Rig Floor

Proposed TD: OCS-P-204; 16,265' MD / 6200' TVD / -6093' SS

TD Location: 11912.57' S and 3840.56' E or (X = 1,050,553.89' and Y = 715,119.85')

<u>Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. PPG/Depth Range</u>
KOP in M1	5400	4131	-4024	8.4
M1 to P/M	8837	4430	-4323	8.4
Fault 1 crossing	11800	4463	-4356	na/+/- 200'
T/ Monterey/M1	11800	4463	-4356	8.4 /+200or missing
M2	12260	4552	-4445	8.4/+300 to -200or missing
M4	12450	4603	-4496	8.4/+300 to -200or missing
Upper Topanga	13777	5149	-5041	8.4/+300 to -200
Lower Top/Sespe	14480	5446	-5338	8.4/+300 to -300
Fault 2 crossing	14850	5602	-5495	8.4/+500 to -500
Sespe C-1 Sand	15615	5925	-5818	8.4/+500 to -500
Total Depth	16265	6200	-6093	8.4

Existing Casing: (All 113' OKB depths)

24", 201#, X-52	1401'	Cmtd w/ 1140 cf
18 5/8", 117.5 K-55	2419'	Cmtd w/ 2314 cf,
13 3/8", 68# K-55	5355'	Cmtd w/ 3921 cf, DV @ 2527'
9 5/8", 40,47# L-80	9066'	Cmtd w/ 3330 cf, DV @ 5019'

Note: Had trace of caustic flush in returns after 1st Stage of cementing the 9 5/8" casing. There is one joint of 9 5/8" 47# casing on top with a crossover and casing below is 40#.

Proposed Casing (*Adjusted to RF elevation):

24", 201#, X-52	*1395'	existing
18 5/8", 117.5 K-55	*2413'	existing
13 3/8", 68# K-55	*5349'	existing (LOT=12.3 ppg 1/16/89)
9 5/8", 40, 47# L-80	5400'	existing (KOP @ 5400')
7", 26#, L-80, Hydril 513	5200' - 16265'	Liner w/ top at 5200'

Note: This procedure follows work done under the abandonment procedure submitted in the approved APM. The well is currently plugged and abandoned. The tubing has been cut near 5400'. The 9 5/8" casing was pressure tested to 3000 psi for 30 minutes on September 24, 2005.

Drilling Procedure

1. Move rig to Well E-6 (slot 20). Nipple up BOP equipped with 4 ram preventers (2 – double gates) and an annular. Test the BOP to 250/3000 psi with 5" drill pipe, 4" drill pipe and 2 7/8" tubing. The 13 5/8" BOPE will be configured for drilling operations, with 2 7/8" X 5" VBR pipe rams in the top of the upper double gate and blind/shear rams in the bottom of the upper double gate, the mud cross will be below the upper double gate, 5" rams will be located in the top of the lower double gate and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. All tests will be recorded on a chart for the MMS to review. The applicable BOPE will be tested every 14 days during the drilling phase of the operations. The 2 3/8" rams will not be tested during the drilling phase. They will be available and will be tested subsequent to completion operations requiring 2 3/8" completion tubing.
2. Pull out of the hole and lay down excess 2 7/8" tubing and completion equipment. Keep sufficient tubing tail in derrick to lay cement plug. Make up and RIH to top of tubing stub at 5400' with 8 1/2" bit and casing scraper (40-47#). Circulate out drilling mud and water. Changeover well to seawater and circulate clean. Pull out of hole with clean out assembly.
3. Rig up electric line and run GR/CCL correlation log to check casing collar depths versus 13 3/8" shoe depth and tag top of tubing fish. Ensure there is sufficient distance between the top of the tubing stub and the 13 3/8" casing to set the CIBP and whip stock and to sidetrack casing without cutting a casing collar. If required make run with wash-over shoe and external cutter to cut and recover additional 2 7/8" tubing. A lubricator will not be used since the well is abandoned and the casing has been tested to 3000 psi. *OK. 5/25*
4. Make up a 9 5/8", 40# bridge plug designed to pass through 47# casing and set the bridge plug 5' above nearest casing collar at +/- 5400'. A lubricator will not be used since the well is abandoned and the casing has been tested to 3000 psi. Rig down electric line unit. *OK*
(5/25)

5. Make up 4' – 3-3/8" spiral shot squeeze pattern perforation gun with absolute pressure firing head and 2-7/8" perforated pup. Run in the hole on 600' of 2-7/8" tubing and 5" drill pipe. Tag bridge plug and pick up to place top shot at +/- 5360' ✓ (+/- 11' below corrected depth for 13-3/8" casing shoe). Close annular preventer and pressure up well to 1500 psi to activate firing head. After guns fire (loss of +/- 700 psi of pressure), circulate bottoms up through choke manifold. Establish injection rates at 1 bpm increments, not exceeding 2500 psi on casing. The original LOT for the 13 3/8" casing shoe at 5355' original KB/5349' 107' RF was reported as ✓ a 12.3 ppg EMW leak off test, which would be equal to 816 psi surface pressure with seawater.
6. Open up well and drop back down to bridge plug. Rig up cementing lines. Equalize 200 CF of cement from +/- 5400' to +/- 4900'. Pull above the top of cement and braidenhead squeeze the perforation holes leaving minimum of 50 lineal feet of cement above the perforations. This will place +/- 170 CF (543 lineal feet) into the 12-1/4" open hole by 9-5/8" casing annulus. Cement volume may be reduce if injection is poor. A 2000 gallon 15% HCL acid job may be performed to increase injection prior to cementing.
7. Pull out of the hole and lay down 2-7/8" stinger and perforating guns. Make up 8 1/2" bit and 8.6" upper watermelon mill as a drift to test pass through top joint of 47# casing and XO (47# casing drift is 8.599"). If mill passes, continue in the hole and clean out cement to the top of the bridge plug. Pressure test squeeze holes to 12 ✓ ppg EMW. Pull out of the hole and lay down mill. Pick up scraper and run in the hole to the top of the bridge plug. Change well over from seawater to Versaclean Mineral Oil Base Mud. See detailed mud program for changeover procedure.
8. Make up 9 5/8" 40#-47# bottom trip whipstock and starting mills. Tools to be designed to pass through 47# casing joint at surface. Lug will be designed to shear with 25M-30M#. Proposed window mill assembly: 8" starting mill, 8.215" lower watermelon mill, 9' flex joint, and 8.6" upper watermelon mill. If the 8.6" drift will not pass utilize the following assembly: 8" starting mill, 8.215" lower watermelon mill, 9' flex joint, 8.5" upper watermelon mill. Pick up an MWD. Run the equipment in the hole on the 5" drill pipe to 30' above the CIBP set at +/- 5400'. Orient the whipstock 45 degrees right of high side as per Sperry directional drilling supervisor using the measurements from the MWD. ✓ Set the whipstock on the CIBP and shear the tools off the whipstock face. Condition the oil base mud as necessary for milling the window and to carry the metal cuttings out of the hole. Mill and dress the window as required for a good exit point for sidetrack. Drill enough rathole to pass all mills through the window and allow for the RWD tools to be below the whipstock face when commence drilling. Mills must smoothly pass through the window. Perform a Formation Integrity Test to 11.0 ppg EMW (13 3/8" casing shoe at 5355' reported a 12.3 ppg EMW leak off test). ✓ Reduce the viscosity of the mud to desired drilling parameters. Pull out hole and lay down the milling tools.

9. Pick up an 9 7/8" HTC Ream While Drill tools with 6 1/2" PDC pilot bit on a 6 3/4" steerable directional drilling assembly including LWD with GR/Resistivity. Run in the hole and sidetrack the well. Directional drill and open a 9 7/8" hole with RWD tool from 5400' to 16,265' MD / 6200' TVD. The 9 7/8" hole will be drilled with a Mineral Oil Base Mud system – MI Drilling Fluid Versaclean System. No overboard discharge of mud or cuttings will be allowed. This hole section is designed to stay in the M1 and lower Santa Margarita intervals through the build and tangent and penetrate the South Sockeye fault block within the M1 interval. The well will then drop angle through the South Sockeye Fault block. Pressure depletion is not expected in this hole section but there could be problems with lost circulation if fractures are encountered. Make bit and wiper trips as necessary.

Notes:

- Have 1600' of 5" HWdp available for this hole section. Kenai to provide 1000' and Weatherford will provide 600' (21 joints).
 - See the attached drilling fluids program.
 - Review the attached directional program.
 - Target No. 1: X=1,049,340, Y=718,455 or 8577' S and 2627' E at 12360' MD / 4577' TVD / -4470' SS
 - Mud loggers to start upon drilling out of the 9 5/8" casing window.
 - Use directional plan version E-6 RD1 Plan 24 (09-Jan-06)
 - Control penetration rate to 70'/hr instantaneous to ensure hole is drilled to full 9 7/8".
 - The RWD should not be rotated on the face of the whipstock. Ensure there is adequate hole drilled below the whipstock to bury the Reamer.
 - Take extra precaution when pulling or running the RWD assembly through whipstock.
 - Do not use RWD tools to ream hole.
10. Circulate and condition the mud for logging. Wipe the hole to the 9 5/8" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
11. Rig up and run Schlumberger drill pipe convey open hole logs from indicated depths as provided by geologist:
Programmed logs for use in the oil base mud system are:
- PEX with induction and spectral GR (high resolution mode for res. and density)
 - Oil Base Mud Imager (OBMI)
 - Sonic – dipole sonic (sonic scanner).
- See detailed logging program. Condition the hole if necessary between runs.
12. Have under reamer available. Based upon caliper log it may be necessary to open the hole through some sections. If caliper log is acceptable make a clean out run with an 8 1/2" bit or hole opener and circulate and condition the hole for the 7" liner. Wipe the hole to the 9 5/8" casing shoe. Circulate and condition the mud to reduce the viscosity of the mud prior to running the 7" liner. Pull out of the hole.

13. Rig up casing crew and run the 7", 26#, L-80, Hydril 513 liner from +/- 5200' to 16265' as follows:

1. 7", 26#, L-80 Float Shoe
2. 1 Joints of 7", 26#, L-80 Casing
3. 7", 26# L-80 Float Collar
4. 1 Joint of 7", 26# L-80 Casing
5. 7", 26# L-80 Landing Collar
6. +/- 11,000' of 7", 26#, L-80 Casing
7. 7" 26# X 9 5/8" 40#, Baker Flexlock Hydraulic Liner Hanger
8. RS Nipple with 6.188" Profile
9. ZXP Liner Top Packer, 7" x 9 5/8", HR Profile w/ 10' tie-back extension

Notes:

- The 7" flush joint liner will be centralized in the open hole.
- Have equipment and be prepared to rotate liner to bottom as required.
- Contact Hydril for running nubbins for the 7" casing.
- Drift DP and xo to ensure cementing dart will pass.
- Run in the hole slowly to avoid surging the formation.
- 7" Hyd 513 XO with a circulating swage with a safety valve will be on the rig floor.

14. Run the liner in the hole, tag bottom and pick up 5' and circulate the well until the returns are clean. Reciprocate the liner while circulating. Drop the setting ball and set the liner hanger.

15. Mix and pump the cement job as per the attached program. Bump the plug with 500 psi above the final circulating pressure. Bleed the pressure back and check the floats. Pick up and set the liner packer at the top of the liner hanger. While waiting on cement, pull out of the hole and lay down and pick up drill pipe and drilling tools as required.

Notes:

- A detailed cementing program will be provided with slurry specifications.
- Cement volumes are based on 35% excess in the open hole.
- Do not circulate at the top of the liner prior to pulling out of the hole.
- Set the liner 5' off bottom.

16. Pick up an 8 1/2" bit and run in the hole. Clean out to the top of the liner at +/- 5200'. Pressure test the liner top to 2500 psi. Pull out of the hole.

17. Pick up a clean out assembly with 6 1/8" bit and 4" HT-38 drill pipe and run in the hole. Clean out the 7" liner to the landing collar or as indicated based upon completion intervals. Pressure test the 7" liner to 2500 psi. Pull out of the hole.

18. Rig up wireline and run a cement bond log (USIT/GR) across 7" liner. Squeeze the liner if necessary. Have 1 – bridge plug and 2 - cement retainers for each pipe size and 2- 2' perforation guns for each size casing available on location.
19. A detailed completion procedure will be provided after the open hole logs have been evaluated.

GENERAL COMPLETION PROCEDURE

Note:

For the completion mode, the 13-5/8" 5M BOPE will be configured with 4 ram preventers (2 – double gate) and an annular. Test the BOP to 250/3000 psi with 5" drill pipe, 4" drill pipe, 2 7/8" tubing and if required for completion - 2 3/8" tubing. The 13 5/8" BOPE will be configured for completion operations, with 2 7/8" X 5" VBR pipe rams in the top of the upper double gate and blind/shear rams in the bottom of the upper double gate, the mud cross will be below the upper double gate, 5" rams will be located in the top of the lower double gate and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. All tests will be recorded on a chart for the MMS to review. The applicable BOPE will be tested every 7 days during the completion phase of the operations.

1. Based upon evaluation of open hole logs the well will be perforated with TCP guns in selected intervals with a contingency to gravel pack as needed.
2. Run production completion equipment .
3. Install and test tree. Rig down and move the rig to the next well.

EVALUATION PROGRAM

Mudlogging Program:

Begin Mudlogging upon exiting original E-6 casing, dry cuttings and wet.

Testing Program

None expected.

Open Hole Logging program

LWD: GR-Resistivity logging while drilling upon exiting original E-6 casing through to TD.
Pick up LWD Resistivity as soon after KOP as feasible, but no later than 7000' MD.

Wireline Logs:

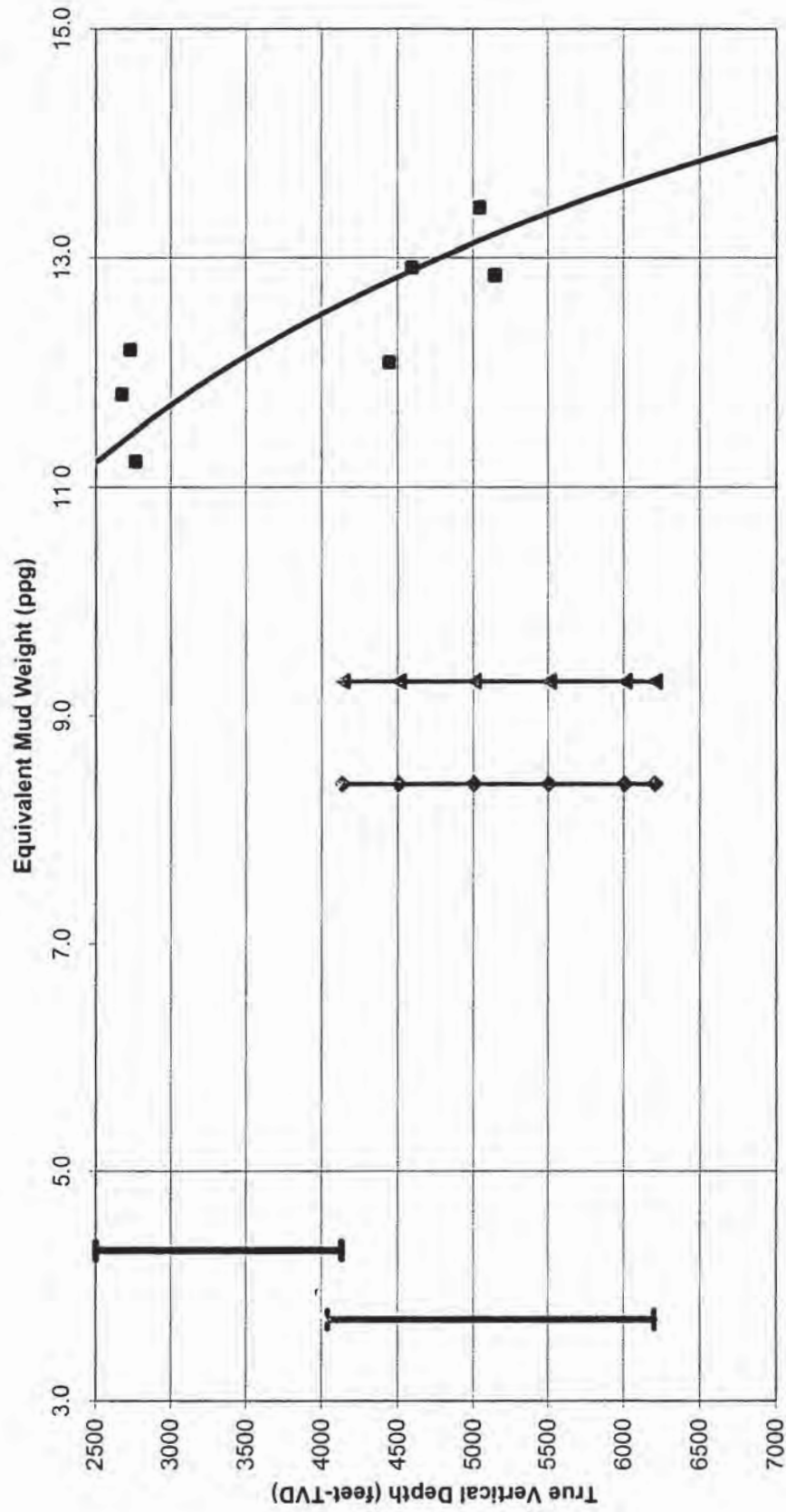
Drill pipe conveyed OH logs from and to indicated depths:
PEX-w/induction, spectral GR (hi res mode for ind. & density)
OBMI Oil-based Mud Imager
SONIC – dipole sonic (sonic scanner).

Logging geologist: Dale Kunitomi 805-987-3026

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

Platform Gail Well E-6 RD Pore Pressure, Mud Weight & Fracture Pressure



LOT Data
 Planned Mud Weight
 Highest Expected PP
 9-5/8" Casing
 7" Liner
 Expon (LOT Data)

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8	7
2	Setting Depth (feet - TVD)	4131	6200
3	Expected Leak Off Test EMW at shoe (ppg)	12.3	13.5
4	Depth of next Casing (feet - TVD)	6200	6200
5	Maximum Expected Formation Pressure (psi)	2708	2708
6	Expected Mud Weight (ppg)	9.3	9.3
7	Formation Equivalent Mud Weight (ppg)	8.4	8.4
8	Expected Hydrostatic Pressure at TD (psi)	2998	2998
9	Amount of Overbalance at TD (psi)	290	290
10	Fracture Gradient at shoe (psi/ft)	0.64	0.70
11	Fracture Pressure at shoe (psi)	2642	4352
12	Hydrostatic Pressure at shoe (psi)	1998	2998
13	Margin between Mud Weight and LOT (psi)	644	1354

Maximum Anticipated Surface Pressures

1	Casing Size (in)	9-5/8	7"
2	Setting Depth (feet - TVD)	4131	6200
3	Expected Leak Off Test EMW at shoe (ppg)	12.3	13.5
4	Expected Mud Weight (ppg)	9.3	9.6
5	Depth of next Casing (feet - TVD)	6200	6200
6	Maximum Expected Formation Pressure (psi)	2708	2708
7	Expected gas gradient (psi/ft)	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.4	8.4
	Max Pressures using 100% Gas to Surface		
9	Max Surface Pressure neglecting shoe (psi)	2398	2398
10	Fracture Gradient at shoe (psi/ft)	0.64	0.70
11	Fracture Pressure at shoe (psi)	2642	4352
12	Surface pressure to break down shoe (psi)	2436	4042
13	Maximum Anticipated Surface Pressure (psi)	2398	2398
	Max Pressures using 70% Gas & 30% Mud		
14	Maximum Anticipated Surface Pressure (psi)	1592	1563
15	Top of fluid (feet-TVD)	4340	4340
16	Pressure at shoe (psi)	1798	2708
17	Margin between pressure and breakdown(psi)	844	1644

CASING PROGRAM

Hole Section	12.25	9.785
Mud Weight	9.3	9.3
Buoyancy Factor	0.858	0.858
MASP (psi)	2398	2398
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9-5/8	7
Setting Depth, MD (ft)	5400	16265
Setting Depth, TVD (ft)	4131	6200
Top of Casing, MD (ft)	0	5200
Weight (lb/ft)	40	26
Grade	L-80	L-80
Threads	STL	513
ID (in)	8.681	6.199
Drift diameter (in)	8.599	6.151
Collapse (psi)	3090	5410
Burst (psi)	5750	7240
Joint Strength (kips)	500	448
Body Strength (kips)	916	604
Collapse Safety Factor	1.55	1.80
Burst Safety Factor	2.40	3.02
Tensile Safety Factor	1.75	1.29

The 9 5/8" is existing casing. There is one joint of 47# at top of the string. The ID/drift is for the 47#, the performance properties are for the 40#.

Notes:

Hydril 513 casing has a smaller ID than API casing and is reflected in ID specifications above.

Burst is calculated on the greater of MASP or gas lift pressure.

Collapse is based on mud outside of an evacuated casing string.

Tension is based on buoyed weight of casing string + 100 kips over pull.

CEMENTING PROGRAM

7" Protective/Production Liner

Objective: Cement 7" liner set across the 9 7/8" open hole interval. Liner will extend 200' back into the 9 5/8" casing. Cement will be programmed to be brought back to 11,500'. This depth is 300' above the Fault estimated at 11,800' and will be greater than 500' above upper proposed perforation interval in the M4 estimated to be at 12,450'. A liner top packer will be installed at the liner top and will isolate the liner lap and provide for casing/liner pressure integrity.

General Information:

9 5/8", 40#, L-80 Casing Window 5400' (8.835" ID)
7", 26#, L-80 Hydril 513 Liner (6.8" ID) Shoe at 16265' & TOL at 5200'
Lap Volume Factor is 0.1508 CF/FT
Open Hole Volume Factor is 0.2646 CF/FT
Shoe Joint Volume Factor is 0.2148 CF/FT
Open Hole Excess 35% over theoretical
Static Temperature is 177 F (@ 6200' TVD (shoe of the 7" casing)

Slurry Volume:

1720 CF of cement total required to bring cement from 16265' to 11,500 which is 4765 lineal feet. This volume includes 35% excess in the open hole. Oil base mud typically provide for close to gauge hole. Actual volumes may be adjusted from the caliper log volumes obtained with open hole logs.

Cement Slurry Details:

Pre-flush: 20 bbls of Ultra Flush II

Tail Slurry: 1720 CF (1495 sx) of Class "G" + additives to be determined.

Yield:	1.15 CF/sx
Water:	4.80 gal/sx
Weight:	15.8 ppg
Mix Water:	Fresh Water
Height:	4765 lineal feet (16265 - 11500)

Note: Lab tests will be performed prior to cementing to verify slurry properties. Actual materials that will be used on location will be used to perform tests.

Drilling Fluids Program

INTERVAL MUD PROPERTIES for Versaclean OBM System							
Depth MD (ft)	Mud Weight (ppg)	S/W Ratio	Plastic Viscosity (cp)	Yield Point (lb/100ft ²)	LSRV	CaCl ₂ % By Weight	Electric Stability
5400' Milling	9.4	12-20	10 - 16	10 - 12	20 - 25	>400	9.4
5400-16265	9.2-10.5	70/30-75/25	12-20	10 - 16	10 - 12	20 - 25	>400

The well will be changed over to seawater, the pits cleaned and the Versaclean OBM will be brought on board for the change-over. See the detailed mud program for description of the change-over.

Notes:

1. Prior to bring the OBM on board the drilling area will be made ready for full containment to prevent accidental overboard discharge of OBM.
2. Operate solids control equipment to maintain drill solids as low as possible.
3. Maintain supply of ZnCO₃ onboard to treat out H₂S.
4. A minimum of **750** sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised a minimum of 0.5 ppg using total circulating volume for 9 7/8" hole to 16265'. This includes open hole volume & active system.
5. Review detailed program for lost circulation contingency plans and materials.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydri") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydri") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.
Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.
Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).
Read drill pipe pressure.
Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.
Shut down pump and close choke at the same time. SEE NOTE.
Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

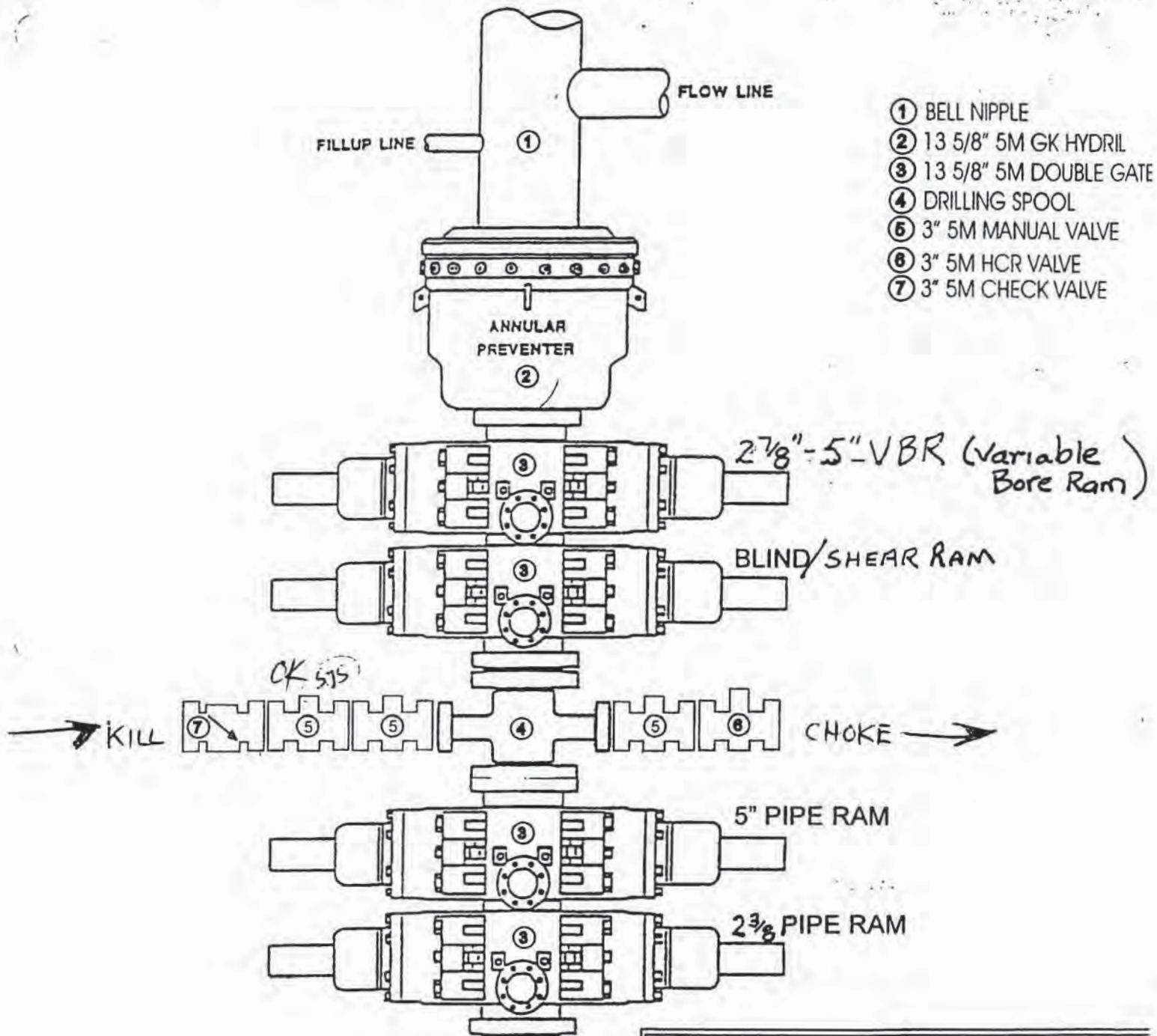
Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas.

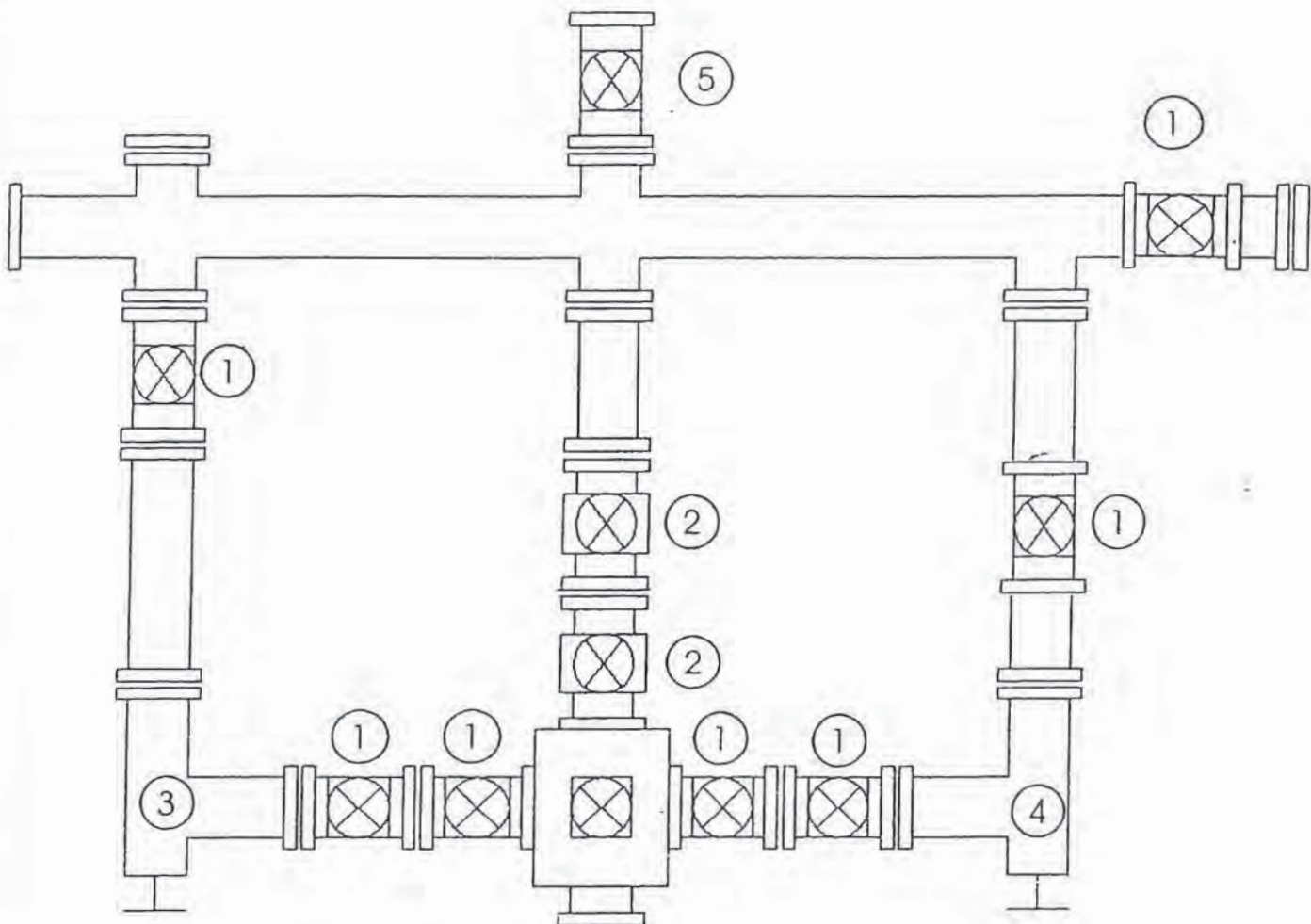
Assume any gas circulated to surface to have hydrogen sulfide potential.

Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

BOP STACK COMPLETION CONFIGURATION



BLOWOUT
 PREVENTION SYSTEM
 PLATFORM GAIL



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD PLATFORM GAIL

Vertical to 1650'
 Max Angle, 63 deg @5300, 22 deg @10516
 D F. Elevation: 113'
 D F. to Tubing Head: 61'
 Water Depth 739'
 Tree FMC 5000 PSI WP

SOCKEYE FIELD **WELL E-6** Lease: OCS-P-0204 **CURRENT ABANDONMENT**

Drawing Revision 12/13/05 JLH

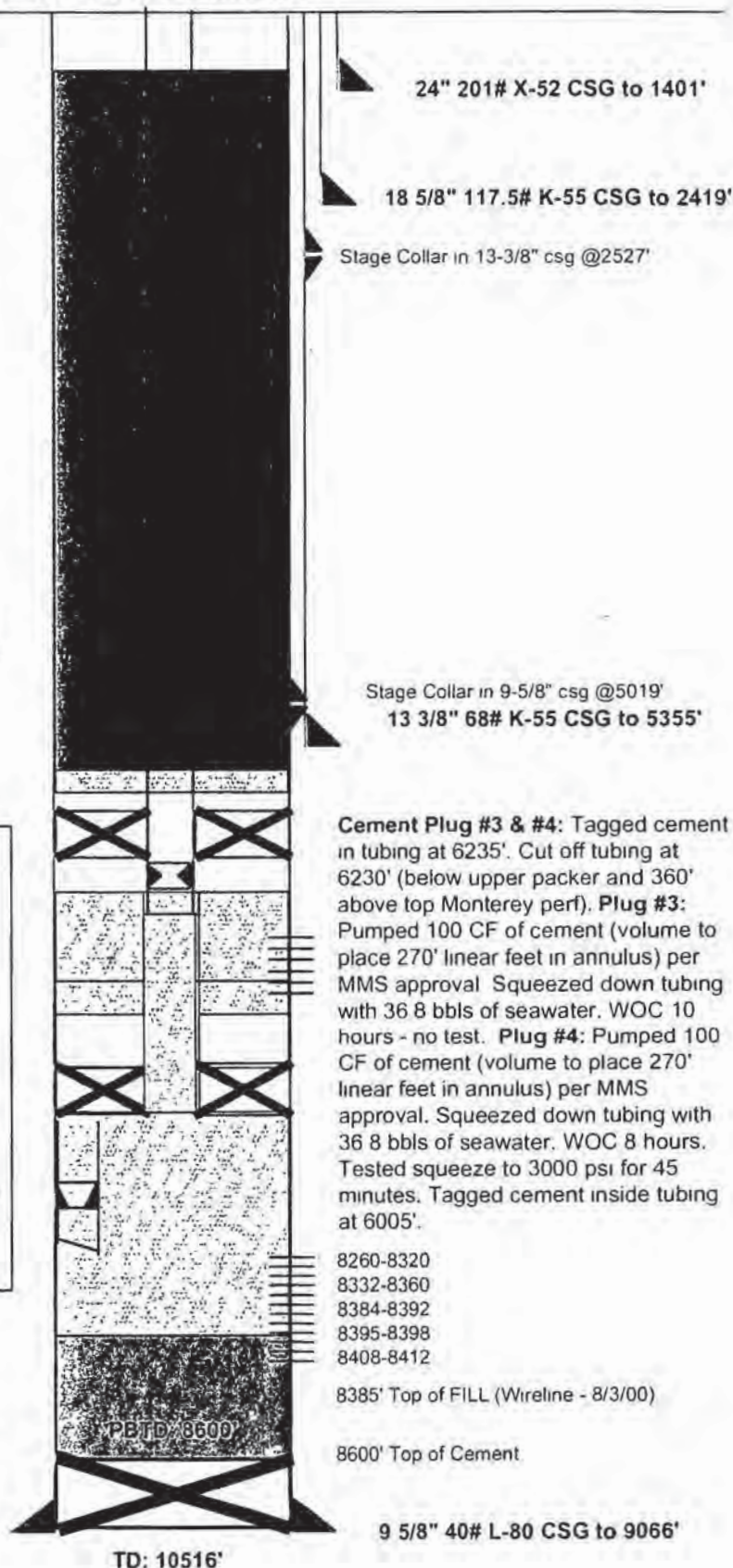
Completion Date: 5/2/89
 Recompletion: 7/2/89, 2/4/93,
 7/13/97

Casing filled with 328 bbls of 9.6 ppg drilling mud from 5400' to +/- 1020' Casing and cement pressure tested again to 3000 psi for 30 minutes and charted. Redrill prep work will be submitted with pending sidetrack APD

Cement Plug #5: Tubing cut at 5970' (above upper packer). Equalized 85 CF of cement through cut on top of packer and inside tubing. WOC for 8 hours. Pressure tested plug to 3000 psi for 30 minutes. Tagged cement inside tubing at 5405' Picked up and cut tubing again at 5400'

Perforation Detail			
Monterey	6584-6586'	2spf-1/2"	Sqzd 6/89
Monterey	6590-6810'	8spf-1/2"	Abdn 9/05
Monterey	6834-6836'	2spf-1/2"	Sqzd 6/89
Alpha	7603-7605'	2spf-1/2"	Sqzd 6/89
Alpha	8150-8152'	2spf-1/2"	Sqzd 6/89
Upper Topanga	8260-8320'	4spf-24"	Abdn 9/05
Upper Topanga	8332-8360'	4spf-1/2"	Abdn 9/05
Upper Topanga	8384-8392'	4spf-1/2"	Abdn 9/05
Upper Topanga	8395-8398'	4spf-1/2"	Abdn 9/05
Upper Topanga	8408-8412'	4spf-1/2"	Abdn 9/05
Upper Sespe	8780-8782'	?spf	Sqzd 4/89
Upper Sespe	8808-8810'	4spf-1/2"	Sqzd 2/89
Upper Sespe	8822-8850'	10spf-1/2"	Abdn 6/89 (2spf 4/89, 8spf 2/89)
Upper Sespe	8858-8860'	4spf-1/2"	Sqzd 2/89
Upper Sespe	8877-8879'	4spf-1/2"	Sqzd 4/89
Upper Sespe	8918-8920'	2spf-?	Sqzd 4/89

Cement Plug #1 & #2: Tubing tail was cut off at 8203'. Found small hole in tubing at 6570' across Monterey perforations. **Plug #1:** Pumped 303 CF of cement (volume to P&A both zones simultaneously) per MMS approval. Squeezed down tubing with 38.5 bbls of seawater. Pressure increased to 3650 psi when cement hit Upper Topanga perms. WOC 6 hours - no test. **Plug #2:** Pumped 83 CF of cement per MMS approval. Squeezed down tubing with 38.5 bbls of seawater. WOC 6 hours - no test. Pressure bled from 3000 psi to 1600 psi in 5 minutes.

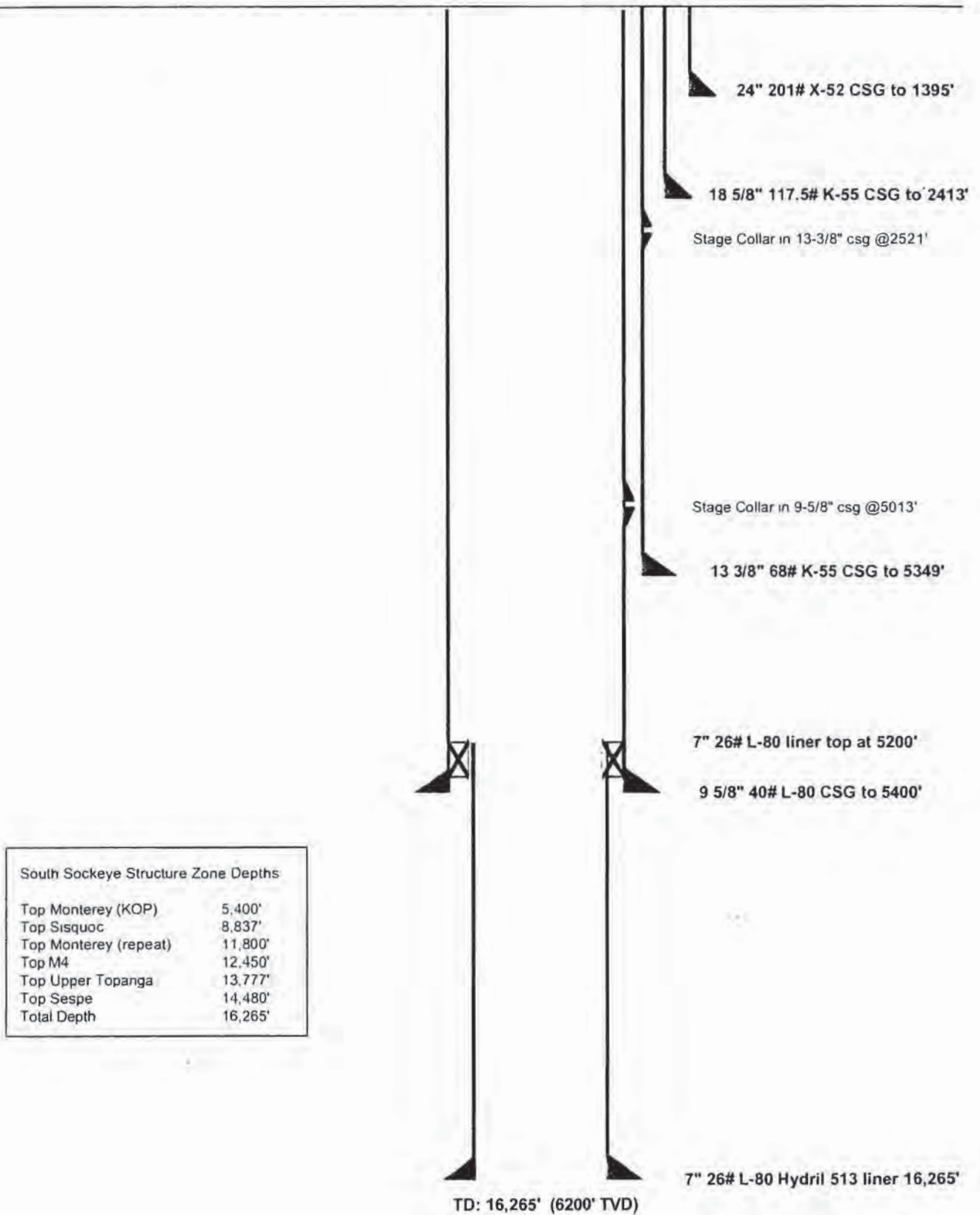


Vertical to 1650'
Max Angle 90 deg @ 6500'
D F Elevation 107'
D F to Tubing Head 55'
Water Depth 739'
Tree FMC 5000 PSI WP

SOCKEYE FIELD
WELL E-6 ST
PROPOSED
DRILLING
Lease: OCS-P-0205

Drawing Revision 1/13/06 JLH

Completion Date



730000

209

208

728000

205

204

1607.6

E-6 Redrill
Surface Location

2886.7

726000

724000

722000

720000

718000

716000

250 0 500 1000 2000 Feet



217 State Street, Suite 300, Santa Barbara, CA 93101

Sockeye Field
E-6 Redrill Offsets From
OCS P0209/P0205 and P0204
Lease Lines

DRAWN: CMK INTERP: DATE: 01/12/2006 SCALE: 1" = 2000'

FILE: E6RD_LLOffsets_Plan24.dwg

953.9

E-6 Redrill
Bottom Hole Location

2344.8

205

204

714000

712000

1040000

1042000

1044000

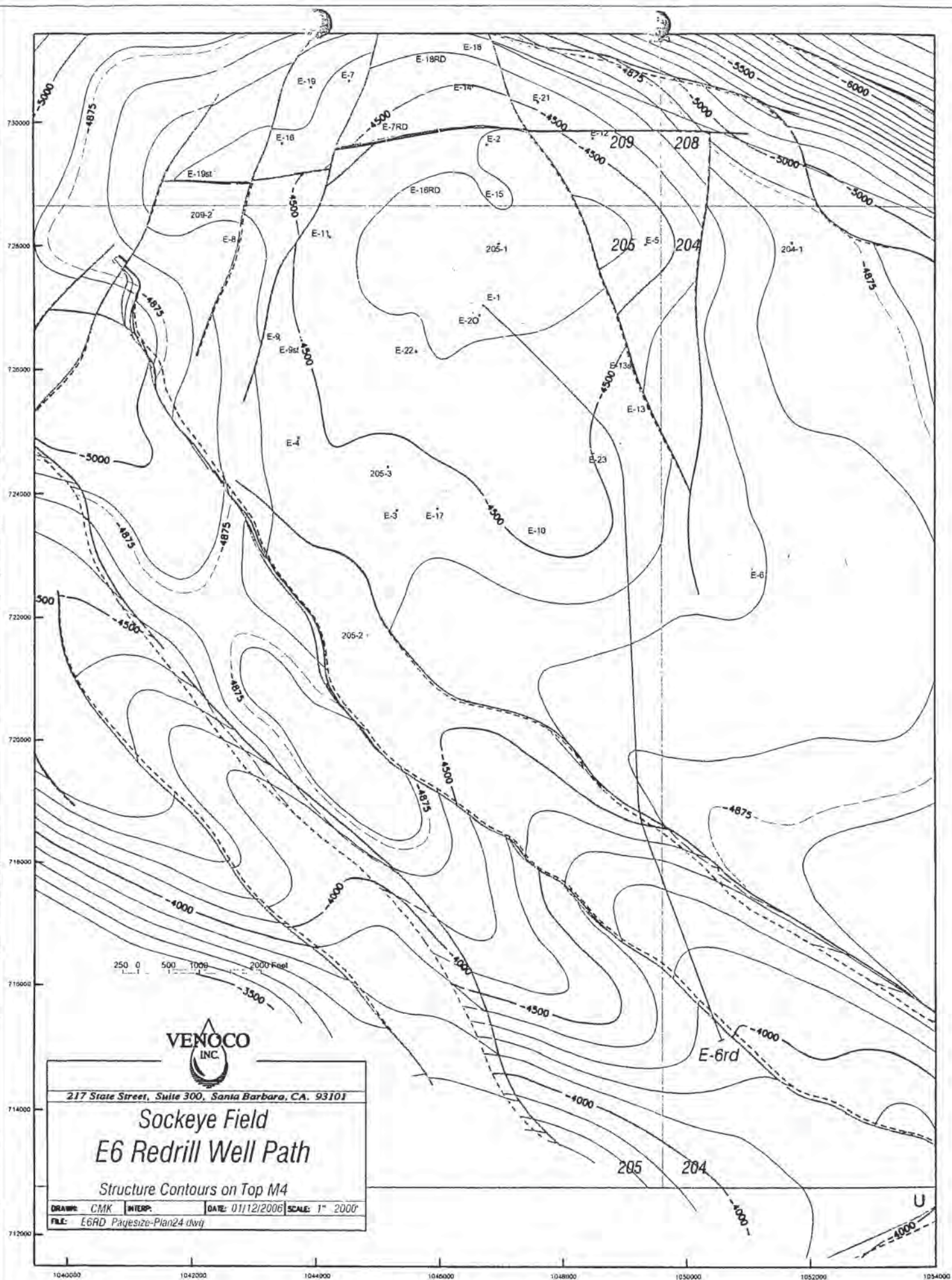
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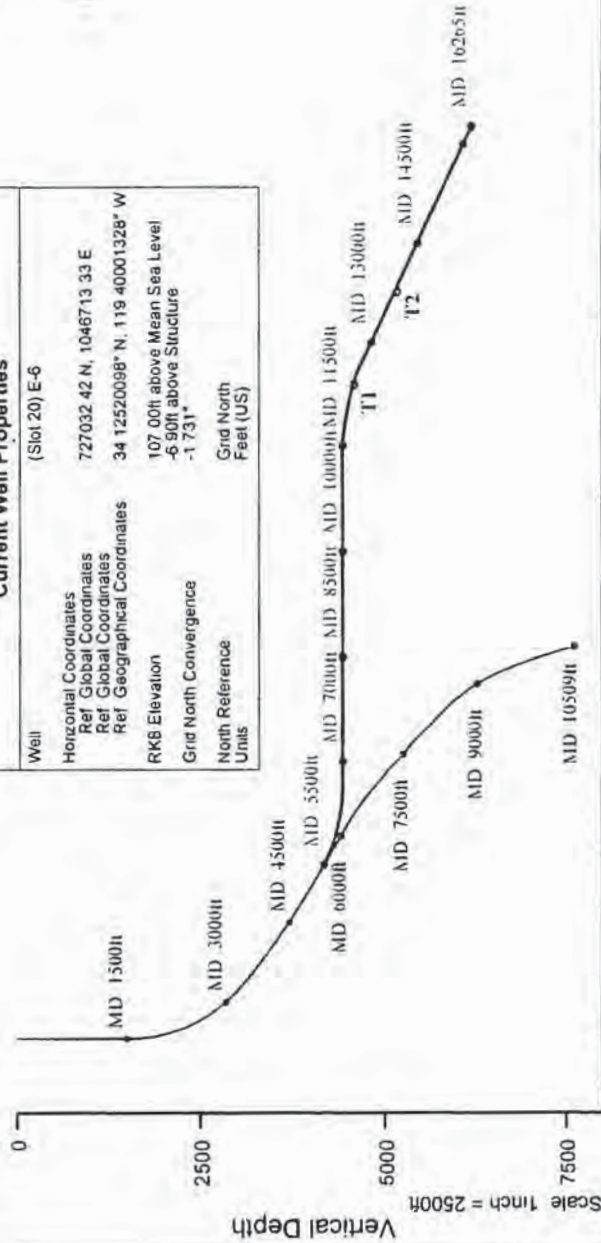
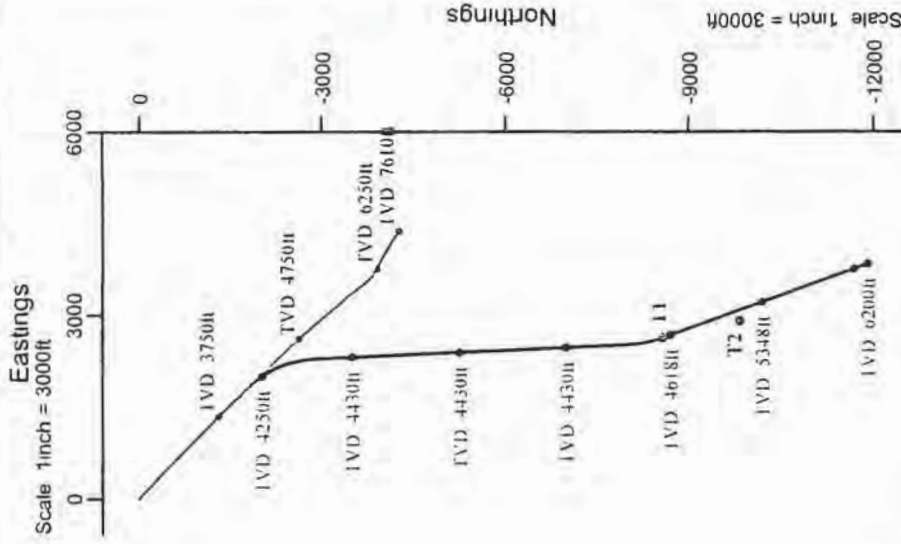
**Sockeye Field
Platform Gail
(Slot 20) E-6**

RD1 Plan 24 (09-Jan-06) Proposal Data

Coordinate System	NAD27 California State Planes, Zone VI							
	Measured Depth	Incl	Azim.	Vertical Depth	Northings	Eastings	Vertical Section	Dogleg Rate
Start Build/Turn	5400.00	62.310	136.024	4130.67	1815.45 S	1831.42 E	2289.83	
Hold Angle	5500.00	65.515	139.518	4174.63	1881.96 S	1891.74 E	2371.64	4.500
Start Build/Turn	5536.22	65.535	139.518	4189.63	1907.04 S	1913.14 E	2402.08	0.000
Hold Angle	6639.13	90.000	177.450	4430.00	2288.72 S	2281.95 E	3449.57	4.000
Start Drop/Turn	11450.13	90.000	177.450	4430.00	7703.95 S	7703.95 S	8098.31	0.000
Hold Angle	11650.17	82.360	177.299	4442.72	7893.25 S	8252.11 E	8372.64	4.000
Start Drop/Turn	11744.84	82.360	177.299	4455.30	7987.94 S	8571.42 E	8969.62	3.000
Continue Drop	12360.70	75.000	160.000	4577.00	8571.42 S	2626.67 E	9282.24	3.000
Hold Angle	12694.04	65.000	160.000	4690.86	8871.39 S	2733.67 E	9516.36	0.000
Total Depth	16264.96	65.000	160.000	6230.00	11912.57 S	3840.56 E	12516.36	

Current Well Properties

Well	(Slot 20) E-6
Horizontal Coordinates	727032 42 N, 1046713 33 E
Ref Global Coordinates	34 12520098° N, 119 40001328° W
Ref Geographical Coordinates	107 00ft above Mean Sea Level
RKB Elevation	-6.90ft above Structure
Grid North Convergence	-1.731°
North Reference	Grid North
Units	Feet (US)



Scale 1 inch = 2500ft

Vertical Section

Section Azimuth 162.131° (Grid North)

Approved

Checked

Date/Time
9 January, 2006 - 15 13

Prepared by
Adman



**Venoco Inc.
Sockeye Field
Platform Gail
(Slot 20) E-6 - RD1 Plan 24 (09-Jan-06)**

Halliburton Sperry-Sun Proposal Report

9 January, 2006

Surface Coordinates 727032 42 N, 1046713 33 E (34 12520098° N, 119 40001328° W)
Grid Coordinate System NAD27 California State Planes, Zone VI

RKB Elevation 107 00ft above Mean Sea Level
Water Depth 739 00ft

Proposal Ref pro151082

HALLIBURTON

Proposal Report for Platform Gail - (Slot 20) E-6

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
0.00	0.000	0.000	107.00	0.00	0.00 N	0.00 E	727032.42 N	1046713.33 E		0.00	
845.10	0.000	0.000	-738.10	845.10	0.00 N	0.00 E	727032.42 N	1046713.33 E	0.000	0.00	
893.10	0.030	336.617	-786.10	893.10	0.01 N	0.00 E	727032.43 N	1046713.33 E	0.062	-0.01	
943.10	0.020	307.050	-836.10	943.10	0.03 N	0.02 W	727032.45 N	1046713.31 E	0.032	-0.03	
993.10	0.050	94.283	-886.10	993.10	0.03 N	0.00 E	727032.45 N	1046713.33 E	0.135	-0.03	
1043.10	0.070	101.567	-936.10	1043.10	0.02 N	0.05 E	727032.44 N	1046713.38 E	0.043	-0.01	
1093.10	0.120	122.550	-986.10	1093.10	0.01 S	0.12 E	727032.41 N	1046713.45 E	0.120	0.05	
1143.10	0.180	86.417	-1036.10	1143.10	0.03 S	0.25 E	727032.39 N	1046713.58 E	0.218	0.11	
1193.10	0.200	84.833	-1086.10	1193.10	0.02 S	0.41 E	727032.40 N	1046713.74 E	0.041	0.15	
1243.10	0.270	101.267	-1136.10	1243.10	0.04 S	0.61 E	727032.38 N	1046713.94 E	0.193	0.22	
1293.10	0.100	197.783	-1186.10	1293.10	0.10 S	0.72 E	727032.32 N	1046714.05 E	0.597	0.31	
1343.10	0.250	240.183	-1236.10	1343.10	0.20 S	0.61 E	727032.22 N	1046713.94 E	0.377	0.37	
1393.10	1.630	353.983	-1286.09	1393.09	0.46 N	0.44 E	727032.88 N	1046713.77 E	3.492	-0.30	
1443.10	2.680	10.600	-1336.06	1443.06	2.31 N	0.58 E	727034.73 N	1046713.91 E	2.423	-2.02	
1493.10	1.970	74.800	-1386.02	1493.02	3.69 N	1.62 E	727036.11 N	1046714.95 E	5.085	-3.01	
1543.10	2.930	97.533	-1435.98	1542.98	3.75 N	3.72 E	727036.17 N	1046717.05 E	2.697	-2.42	
1593.10	3.830	109.000	-1485.89	1592.89	3.03 N	6.57 E	727035.45 N	1046719.90 E	2.243	-0.87	
1643.10	4.650	118.633	-1535.75	1642.75	1.52 N	9.92 E	727033.94 N	1046723.25 E	2.167	1.60	
1693.10	5.580	128.917	-1585.56	1692.56	0.98 S	13.59 E	727031.44 N	1046726.92 E	2.605	5.10	
1743.10	6.920	135.400	-1635.26	1742.26	4.65 S	17.60 E	727027.77 N	1046730.93 E	3.025	9.83	
1793.10	8.080	136.933	-1684.83	1791.83	9.36 S	22.12 E	727023.06 N	1046735.45 E	2.354	15.70	
1843.10	9.730	136.917	-1734.22	1841.22	15.02 S	27.40 E	727017.40 N	1046740.73 E	3.300	22.70	
1893.10	11.550	136.633	-1783.36	1890.36	21.74 S	33.72 E	727010.68 N	1046747.05 E	3.641	31.04	
1943.10	12.850	136.133	-1832.23	1939.23	29.39 S	41.02 E	727003.03 N	1046754.35 E	2.609	40.56	
1993.10	14.380	134.883	-1880.83	1987.83	37.78 S	49.27 E	726994.64 N	1046762.60 E	3.116	51.07	
2043.10	15.970	134.167	-1929.08	2036.08	46.95 S	58.60 E	726985.47 N	1046771.93 E	3.202	62.67	
2093.10	17.730	135.167	-1976.93	2083.93	57.15 S	68.90 E	726975.27 N	1046782.23 E	3.567	75.53	
2193.10	20.930	138.983	-2071.29	2178.29	81.43 S	91.37 E	726950.99 N	1046804.70 E	3.439	105.54	
2293.10	24.420	137.083	-2163.54	2270.54	110.05 S	117.17 E	726922.37 N	1046830.50 E	3.566	140.70	
2393.10	26.930	134.367	-2253.67	2360.67	141.03 S	147.44 E	726891.39 N	1046860.77 E	2.772	179.47	

E-6 Original

HALLIBURTON

Proposal Report for Platform Gail - (Slot 20) E-6

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
2493 10	29 520	133 283	-2341 77	2448 77	173 76 S	181 57 E	726858 66 N	1046894 90 E	2 640	221 10	
2593 10	33 230	133 733	-2427 13	2534 13	209 61 S	219 32 E	726822 81 N	1046932 65 E	3 717	266 79	
2693 10	35 870	131 750	-2509 49	2616 49	248 07 S	260 98 E	726784 35 N	1046974 31 E	2 869	316 18	
2793 10	38 970	131 417	-2588 90	2695 90	288 39 S	306 43 E	726744 03 N	1047019 76 E	3 107	368 50	
2893 10	41 770	133 017	-2665 08	2772 08	331 92 S	354 38 E	726700 50 N	1047087 71 E	2 985	424 65	
2993 10	44 130	134 317	-2738 28	2845 28	378 97 S	403 65 E	726653 45 N	1047116 98 E	2 521	484 55	
3093 10	46 470	134 317	-2808 61	2915 61	428 63 S	454 50 E	726603 79 N	1047167 83 E	2 340	547 41	
3193 10	49 030	133 867	-2875 84	2982 84	480 12 S	507 67 E	726552 30 N	1047221 00 E	2 582	612 74	
3293 10	51 280	133 967	-2939 91	3046 91	533 38 S	562 97 E	726499 04 N	1047276 30 E	2 251	680 39	
3393 10	53 300	134 017	-3001 07	3108 07	588 32 S	619 88 E	726444 10 N	1047333 21 E	2 020	750 15	
3493 10	55 270	134 233	-3059 44	3166 44	644 85 S	678 16 E	726387 57 N	1047391 49 E	1 978	821 83	
3593 10	55 700	134 367	-3116 11	3223 11	702 40 S	737 13 E	726330 02 N	1047450 46 E	0 444	894 70	
3693 10	56 270	134 567	-3172 05	3279 05	760 46 S	796 29 E	726271 96 N	1047509 62 E	0 594	968 11	
3793 10	56 750	134 750	-3227 23	3334 23	819 08 S	855 61 E	726213 34 N	1047568 94 E	0 504	1042 10	
3893 10	57 270	134 967	-3281 68	3388 68	878 24 S	915 06 E	726154 18 N	1047628 39 E	0 551	1116 66	
3993 10	57 630	135 033	-3335 48	3442 48	937 84 S	974 67 E	726094 58 N	1047688 00 E	0 364	1191 67	
4093 10	58 270	135 167	-3388 54	3495 54	997 88 S	1034 49 E	726034 54 N	1047747 82 E	0 650	1267 17	
4193 10	58 670	135 317	-3440 84	3547 84	1058 41 S	1094 51 E	725974 01 N	1047807 84 E	0 420	1343 19	
4293 10	59 120	135 400	-3492 50	3599 50	1119 33 S	1154 67 E	725913 09 N	1047868 00 E	0 456	1419 64	
4393 10	59 500	-135 533	-3543 54	3650 54	1180 63 S	1214 98 E	725851 79 N	1047928 31 E	0 397	1496 49	
4493 10	60 020	135 583	-3593 90	3700 90	1242 31 S	1275 47 E	725790 11 N	1047988 80 E	0 522	1573 75	
4593 10	60 430	135 717	-3643 56	3750 56	1304 38 S	1336 15 E	725728 04 N	1048049 48 E	0 426	1651 44	
4693 10	60 830	135 733	-3692 61	3799 61	1366 78 S	1386 99 E	725665 64 N	1048110 32 E	0 400	1729 50	
4793 10	61 320	135 733	-3740 97	3847 97	1429 45 S	1458 08 E	725602 97 N	1048171 41 E	0 490	1807 90	
4893 10	61 550	135 817	-3788 79	3895 79	1492 39 S	1519 34 E	725540 03 N	1048232 67 E	0 241	1886 60	
4993 10	62 120	136 067	-3835 99	3942 99	1555 74 S	1580 64 E	725476 68 N	1048293 97 E	0 611	1965 70	
5093 10	62 130	136 033	-3882 74	3989 74	1619 38 S	1641 99 E	725413 04 N	1048355 32 E	0 031	2045 10	
5193 10	62 620	136 033	-3929 11	4036 11	1683 15 S	1703 50 E	725349 27 N	1048416 83 E	0 490	2124 67	
5293 10	63 200	135 900	-3974 65	4081 65	1747 16 S	1765 38 E	725285 26 N	1048478 71 E	0 592	2204 57	
5393 10	62 270	136 017	-4020 46	4127 46	1811 06 S	1827 18 E	725221 36 N	1048540 51 E	0 936	2284 35	

Proposal Report for Platform Gail - (Slot 20) E-6

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
5400 00	62 310	136 024	-4023 67	4130 67	1815 45 S	1831 42 E	725216 97 N	1048544 75 E	0 587	2289 83	Tied on at 5400 00ft
RD1 Plan 24 (09-Jan-06)											
5500 00	65 535	139 518	-4067 63	4174 63	1881 96 S	1891 74 E	725150 46 N	1048605 07 E	4 500	2371 64	End of Build/Turn at 5500 00ft
5536 22	65 535	139 518	-4082 63	4189 63	1907 04 S	1913 14 E	725125 38 N	1048626 47 E	0 000	2402 08	Start Build/Turn at 5536 22ft
5600 00	66 752	141 970	-4108 43	4215 43	1952 20 S	1950 04 E	725080 22 N	1048663 37 E	4 000	2456 39	
5700 00	68 734	145 725	-4146 32	4253 32	2026 92 S	2004 61 E	725005 50 N	1048717 94 E	4 000	2544 25	
5800 00	70 797	149 377	-4180 91	4287 91	2106 09 S	2054 92 E	724926 33 N	1048768 25 E	4 000	2635 03	
5900 00	72 930	152 938	-4212 05	4319 05	2189 32 S	2100 74 E	724843 10 N	1048814 07 E	4 000	2728 31	
6000 00	75 124	156 418	-4239 57	4346 57	2276 21 S	2141 83 E	724756 21 N	1048855 16 E	4 000	2823 62	
6100 00	77 369	159 826	-4263 35	4370 35	2366 33 S	2178 01 E	724666 09 N	1048891 34 E	4 000	2920 49	
6200 00	79 657	163 175	-4283 27	4390 27	2459 25 S	2209 08 E	724573 17 N	1048922 41 E	4 000	3018 46	
6300 00	81 979	166 474	-4299 23	4406 23	2554 51 S	2234 91 E	724477 91 N	1048948 24 E	4 000	3117 05	
6400 00	84 327	169 736	-4311 15	4418 15	2651 64 S	2255 37 E	724380 78 N	1048968 70 E	4 000	3215 77	
6500 00	86 693	172 972	-4318 98	4425 98	2750 18 S	2270 35 E	724282 24 N	1048983 68 E	4 000	3314 16	
6600 00	89 069	176 192	-4322 68	4429 68	2849 65 S	2279 78 E	724182 77 N	1048993 11 E	4 000	3411 72	
6639 13	90 000	177 450	-4323 00	4430 00	2888 72 S	2281 95 E	724143 70 N	1048995 28 E	4 000	3449 57	End of Build/Turn at 6639 13ft
6700 00	90 000	177 450	-4323 00	4430 00	2949 53 S	2284 66 E	724082 89 N	1048997 99 E	0 000	3508 27	
6800 00	90 000	177 450	-4323 00	4430 00	3049 43 S	2289 10 E	723982 99 N	1049002 43 E	0 000	3604 72	
6900 00	90 000	177 450	-4323 00	4430 00	3149 33 S	2293 55 E	723883 09 N	1049006 88 E	0 000	3701 17	
7000 00	90 000	177 450	-4323 00	4430 00	3249 23 S	2298 00 E	723783 19 N	1049011 33 E	0 000	3797 61	
7100 00	90 000	177 450	-4323 00	4430 00	3349 13 S	2302 45 E	723683 29 N	1049015 78 E	0 000	3894 06	
7200 00	90 000	177 450	-4323 00	4430 00	3449 03 S	2306 90 E	723583 39 N	1049020 23 E	0 000	3990 51	
7300 00	90 000	177 450	-4323 00	4430 00	3548 93 S	2311 35 E	723483 49 N	1049024 68 E	0 000	4086 95	
7400 00	90 000	177 450	-4323 00	4430 00	3648 83 S	2315 80 E	723383 59 N	1049029 13 E	0 000	4183 40	
7500 00	90 000	177 450	-4323 00	4430 00	3748 73 S	2320 25 E	723283 69 N	1049033 58 E	0 000	4279 85	
7600 00	90 000	177 450	-4323 00	4430 00	3848 64 S	2324 70 E	723183 78 N	1049038 03 E	0 000	4376 30	
7700 00	90 000	177 450	-4323 00	4430 00	3948 54 S	2329 15 E	723083 88 N	1049042 48 E	0 000	4472 74	

Proposal Report for Platform Gail - (Slot 20) E-6

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
7800.00	90.000	177.450	-4323.00	4430.00	4048.44 S	2333.60 E	722983.98 N	1049046.93 E	0.000	4569.19	
7900.00	90.000	177.450	-4323.00	4430.00	4148.34 S	2338.04 E	722884.08 N	1049051.37 E	0.000	4665.64	
8000.00	90.000	177.450	-4323.00	4430.00	4248.24 S	2342.49 E	722784.18 N	1049055.82 E	0.000	4762.08	
8100.00	90.000	177.450	-4323.00	4430.00	4348.14 S	2346.94 E	722684.28 N	1049060.27 E	0.000	4858.53	
8200.00	90.000	177.450	-4323.00	4430.00	4448.04 S	2351.39 E	722584.38 N	1049064.72 E	0.000	4954.98	
8300.00	90.000	177.450	-4323.00	4430.00	4547.94 S	2355.84 E	722484.48 N	1049069.17 E	0.000	5051.42	
8400.00	90.000	177.450	-4323.00	4430.00	4647.84 S	2360.29 E	722384.58 N	1049073.62 E	0.000	5147.87	
8500.00	90.000	177.450	-4323.00	4430.00	4747.74 S	2364.74 E	722284.68 N	1049078.07 E	0.000	5244.32	
8600.00	90.000	177.450	-4323.00	4430.00	4847.65 S	2369.19 E	722184.77 N	1049082.52 E	0.000	5340.76	
8700.00	90.000	177.450	-4323.00	4430.00	4947.55 S	2373.64 E	722084.87 N	1049086.97 E	0.000	5437.21	
8800.00	90.000	177.450	-4323.00	4430.00	5047.45 S	2378.09 E	721984.97 N	1049091.42 E	0.000	5533.66	
8900.00	90.000	177.450	-4323.00	4430.00	5147.35 S	2382.54 E	721885.07 N	1049095.87 E	0.000	5630.11	
9000.00	90.000	177.450	-4323.00	4430.00	5247.25 S	2386.99 E	721785.17 N	1049100.32 E	0.000	5726.55	
9100.00	90.000	177.450	-4323.00	4430.00	5347.15 S	2391.43 E	721685.27 N	1049104.76 E	0.000	5823.00	
9200.00	90.000	177.450	-4323.00	4430.00	5447.05 S	2395.88 E	721585.37 N	1049109.21 E	0.000	5919.45	
9300.00	90.000	177.450	-4323.00	4430.00	5546.95 S	2400.33 E	721485.47 N	1049113.66 E	0.000	6015.89	
9400.00	90.000	177.450	-4323.00	4430.00	5646.85 S	2404.78 E	721385.57 N	1049118.11 E	0.000	6112.34	
9500.00	90.000	177.450	-4323.00	4430.00	5746.75 S	2409.23 E	721285.67 N	1049122.56 E	0.000	6208.79	
9600.00	90.000	177.450	-4323.00	4430.00	5846.66 S	2413.68 E	721185.76 N	1049127.01 E	0.000	6305.23	
9700.00	90.000	177.450	-4323.00	4430.00	5946.56 S	2418.13 E	721085.86 N	1049131.46 E	0.000	6401.68	
9800.00	90.000	177.450	-4323.00	4430.00	6046.46 S	2422.58 E	720985.96 N	1049135.91 E	0.000	6498.13	
9900.00	90.000	177.450	-4323.00	4430.00	6146.36 S	2427.03 E	720886.06 N	1049140.36 E	0.000	6594.58	
10000.00	90.000	177.450	-4323.00	4430.00	6246.26 S	2431.48 E	720786.16 N	1049144.81 E	0.000	6691.02	
10100.00	90.000	177.450	-4323.00	4430.00	6346.16 S	2435.93 E	720686.26 N	1049149.26 E	0.000	6787.47	
10200.00	90.000	177.450	-4323.00	4430.00	6446.06 S	2440.37 E	720586.36 N	1049153.70 E	0.000	6883.92	
10300.00	90.000	177.450	-4323.00	4430.00	6545.96 S	2444.82 E	720486.46 N	1049158.15 E	0.000	6980.36	
10400.00	90.000	177.450	-4323.00	4430.00	6645.86 S	2449.27 E	720386.56 N	1049162.60 E	0.000	7076.81	
10500.00	90.000	177.450	-4323.00	4430.00	6745.76 S	2453.72 E	720286.66 N	1049167.05 E	0.000	7173.26	
10600.00	90.000	177.450	-4323.00	4430.00	6845.66 S	2458.17 E	720186.76 N	1049171.50 E	0.000	7269.70	
10700.00	90.000	177.450	-4323.00	4430.00	6945.57 S	2462.62 E	720086.85 N	1049175.95 E	0.000	7366.15	

Proposal Report for Platform Gail - (Slot 20) E-6

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft) Eastings (ft)	Global Coordinates Northings (ft) Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
10800.00	90.000	177.450	-4323.00	4430.00	7045.47 S 2467.07 E	719886.95 N 1049180.40 E	0.000	7462.60	
10900.00	90.000	177.450	-4323.00	4430.00	7145.37 S 2471.52 E	719887.05 N 1049184.85 E	0.000	7559.04	
11000.00	90.000	177.450	-4323.00	4430.00	7245.27 S 2475.97 E	719787.15 N 1049189.30 E	0.000	7655.49	
11100.00	90.000	177.450	-4323.00	4430.00	7345.17 S 2480.42 E	719687.25 N 1049193.75 E	0.000	7751.94	
11200.00	90.000	177.450	-4323.00	4430.00	7445.07 S 2484.87 E	719587.35 N 1049198.20 E	0.000	7848.39	
11300.00	90.000	177.450	-4323.00	4430.00	7544.97 S 2489.31 E	719487.45 N 1049202.64 E	0.000	7944.83	
11400.00	90.000	177.450	-4323.00	4430.00	7644.87 S 2493.76 E	719387.55 N 1049207.09 E	0.000	8041.28	
11459.13	90.000	177.450	-4323.00	4430.00	7703.95 S 2496.39 E	719328.47 N 1049209.72 E	0.000	8098.31	Start Drop/Turn at 11459.13ft
11500.00	88.366	177.418	-4323.58	4430.58	7744.77 S 2498.22 E	719287.65 N 1049211.55 E	4.000	8137.72	
11600.00	84.366	177.339	-4329.92	4436.92	7844.44 S 2502.79 E	719187.98 N 1049216.12 E	4.000	8233.99	
11650.17	82.360	177.299	-4335.72	4442.72	7894.22 S 2505.12 E	719138.20 N 1049218.45 E	4.000	8282.08	End of Drop/Turn at 11650.17ft
11700.00	82.360	177.299	-4342.34	4449.34	7943.55 S 2507.45 E	719088.87 N 1049220.78 E	0.000	8329.75	
11744.84	82.360	177.299	-4348.30	4455.30	7987.94 S 2509.54 E	719044.48 N 1049222.87 E	0.000	8372.64	Start Drop/Turn at 11744.84ft
11800.00	81.663	175.783	-4355.97	4462.97	8042.47 S 2512.84 E	718989.95 N 1049226.17 E	3.000	8425.55	
11900.00	80.416	173.021	-4371.55	4478.55	8140.76 S 2522.47 E	718891.66 N 1049235.80 E	3.000	8522.06	
12000.00	79.190	170.239	-4389.26	4496.26	8238.12 S 2536.79 E	718794.30 N 1049250.12 E	3.000	8619.11	
12100.00	77.989	167.434	-4409.04	4516.04	8334.28 S 2555.76 E	718698.14 N 1049269.09 E	3.000	8716.45	
12200.00	76.817	164.604	-4430.86	4537.86	8428.97 S 2579.33 E	718603.45 N 1049292.66 E	3.000	8813.81	
12300.00	75.676	161.748	-4454.63	4561.63	8521.94 S 2607.43 E	718510.48 N 1049320.76 E	3.000	8910.91	
12360.70	75.000	160.000	-4470.00	4577.00	8577.42 S 2626.67 E	718455.00 N 1049340.00 E	3.000	8969.62	Continue Drop at 12360.70ft Target - T1, 30.00 Radius, Comment
12400.00	73.821	160.000	-4480.56	4597.56	8612.99 S 2639.62 E	718419.43 N 1049352.95 E	3.000	9007.45	
12500.00	70.821	160.000	-4510.93	4617.93	8702.51 S 2672.20 E	718329.91 N 1049385.53 E	3.000	9102.65	
12600.00	67.821	160.000	-4546.23	4633.23	8790.41 S 2704.19 E	718242.01 N 1049417.52 E	3.000	9196.13	
12694.04	65.000	160.000	-4583.86	4690.86	8871.39 S 2733.67 E	718161.03 N 1049447.00 E	3.000	9282.24	End of Drop at 12694.04ft
12700.00	65.000	160.000	-4586.38	4693.38	8876.47 S 2735.51 E	718155.95 N 1049448.84 E	0.000	9287.64	
12800.00	65.000	160.000	-4628.64	4735.64	8961.63 S 2766.51 E	718070.79 N 1049479.84 E	0.000	9378.21	
12900.00	65.000	160.000	-4670.91	4777.91	9046.80 S 2797.51 E	717985.62 N 1049510.84 E	0.000	9468.78	
13000.00	65.000	160.000	-4713.17	4820.17	9131.96 S 2828.51 E	717900.46 N 1049541.84 E	0.000	9559.34	
13100.00	65.000	160.000	-4755.43	4862.43	9217.13 S 2859.50 E	717815.29 N 1049572.83 E	0.000	9649.91	
13200.00	65.000	160.000	-4797.69	4904.69	9302.29 S 2890.50 E	717730.13 N 1049603.83 E	0.000	9740.48	

Proposal Report for Platform Gail - (Slot 20) E-6

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
13300.00	65.000	160.000	-4839.95	4946.95	9387.46 S	2921.50 E	717644.96 N	1049634.83 E	0.000	9831.05	
13400.00	65.000	160.000	-4882.22	4989.22	9472.62 S	2952.50 E	717559.80 N	1049665.83 E	0.000	9921.62	
13500.00	65.000	160.000	-4924.48	5031.48	9557.79 S	2983.49 E	717474.63 N	1049696.82 E	0.000	10012.19	
13600.00	65.000	160.000	-4966.74	5073.74	9642.95 S	3014.49 E	717389.47 N	1049727.82 E	0.000	10102.75	
13700.00	65.000	160.000	-5009.00	5116.00	9728.12 S	3045.49 E	717304.30 N	1049758.82 E	0.000	10193.32	
13800.00	65.000	160.000	-5051.26	5158.26	9813.28 S	3076.49 E	717219.14 N	1049789.82 E	0.000	10283.89	
13900.00	65.000	160.000	-5093.52	5200.52	9898.45 S	3107.48 E	717133.97 N	1049820.81 E	0.000	10374.46	
14000.00	65.000	160.000	-5135.79	5242.79	9983.61 S	3138.48 E	717048.81 N	1049851.81 E	0.000	10465.03	
14100.00	65.000	160.000	-5178.05	5285.05	10068.78 S	3169.48 E	716963.64 N	1049882.81 E	0.000	10555.59	
14200.00	65.000	160.000	-5220.31	5327.31	10153.94 S	3200.48 E	716878.48 N	1049913.81 E	0.000	10646.16	
14300.00	65.000	160.000	-5262.57	5369.57	10239.11 S	3231.47 E	716793.31 N	1049944.80 E	0.000	10736.73	
14400.00	65.000	160.000	-5304.83	5411.83	10324.27 S	3262.47 E	716708.15 N	1049975.80 E	0.000	10827.30	
14500.00	65.000	160.000	-5347.10	5454.10	10409.44 S	3293.47 E	716622.98 N	1050006.80 E	0.000	10917.87	
14600.00	65.000	160.000	-5389.36	5496.36	10494.60 S	3324.47 E	716537.82 N	1050037.80 E	0.000	11008.43	
14700.00	65.000	160.000	-5431.62	5538.62	10579.77 S	3355.47 E	716452.65 N	1050068.80 E	0.000	11099.00	
14800.00	65.000	160.000	-5473.88	5580.88	10664.93 S	3386.46 E	716367.49 N	1050099.79 E	0.000	11189.57	
14900.00	65.000	160.000	-5516.14	5623.14	10750.10 S	3417.46 E	716282.32 N	1050130.79 E	0.000	11280.14	
15000.00	65.000	160.000	-5558.40	5665.40	10835.26 S	3448.46 E	716197.16 N	1050161.79 E	0.000	11370.71	
15100.00	65.000	160.000	-5600.67	5707.67	10920.43 S	3479.46 E	716111.99 N	1050192.79 E	0.000	11461.28	
15200.00	65.000	160.000	-5642.93	5749.93	11005.59 S	3510.45 E	716026.83 N	1050223.78 E	0.000	11551.84	
15300.00	65.000	160.000	-5685.19	5792.19	11090.76 S	3541.45 E	715941.66 N	1050254.78 E	0.000	11642.41	
15400.00	65.000	160.000	-5727.45	5834.45	11175.92 S	3572.45 E	715856.50 N	1050285.78 E	0.000	11732.98	
15500.00	65.000	160.000	-5769.71	5876.71	11261.09 S	3603.45 E	715771.33 N	1050316.78 E	0.000	11823.55	
15600.00	65.000	160.000	-5811.98	5918.98	11346.25 S	3634.44 E	715686.17 N	1050347.77 E	0.000	11914.12	
15700.00	65.000	160.000	-5854.24	5961.24	11431.42 S	3665.44 E	715601.00 N	1050378.77 E	0.000	12004.68	
15800.00	65.000	160.000	-5896.50	6003.50	11516.58 S	3696.44 E	715515.84 N	1050409.77 E	0.000	12095.25	
15900.00	65.000	160.000	-5938.76	6045.76	11601.75 S	3727.44 E	715430.67 N	1050440.77 E	0.000	12185.82	
16000.00	65.000	160.000	-5981.02	6088.02	11686.91 S	3758.43 E	715345.51 N	1050471.76 E	0.000	12276.39	
16100.00	65.000	160.000	-6023.28	6130.28	11772.08 S	3789.43 E	715260.34 N	1050502.76 E	0.000	12366.96	
16200.00	65.000	160.000	-6065.55	6172.55	11857.24 S	3820.43 E	715175.18 N	1050533.76 E	0.000	12457.52	

Proposal Report for Platform Gail - (Slot 20) E-6

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft) Eastings (ft)	Global Coordinates Northings (ft) Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
16264 96	65-000	160 000	-6093 00	6200 00	11912 57 S 3840 56 E	715119 85 N 1050553 89 E	0 000	12516 36	Total Depth at 16264 96ft

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grid North. Vertical depths are relative to Well. Northings and Eastings are relative to Well. Global Northings and Eastings are relative to NAD27 California State Planes, Zone VI.

The Dogleg Severity is in Degrees per 100 feet (US). Vertical Section is from Well and calculated along an Azimuth of 162 131° (Grid).

Based upon Minimum Curvature type calculations, at a Measured Depth of 16264 96ft. The Bottom Hole Displacement is 12516 36ft., in the Direction of 162 131° (Grid).

Comments

Measured Depth (ft)	TVD (ft)	Station Coordinates Northings (ft) Eastings (ft)	Comment
5400 00	4130 67	1815 45 S 1831 42 E	Tied on at 5400 00ft
5400 00	4130 67	1815 45 S 1831 42 E	Tied on at 5400 00ft
5500 00	4174 63	1891 74 E 1891 74 E	End of Build/Turn at 5500 00ft
5536 22	4189 63	1907 04 S 1913 14 E	Start Build/Turn at 5536 22ft
6639 13	4430 00	2888 72 S 2281 95 E	End of Build/Turn at 6639 13ft
11459 13	4430 00	7703 95 S 2496 39 E	Start Drop/Turn at 11459 13ft
11650 17	4442 72	7894 22 S 2505 12 E	End of Drop/Turn at 11650 17ft
11744 84	4455 30	7987 94 S 2509 54 E	Start Drop/Turn at 11744 84ft
12360 70	4577 00	8577 42 S 2626 67 E	Continue Drop at 12360 70ft
12694 04	4690 86	8871 39 S 2733 67 E	End of Drop at 12694 04ft
16264 96	6200 00	11912 57 S 3840 56 E	Total Depth at 16264 96ft

Proposal Report for Platform Gail - (Slot 20) E-6

Targets associated with this wellpath

Target Name	TVD (ft)	Target Northings (ft)	Target Eastings (ft)	Distance (ft)	Direction (°Grid)
T1 (Circle)	4577.00	8577.42 S	2626.67 E	8970.59	162.974
	-4470.00	718455.00 N	1049340.00 E		
	30.00ft	34 10186059° N	119 39048561° W		
		Mean Sea Level/Global Coordinates			
		Geographical Coordinates			
		Target Radius			
T2 (Circle)	5161.00	9828.42 S	2901.67 E	10247.81	163.552
	-5054.00	717204.00 N	1049615.00 E		
	30.00ft	34 09844741° N	119 38945330° W		
		Mean Sea Level/Global Coordinates			
		Geographical Coordinates			
		Target Radius			

North Reference Sheet for Platform Gail - (Slot 20) E-6

Coordinate System is NAD27 California State Planes, Zone VI, US Foot
Source Snyder, J P, 1987, Map Projections - A Working Manual

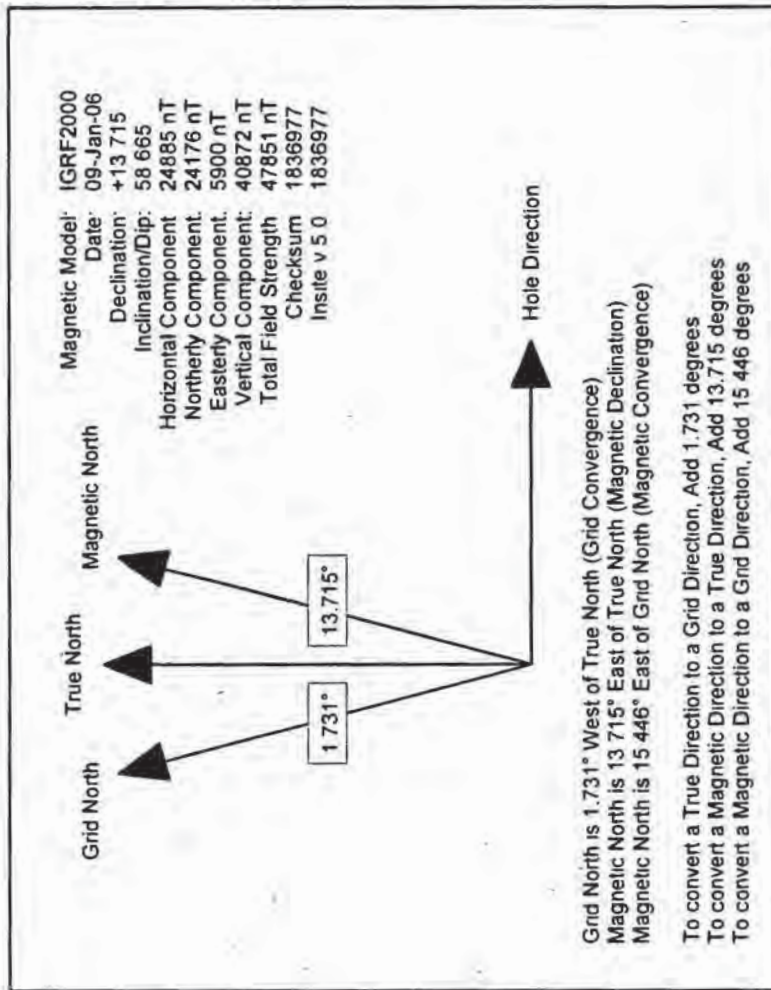
Datum is North American Datum of 1927 (US48, AK, HI, and Canada)

Spheroid is Clarke - 1866
Equatorial Radius 6378206 400m
Polar Radius 6356583 800m
Inverse Flattening 294 978698213901

Projection method is Lambert Conformal Conic Projection

Central Meridian is -116 250°
Longitude Origin -116 250°
Latitude Origin 32 167°
False Easting 609600 00m
False Northing 0 00m
Scale Reduction 1 000000000

Grid Coordinates of Well 727032 42 N, 1046713 33 E
Geographical Coordinates of Well 34 12520098° N, 119 40001328° W
Surface Elevation of Well 107 00ft
Grid Convergence at Surface is -1 731°
Magnetic Convergence at Surface is -15 446° (9 January, 2006)



Overview of Proposal

Venoco, Inc., designated operator of the Sockeye Field within the Santa Clara Unit, proposes to drill well OCS-P 0205 #E-6RD into the Sespe Formation. The objectives of the well are to exploit potential reservoirs in the Miocene Monterey, Lower Miocene Upper Topanga, and/or Oligocene Sespe Formations. This well is essentially a new pool extension "wildcat" well to test and potentially add significant reserves to the Sockeye field in a separate undeveloped structure south of the main field.

The proposed well will be drilled using Kenai Rig #2 on Platform Gail to a bottom hole location in Lease OCS-P 0204, southeast of the platform. E-6RD is a "new" well designed to explore the potential production on the undeveloped anticlinal nose structural to the southeast of the platform. E-6RD would extend the known boundaries of the field. The proposed E-6RD crosses or comes very close to two northwest-southeast trending faults that border the structure fold. The closest well to this location was OCS-P-205#2 an exploratory well drilled by Chevron prior to the development of the Sockeye field.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Top Monterey M1	Miocene	12,260 feet	4,552 feet
Top Monterey M4	Miocene	12,450 feet	4,603 feet
Top Upper Topanga	L. Miocene	13,777 feet	5,149 feet
Top Sespe Fm.	Oligocene	14,480 feet	5,446 feet
Total Depth	Oligocene	16,265 feet	6,200 feet

2. Potential Oil and Gas Reservoirs (from OCS-P 0205 E-10)

Formation	Age	(TVD)	Thickness	HC Type
Monterey M4*	Miocene	4,603 feet	800 +/- feet	Oil/Gas
Upper Topanga*	L. Miocene	5,149 feet	350 +/- feet	Oil/Gas
Sespe*	Oligocene	5,446 feet	>1,700 feet	Oil/Gas

* Operator's stated objective. Thicknesses based on estimates.

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. This well is a side track from well E-6. therefore all the upper zones are already behind casing, and we expect normal salty or briny formation water while

drilling.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of P-0205#2. The present operator and former operator of the Sockeye field have extensive drilling experience in this field. The proposed drilling program is similar to those utilized in drilling the production wells in the field. In the event a new pool is discovered, unrelated to the Main zones of the field, the operator should be prepared for higher than expected formation pressure.

5. Faulting and Folding

Several important faults have been mapped by the Operator. Faulting is an important consideration for the success of the well. The well will cross two northwest-southeast trending faults that border the structure.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The P-0209-2 well did not find near surface gas, but did record gas shows in the Pliocene section.

7. Possible Over-pressured or Depleted Zones

Several ditch gas kicks are noted in the mud logs for OCS-P-205#2. However, as noted above, in the event of a new pool discovery the operator should be prepared for higher than expected formation pressures, similar to the original formation pressures noted at the discovery of the Sockeye field. The Operator has included a well control contingency plan with the Application.

8. Logging/Coring

The Operator plans a standard set of logs, as is the common practice with production wells in this area. A standard mud log will be taken to total depth. Electric logs are planned in both the 12¼ inch and 8½ inch sections of the well. The E-logs will include gamma ray, density, neutron, and resistivity, taken on wire line surveys. An MWD with gamma ray will be used for directional surveys and correlation while drilling.

9. Other Comments

The Monterey and Topanga Formations may contain hydrogen sulfide gas. Well E-6RD drill path is located between E-13 to the north and E-23 to the south. The path of E-6RD comes the closest to well E-23, however based on the current drilling plan there is sufficient spacing between the two wells.

APPLICATION FOR PERMIT TO DRILL

CHECK LIST

OPERATOR Wenoco, Inc. ENGRG. REVIEW BY SJ Shaw
 LEASE NO. swrf: P0205/BHL: P0204 DATE COMPLETED 1/25/06
 WELL NO. E-6 ST 01 API# 043112067101
 COPIES RECEIVED 3 P.I. 1
 GEOLOGIC/GEOPHYSICAL REVIEW COMPLETED BY F. Victor DATE 1/20/06
 COPIES ON FILE WITH APD Yes
 LEASE INSTRUMENT CHECKED No
 DESIGNATION OF OPERATOR APPROVED yes-previous
 SPECIAL LEASE STIPULATIONS NOTED lease instrument not examined

POE/POD APPROVED DATE _____
 SPECIAL CONDITIONS OF APPROVAL Standard COA(S) to drill OCS well attached to all copies of APD

MOBIL DRILLING UNIT No TYPE Platform Rig/Kenai #2
 ABS & COASTGUARD DOCUMENTS ON FILE N/A
 FRONTIER AREA YES/NO (NO)
 SEA FLOOR CONDITIONS EXAMINED, DOCUMENTED AND APPROVED Yes-Previously

RIG DESCRIPTION AND SPECIFICATIONS ON FILE? Yes
 PLAT PROVIDED 2000 FEET/ONE INCH Yes
 SURFACE LOCATION CHECKED Yes
 SUBSURFACE LOCATION CHECKED Yes

RKB TO WATER 107' WD 739' RKB TO ML _____
 TVD 6200' MD 16,265' KOP @ ~5400' MD / 4131' TVD

WELL DESIGN CRITERIA:

TAKEN FROM OFFSET WELL X and CALCULATED X
 CASING SIZE 13 3/8" 9 5/8" 7" (Liner)
 CASING DEPTH 5355' MD 5400' (KOP) 16265' / 6200' TVD
 PORE PRESS. [] [] 8.4 ppg
 FRAC. PRESS. [] [] 13.5 ppg
 ANTICIPATED SURFACE PRESS. EXISTING EXISTING 2398 psi assumes 100% Gas to Surf.
 MUD WEIGHT [] [] 9.3 ppg (OAM)
 LOST CIRCULATION ZONES Possible in Monterey Fm. if fractures are encountered.
 SHALLOW HAZARDS FROM GEOLOGIC/GEOPHYSICAL REVIEW Already behind casing(s)

BOPE

NO. AND TYPE 1-13 3/8"-5M ANNULAR PIPE RAMS BLIND/SHEAR RAMS
Hydril Type GK 3-1 1/2" X 5" VBR 1-13 3/8"-5M
Arrangement: R/L SH/VBR/A -1-5" pipe ram 1-2 3/8" pipe ram

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco, Inc. 6267 Carpinteria Ave., Suite 100 Carpinteria, Ca 93013		
4 WELL NAME (CURRENT) E-17	5 SIDETRACK NO (CURRENT) 00	6 BYPASS NO (CURRENT) 00			
7 PROPOSED START DATE November 5, 2006	8 PLAN CONTROL NO (NEW WELL ONLY)				
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04-311-20699-00					
10 ☐ Revision	11 If revision, please list changes				
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE		
12 LEASE NO P-0205			17 LEASE NO P-0205		
13 AREA NAME 6B			18 AREA NAME 6B		
14 BLOCK NO 4661			19 BLOCK NO 4661		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) Y=727,569.93'			20 LATITUDE (☐ NAD 83 / ☒ NAD 27) Y=727,008.43'		
16 LONGITUDE (☐ NAD 83 / ☒ NAD 27) X=1,040,906.27'			21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) X=1,046,704.21'		
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME	23 TOP (MD)	24 TOP (TVD)	22 NAME	23 TOP (MD)	24 TOP (TVD)
Monterey M1	4,200'	4,111'			
Monterey M2	4,550'	4,301'			
25 LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250 414(b) through (g) or 30 CFR 250 1617 (c) and (d) as appropriate) Prognosis including: Directional program, wellbore diagram, mud, frac and pore pressure plot, mud program, casing design, well control procedures and equipment, lease plot, structure map and proof of payment.					
26 CONTACT NAME John Hood			27 CONTACT TELEPHONE NO (805) 745-2164	28 CONTACT E-MAIL ADDRESS jhood@venocoinc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Roger Hamson			30 TITLE V. P. Southern Assets		
31 AUTHORIZING SIGNATURE <i>[Signature]</i> for Roger Hamson			32 DATE 11-01-06		
THIS SPACE FOR MMS USE ONLY					
APPROVED ☒ With Attached Conditions ☐ Without Conditions		BY <i>[Signature]</i>		TITLE for: District Manager	
API WELL NO ASSIGNED TO THIS WELL		04-311-20699-01		DATE 11/2/06	

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain	☐ YES ☐ NO ☒ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et. seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2-5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name Venoco, Inc			2) Well Name (Proposed) E-17 ST 01 BP 00		
3) Bottom Hole Lease P-0205			4) Surface Lease P-0205		
5) API Number 04-311-20699-01			6) Type of Well: ☐ Exploratory ☒ Development		
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown			8) H ₂ S Activation Plan Depth (TVD) (ft). 3800		
9) Rig Name Kenai Rig #2			10) SubSea BOP: ☐ Yes ☒ No		
11) Water Depth (ft) 739		12) RKB Height (ft) 107		13) Mineral Code.	
14) Drive Pipe Size (in). N/A		15) Drive Pipe Depth (ft) N/A		16) Anchors: ☐ Yes ☒ No	

17) Well Design Information								
Interval Number: Conductor through Intermediate			Type: ST00		Name: Existing Casing			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
Conductor	24	201	X-52					
Surface	13-3/8	68	K-55					
Intermediate	9-5/8	40 & 43.5	L-80/SS-95					

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in)		Type Rams & Annular		Annular Test (psi) 3000 psi	
Mud Weight (ppg) 9.1		Size (in) 13-5/8"		BOP/Diverter Test (psi) 3000 psi	
Mud Type Code		Wellhead Rating (psi) 5000		Mud Test Weight (ppg) 9.1	
Frac Gradient (ppg) 10.5		Annular Rating (psi) 5000		Casing/Liner Test (psi) 3000 psi	
Liner Top Depth (ft)		BOP/Diverter Rating (psi) 5000		Formation Test (ppg) 10.5	
Cement Volume (ft ³)					

Interval Number: Production			Type: ST01		Name: Planned			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
Production	7 days	26	L-80					

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in) 8-1/2		Type Rams & Annular		Annular Test (psi) 250/3000 psi	
Mud Weight (ppg) 9.1		Size (in) 13-5/8"		BOP/Diverter Test (psi) 250/3000 psi	
Mud Type Code		Wellhead Rating (psi) 5000 psi		Mud Test Weight (ppg) 9.1	
Frac Gradient (ppg) 10.5		Annular Rating (psi) 5000 psi		Casing/Liner Test (psi) 3000 psi	
Liner Top Depth (ft) 3700		BOP/Diverter Rating (psi) 5000 psi		Formation Test (ppg) 10.5	
Cement Volume (ft ³) None					

Interval Number:			Type:		Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in)		Type		Annular Test (psi)	
Mud Weight (ppg)		Size (in)		BOP/Diverter Test (psi)	
Mud Type Code		Wellhead Rating (psi)		Mud Test Weight (ppg)	
Frac Gradient (ppg)		Annular Rating (psi)		Casing/Liner Test (psi)	
Liner Top Depth (ft)		BOP/Diverter Rating (psi)		Formation Test (ppg)	
Cement Volume (ft ³)					

* NOTE* For additional casing/liner intervals, please submit an additional Form MMS-123S

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VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-17 REDRILL PROGRAM
API# 04-311-20699-00
LEASE OCS-P-0205
November 1, 2006

Objective: Redrill E-17 to an up-dip location (up-dip of successful Monterey M2 producer E-8 redrill) in the Monterey M2 formation as a horizontal oil producer. The well will be a single completion with the open hole protected by 7" pre-drilled hole liner (see attached proposed completion schematic).

Surface Location: OCS-P-205, Slot No. 35 (X= 1,046,704.29' & Y= 727,008.43')

Elevation: 739' WD, 107' Above MLLW, 846' Ocean Floor to Rig Floor

Proposed TD: OCS-P-205; 11,303' MD / 4,772' TVD / 4,665' SS

TD Location: 561.5' N and 5,798.02' W or (X = 1,040,906.27' and Y = 727,569.93')

Proposed and *Existing Casing: (USING NEW 107' DF)

*24", 201#, X-52	1384'	1265 cf
*13 3/8", 68# K-55	2632'	2247 cf
*9 5/8", 40# & 43.5# L-80/SS-95	3800' (window)	2044 cf DV @ 2356'
*The 9 5/8" is reported as a mixed string of 43.5# and 40# to BP at 3814')		
7", 26#, L-80 Hydril 513	11,303'	pre-perforated with top at +/- 3,700'

<u>Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est.Pressure</u>
Monterey M1	4,200'	4,111'	-4,004'	8.5 PPG
Monterey M2	4,550'	4,301'	-4,194'	8.5 PPG

Note: This procedure follows work to be performed under an approved APM for the abandonment of E-17.

DRILLING PROCEDURE

1. This APD procedure repeats the last two steps of the Abandonment Procedure, in order to maintain continuity of logic. Test BOP equipped with 4 ram preventers (2 – double gates) and an annular. Test the BOP to 250/3000 psi with 5" drill pipe, 4" drill pipe and 2-7/8" tubing. The 13 5/8" BOPE will be configured for drilling operations, with 2 7/8" X 5" VBR pipe rams in the top of the upper double gate and blind/shear rams in the bottom of the upper double gate, the mud cross will be below the upper double gate, 5" rams will be located in the top of the lower double gate and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. All tests will be recorded on a chart for the MMS to review. The applicable BOPE will be tested every 14 days during the drilling phase of the operations. NOTE: If work is continuation of abandonment operation – Drilling Engineer will request MMS approval to convert the testing frequency from 7 days to 14 days based upon last BOPE test performed during the abandonment operations. The 2 3/8" rams will not be tested since they will not be required.
2. Make up 9 5/8" 43.5#-40# bottom trip whipstock and starting mills. Tools to be designed to pass through 43.5# casing joints at surface. Lug will be designed to shear with 25M-30M#. Proposed window mill assembly: 8" starting mill, 8.215" lower watermelon mill, 9' flex joint, and 8.6" upper watermelon mill. Pick up an MWD. Run the equipment in the hole on the 5" drill pipe to 30' above the CIBP set at +/- 3,814'. Orient the whipstock off of high side as per Sperry directional drilling supervisor using the measurements from the MWD. Set the whipstock on the CIBP and shear the tools off the whipstock face. Condition the water base mud as necessary for milling the window and to carry the metal cuttings out of the hole. Mill and dress the window through the 9-5/8" & 13-3/8" casing as required for a good exit point for sidetrack. Drill enough rat hole to pass all mills through the window and allow for the directional drilling BHA to be below the whipstock face when commence drilling. Mills must smoothly pass through the window. Perform a Formation Integrity Test to 10.5 ppg EMW. Reduce the viscosity of the mud to desired drilling parameters. Pull out hole and lay down the milling tools.
3. Pick up an 8-1/2" PDC bit and drilling assembly on a 6 3/4" steerable directional drilling assembly including LWD triple combo. Run in the hole and sidetrack the well. Directionally drill the 8-1/2" hole from +/- 3,814' to 11,303' MD / 4,772' TVD. No overboard discharge of mud or cuttings will be allowed. Utilize MMS approved cuttings injector well E-4s for disposal of mud and cuttings. Record injection volumes, rates and pressures on a daily basis.
 - Review the attached directional program. Drill well per Halliburton Sperry-Sun (Slot 35) E-17 RD1 Plan 6 (31-Oct-06). All depths to be referenced to 107' DF elevation.
 - Mud loggers to start upon drilling out of the 9 5/8" casing window and continue through total depth.
 - The BHA should not be rotated on the face of the whipstock. Ensure there is adequate hole drilled below the whipstock to bury the BHA.

4. Circulate the hole clean. Pull out of the hole and lay down directional drilling tools. Run in the hole with 8-1/2" fixed hole opener. Circulate the well clean. Wipe the hole to the 9-5/8" casing window. Run back to bottom, circulate the well clean and pull out of the hole.
5. Rig up Schlumberger drill pipe conveyed logging equipment and run FMI/GR log to +/- 11,303' MD, or as requested by Geologist. If the entire open hole is logged, two latches will be required. Pull out of the hole and rig down Schlumberger.
6. Run in the hole with 8-1/2" fixed hole opener. Circulate the well clean. Wipe the hole to the 9-5/8" casing window. Run back to bottom, circulate the well clean. Displace the +/- 9.1 ppg water based mud with 9.1 ppg brine fluid. This weight brine was successful in completing well E-8 and working it over without well control issues. Monitor fluid loss rate. Maintain a hole filling rate to keep fluid level near the surface. Pull out of the hole.
7. Rig up casing crew and run the 7", 26#, L-80, Hydril 513 liner from +/- 3,700' to 11,303' as follows:
 1. 7", 26#, L-80 insert float shoe
 2. As required, +/- 7600' of 7", 26#, L-80 Hydril 513 casing with 12, 3/4" holes per foot of machine perforated liner adjacent to sections of the open hole that were identified with the FMI processing to have sufficient fracturing to provide conductivity to the wellbore. Other non-productive sections will have blank liner adjacent to them to properly space out the machine perforated liner.
 3. 7" 26# X 9 5/8" 40#, Baker HMC Hydraulic Liner Hanger
 4. RS Nipple with 6.188" Profile
 5. Beveled Liner Top (No Packer), for 7" x 9 5/8", HR Profile w/ 10' tie-back extension to allow for liner running and releasing. A separate seal assembly (that will sting into the 10' tie-back extension above) and large ID hydraulic production packer will be set during the completion phase to isolate the open hole from gas lift gas (see proposed completion schematic).

Notes:

- The 7" flush joint liner will NOT be centralized in the open hole.
 - Contact Hydril and have them provide nubbins for the 7" casing.
 - The liner will not be cemented due to the machined perforations, also there will be no need to have Hydril provide a 7" Hyd 513 XO sub and circulating swage with a safety valve on the rig floor, since circulating is not possible.
8. Run the liner in the hole, tag bottom and pick up 5' to remove all compression. This will allow for thermal expansion during the production phase. Drop the setting ball and set the liner hanger. There will not be a liner top packer set at this point. The hanger is being set to centralize the liner top and anchor the liner for the future addition of a separate packer. The liner will not be cemented. Pull out of the hole with the running tool. Make up seal assembly with large bore hydraulic packer and run in the hole. Stab seals into tieback extension at +/- 3,700'. Drop ball and set packer. Pull out of the hole.

9. Pick up an 6 1/8" bit and 7" scraper. Run in the hole to the insert float shoe. Circulate bottoms up. Spot +/- 8,000 gallons of 15% HCl across the machined hole liner. Have sufficient NaCl fluid volume in pits prior to spotting acid. Have sufficient sack material on location. Adjust brine weight as necessary to maintain a fluid loss rate into the formation of 10 to 20 bbls per hour. This has been sufficient to maintain control of the wellbore. If power is lost and/or if fluid volume is not sufficient, shut well in and wait and/or build volume until tripping operations can safely proceed. Pull out of the hole.
10. Run 2-7/8" 6.5# L-80 EUE 8rd tubing and production equipment as per the attached wellbore schematic. Hydrotest tubing to 5000 psi. Land tubing hanger and secure with lock down pins. Drop 7" packer setting ball and pump into place.
11. Close SCSSV. Set BPV. Remove BOP. Install and test void/tree to 5000 psi. Install and test new flowlines. Place well on gas lift production. Prepare to move rig to next well.

EVALUATION PROGRAM

Mudlogging Program for Horizontal Hole:

- Begin Mudlogging upon exiting shoe/casing above Monterey formation, including GR-Res curves on mudlog.
- Collect dry samples at 30' intervals throughout the well.

Testing Program

- None expected.

Open Hole Logging program

- LWD starting right out of casing with Sperry Gr-Res-Density for the horizontal well. Real-time data images via Insite.
- Drill Pipe conveyed FMI/GR tool provided by Schlumberger (two latches max).

Cased Hole Logging program

- None – No cementing and/or perforating required.

Logging geologist: Dale Kunitomi 805-987-3026

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-698-5751

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8	7
2	Setting Depth (feet - TVD)	3800	4772
3	Expected Leak Off Test EMW at shoe (ppg)	10.5	10.5
4	Depth of next Casing (feet - TVD)	4772	4772
5	Maximum Expected Formation Pressure (psi)	2109	2109
6	Expected Mud Weight (ppg)	9.1	9.1
7	Formation Equivalent Mud Weight (ppg)	8.5	8.5
8	Expected Hydrostatic Pressure at TD (psi)	2258	2258
9	Amount of Overbalance at TD (psi)	149	149
10	Fracture Gradient at shoe (psi/ft)	0.55	0.55
11	Fracture Pressure at shoe (psi)	2075	2606
12	Hydrostatic Pressure at shoe (psi)	1798	2258
13	Margin between Mud Weight and LOT (psi)	277	347

Maximum Anticipated Surface Pressures

1	Casing Size (in)	9-5/8	7"
2	Setting Depth (feet - TVD)	3800	4772
3	Expected Leak Off Test EMW at shoe (ppg)	10.5	10.5
4	Expected Mud Weight (ppg)	9.1	9.1
5	Depth of next Casing (feet - TVD)	4772	4772
6	Maximum Expected Formation Pressure (psi)	2109	2109
7	Expected gas gradient (psi/ft)	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.5	8.5
	Max Pressures using 100% Gas to Surface		
9	Max Surface Pressure neglecting shoe (psi)	1871	1871
10	Fracture Gradient at shoe (psi/ft)	0.55	0.55
11	Fracture Pressure at shoe (psi)	2075	2606
12	Surface pressure to break down shoe (psi)	1885	2367
13	Maximum Anticipated Surface Pressure (psi)	1871	1871
	Max Pressures using 70% Gas & 30% Mud		
14	Maximum Anticipated Surface Pressure (psi)	1265	1265
15	Top of fluid (feet-TVD)	3340	3340
16	Pressure at shoe (psi)	1649	2109
17	Margin between pressure and breakdown(psi)	426	496

CASING PROGRAM

Hole Section	12.25	8 1/2" Hole
Mud Weight	9.1	9.1
Buoyancy Factor	0.861	0.861
MASP (psi)	2109	2109
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9-5/8*	7
Setting Depth, MD (ft)	3800	11303
Setting Depth, TVD (ft)	3800	4772
Top of Casing, MD (ft)	0	3700
Weight (lb/ft)	40	26
Grade	L-80	L-80
Threads	STL	513
ID (in)	8.755	6.199
Drift diameter (in)	8.599	6.151
Collapse (psi)	3090	5410
Burst (psi)	5750	7240
Joint Strength (kips)	500	448
Body Strength (kips)	916	604
Collapse Safety Factor	1.72	2.40
Burst Safety Factor	2.73	3.43
Tensile Safety Factor	2.17	1.66

* Existing Casing

Notes:

Burst is calculated on the greater of MASP or gas lift pressure.

Collapse is based on mud outside of an evacuated casing string.

Tension is based on buoyed weight of casing string + 100 kips over pull.

Since the 7" liner has machined perforations, burst and collapse forces are exaggerated in the table above. There will not be any real opportunity for differential pressure to exist across the 7" liner. The tensile loads are also exaggerated due to the 100 kips overpull. Even using these conservative assumptions, the planned casing strings are more than adequate.

CEMENTING PROGRAM – NONE REQUIRED AND/OR ANTICIPATED

MUD PROGRAM

INTERVAL MUD PROPERTIES for WBM System

Depth MDP (ft)	Mud Weight (ppg)	Fluid Loss (ml/30 min)	Plastic Viscosity (cp)	Yield Point (lb/100ft ²)	YS	Chlorides (kmg/l)	PH
+/- 3,800' Milling	8.6 - 8.8	NC	12 - 20	>40	>20	18 - 20	10 - 11
3,800' -11303'	8.6 - 9.1	< 6 cc	12 - 20	15-25	>10	+19 - 25 K	+/- 8.5

Whipstock: The fluid system used for the milling operations will be Durogel and Duovis. This will provide adequate viscosity and carrying capacity for the milling operations. These products mix easily with seawater, which will be in the well after abandoning the Upper Topanga formation in the Original Hole.

3800' - 11303': Convert over to SP 101 by adding 1.5 to 2.5 ppb of Sp 101 to the system. Continue with the additions of SP 101 for fluid loss reductions (<6.0 cc). Add dry NaCl to maintain the chloride content between 19,000 and 25,000. Stop additions of Durogel and build up the surface system with MI Gel pre-hydrated in fresh water at a concentration of 12 to 15 ppb. Maintain the mud weight as low as possible with the solids control equipment. Condition the mud with water to keep the MBT below 30 ppb and treat out calcium with Soda Ash to below 200 ppm. Reduce the mud weight or add calcium carbonate if mud losses are excessive while drilling this section.

Notes:

1. Operate solids control equipment to maintain drill solids as low as possible.
2. Maintain supply of ZnCO₃ onboard to treat out H₂S.
3. A minimum of 750 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised 0.5 ppg using 1400 bbl total circulating volume (800 open hole volume & 600 bbl active system).
4. Do not add Calcium Carbonate to the mud system after drilling into the Monterey interval, unless mud losses are excessive. Any LCM material must be acid soluble since this will be the only practical method available to restore formation productivity to its undamaged state.

Hydrogen Sulfide Considerations:

The Monterey has the potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

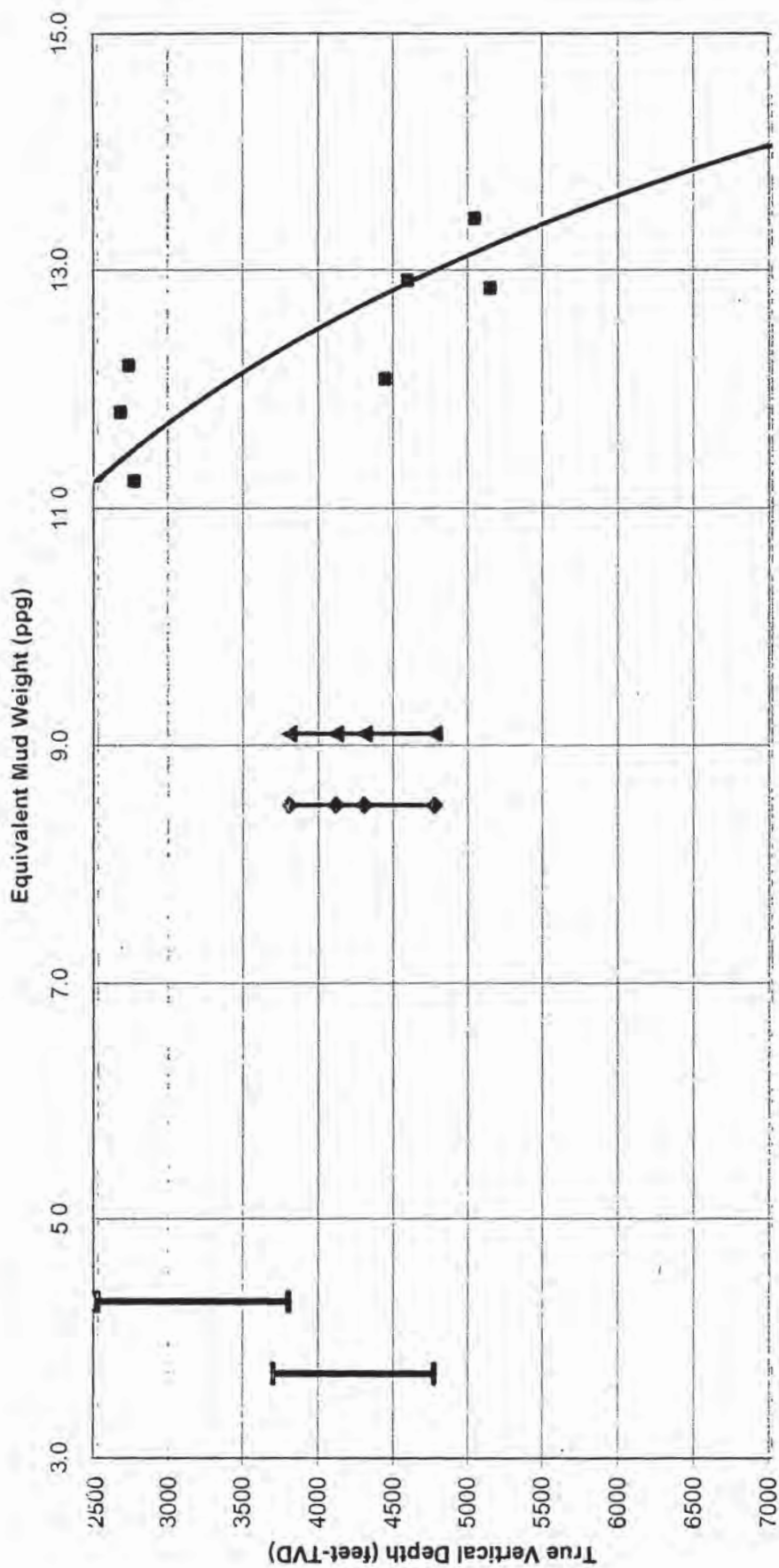
1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

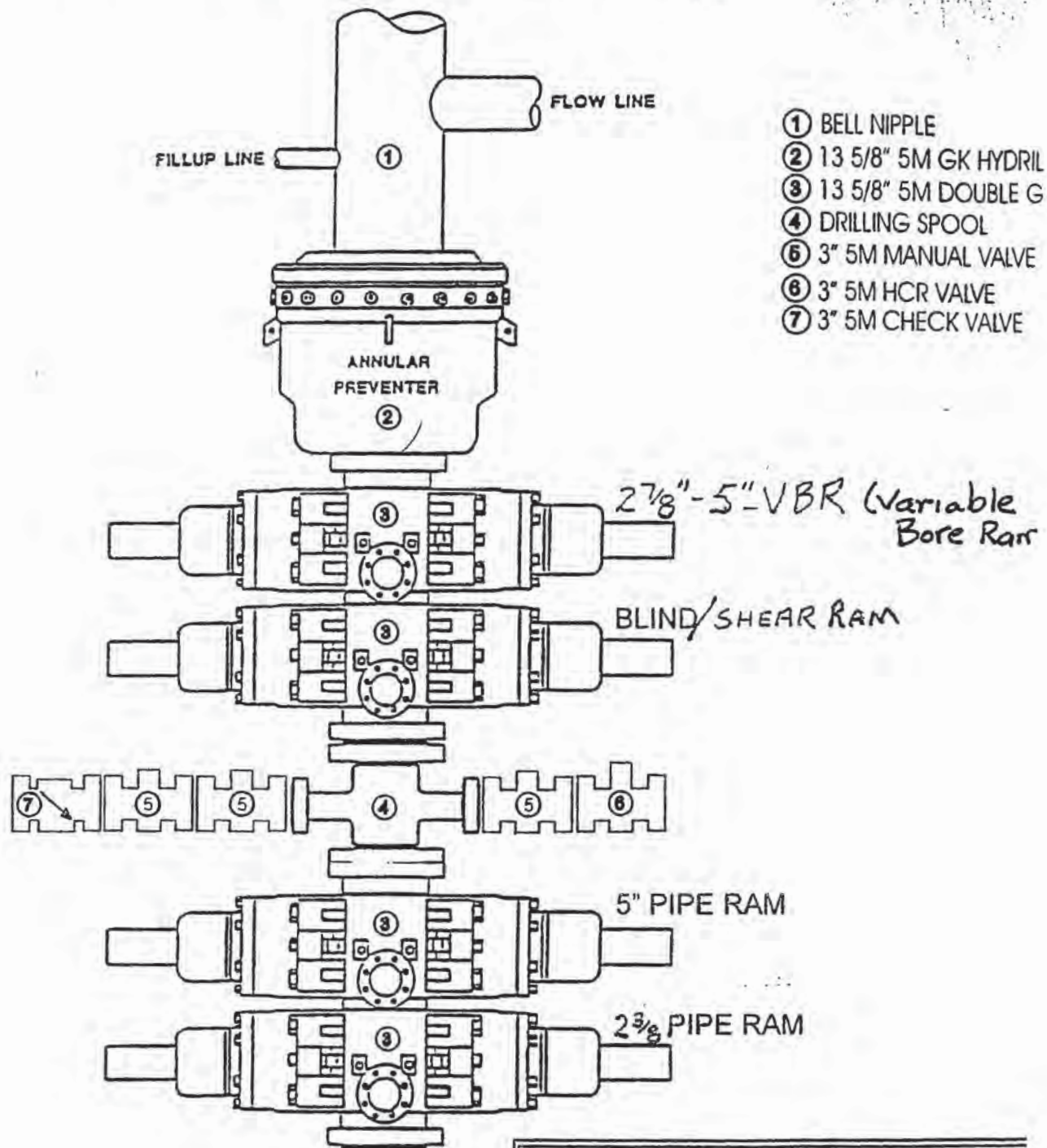
The Monterey has the potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

Platform Gail Well E-17 RD Horizontal Lateral Pore Pressure, Mud Weight & Fracture Pressure

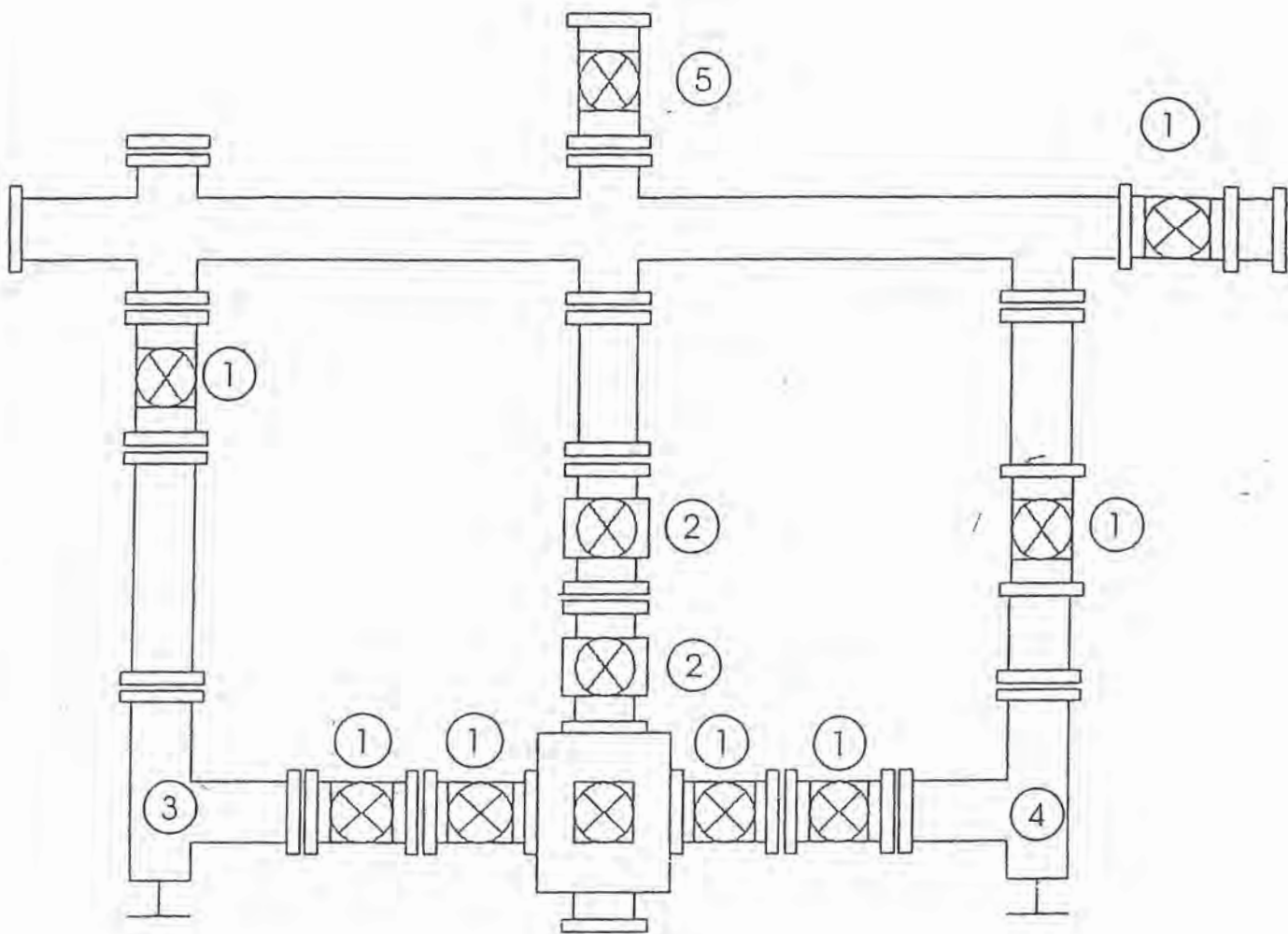


LOT Data
 Planned Mud Weight
 Highest Expected PP
 9-5/8" Casing
 7" Liner
 Expon. (LOT Data)

BOP STACK COMPLETION CONFIGURATION



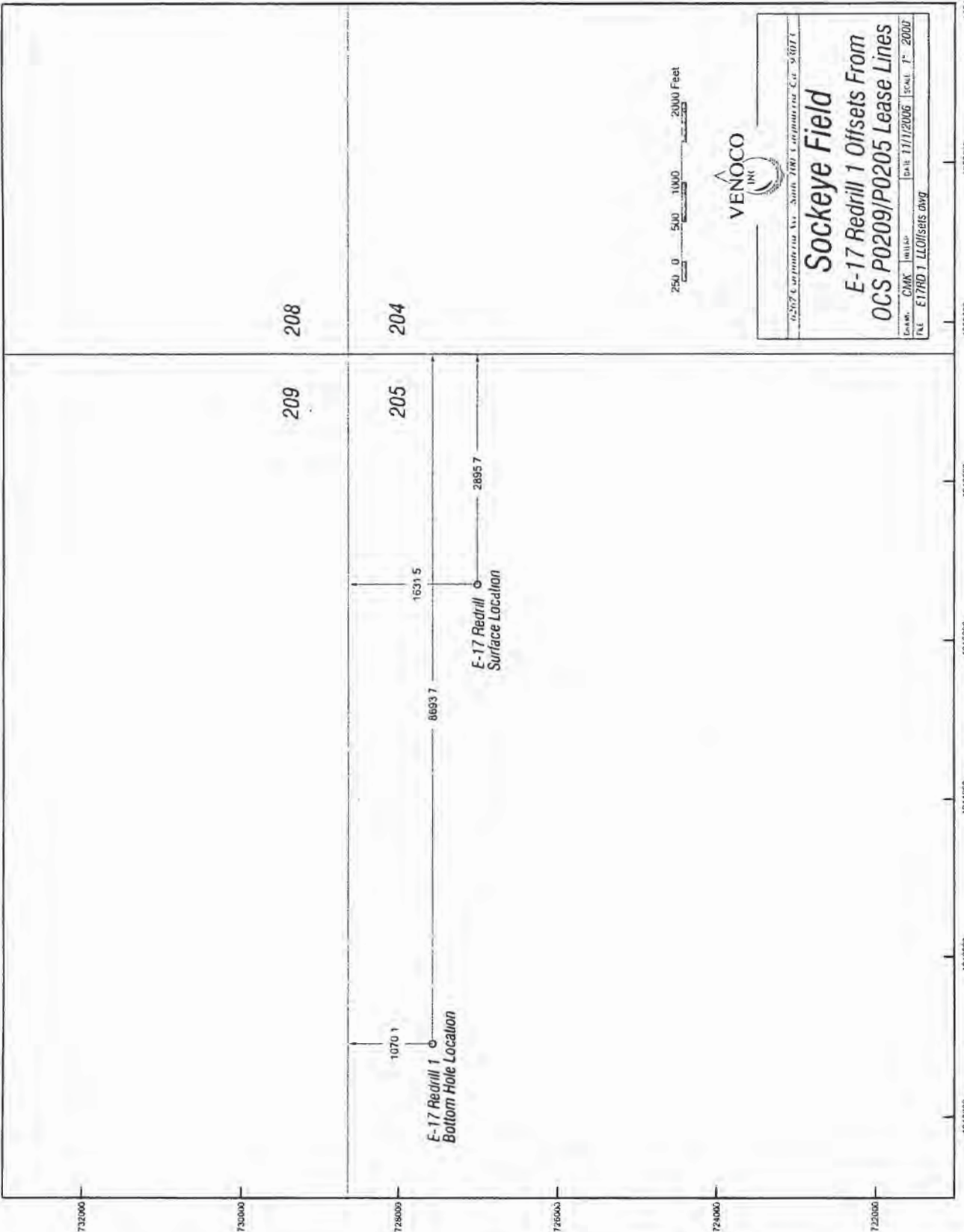
BLOWOUT
 PREVENTION SYSTEM
 PLATFORM GAIL



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD PLATFORM GAIL



12572 E. 17th Ave. Suite 100 Denver, CO 80231

Sockeye Field
E-17 Redrill 1 Offsets From
OCS P0209/P0205 Lease Lines

DATE: 11/11/2006 SCALE: 1" = 2000'

FILE: E17RD1.LLOFFSETS.dwg



Azimuths to Grid North
True North 1.73°
Magnetic North 15.00°

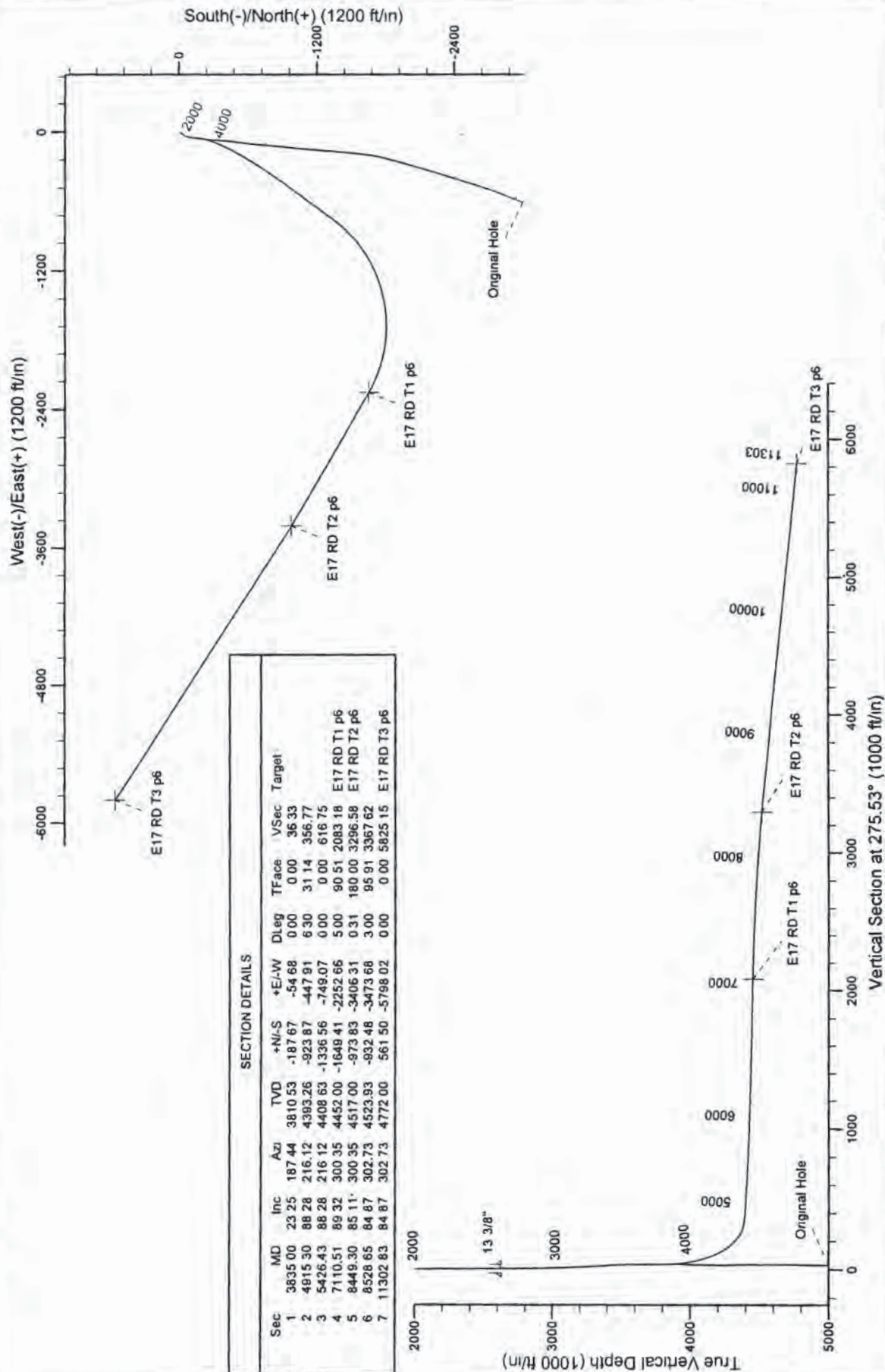
Magnetic Field
Strength 47704.3nT
Dip Angle 58.75°
Date 10/26/2006
Model BGM2006

Venoco Inc.

Project Platform Gail
Site Platform Gail
Well (Slot 35) E-17
RD1
Plan #6 (31-Oct-06)

(Slot 35) E-17
NAD 1927 (NADCON CONUS)
California VI 406
Grid
rtbe @ 107 00m (Kenai 2)
Northing 727008 43
Easting 1046704 29

HALLIBURTON
Sperry Drilling Services



Venoco Inc.

Platform Gail
Platform Gail
(Slot 35) E-17
RD1

Plan: Plan #6 (31-Oct-06)

Job No Plan #6 (31-Oct-06)

Sperry Drilling Services Combo Report

31 October, 2006

Well Coordinates 727,008.43 N, 1,046,704.29 E (34° 07' 30.48" N, 119° 24' 00.15" W)
Water Depth 739.00 ft

Local Coordinate Origin	Centered on Well (Slot 35) E-17
Viewing Datum	rkbe @ 107.00ft (Kenai 2)
TVDs to System	N
North Reference	Gnd
Unit System	API - US Survey Feet

Version 2003.14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for (Slot 35) E-17 - RD1 - Plan #6 (31-Oct-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	107.00	0.00	0.00 N	0.00 E	727,008.43	1,046,704.29	0.00	0.00	
846.00	0.00	0.00	-739.00	846.00	0.00 N	0.00 E	727,008.43	1,046,704.29	0.00	0.00	
894.00	0.15	232.97	-787.00	894.00	0.04 S	0.05 W	727,008.39	1,046,704.24	0.31	0.05	
994.00	0.12	160.09	-887.00	994.00	0.22 S	0.12 W	727,008.21	1,046,704.17	0.16	0.10	
1,094.00	0.19	75.83	-987.00	1,094.00	0.27 S	0.08 E	727,008.16	1,046,704.37	0.21	-0.10	
1,194.00	0.25	50.36	-1,087.00	1,194.00	0.09 S	0.41 E	727,008.34	1,046,704.70	0.11	-0.41	
1,294.00	0.24	344.88	-1,187.00	1,294.00	0.25 N	0.52 E	727,008.68	1,046,704.81	0.27	-0.49	
1,394.00	0.26	251.56	-1,287.00	1,394.00	0.38 N	0.25 E	727,008.81	1,046,704.54	0.36	-0.21	
1,494.00	0.40	204.06	-1,387.00	1,494.00	0.01 S	0.11 W	727,008.42	1,046,704.18	0.30	0.11	
1,594.00	0.47	200.63	-1,486.99	1,593.99	0.71 S	0.39 W	727,007.72	1,046,703.90	0.07	0.32	
1,694.00	0.51	175.09	-1,586.99	1,693.99	1.54 S	0.50 W	727,006.89	1,046,703.79	0.22	0.35	
1,794.00	0.37	174.09	-1,686.99	1,793.99	2.31 S	0.43 W	727,006.12	1,046,703.86	0.14	0.21	
1,894.00	0.37	215.87	-1,786.98	1,893.98	2.89 S	0.59 W	727,005.54	1,046,703.70	0.26	0.30	
1,994.00	0.71	210.00	-1,886.98	1,993.98	3.69 S	1.08 W	727,004.74	1,046,703.21	0.34	0.72	
2,094.00	0.85	195.77	-1,986.97	2,093.97	4.94 S	1.60 W	727,003.49	1,046,702.69	0.24	1.11	
2,194.00	0.87	204.45	-2,086.96	2,193.96	6.34 S	2.11 W	727,002.09	1,046,702.18	0.13	1.49	
2,294.00	1.26	203.93	-2,186.94	2,293.94	8.04 S	2.87 W	727,000.39	1,046,701.42	0.39	2.08	
2,394.00	1.17	191.70	-2,286.92	2,393.92	10.04 S	3.53 W	726,998.39	1,046,700.76	0.27	2.54	
2,494.00	1.20	210.29	-2,386.90	2,493.90	11.95 S	4.26 W	726,996.48	1,046,700.03	0.38	3.09	
2,594.00	1.45	204.79	-2,486.87	2,593.87	14.00 S	5.32 W	726,994.43	1,046,698.97	0.28	3.94	
2,632.00	1.38	202.25	-2,524.86	2,631.86	14.86 S	5.69 W	726,993.57	1,046,698.60	0.25	4.23	13 3/8"
2,694.00	1.27	197.51	-2,586.84	2,693.84	16.21 S	5.18 W	726,992.22	1,046,698.11	0.25	4.59	
2,794.00	1.35	216.72	-2,686.82	2,793.82	18.21 S	7.22 W	726,990.22	1,046,697.07	0.44	5.43	
2,894.00	2.04	214.17	-2,786.77	2,893.77	20.62 S	8.92 W	726,987.81	1,046,695.37	0.69	6.90	
2,994.00	2.74	226.35	-2,886.69	2,993.69	23.75 S	11.65 W	726,984.68	1,046,692.64	0.86	9.31	
3,094.00	2.79	224.61	-2,986.57	3,093.57	27.13 S	15.09 W	726,981.30	1,046,689.20	0.10	12.41	
3,194.00	3.87	223.97	-3,086.40	3,193.40	31.29 S	19.14 W	726,977.14	1,046,685.15	1.08	16.04	
3,244.00	5.89	214.45	-3,136.22	3,243.22	34.62 S	21.77 W	726,973.81	1,046,682.52	4.34	18.33	
3,294.00	7.90	208.48	-3,185.85	3,292.85	39.76 S	24.86 W	726,968.67	1,046,679.43	4.26	20.91	
3,344.00	10.30	205.85	-3,235.22	3,342.22	46.80 S	28.45 W	726,961.63	1,046,675.84	4.87	23.80	
3,394.00	12.27	203.66	-3,284.25	3,391.25	55.69 S	32.53 W	726,952.74	1,046,671.76	4.03	27.01	
3,444.00	13.37	200.70	-3,333.01	3,440.01	65.97 S	36.70 W	726,942.46	1,046,667.59	2.56	30.17	
3,494.00	14.91	195.64	-3,381.49	3,488.49	77.57 S	40.48 W	726,930.86	1,046,663.81	3.95	32.82	
3,544.00	15.94	189.22	-3,429.69	3,536.69	90.54 S	43.32 W	726,917.89	1,046,660.97	3.99	34.39	
3,594.00	16.93	186.34	-3,477.65	3,584.65	104.55 S	45.22 W	726,903.88	1,046,659.07	2.56	34.93	
3,644.00	18.51	186.23	-3,525.28	3,632.28	119.68 S	46.89 W	726,888.75	1,046,657.40	3.16	35.13	
3,694.00	19.81	185.91	-3,572.51	3,679.51	136.00 S	48.62 W	726,872.43	1,046,655.67	2.61	35.28	
3,744.00	21.24	186.03	-3,619.33	3,726.33	153.43 S	50.44 W	726,855.00	1,046,653.85	2.86	35.42	
3,794.00	22.41	187.40	-3,665.75	3,772.75	171.89 S	52.62 W	726,836.54	1,046,651.67	2.55	35.81	
3,835.00	23.25	187.44	-3,703.53	3,810.53	187.67 S	54.68 W	726,820.76	1,046,649.61	2.04	36.33	Start DLS 6 30 TFO 31 14

HALLIBURTON

Plan Report for (Slot 35) E-17 - RD1 - Plan #6 (31-Oct-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
3,850.00	24.06	188.64	-3,717.27	3,824.27	133.63 S	55.52 W	726,814.80	1,046,648.77	6.30	36.60	
3,900.00	26.83	192.13	-3,762.42	3,869.42	214.74 S	59.42 W	726,793.69	1,046,644.87	6.30	38.45	
3,950.00	29.67	195.01	-3,806.46	3,913.46	237.73 S	65.00 W	726,770.70	1,046,639.28	6.30	41.78	
4,000.00	32.56	197.42	-3,849.27	3,956.27	262.53 S	72.24 W	726,745.90	1,046,632.05	6.30	46.60	
4,050.00	35.50	199.48	-3,890.70	3,997.70	289.06 S	81.11 W	726,719.37	1,046,623.18	6.30	52.87	
4,100.00	38.46	201.26	-3,930.64	4,037.64	317.24 S	91.59 W	726,691.19	1,046,612.70	6.30	60.59	
4,150.00	41.45	202.82	-3,968.96	4,075.96	346.99 S	103.65 W	726,661.44	1,046,600.64	6.30	69.72	
4,200.00	44.45	204.21	-4,005.56	4,112.56	378.22 S	117.25 W	726,630.21	1,046,587.04	6.30	80.25	
4,250.00	47.47	205.45	-4,040.31	4,147.31	410.83 S	132.36 W	726,597.60	1,046,571.93	6.30	92.14	
4,300.00	50.50	206.58	-4,073.12	4,180.12	444.73 S	148.91 W	726,563.70	1,046,555.38	6.30	105.35	
4,350.00	53.55	207.62	-4,103.88	4,210.88	479.81 S	166.87 W	726,528.62	1,046,537.42	6.30	119.84	
4,400.00	56.60	208.58	-4,132.51	4,239.51	515.96 S	186.18 W	726,492.47	1,046,518.11	6.30	135.58	
4,450.00	59.66	209.47	-4,158.91	4,265.91	553.09 S	208.78 W	726,455.35	1,046,497.51	6.30	152.51	
4,500.00	62.72	210.31	-4,183.00	4,290.00	591.06 S	228.61 W	726,417.37	1,046,475.68	6.30	170.58	
4,550.00	65.79	211.10	-4,204.72	4,311.72	629.78 S	251.61 W	726,378.65	1,046,452.68	6.30	189.73	
4,600.00	68.85	211.85	-4,223.99	4,330.99	669.12 S	275.70 W	726,339.31	1,046,428.59	6.30	209.92	
4,650.00	71.93	212.58	-4,240.77	4,347.77	708.96 S	300.81 W	726,299.47	1,046,403.48	6.30	231.07	
4,700.00	75.01	213.28	-4,254.99	4,361.99	749.19 S	326.86 W	726,259.24	1,046,377.43	6.30	253.13	
4,750.00	78.09	213.96	-4,266.82	4,373.62	789.68 S	353.79 W	726,218.75	1,046,350.50	6.30	276.02	
4,800.00	81.17	214.62	-4,275.61	4,382.61	830.31 S	381.48 W	726,178.12	1,046,322.80	6.30	299.68	
4,850.00	84.26	215.28	-4,281.95	4,388.95	870.95 S	409.90 W	726,137.48	1,046,294.39	6.30	324.04	
4,900.00	87.34	215.92	-4,285.62	4,392.62	911.49 S	438.93 W	726,096.94	1,046,265.36	6.30	349.02	
4,915.30	88.28	216.12	-4,286.26	4,393.26	923.87 S	447.91 W	726,084.56	1,046,256.38	6.26	356.77	Start S11 13 hold at 4915 30 MD
5,000.00	88.28	216.12	-4,288.81	4,395.81	992.25 S	497.81 W	726,016.18	1,046,206.48	0.00	399.85	
5,100.00	88.28	216.12	-4,291.81	4,398.81	1,072.99 S	556.73 W	725,935.44	1,046,147.56	0.00	450.71	
5,200.00	88.28	216.12	-4,294.82	4,401.82	1,153.74 S	615.65 W	725,854.69	1,046,088.64	0.00	501.58	
5,300.00	88.28	216.12	-4,297.83	4,404.83	1,234.48 S	674.57 W	725,773.95	1,046,029.72	0.00	552.44	
5,400.00	88.28	216.12	-4,300.83	4,407.83	1,315.22 S	733.49 W	725,693.21	1,045,970.80	0.00	603.30	
5,426.43	88.28	216.12	-4,301.63	4,408.63	1,336.56 S	749.07 W	725,671.87	1,045,955.22	0.00	616.75	Start DLS 5.00 TFO 90.51
5,500.00	88.25	219.80	-4,303.86	4,410.86	1,394.53 S	794.29 W	725,613.90	1,045,910.00	5.00	656.17	
5,600.00	88.22	224.80	-4,306.94	4,413.94	1,468.43 S	861.54 W	725,540.00	1,045,842.75	5.00	715.98	
5,700.00	88.21	229.80	-4,310.06	4,417.06	1,536.19 S	934.98 W	725,472.24	1,045,769.31	5.00	782.54	
5,800.00	88.21	234.81	-4,313.19	4,420.19	1,597.29 S	1,014.04 W	725,411.14	1,045,690.25	5.00	855.35	
5,900.00	88.22	239.81	-4,316.32	4,423.32	1,651.26 S	1,098.13 W	725,357.17	1,045,606.16	5.00	933.85	
6,000.00	88.25	244.81	-4,319.40	4,426.40	1,697.69 S	1,186.61 W	725,310.74	1,045,517.68	5.00	1,017.44	
6,100.00	88.29	249.81	-4,322.43	4,429.43	1,736.23 S	1,278.90 W	725,272.20	1,045,425.49	5.00	1,105.48	
6,200.00	88.34	254.82	-4,325.38	4,432.38	1,766.59 S	1,374.00 W	725,241.84	1,045,330.29	5.00	1,197.32	
6,300.00	88.40	259.82	-4,328.22	4,435.22	1,788.53 S	1,471.49 W	725,219.90	1,045,232.80	5.00	1,292.24	
6,400.00	88.48	264.82	-4,330.94	4,437.94	1,801.89 S	1,570.52 W	725,206.54	1,045,133.77	5.00	1,389.52	

HALLIBURTON

Plan Report for (Slot 35) E-17 - RD1 - Plan #6 (31-Oct-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
6,500.00	88.57	269.82	-4,333.51	4,440.51	1,806.56 S	1,670.35 W	725,201.87	1,045,033.94	5.00	1,488.43	
6,600.00	88.67	274.82	-4,335.92	4,442.92	1,802.52 S	1,770.21 W	725,205.91	1,044,934.08	5.00	1,588.22	
6,700.00	88.78	279.82	-4,338.14	4,445.14	1,789.78 S	1,869.34 W	725,218.65	1,044,834.95	5.00	1,688.11	
6,800.00	88.90	284.82	-4,340.17	4,447.17	1,768.46 S	1,966.98 W	725,239.97	1,044,737.31	5.00	1,787.36	
6,900.00	89.03	289.82	-4,341.97	4,448.97	1,738.71 S	2,062.40 W	725,268.72	1,044,641.89	5.00	1,885.20	
7,000.00	89.17	294.82	-4,343.55	4,450.55	1,700.75 S	2,154.87 W	725,307.68	1,044,549.42	5.00	1,980.90	
7,100.00	89.31	299.82	-4,344.88	4,451.88	1,654.88 S	2,243.68 W	725,353.55	1,044,460.61	5.00	2,073.72	
7,110.51	89.32	300.35	-4,345.00	4,452.00	1,649.41 S	2,252.66 W	725,359.02	1,044,451.63	5.12	2,083.18	Start DLS 0.31 TFO 180.00 - E17 RD T1 p6
7,200.00	89.04	300.35	-4,346.28	4,453.28	1,604.19 S	2,329.88 W	725,404.24	1,044,374.41	0.31	2,164.40	
7,300.00	88.73	300.35	-4,348.23	4,455.23	1,553.67 S	2,416.15 W	725,454.76	1,044,288.14	0.31	2,255.14	
7,400.00	88.41	300.35	-4,350.72	4,457.72	1,503.15 S	2,502.42 W	725,505.28	1,044,201.87	0.31	2,345.87	
7,500.00	88.10	300.35	-4,353.77	4,460.77	1,452.64 S	2,588.67 W	725,555.79	1,044,115.62	0.31	2,436.59	
7,600.00	87.78	300.35	-4,357.36	4,464.36	1,402.14 S	2,674.91 W	725,606.29	1,044,029.38	0.31	2,527.30	
7,700.00	87.47	300.35	-4,361.51	4,468.51	1,351.65 S	2,761.13 W	725,656.78	1,043,943.16	0.31	2,617.98	
7,800.00	87.15	300.35	-4,366.20	4,473.20	1,301.17 S	2,847.32 W	725,707.26	1,043,856.97	0.31	2,708.64	
7,900.00	86.84	300.35	-4,371.44	4,478.44	1,250.71 S	2,933.50 W	725,757.72	1,043,770.79	0.31	2,799.28	
8,000.00	86.52	300.35	-4,377.23	4,484.23	1,200.26 S	3,019.64 W	725,808.17	1,043,684.65	0.31	2,889.89	
8,100.00	86.21	300.35	-4,383.57	4,490.57	1,149.83 S	3,105.76 W	725,858.60	1,043,598.53	0.31	2,980.47	
8,200.00	85.99	300.35	-4,390.45	4,497.45	1,099.42 S	3,191.85 W	725,909.01	1,043,512.44	0.31	3,071.01	
8,300.00	85.58	300.35	-4,397.88	4,504.88	1,049.02 S	3,277.90 W	725,959.41	1,043,426.39	0.31	3,161.52	
8,400.00	85.27	300.35	-4,405.86	4,512.86	998.65 S	3,363.92 W	726,009.78	1,043,340.37	0.31	3,251.99	
8,449.30	85.11	300.35	-4,410.00	4,517.00	973.83 S	3,406.31 W	726,034.60	1,043,297.98	0.31	3,296.58	Start DLS 3.00 TFO 95.91 - E17 RD T2 p6
8,500.00	84.96	301.87	-4,414.39	4,521.39	947.73 S	3,449.56 W	726,060.70	1,043,254.73	3.00	3,342.14	
8,528.65	84.87	302.73	-4,416.93	4,523.93	932.48 S	3,473.68 W	726,075.95	1,043,230.61	3.00	3,367.62	Start 2774 18 hold at 8528 65 MD
8,600.00	84.87	302.73	-4,423.31	4,530.31	894.05 S	3,533.46 W	726,114.38	1,043,170.83	0.00	3,430.82	
8,700.00	84.87	302.73	-4,432.25	4,539.25	840.20 S	3,617.24 W	726,168.23	1,043,087.05	0.00	3,519.41	
8,800.00	84.87	302.73	-4,441.19	4,548.19	786.35 S	3,701.03 W	726,222.08	1,043,003.26	0.00	3,607.99	
8,900.00	84.87	302.73	-4,450.14	4,557.14	732.49 S	3,784.81 W	726,275.94	1,042,919.48	0.00	3,696.58	
9,000.00	84.87	302.73	-4,459.08	4,566.08	678.64 S	3,868.60 W	726,329.79	1,042,835.69	0.00	3,785.17	
9,100.00	84.87	302.73	-4,468.02	4,575.02	624.79 S	3,952.38 W	726,383.64	1,042,751.91	0.00	3,873.75	
9,200.00	84.87	302.73	-4,476.96	4,583.96	570.94 S	4,036.17 W	726,437.49	1,042,668.12	0.00	3,962.34	
9,300.00	84.87	302.73	-4,485.91	4,592.91	517.08 S	4,119.95 W	726,491.35	1,042,584.34	0.00	4,050.92	
9,400.00	84.87	302.73	-4,494.85	4,601.85	463.23 S	4,203.74 W	726,545.20	1,042,500.55	0.00	4,139.51	
9,500.00	84.87	302.73	-4,503.79	4,610.79	409.38 S	4,287.52 W	726,599.05	1,042,416.77	0.00	4,228.09	
9,600.00	84.87	302.73	-4,512.73	4,619.73	355.52 S	4,371.31 W	726,652.91	1,042,332.98	0.00	4,316.68	
9,700.00	84.87	302.73	-4,521.67	4,628.67	301.67 S	4,455.09 W	726,706.76	1,042,249.20	0.00	4,405.27	
9,800.00	84.87	302.73	-4,530.62	4,637.62	247.82 S	4,538.88 W	726,760.61	1,042,165.41	0.00	4,493.85	

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Plan Report for (Slot 35) E-17 - RD1 - Plan #6 (31-Oct-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft) Easting (ft)	Map Coordinates Northing (ft) Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
9,900.00	84.87	302.73	-4,539.56	4,646.56	193.97 S 4,622.66 W	726,814.46 1,042,081.63	0.00	4,582.44	
10,000.00	84.87	302.73	-4,548.50	4,655.50	140.11 S 4,706.45 W	726,868.32 1,041,997.84	0.00	4,671.02	
10,100.00	84.87	302.73	-4,557.44	4,664.44	86.26 S 4,790.23 W	726,922.17 1,041,914.06	0.00	4,759.61	
10,200.00	84.87	302.73	-4,566.38	4,673.38	32.41 S 4,874.02 W	726,976.02 1,041,830.27	0.00	4,848.20	
10,300.00	84.87	302.73	-4,575.33	4,682.33	21.45 N 4,957.80 W	727,029.88 1,041,746.49	0.00	4,936.78	
10,400.00	84.87	302.73	-4,584.27	4,691.27	75.30 N 5,041.58 W	727,083.73 1,041,662.71	0.00	5,025.37	
10,500.00	84.87	302.73	-4,593.21	4,700.21	129.15 N 5,125.37 W	727,137.58 1,041,578.92	0.00	5,113.95	
10,600.00	84.87	302.73	-4,602.15	4,709.15	183.00 N 5,209.15 W	727,191.43 1,041,495.14	0.00	5,202.54	
10,700.00	84.87	302.73	-4,611.09	4,718.09	236.86 N 5,292.94 W	727,245.29 1,041,411.35	0.00	5,291.12	
10,800.00	84.87	302.73	-4,620.04	4,727.04	290.71 N 5,376.72 W	727,299.14 1,041,327.57	0.00	5,379.71	
10,900.00	84.87	302.73	-4,628.98	4,735.98	344.56 N 5,460.51 W	727,352.99 1,041,243.78	0.00	5,468.30	
11,000.00	84.87	302.73	-4,637.92	4,744.92	398.42 N 5,544.29 W	727,406.85 1,041,160.00	0.00	5,556.88	
11,100.00	84.87	302.73	-4,646.86	4,753.86	452.27 N 5,628.08 W	727,460.70 1,041,076.21	0.00	5,645.47	
11,200.00	84.87	302.73	-4,655.80	4,762.80	506.12 N 5,711.86 W	727,514.55 1,040,992.43	0.00	5,734.05	
11,302.83	84.87	302.73	-4,665.00	4,772.00	561.50 N 5,798.02 W	727,569.93 1,040,906.27	0.00	5,825.15	TD at 11302.83 - E17 RD T3 p6

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft) +E/-W (ft)	Comment
3,835.00	3,810.53	-187.67 -54.68	Start DLS 6.30 TFO 31.14
4,915.30	4,393.26	-923.87 -447.91	Start 511.13 hold at 4915.30 MD
5,426.43	4,408.63	-1,336.56 -749.07	Start DLS 5.00 TFO 80.51
7,110.51	4,452.01	-1,649.61 -2,252.78	Start DLS 0.31 TFO 180.00
8,449.30	4,517.00	-973.83 -3,406.31	Start DLS 3.00 TFO 95.91
8,528.65	4,523.93	-932.48 -3,473.68	Start 2774.18 hold at 8528.65 MD
11,302.83	4,772.00	561.50 -5,798.02	TD at 11302.83

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	+N/-S (ft) +E/-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	275.53	Slot	0.00 0.00	0.00

Casing Details

	Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
<u>Targets</u>					
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)
- hit/miss target					
- Shape					
E17 RD T2 p6	0 00	360.00	4,517 00	-973 83	-3,406 31
- plan hits target					
- Point					
E17 RD T3 p6	0 00	0 00	4,772 00	561 50	-5,798 02
- plan hits target					
- Point					
E17 RD T1 p6	0 00	360.00	4,452 00	-1,649 41	-2,252 66
- plan hits target					
- Point					

HALLIBURTON

North Reference Sheet for Platform Gail - (Slot 35) E-17 - RD1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference. Vertical Depths are relative to rkb @ 107.00ft (Kenai 2). Northing and Easting are relative to (Slot 35) E-17.

Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -116 2500000°. Longitude Origin 0.000000°, Latitude Origin 33 883333°

False Easting 2,000,000 00ft. False Northing 0 00ft. Scale Reduction 1 00004934

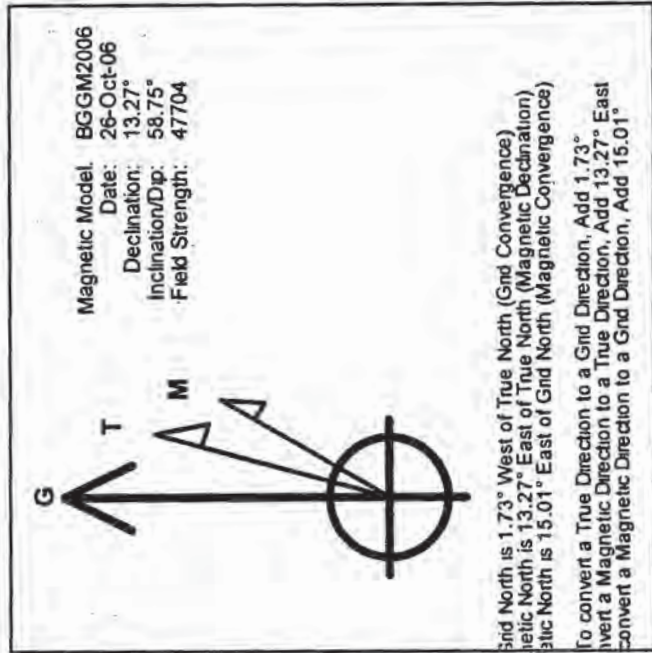
Grid Coordinates of Well 727.008 43 ft N, 1,046,704 28 ft E

Geographical Coordinates of Well 34° 07' 30 48" N, 119° 24' 00 15" W

Grid Convergence at Surface is -1.73°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,302 83ft the Bottom Hole Displacement is 5,825.15ft in the Direction of 275 53° (Gnd)

Magnetic Convergence at surface is -15 01° (26 October 2006, BGGM2006)



Vertical to 3250'
•Max Angle: 89° from +/- 4,900', drop to 85° by TD
D F Elevation: 107'
D.F to Tubing Head: 54.2'
Water Depth: 739'
Tree FMC 5000 PSI WP

SOCKEYE FIELD

WELL E-17

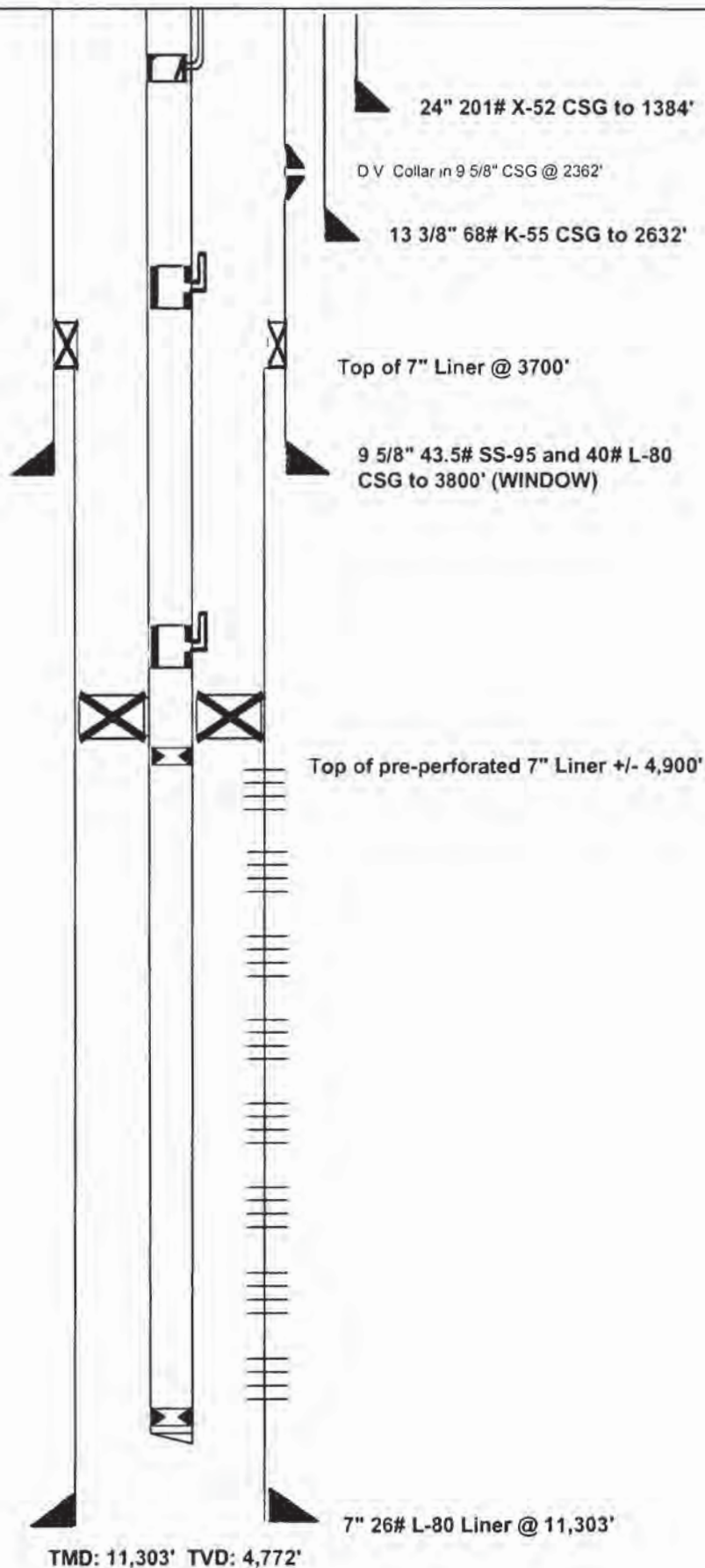
Lease: OCS-P-0205

PROPOSED

Drawing Revision 11/01/06 JLH

Completion Date: 11/30/06

Recompletion:





United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Pacific OCS Region

770 Paseo Camarillo

Camarillo, California 93010-6064

7106

November 2, 2006

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation and Production *FV*

Subject: Geologic Hazards Analysis for Development Well P-0205 E-17RD

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Sockeye Oil Field
Lease: OCS-P 0205
Platform: Gail
Well/Slot: E-17 in slot 35
Objective: Drill a horizontal, single completion in the Monterey
API: 04-311-20699-00

Surface Location: X = 1,046,704 ft
Lambert Zone 6 Y = 727,008 ft

Estimated Top of X =
Productive Zone Y =

Estimated Bottom X = 1,040,906 ft
Hole Location Y = 727,569 ft

Elevation of KB: + 113 feet
Est. Total Depth (measured): - 11,303 feet (RKB)
Est. Total Depth (true vert.): - 4,772 feet (RKB)

Water Depth (Gail): 739 feet +/-

TAKE PRIDE
IN AMERICA 

Overview of Proposal

Venoco, Inc., designated operator of the Sockeye Field within the Santa Clara Unit, proposes to redrill well OCS-P 0205 #E-17 into the Monterey M2 formation. The objective of the well is to drill a horizontal, single completion producer in the Monterey M2.

The proposed well will be drilled on Platform Gail to a bottom hole location in Lease OCS-P 0205, ~~west~~ ⁵¹⁵ north of the platform.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Top Monterey M1	Miocene	4,200 feet	4,111 feet
Top Monterey M2	Miocene	4,550 feet	4,301 feet

2. Potential Oil and Gas Reservoirs Targets

Formation	Age	(TVD)	Thickness	HC Type
Monterey M2	Micene	4,301	> 200*	Oil

* Horizontal well completion, therefore vertical pay thickness is meaningless

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. The top 3,800 feet of this well is the existing casing from the original E-17 well so any potential shallow aquifers are already behind casing.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of the original P-0209 E-17. The present operator and former operator of the Sockeye field have extensive drilling experience in this field. The proposed drilling program is similar to those utilized in drilling the production wells in the field.

5. Faulting and Folding

Several important faults have been mapped by the Operator. Faulting is an important consideration for the success of the well. The well at total depth is should cross one east-west trending fault.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The P-0209-2 Well did not find near surface gas, but did record gas shows in the Pliocene section.

7. Possible Over-pressured or Depleted Zones

Several ditch gas kicks are noted in the mud logs for E-10 and E-17. However, as noted above, in the event of a new pool discovery the operator should be prepared for higher than expected formation pressures, similar to the original formation pressures noted at the discovery of the Sockeye field.

8. Logging/Coring

The Operator plans a standard set of logs, as is the common practice with production wells in this area. A standard mud log will be taken to total depth from the kick off point. The E-logs will include gamma ray, density, neutron, and resistivity, taken on wireline.

9. Other Comments

The Monterey and Topanga Formations may contain hydrogen sulfide gas. The plan of the side track should reflect this potential drilling hazard.

APPLICATION FOR PERMIT TO DRILL

CHECK LIST

OPERATOR Venoco, Inc.
 LEASE NO. P-0205
 WELL NO. E-77ST-01
 COPIES RECEIVED 3 P.I. 1
 GEOLOGIC/GEOPHYSICAL REVIEW COMPLETED BY F. Victor DATE 11/2/06
 COPIES ON FILE WITH APD yes
 LEASE INSTRUMENT CHECKED no
 DESIGNATION OF OPERATOR APPROVED yes
 SPECIAL LEASE STIPULATIONS NOTED lease instrument not examined.

POE/POD APPROVED DATE _____
 SPECIAL CONDITIONS OF APPROVAL Standard COAS to Drill OCS Well" attached to all copies of APD.

MOBIL DRILLING UNIT NO TYPE Platform Rig: Kenai #2
 ABS & COASTGUARD DOCUMENTS ON FILE N/A
 FRONTIER AREA YES/NO NO
 SEA FLOOR CONDITIONS EXAMINED, DOCUMENTED AND APPROVED Yes - previously

RIG DESCRIPTION AND SPECIFICATIONS ON FILE? yes
 PLAT PROVIDED 2000 FEET/ONE INCH yes
 SURFACE LOCATION CHECKED yes
 SUBSURFACE LOCATION CHECKED yes
 RKB TO WATER 107' (asl) WD 739' RKB TO ML 846'
 TVD 4772' MD 11,303'

WELL DESIGN CRITERIA:

TAKEN FROM OFFSET WELL	X			& CALCULATED X		KOP ~ 3800' MD in 8 1/2" TO L @ 3700' pre-perforated	
CASING SIZE	24"	13 3/8"	9 5/8"	7" Liner	11,303' MD	2109 psi	10.5 ppg
CASING DEPTH	1384' MD	2632' MD	MD 3800' (window)	7" Liner	11,303' MD	2109 psi	10.5 ppg
PORE PRESS.			2109 psi			2109 psi	
FRAC. PRESS.			10.5 ppg			10.5 ppg	
ANTICIPATED SURFACE PRESS.	[EXISTING]			1871 psi	1871 psi *		
MUD WEIGHT			9.1 ppg			9.1 ppg	
LOST CIRCULATION ZONES	Possible in highly fractured Monterey						
SHALLOW HAZARDS FROM GEOLOGIC/GEOPHYSICAL REVIEW	Already behind existing casings.						

* Assumes 100% gas to surface.

BOPE

NO. AND TYPE	ANNULAR	PIPE RAMS	BLIND/SHEAR RAMS
1-13 5/8" - 5M	3-13 5/8" - 5M	1-13 5/8" - 5M	
GK Hydril	(a) 2 3/8"		
	(b) 5"		
	(c) 2 7/8" - 5" VBR		

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Manager.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, etc., shall be verbally reported immediately to the District Manager.
6. The District Manager shall be notified in advance in the event of production tests.
7. One copy of all logs, including the mud log to date, shall be furnished to the Office of Reservoir Evaluation and Production immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Manager shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.

U.S. Department of the Interior
Bureau of Safety and Environmental
Enforcement (BSEE)

Submit original plus THREE copies,
with ONE copy marked "Public Information"

OMB Control No 1014-0018
OMB Approval Expires 10/31/2014

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 BSEE OPERATOR NO 02309		3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013	
4 WELL NAME (CURRENT) E-22		5. SIDETRACK NO (CURRENT)		6 BYPASS NO (CURRENT)	
7 PROPOSED START DATE May 26, 2012		8. PLAN CONTROL NO (NEW WELL ONLY)			
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04-311-20747-00					
10 ☐ Revision		11 If revision, please list changes			
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE MAY 8 2012		
12 LEASE NO P-0205		17. LEASE NO. P-0205			
13 AREA NAME 6B		18 AREA NAME 6B OFFICE OF FIELD OPERATIONS			
14 BLOCK NO 4661		19 BLOCK NO 4661			
15 LATITUDE (☒ NAD 83 / ☐ NAD 27) 727750.40		16 LONGITUDE (☒ NAD 83 / ☐ NAD 27) 1043150.48		20 LATITUDE (☒ NAD 83 / ☐ NAD 27) 727020.40	
				21 LONGITUDE (☒ NAD 83 / ☐ NAD 27) 1046696.30	
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME	23 TOP (MD)	24 TOP (TVD)	22 NAME	23 TOP (MD)	24 TOP (TVD)
25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate.) Drilling program includes design criteria for well, casing program, drilling prognosis, mud program, directional program, and 123-S Supplemental APD Information					
26 CONTACT NAME Derok Paulgaard		27 CONTACT TELEPHONE NO 805-745-2146		28. CONTACT E-MAIL ADDRESS dj.paulgaard@venocoinc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Larry Huskins		30. TITLE Operations Manager			
31 AUTHORIZING SIGNATURE <i>P. Livett</i> (FOR LARRY HUSKINS)		32 DATE 4/30/2012			
THIS SPACE FOR BSEE USE ONLY					
APPROVED ☒ With Attached Conditions ☐ Without Conditions		BY ORIG. SGD. BY: Phil Schroeder		TITLE District Manager California District	
API WELL NO ASSIGNED TO THIS WELL 043112074701		DATE 6-4-12			

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings userless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to BSEE District Office that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain	☐ YES ☒ NO ☐ N/A	Approved field drilling rules.
G) Is the calculated daily volume possible from an uncontrolled blowout of this well greater than the daily volume included in the worst case discharge scenario in the approved oil spill response plan?	☐ YES ☒ NO ☐ N/A	Approved field drilling rules.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name Venoco Inc				2) Well Name (Proposed) E-22 ST 1 BP			
3) Bottom Hole Lease P-0205				4) Surface Lease P-0205			
5) API Number 04-311-20747-01				6) Type of Well ☐ Exploratory ☒ Development			
7) H ₂ S ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft) KOP			
9) Rig Name Kenai 2				10) SubSea BOP ☐ Yes ☒ No			
11) Water Depth (ft) 739'		12) RKB Height (ft) 108'		13) Mineral Code			
14) Drive Pipe Size (in) N/A		15) Drive Pipe Depth (ft) N/A		16) Anchors ☐ Yes ☒ No			
17) Well Design Information							
Interval Number: 1				Type: Casing		Name: Existing Production Casing	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
Existing	9-5/8"	47.0 lb/ft	L-80	6,870 psi	4,760 psi	3,500' / 3,366'	8.5 ppg
GENERAL INFORMATION							
Hole Size (in) N/A				Type N/A		Annular Test (psi) N/A	
Mud Weight (ppg) N/A				Size (in) N/A		BOP/Diverter Test (psi) N/A	
Mud Type Code N/A				Wellhead Rating (psi) N/A		Mud Test Weight (ppg) N/A	
Frac Gradient (ppg) N/A				Annular Rating (psi) N/A		Casing/Liner Test (psi) 2300 psi	
Liner Top Depth (ft) N/A				BOP/Diverter Rating (psi) N/A		Formation Test (ppg) N/A	
Cement Volume (ft ³) N/A							
Interval Number: 2							
Type: Slotted Liner				Name: Production Liner			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
2	7"	26.0 lb/ft	L-80	7,240 psi	5,410 psi	5,150' / 4,339'	8.5 ppg
2	5-1/2"	17.0 lb/ft	L-80	7,740 psi	6,290 psi	7,324' / 4,417'	8.5 ppg
GENERAL INFORMATION							
Hole Size (in) 8-1/2"				Type Class II		Annular Test (psi) 2,500 psi	
Mud Weight (ppg) 9.1 ppg				Size (in) 13-5/8"		BOP/Diverter Test (psi) 2,500 psi	
Mud Type Code N/A				Wellhead Rating (psi) 3K		Mud Test Weight (ppg) 8.6 ppg	
Frac Gradient (ppg) 12.3 ppg				Annular Rating (psi) 5K		Casing/Liner Test (psi) 2,300 psi	
Liner Top Depth (ft) 3,350'				BOP/Diverter Rating (psi) 5K		Formation Test (ppg) 11.0 ppg	
Cement Volume (ft ³) N/A							
Interval Number:							
Type: Intermediate				Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (ppg)
GENERAL INFORMATION							
Hole Size (in)				Type		Annular Test (psi)	
Mud Weight (ppg)				Size (in)		BOP/Diverter Test (psi)	
Mud Type Code				Wellhead Rating (psi)		Mud Test Weight (ppg)	
Frac Gradient (ppg)				Annular Rating (psi)		Casing/Liner Test (psi)	
Liner Top Depth (ft)				BOP/Diverter Rating (psi)		Formation Test (ppg)	
Cement Volume (ft ³)							

* NOTE* For additional casing/liner intervals, please submit an additional Form 0123S

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. BSEE uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for Forms BSEE-0123 and BSEE-0123S is estimated to average 100 hours per response. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Bureau of Safety and Environmental Enforcement, 381 Elden Street, Herndon, VA 20170.

April 27, 2012

Mr. Derek Paulgaard
Drilling Engineer
Venoco Inc.
Ventura California

4567 Telephone Road
Suite 203
Ventura, CA 93003

T: +1 805 658 5600
F: +1 805 658 5605
www.interactprojects.com

Subject: **Venoco Inc. Platform Gail E-22 ST1 Drilling Program Casing and Cementing Certification.**

Dear Derek:

In response to the requirements set forth in **The Code of Federal Regulations (CFR) Part 250- Oil and Gas and Sulphur Operations in The Outer Continental Shelf, Subpart A 250.420** **What well casing and cementing requirements must I meet.** InterAct provides the following verification for the Venoco Inc. Platform Gail E-28 New Well Drilling Program:

I do hereby verify that:

The Venoco, Inc. Platform Gail E-22 ST1 Drilling Program (April 16, 2012) provides two independent tested barriers, including one mechanical barrier, across each flow path during the well completion activities.

Furthermore, I verify that:

The casing and cementing design of the Platform Gail E-22 ST1 Drilling Program is appropriate for the expected wellbore conditions.

Sincerely,



Greg Stephens P.E. (California P 1377)

Attachment: InterAct Statement of Qualifications

InterAct Statement of Qualifications

InterAct Offers a broad range of professional engineering and project management services to the international oil and gas industry. InterAct assists operators at every stage of the field life cycle, from development through the production phase to facilities decommissioning and abandonment, both on and offshore. Key Services by InterAct are:

Drilling and production services

- Abandonment services (subsea well)
- Activity management Facility decommissioning and abandonment
- Field development concept studies
- Permitting and environmental services
- Subsea installation and intervention
- Drilling and Production Services

InterAct drilling engineers work closely with clients' geologists and reservoir engineers to prepare cost effective well designs that ensure maximum productivity. We have successfully designed and managed drilling projects for horizontal and extended reach wells, deepwater subsea wells, reservoirs with complex geological formations, and wells in urban areas. Our portfolio of services includes:

- Drilling and completion designs
- Directional design
- Testing work over and stimulation programs
- Artificial lift design and optimization
- Drilling and production services
- Rig and equipment sizing, contracting and procurement
- Well and drill site permitting
- Wellbore review and management of slot recovery programs

Website: www.interactprojects.com

Experience and Summary of Greg Stephens

Mr. Stephens is a California registered professional engineer (P-1377) with 30 years of experience with major international oil companies. Mr. Stephens' experience includes staff assignments in drilling and production operations, including the Santa Barbara Channel and senior level assignments in Operations, Project Management, Business Development / Acquisitions, and Corporate Governance for domestic and international ventures.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-22 ST1 Drilling Program
API# 04-311-20747-01
LEASE OCS-P-0205
April 16, 2012

Objective: Drill development sidetrack well E-22 ST1 and complete it as a horizontal well in the Monterey "M-2" Formation. Well TDs in OCS-P- 0205 Lease.

Surface Location: OCS-P-205, Slot No. 26

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Existing Casing New KB Depths:

24", 186.4#, X-42	1411'
13 3/8", 68#, K-55	2798'
9 5/8", 47#, L-80	3500' (window depth)

Proposed Liner

7" 26#, L-80, FlushMax x	TOL at 3350' to 5150' (estimated top M2 at 5176' MD)
5 1/2", 17#, L-80, GeoConn	5150' to 7324'

NOTE: 5 1/2" casing will be pre-perforated every other joint

Casing Pressure Test Details from original drilling operation

- The 9 5/8" casing stage collar did not open during the primary cementing, the opening bomb was dropped but circulation could not be established. After WOC cement attempt to test the 9 5/8" X 13 3/8" annulus and pressure leaked off at 475 psi. After install casing head and NU BOPE, ran in hole and pushed the closing plug in hole with drill pipe and went through the closing procedure. Drill out the stage collar and casing and stage collar were pressure tested to 2500 psi with 9.1 ppg reported in hole.

Markers:	MD	TVD	VSS	Press	EMW	Comments
9 5/8" Casing (window)	3500	3366	-3258	8.5	8.5	Miocene Shale
Monterey M1	4266	3981	-3873	1760	8.5	Estimated BHP
Monterey M2	5176	4312	-4233	1867	8.5	Estimated BHP
TD	7324	4417	-4309	2031	8.5	Estimated BHP

BOPE Equipment and Testing

- BOPE will be tested every 14 days during proposed operations.
- BOP equipped with 4 ram preventers and an annular. Test the BOP to 250/2500 psi with 5" and 3 1/2" drill pipe. The 13 5/8" BOPE will be configured for drilling or re-completion

operations, with 2 7/8" X 5" VBR pipe rams in the top gate and blind/shear rams in the second gate from top, the mud cross will be below the blind/shear rams, and double gate with 5" rams at top and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. The 2 3/8" rams will not be tested as we are not working with 2 3/8" tubing in this well. All tests will be recorded on a chart for the MMS to review.

Hydrogen Sulfide Considerations:

The Monterey has the potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

NOTE: Have a **minimum of 2 bbls H2S scavenger ZnO or Safe-Scav HS** (triazine) on board for use in mud in the event they are required during drilling. 2 bbls can treat 1040 bbls of mud.

Drilling Fluids:

- It is proposed to use MI's 9.0 ppg UltraDril Water Based Mud system
- There will be no discharge of drilling fluids during the well operations

Sidetrack Procedure

1. As part of the well preparations a CIBP will be set at +/- 3500'. The casing will have been pressure tested to 1000 psi. Prior to sidetrack commencing pressure test casing and CIBP to 2300 psi. Additionally, prior to sidetrack, a USIT log will be run and a determination will be made as to the suitability of the cement job behind the 9-5/8" casing.
2. RIH with whipstock assembly and MWD tools to CIBP. Orient whipstock and set whipstock.
3. Mill window in 9 5/8" casing. Trip for new mills as necessary. Periodically pump rope fiber sweeps to clean up metal shavings. Mill 10' of rathole into formation and pull above window. Get 11.0 ppg FIT. POOH.
4. Make up 8 1/2" Directional BHA per BHI. Drill 8-1/2" horizontal hole to TD of 7324' MD/4418' TVD as per BHI directional plan E-22 RD1 Plan3.
 - Overboard discharge will not be allowed in this hole section.
 - Perform and log BOP tests (2 weeks) on tour sheet per BSEE regulations. Perform and document all weekly BOP/H2S drills and all items on BSEE checklist. Fill out NPDES monitoring information daily.
 - H2S is present in this hole section. Safety company should calibrate H2S monitors every 12 hours and document on tour sheets. H2S drills should continue throughout operations
 - MWD/GR will be run in this hole section
 - Perform flow checks and circulate bottoms up as necessary
 - Keep fluid loss low in mud to reduce swelling/swabbing in the clay formation.
 - Make wiper trips as necessary to keep hole in good shape
 - As this is a horizontal hole section, circulating should be 3-4 BU or until mud is clean
 - Notify engineer if losses occur. All LCM material to be acid soluble.

8. Short trip to shoe and back to TD. Rotate pipe and circulate at recommend rate to clean hole. Circulate and condition the hole 3-4 x BU for logs. POOH
9. Run in with Weatherford tubing-conveyed logging tools and log lateral. POOH.
10. RIH with clean-out BHA as per swell packer company recommendation, or as indicated, and condition the hole for casing. Rotate pipe and circulate at recommended rate to clean hole. POOH
11. Rig up casing crew.
12. Run 7", 26#, L-80 FlushMax x 5 1/2", 17#, L-80, GeoConn casing from +/-7324' to 3350' as follows:
 - 9 5/8" x 7" Liner Hanger to be set at +/- 3350' MD
 - 7" X 5 1/2" combination string to be run.
 - One swell packer will be set near the top of the M2
 - Spacing of packers and slotted joints to be determined from logs
 - Run liner on drill pipe and with HWDP spaced out as needed per torque and drag prediction program and if hole conditions dictate to push liner to bottom.
 - Run centralizers above and below each swell packer
 - Run in the hole slowly to avoid surging the formation.
 - A circulating swage with a safety valve will be on the rig floor.
13. Run the liner in the hole to +/-7324'. Circulate the well until the returns are clean. Drop the setting ball and set the liner hanger and packer. Release running tool from liner hanger.
14. After setting liner hanger packer, the liner top packer will be pressure tested to 2300 psi for 30 minutes. Note: Fracture Gradient at 3500' is estimated to be 12.1 ppg EMW (.63 psi/ft). A pressure test to 2300 psi with 9.0 ppg mud will create pressure test 1735 psi over the estimated Fracture Gradient at 3500.
15. Displace WBM to seawater from the liner top to surface weighted up with additional NaCl as indicated by drilling gas shows. POOH with running tools
16. RIH with 7" test packer and set above liner. Test casing and liner lap above packer to 2300 psi for 30 minutes. POOH.

Completion Procedure

NOTE: Install a 2 1/16" 5M casing valve with a 1502 tee and pressure gauge, a check valve and high pressure hose connection below the tubing hanger. Test to 2500/250 psi for 5 minutes. It will be used to pump seawater into the well to control the well.

NOTE: BOPE testing to continue on 14 day frequency through the completion that is approved as part of the APD.

5. The well will be a single horizontal completion in the Monterey "M-2" (see attached Proposed Completion Diagram).

6. RIH with 4 3/4" bit to TD. Displace well to seawater. Acidize lateral per plan. Acid plan will be developed with log results. POOH
7. Pull wear bushing. Pick up the completion equipment in following order:
 - Wireline entry guide
 - 2 7/8" Baker 'BXN' seating nipple
 - 1 joint of 2 7/8" EUE 8rd Tubing
 - 2 7/8" Baker 'BX' seating nipple
 - 1 joints of 2 7/8" EUE 8rd Tubing
 - Baker 7" HS Packer w/ 6' pup joints made up to the top and bottom of the packer
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" GLM with live valve run in place
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" GLM with live valve run in place
 - XX joints of 2 7/8" EUE 8rd Tubing
 - 2 7/8" Baker TE-5 TRSSSV
 - XX joints of 2 7/8" EUE 8rd Tubing
 - Cameron Tubing Hanger
8. After pick up TRSSSV, install control line and pressure test to 7000 psi. Run in hole with tubing and control line banding the line to the tubing with 2 bands per joint. Run in to landing depth, pick up and install Cameron tubing hanger and install control line and pressure test to 7000 psi. Pump XX bbls packer fluid and place from packer set depth to above the bottom GLM. Get up and down weight prior to landing. Follow Cameron procedure for landing tubing hanger. At no time will hanger hold down pin be removed. Pressure test tubing hanger void.
9. After tubing hanger is landed and tested, RU slickline and set tubing plug in XN nipple.
10. Pressure up tubing to 3000 psi in 500 psi increments to set the HS packer and hold 3000 psi on tubing for 15 minutes. Slowly bleed pressure off of tubing.
11. Bleed off control line pressure to close TRSSSV
12. Pressure up on annulus and pressure test the packer, annulus, tubing plug, and TRSSSV to 1000 psi. Bleed pressure off of annulus (Note: live gas lift valves will be run)
13. Pressure up tubing to 1100psi and open TRSSSV to release pressure trapped b/w TRSSSV and tubing plug. Close TRSSSV.
NOTE: Tubing plug and TRSSSV will constitute our 2 tested barriers.
14. Install BPV into tubing hanger. ND BOPE and NU Cameron 3 1/2" tree with adapter. Install blanking plug and pressure test bonnet void and tree to 3000 psi. Remove blanking plug.
15. Release rig and turn well over to production.

Requested Waivers

- 1) Sec 250.423 (a) (3): Test production casing to a minimum test pressure of 70% of minimum internal yield

Request: Test production casing to the maximum anticipated surface pressure (MASP) that the string will be subject to. (Note: Casing is designed so that the MASP is less than 70% of the rated casing burst pressure.)

- 2) Sec 250.448 (b): BOP high-pressure tests

Request: Revise the high-pressure test for ram-type BOP's, annular type BOP's, the choke manifold, and other BOP components to be 500 psi greater than the calculated MASP for the applicable section of hole as indicated in the APD.

Other Data

Please see the E-4ST5 APD for the following material:

- BSR shear test data and calculations
- Detailed choke manifold schematics
- BOP control schematics

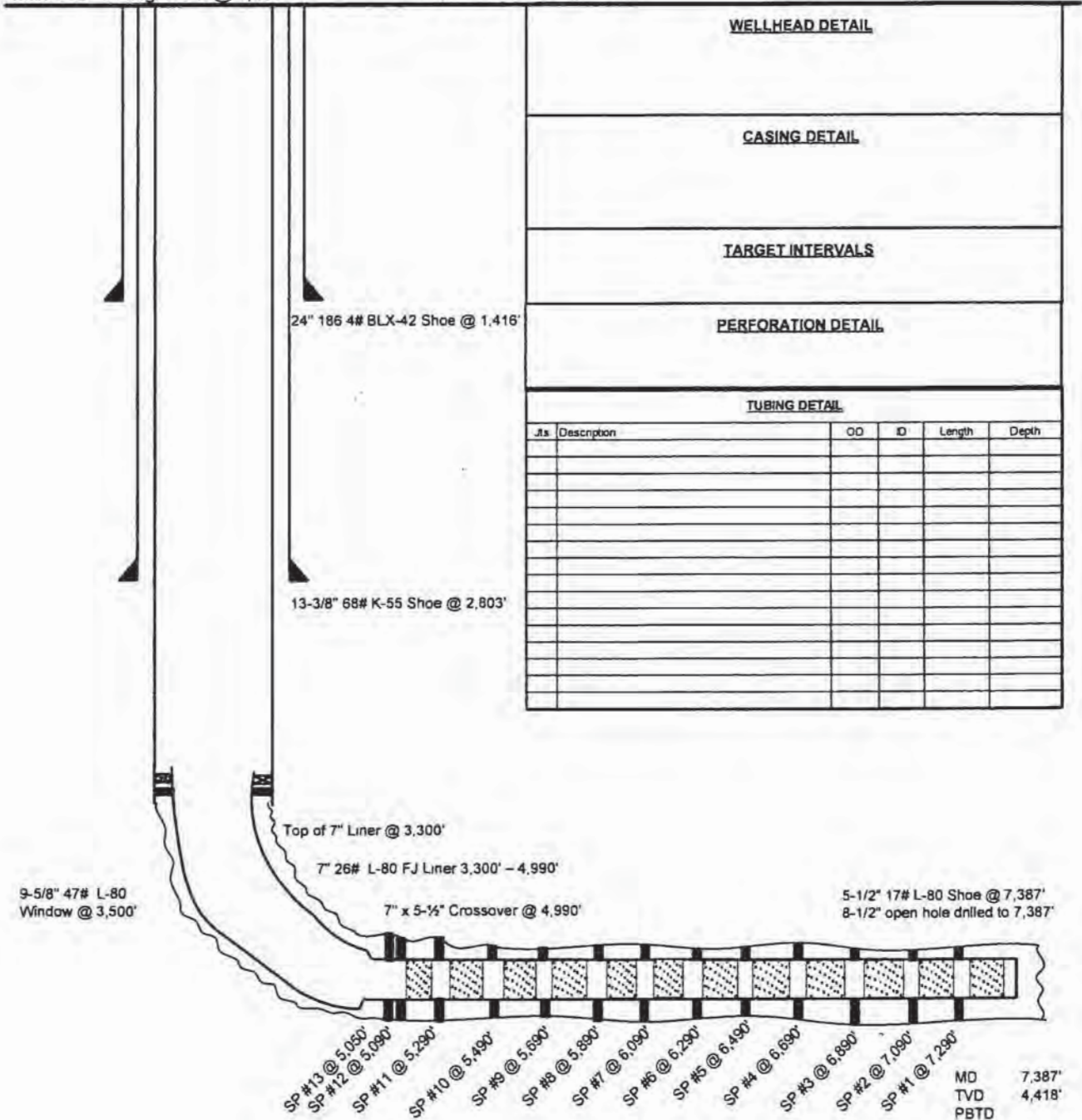
Performance Data					
Upperson, Jurnell	0.785	0.000	4.97	3.8*	total B3-1 (Peak 0.000)
Upperson, Jurnell	0.800	0.000	4.99	4.0*	total B3-1 (Peak 1.0/2.3)
Upperson, Jurnell	0.830	0.000	4.99	3.9*	total B3-1 (Peak 0.000)
Upperson, Jurnell	0.830	0.000	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	0.848	0.000	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	0.853	0.000	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	0.870	0.000	4.99	4.0*	total B3-1 (Peak 1.0/3.2)
Upperson, Jurnell	0.900	0.043	4.99	4.0*	total B3-1 (Peak 1.0/3.2)
Upperson, Jurnell	0.930	0.060	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	0.948	0.070	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.000	1.000	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.004	1.000	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.003	1.000	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.003	1.000	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.008	0.018	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.018	0.018	4.99	4.0*	total B3-1 (Peak 7.0/8)
Upperson, Jurnell	1.020	0.018	4.99	4.0*	total B3-1 (Peak 7.0/8)
Upperson, Jurnell	1.038	0.018	4.99	4.0*	total B3-1 (Peak 7.0/8)
Upperson, Jurnell	1.043	0.018	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.043	0.018	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.048	0.018	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.058	0.018	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.070	0.018	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.070	0.018	4.99	4.0*	total B3-1 (Peak 0.000)
Upperson, Jurnell	1.073	0.018	4.99	4.0*	total B3-1 (Peak 7.0/8)

Lease: OCS-P-0205
SOCKEYE FIELD
E-22RD1

Drawing Revision 2/28/12 MLO

D F Elevation 107'
 D F to Tubing Head.
 Water Depth
 Tree: Cameron, Single
 Wellhead: Cameron
 TD 7,387' MD, 4,418' TVD
 Max Incl: 88°, Incl @ TD 88°
 Max DLS 12 deg/100 ft @ 3,590'

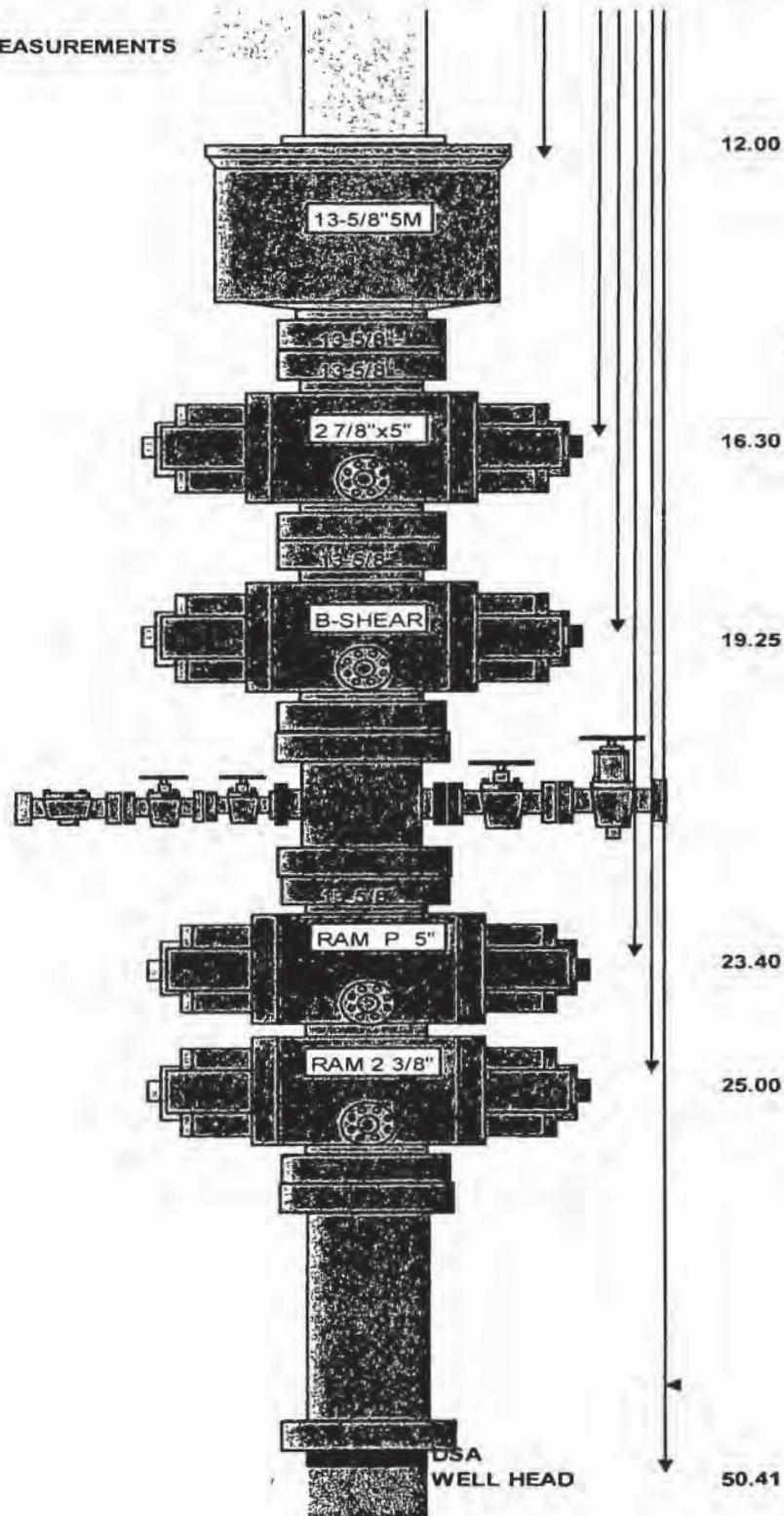
API:
 M2 Lateral- Producer
 Proposed Completion



BOPE

KENAI BOPE

RIG FLOOR MEASUREMENTS



MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP
3500'-7324' (8 ½" hole)	UltraDril WBM	8.7 - 9.5	<6	8.0-9.5	18-25

3500'-7324'

The objective in this interval is to drill an 8 ½" hole from the window in the 9 5/8" casing to 7324'. The fluid system recommended is UltraDril WBM, MI's high performance water based mud system.

Notes:

- 1) Operate solids control equipment to maintain drill solids as low as possible.
- 2) **Maintain 2 bbls (104 gal) of H₂S scavenger on board.** ZnO or Safe-Scav HS (triazine) are both compatible with this mud system. 2 bbls can treat 1040 bbls of mud.
- 3) **A minimum of 500 sx of barite shall be kept on the platform at all times, enough to raise the mud weight 0.5 ppg.**
- 4) There is no minimum amount of Xanthan gum viscosifier to be kept on the platform, as it is not required to raise the mud weight of the UltraDril system.

Hydrogen Sulfide Considerations:

The Monterey has potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

CEMENT PROGRAM

Not Applicable

EVALUATION PROGRAM

1) MUD LOGGING

8 1/2" Hole Section – Continuous mud logging shall be performed from drilling out the shoe of the 7" window to the total depth. Collect dry samples at 30' intervals.

2) CORING – none

3) LOGGING WHILE DRILLING

8 1/2" Hole Section – MWD/GR will be run for the entirety of the hole

4) ELECTRIC LOGGING

8 1/2" Hole Section

Triple combo + CMI

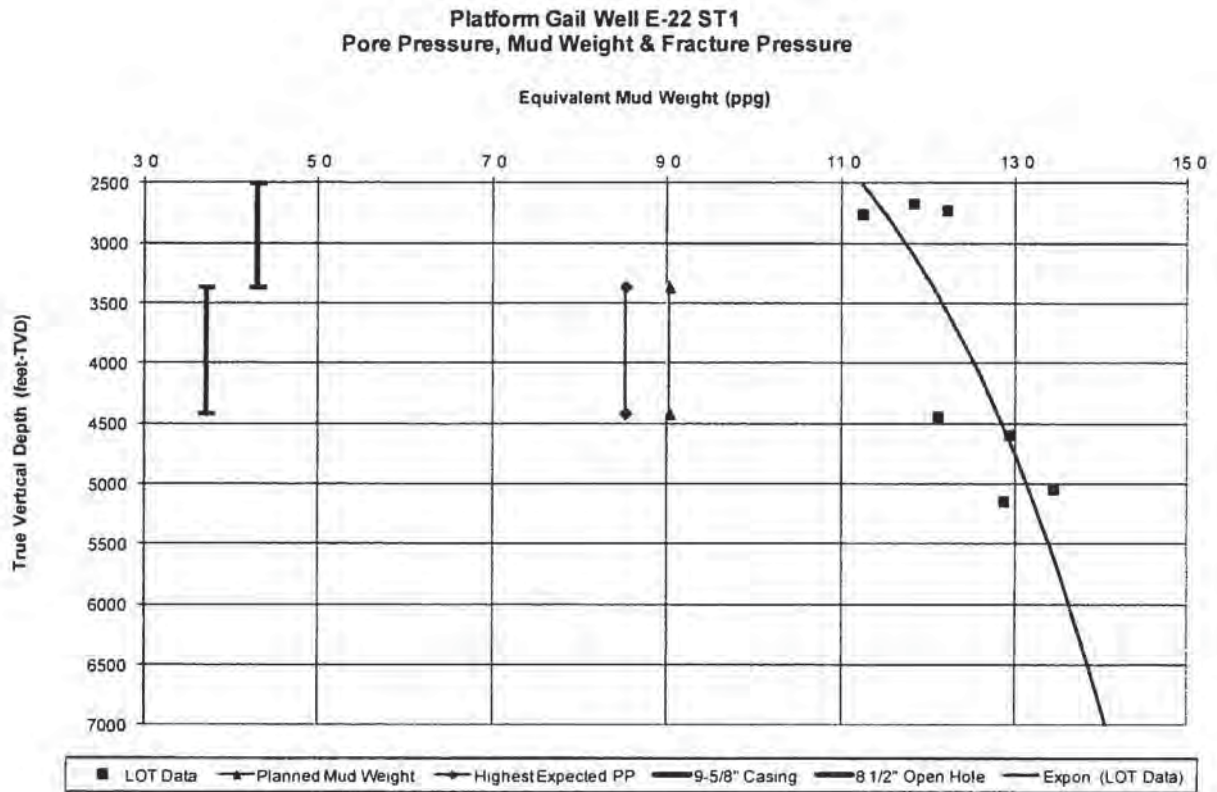
Notify Geologist to witness all logs.
Primary Geologist: Monica Carlsen
805-745-2115 office
805-448-5622 cell

Back-up Geologist: Chris Peltonen
805-745-2266 office
805-732-8846 cell

MASP CALCULATIONS

	Window	Pilot Hole
1 Casing Size (in)	9-5/8	8 1/2
2 Setting Depth (feet - TVD)	3365	4417
3 Expected Leak Off Test EMW at shoe (ppg)	12.1	12.1
4 Expected Mud Weight (ppg)	9	9
5 Depth of next Casing (feet - TVD)	4417	4417
6 Maximum Expected Formation Pressure (psi)	1952	1952
7 Expected gas gradient (psi/ft)	0.05	0.05
8 Formation Equivalent Mud Weight (ppg)	8.5	8.5
Max Pressures using 100% Gas to Surface		
9 Max Surface Pressure neglecting shoe (psi)	1731	1731
10 Fracture Gradient at shoe (psi/ft)	0.63	0.63
11 Fracture Pressure at shoe (psi)	2117	2779
12 Surface pressure to break down shoe (psi)	1949	2558
13 Maximum Anticipated Surface Pressure (psi)	1731	1731
Max Pressures using 70% Gas & 30% Mud		
14 Maximum Anticipated Surface Pressure (psi)	1178	1178
15 Top of fluid (feet-TVD)	3092	3092
16 Pressure at shoe (psi)	1460	1952
17 Margin between pressure and breakdown(psi)	657	827

Pore Pressure Plot



CASING DESIGN

Hole Section	Existing	8 1/2"
Mud Weight	9	9
Buoyancy Factor	0.863	0.863
MASP (psi)	1731	1731
Gas Lift Pressure (psi)	1800	N/A
Casing Size (in)	9-5/8*	slot liner
Setting Depth, MD (ft)	4950	
Setting Depth, TVD (ft)	4157	
Top of Casing, MD (ft)	0	
Weight (lb/ft)	43.5	
Grade	L-80	
Threads	STL	
ID (in)	8.755	
Dnft diameter (in)	8.599	
Collapse (psi)	3810	
Burst (psi)	6330	
Joint Strength (kips)	825	
Body Strength (kips)	1005	
Collapse Safety Factor Assumes Complete Evacuation	1.96	
Burst Safety Factor Assumes No Backup at Surface	3.52	
Tensile Safety Factor	2.89	

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. **Assume any gas circulated to surface to have hydrogen sulfide potential.** Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

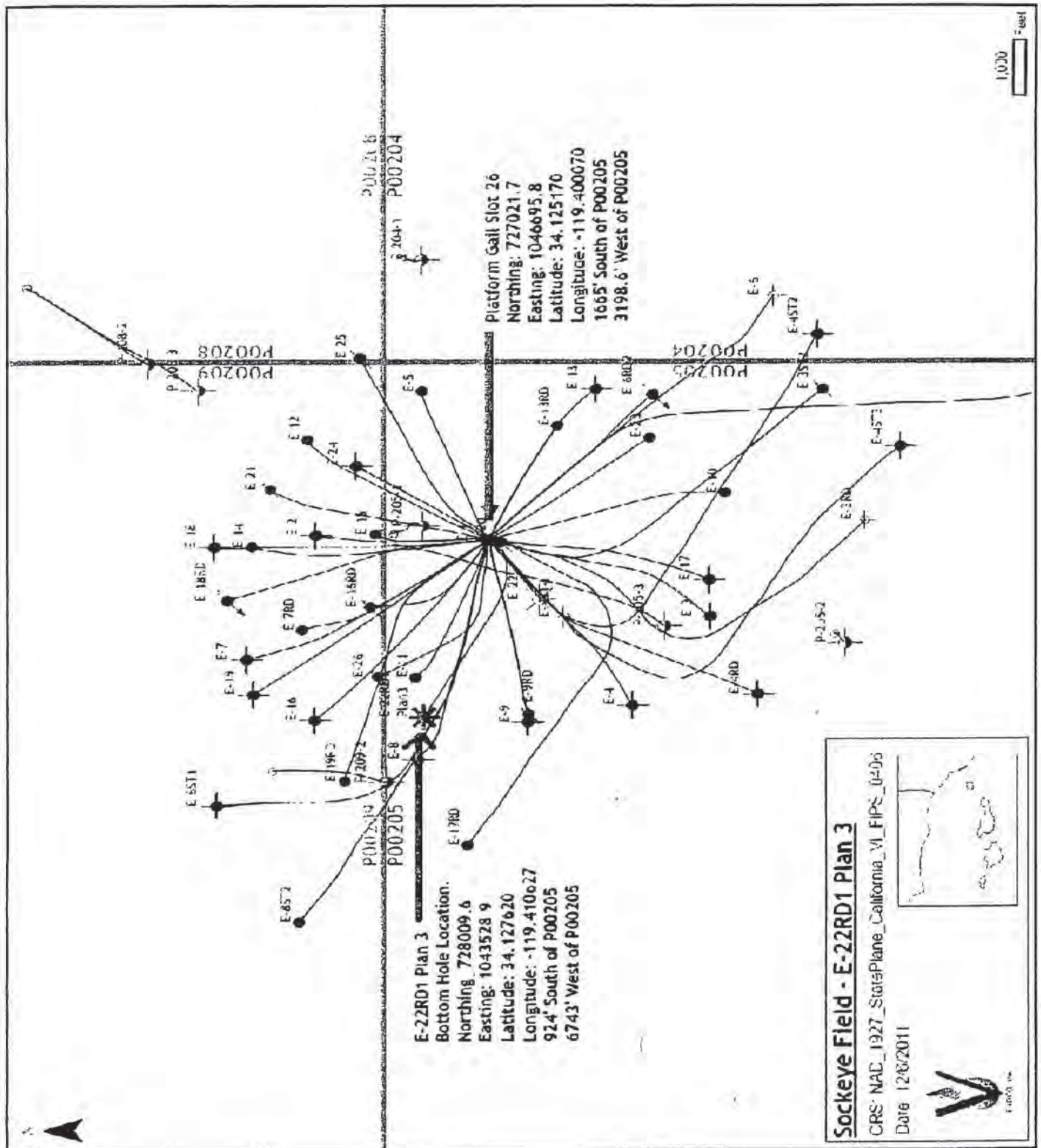
RIG SPECS



Rig #2 Specifications

<u>Drilling Range:</u>	21,000' with 5" Drillpipe.
<u>Drawworks:</u>	Skytop Brewster N-12 : 2,000 H.P. Driven by (2)-1,000 H.P. General Electric 752 DC Traction Motors With a Parkersburg V-200 Hydromatic Brake and Electronic Control Panel.
<u>Mast:</u>	Skytop Brewster 142' High, Rated at 1,250,000# GNC and 1,000,000# Static Hook Capacity.
<u>Substructure:</u>	Skytop Brewster 21' High (10' Pont Available), With 1,250,000# Capacity.
<u>Mud Pump #1:</u>	National 12P-100 Triplex, 7"x12" 1,000 H.P., Powered by (2)-1,000 H.P. General Electric 752 DC Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Mud Pump #2:</u>	National 12P-100 Triplex, 7"x12" 1,000 H.P., Powered by (2)-1,000 H.P. General Electric 752 Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Rotary Table:</u>	Continental Emsco 27'-6" (3'-6" Optional)
<u>Traveling System:</u>	Skytop Brewster 6 Sheave, 500 Ton Block Hook Combination and National P-500 Ton Swivel.
<u>SCR Power System:</u>	Ross Hill 4 Bridge, 4 Input SCR Unit With Highline Connection and G.E. Electrical Control Unit.
<u>Mud System:</u>	(2)-Pit System, 1,000 Total Barrels. With Trip, Shaker, Volume, Mud Cleaning, Suction and Pill Mixing Compartments, (6)-Lightning Mud Agitators, Submerged Guns, (2)-5x6 Centrifugal Pumps and (2)-Flowline Cleaners.
<u>B.O.P.E.:</u>	Hydral GK 13-5 5", 5,000# Annular, Shaffer LWS 13-5 5", 5,000# D-Ram, Hydral 220 Gallon Accumulator and 5,000# Choke Manifold or as Designated by Contract.
<u>Water Storage:</u>	400 BBLS.
<u>Auxiliary Equipment:</u>	(2)-Air Winches, Wireline Unit (1002"), (2)-Air compressors, Upper & Lower Doghouses, Toolpusher Trailer.

PROPOSED MAP



Wellpath Report

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Planned Wellpath Report

E-22 RD1 Plan3

Page 1 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc.	Slot	Slot 26
Area	California 3	Well	Well E-22
Field	Sockeye Field	Wellbore	E-22 RD1
Facility	Platform Gail	Sidetrack from	AWB E-22 at 3495.00 MD

REPORT SETUP INFORMATION			
Projection System	NAD27 / Lambert California SP, Zone VI (404), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Vamjoel
Scale	1.00005	Report Generated	12/5/2011 at 5:17:01 AM
Convergence at slot	1.73° West	Database/Source file	WA Bakersfield/E-22 RD1.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North(ft)	East(ft)	Easting(US ft)	Northing(US ft)	Latitude	Longitude
Slot Location	-11.60	53.30	1046690.30	727020.40	34°07'30.600"N	119°24'00.246"W
Facility Reference Pt			1046643.00	727032.00	34°07'30.698"N	119°24'00.384"W
Field Reference Pt			1049400.00	728640.00	34°07'47.480"N	119°23'26.305"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on Slot E-22 RD1 (RT) to Facility Vertical Datum	108.00ft
Horizontal Reference Pt	Slot	Rig on Slot E-22 RD1 (RT) to Mean Sea Level	108.00ft
Vertical Reference Pt	Rig on Slot E-22 RD1 (RT)	Rig on Slot E-22 RD1 (RT) to Mean Line at Slot (Slot 26)	847.00ft
MD Reference Pt	Rig on Slot E-22 RD1 (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	281.63°

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12/5/2011



Planned Wellpath Report

E-22 RD1 Plan3

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REFERENCE WELLPATH IDENTIFICATION

Operator	Venoco Inc	Slot	Slot 26
Area	California 3	Well	Well E-22
Field	Sockeye Field	Wellbore	E-22 RD1
Facility	Platform Gail	Sidetrack from	AWB E-22 at 3495.00 MD

WELLPATH DATA (81 stations) T = interpolated/extrapolated station

MD [ft]	inclination [°]	Azimuth [°]	TVD [ft]	TVD from Ref Vess Ref [ft]	Vert Sec [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Footcage [ft]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
-5.00	0.000	186.370	-5.00	-133.00	0.00	0.00	3.00	1046496.30	727020.40	0.00	0.00	0.00	0.00	
0.00	0.000	186.370	0.00	-108.00	0.00	0.00	3.00	1046496.30	727020.40	0.00	0.00	0.00	0.00	
847.00	0.000	239.800	847.00	339.00	0.00	0.00	3.00	1046496.30	727020.40	0.00	173.63	0.00	0.00	
895.00	0.211	186.370	895.00	787.00	-0.01	-0.09	-0.01	1046496.29	727020.31	0.44	-82.41	0.44	0.00	
945.00	0.260	157.150	945.00	337.00	-0.08	-0.28	0.02	1046496.32	727020.12	0.20	-157.44	0.10	-38.45	
995.00	0.134	129.600	995.00	387.00	-0.20	-0.42	0.11	1046496.41	727019.98	0.31	-139.66	-0.26	-55.10	
1095.00	0.110	39.860	1095.00	587.00	-0.34	-0.43	0.26	1046496.56	727019.98	0.17	-138.40	-0.02	-89.75	
1195.00	0.080	223.650	1195.00	1087.00	-0.35	-0.40	0.27	1046496.57	727020.00	0.19	-139.13	-0.03	-176.31	
1295.00	0.230	71.600	1295.00	1187.00	-0.49	-0.39	0.42	1046496.71	727020.01	0.30	-165.19	0.13	-152.05	
1395.00	0.080	324.680	1395.00	1287.00	-0.61	-0.27	0.57	1046496.87	727020.13	0.26	163.58	-0.15	-106.91	
1575.00	0.210	46.530	1575.00	1467.00	-0.71	0.06	0.73	1046497.03	727020.46	0.12	56.17	0.07	45.41	
1665.00	0.430	79.160	1665.00	1557.00	-1.20	0.24	1.18	1046497.48	727020.54	0.29	144.12	0.23	35.14	
1755.00	0.250	142.300	1755.00	1657.00	-1.60	0.15	1.57	1046497.97	727020.55	0.28	-137.17	-0.17	64.14	
1815.00	0.210	39.150	1815.00	1706.99	-1.75	0.11	1.81	1046498.11	727020.51	0.61	169.11	-0.08	-166.30	
1870.00	1.590	226.910	1870.00	1750.99	-1.36	-0.39	1.31	1046497.61	727020.01	3.43	22.02	2.99	305.00	
1879.00	3.590	238.730	1879.00	1820.92	0.50	-1.85	-0.91	1046495.39	727018.45	3.33	0.63	3.13	10.10	
1891.00	3.660	239.000	1891.00	1881.72	4.17	-4.53	-5.19	1046491.11	727015.87	5.24	19.22	3.24	0.35	
2083.00	8.760	242.630	2083.00	1973.98	12.95	-10.08	-15.30	1046481.00	727010.31	3.40	11.24	3.37	3.97	
2149.00	10.470	244.500	2149.00	2039.05	11.64	-14.98	-25.18	1046471.13	727005.40	2.67	-25.05	2.59	2.30	
2205.00	12.000	246.800	2205.00	2093.98	30.10	-20.01	-34.85	1046461.44	727000.39	5.02	-23.54	3.79	-8.61	
2267.00	14.300	236.800	2267.00	2154.35	40.41	-27.34	-46.89	1046449.41	726999.05	3.99	17.25	3.71	-8.45	
2361.00	16.300	239.000	2361.00	2245.01	38.35	-40.50	-67.91	1046438.38	726997.90	2.77	-9.82	2.13	2.34	
2416.00	17.900	238.100	2416.00	2297.58	70.16	-48.94	-81.71	1046414.59	726997.46	2.95	-18.17	2.91	-1.65	
2447.00	19.100	236.900	2447.00	2326.98	77.12	-54.13	-90.00	1046406.30	726996.17	4.06	-4.88	3.81	-3.81	
2510.00	21.700	236.300	2510.00	2386.02	92.73	-56.32	-108.33	1046387.97	726995.08	4.14	8.79	4.13	-0.95	
2540.00	21.700	236.700	2540.00	2413.80	100.75	-72.58	-117.78	1046378.51	726997.82	5.37	10.30	3.33	1.35	
2609.00	23.600	237.100	2609.00	2477.24	120.00	-87.39	-140.50	1046355.79	726993.01	1.37	-12.66	1.30	0.58	
2702.00	26.500	235.600	2702.00	2561.45	147.75	-109.37	-173.52	1046322.97	726991.13	3.30	-13.09	3.23	-1.61	
2748.00	27.900	234.800	2748.00	2603.34	162.24	-121.29	-190.62	1046305.68	726989.10	2.94	-18.76	2.83	-1.74	
2831.00	28.600	234.000	2831.00	2675.46	188.91	-144.16	-222.56	1046278.73	726987.23	0.96	25.98	0.84	-0.96	
2924.00	29.100	234.500	2924.00	2756.91	219.30	-170.38	-258.97	1046437.31	726985.01	0.60	-59.26	0.54	0.54	
3017.00	29.100	233.900	3017.00	2838.17	249.89	-196.83	-295.36	1046400.63	726983.56	0.31	0.00	0.00	-0.63	
3111.00	29.300	233.900	3111.00	2920.23	280.74	-223.85	-332.71	1046368.57	726981.54	0.21	-63.15	0.21	0.00	
3203.00	29.400	233.500	3203.00	3000.42	310.95	-250.55	-369.05	1046327.23	726979.84	0.24	9.38	0.17	-0.43	
3296.00	29.700	233.600	3296.00	3081.33	341.59	-277.80	-405.95	1046290.33	726977.59	0.33	26.59	0.35	0.11	
3388.00	30.000	233.900	3388.00	3161.13	372.30	-304.88	-442.88	1046253.40	726975.51	0.16	0.00	0.33	0.33	
3481.00	30.300	233.900	3481.00	3241.54	403.72	-332.40	-480.67	1046215.66	726973.99	0.32	-26.85	0.35	0.00	
3500.00	30.321	233.879	3500.00	3257.94	410.17	-338.05	-488.36	1046207.91	726982.33	0.00	-35.00	0.11	-0.11	Fin Co
3520.00	32.313	231.304	3520.00	3375.02	416.97	-344.37	-496.61	1046199.66	726976.02	12.00	0.00	9.98	-12.58	End of 3D Arc
3590.00	32.313	231.304	3590.00	3334.18	440.86	-367.76	-525.82	1046170.46	726965.62	0.00	-114.04	0.00	0.00	End of Tangent
3600.00	32.103	230.403	3600.00	3342.85	444.33	-371.13	-529.95	1046166.31	726964.26	5.24	-113.28	-2.10	-9.00	
3671.79	30.790	223.642	3671.79	3403.91	465.92	-396.59	-557.34	1046138.93	726962.79	5.24	78.32	-1.83	-9.43	End of 3D Arc (DBL)
3700.00	31.120	226.444	3700.00	3428.10	473.91	-406.84	-567.81	1046128.66	726961.54	5.24	75.92	1.17	9.93	
3800.00	32.751	235.808	3800.00	3513.02	507.56	-439.85	-608.76	1046087.52	726958.53	5.24	67.92	1.63	9.43	
3900.00	35.021	244.348	3900.00	3596.07	549.29	-467.47	-657.05	1046039.22	726955.91	5.24	60.87	2.27	8.48	

Wellpath Report

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Planned Wellpath Report

E-22 RD1 Plan3

Page 3 of 4



REFERENCE WELLPATH IDENTIFICATION					
Operator:	Venoco Inc	Slot	Slot 26		
Area:	California 3	Well:	Well E-22		
Field:	Sockeye Field	Wellbore:	E-22 RD1		
Facility:	Platform Gail	Sidetrack from:	AWB E-22 at 3495.06 MD		

WELLPATH DATA (81 stations) T = interpolated/extrapolated station														
MD [ft]	Longitude [°]	Latitude [°]	TVD [ft]	TVD from Pit Vert Ref [ft]	True Surt [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	DLS [°/100ft]	Toolface [°]	Build Rate [°/100ft]	Turn Rate [°/100ft]	Comments
4000.00	37.814	251.824	3784.58	7676.58	598.75	-489.45	-713.07	1045584.19	726330.91	5.24	54.85	2.79	7.48	
4100.00	37.821	251.835	3801.35	7693.35	657.57	-505.66	-713.38	1045592.88	726314.71	5.24	49.80	3.21	6.53	
4200.00	37.831	251.846	3915.36	7807.36	719.16	-515.92	-840.48	1045855.80	726504.46	5.24	45.61	3.53	5.71	
4300.00	37.839	251.857	4004.18	7896.18	789.11	-520.15	-912.74	1045783.51	726500.23	5.24	42.15	3.78	5.01	
4400.00	37.843	251.861	4068.04	7960.04	864.78	-518.33	-989.63	1045706.52	726507.05	5.24	39.31	3.93	4.44	
4500.00	37.846	251.864	4126.31	8018.31	945.56	-510.46	-1070.48	1045623.77	726509.93	5.24	36.59	4.12	3.98	
4600.00	37.849	251.867	4178.49	8070.49	1026.75	-496.61	-1154.61	1045541.34	726523.73	5.24	35.10	4.24	3.61	
4700.00	37.852	251.870	4224.16	8116.16	1119.56	-476.90	-1248.32	1045454.97	726543.48	5.24	33.58	4.33	3.32	
4800.00	37.855	251.873	4262.93	8154.93	1211.33	-451.49	-1349.89	1045368.55	726568.89	5.24	32.38	4.40	3.08	
4900.00	37.858	251.876	4294.47	8186.47	1305.61	-420.59	-1449.58	1045276.56	726599.79	5.24	31.46	4.45	2.89	
5000.00	37.861	251.879	4319.52	8211.52	1391.09	-384.43	-1549.65	1045186.50	726635.71	5.24	30.79	4.48	2.79	
5100.00	37.864	251.882	4334.88	8226.88	1477.20	-343.42	-1649.30	1045096.93	726676.96	5.24	30.35	4.51	2.70	
5200.00	37.867	251.885	4343.44	8235.44	1561.11	-297.79	-1648.83	1045008.59	726722.50	5.24	30.12	4.53	2.68	
5233.93	37.867	251.885	4344.00	8236.00	1606.40	-291.10	-1700.00	1044996.10	726729.29	5.24	0.00	4.53	2.68	End of 3D Arc (DBL)
5300.00	37.867	251.885	4347.01	8239.01	1688.53	-249.45	-1775.30	1044906.92	726770.34	0.00	0.00	0.00	0.00	
5400.00	37.867	251.885	4350.51	8242.51	1783.93	-201.07	-1862.14	1044833.47	726819.53	0.00	0.00	0.00	0.00	
5500.00	37.867	251.885	4354.01	8246.01	1879.34	-152.69	-1950.19	1044746.01	726867.70	0.00	0.00	0.00	0.00	
5600.00	37.867	251.885	4357.51	8249.51	1974.75	-104.31	-2037.64	1044658.56	726916.08	0.00	0.00	0.00	0.00	
5700.00	37.867	251.885	4361.01	8253.01	2070.16	-55.89	-2125.09	1044571.11	726964.46	0.00	0.00	0.00	0.00	
5800.00	37.867	251.885	4364.51	8256.51	2165.56	-7.56	-2212.54	1044483.66	727012.84	0.00	0.00	0.00	0.00	
5900.00	37.867	251.885	4368.02	8260.02	2260.97	40.82	-2299.99	1044396.21	727061.23	0.00	0.00	0.00	0.00	
6000.00	37.867	251.885	4371.52	8263.52	2356.38	89.20	-2387.45	1044308.75	727109.61	0.00	0.00	0.00	0.00	
6100.00	37.867	251.885	4375.03	8267.03	2451.79	137.58	-2474.88	1044221.30	727157.99	0.00	0.00	0.00	0.00	
6200.00	37.867	251.885	4378.53	8270.53	2547.19	185.96	-2562.33	1044133.85	727206.37	0.00	0.00	0.00	0.00	
6300.00	37.867	251.885	4382.03	8274.03	2642.60	234.34	-2649.78	1044046.40	727254.75	0.00	0.00	0.00	0.00	
6400.00	37.867	251.885	4385.53	8277.53	2738.01	282.72	-2737.23	1043958.94	727303.13	0.00	0.00	0.00	0.00	
6500.00	37.867	251.885	4389.03	8281.03	2833.42	331.10	-2824.68	1043871.49	727351.51	0.00	0.00	0.00	0.00	
6600.00	37.867	251.885	4392.53	8284.53	2928.83	379.48	-2912.12	1043784.04	727399.90	0.00	0.00	0.00	0.00	
6700.00	37.867	251.885	4396.03	8288.03	3024.23	427.86	-2999.57	1043696.59	727448.28	0.00	0.00	0.00	0.00	
6800.00	37.867	251.885	4399.53	8291.53	3119.64	476.24	-3087.02	1043609.13	727496.66	0.00	0.00	0.00	0.00	
6900.00	37.867	251.885	4403.03	8295.03	3215.05	524.62	-3174.47	1043521.58	727545.04	0.00	0.00	0.00	0.00	
7000.00	37.867	251.885	4406.53	8298.53	3310.45	573.00	-3261.92	1043434.23	727593.42	0.00	0.00	0.00	0.00	
7100.00	37.867	251.885	4410.03	8302.03	3405.86	621.37	-3349.37	1043346.78	727641.80	0.00	0.00	0.00	0.00	
7200.00	37.867	251.885	4413.53	8305.53	3501.27	669.75	-3436.81	1043259.32	727690.19	0.00	0.00	0.00	0.00	
7300.00	37.867	251.885	4417.03	8309.03	3596.68	718.13	-3524.26	1043171.87	727738.57	0.00	0.00	0.00	0.00	
7324.46	37.867	251.885	4417.88	8309.88	3620.01	729.97	-3545.65	1043150.48	727750.40	0.00	0.00	0.00	0.00	End of Tangent

file://D:\WellArchitect\E-22_RD1.xml

12/5/2011



Planned Wellpath Report

E-22 RD1 Plan3

Page 4 of 4



REFERENCE WELLPATH IDENTIFICATION			
Operator	Venoco Inc	Slot	Slot 26
Area	California 3	Well	Well E-22
Field	Sockeye Field	Wellbore	E-22 RD1
Facility	Platform Gail	Sidetrack from	AWB E-22 at 3495.00 MD

HOLE & CASING SECTIONS - Ref Wellbore: E-22 RD1 Ref Wellpath: E-22 RD1 Plan3									
String Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
2 1/4 in Casing	-5.00	1411.00	1416.00	-5.00	1411.00	0.00	0.00	-0.25	0.50
13 3/75 in Casing	-5.00	2798.00	2803.00	-5.00	2754.44	0.00	0.00	-134.95	-209.81
9 625 in Casing	-5.00	3500.00	3505.00	-5.00	3365.94	0.00	0.00	-358.05	-488.30
8 5/8 in Open Hole	3500.00	7324.00	3824.00	3365.94	4417.86	-338.05	-488.36	729.74	-3545.25
5 in Liner	3400.00	7324.00	3924.00	3279.51	4417.86	-308.41	-447.73	729.74	-3545.25

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) FUD H3 T1 M2	5213.92	4344.00	-291.10	-1700.02	1044996.20	726729.29	34°07'27.213"N	119°24'20.353"W	point
2) FUD H3 T2 M2	7324.40	4417.88	729.97	-3545.65	1043150.43	727750.40	34°07'36.750"N	119°24'42.664"W	point

SURVEY PROGRAM - Ref Wellbore: E-22 RD1 Ref Wellpath: E-22 RD1 Plan3				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
347.00	1595.00	Unknown Tool (Standard)		AWB E-22
1595.00	3500.00	ISCWSA MWD, Rev. 2 (Standard)		AWB E-22
3500.00	4070.00	Generic gyro - continuous (Standard)		E-22 RD1
4070.00	7324.40	Outtrak (Standard)		E-22 RD1

RP 65 Compliance Questions:

	GENERAL QUESTIONS:	
1	Have you considered the following in your well planning and drilling plan determinations: evaluation for flow potential, site selection, shallow hazards, deeper hazard contingency planning, well control planning for fluid influxes, planning for lost circulation control, regulatory issues and communications plans, planning the well, pore pressure, fracture gradient, mud weight, casing plan, cementing plan, drilling plan, wellbore hydraulics, wellbore cleaning, barrier design, and contingency planning? [API 65-2 1.5]	Yes/No
2	Have you considered the general well practices while drilling, monitoring and maintaining wellbore stability, curing and preventing lost circulation, and planning and operational considerations? [API 65-2 1.6]	Yes/No
	FLOW POTENTIAL	
3	Will a pre-spud hazard assessment be conducted for the proposed well site?	NA
4	List all potential flow zones within the well section to be cemented.	NA
5	Has the information concerning the type, location, and likelihood of potential flow zones been communicated to key parties (cementing service provider, rig contractor, or 3 rd parties)?	NA
	CRITICAL DRILLING FLUID PARAMETERS	
6	Are fluid densities sufficient to maintain well control without inducing lost circulation?	Yes/No
	CRITICAL WELL DESIGN PARAMETERS	
7	Will you use a cementing simulation model in the design of this well?	NA
7a	If yes, how is the output of this simulation model used in your decision-making process?	Describe below
7b	If no, include discussion of why a model is not being used.	Describe below
7c	Either way, include the number and placement of centralizers being used.	Describe below
8	Will you ensure the planned top of cement will be 500 feet above the shallowest potential flow zone?	NA
9	Have you confirmed that the hole diameter is sufficient to provide adequate centralization?	Yes/No
10	If there are any isolated annuli, how have you mitigated thermal casing pressure build-up.	NA
11	Will you ensure the well will be stable (no volume gain or losses, drilling fluid density equal in vs. out) before commencing cementing operations?	NA
12	List all annular mechanical barriers in your design.	Describe below
13	Has the rat hole length been minimized or filled with drilling fluid with a density greater than the cement density?	NA
14a	If you have any liner top packers exposed to the production or intermediate annulus, what is the rating for differential pressure across this packer?	NA or Describe below
14b	If you have any liner top packers exposed to the production or intermediate annulus, have you confirmed that your negative test will not exceed this rating?	Yes/No/NA
15	What type of casing hanger lock-down mechanisms will be used?	Describe below
16	For all intermediate and production casing hangers set in subsea, HP wellhead housing, will you immediately set/energize the lock-down ring prior to performing any negative test?	NA
17	For all production casing hangers set in subsea, HP wellhead housing, will you set/energize the lock-down sleeve immediately after running the casing and prior to performing any negative test?	NA
	CRITICAL OPERATIONAL PARAMETERS	
18	Will you have 2 mechanical barriers in addition to cement in your final casing string (or liner if it is your final string)?	Yes/No
19	Do you plan to nipple down BOP in accordance with the WOC requirements in 30 CFR 250.422(a)?	Yes/No
20	Do you plan on running a cement bond log on the production and intermediate casing/liner prior to conducting the negative test on that string?	NA
	Are contingency plans in place for the following:	
21	Lost circulation?	Yes/No
22	Unplanned shut-down?	Yes/No
23	Unplanned rate change?	Yes/No

June 4, 2012

Memorandum

To: Drew Mayerson, Regional Supervisor, Office of Production and Development

From: Robert Dame, Geophysicist, Office of Production and Development

Subject: Geologic Hazards Analysis for E-22 ST01 Development Well APD (Proprietary)

NOTE: THIS GEOLOGIC SAFETY ANALYSIS IS INTENDED TO ALERT THE OPERATOR AND DISTRICT ENGINEERS TO POTENTIAL GEOLOGIC HAZARDS THAT MAY BE ENCOUNTERED DURING DRILLING OPERATIONS. THIS ANALYSIS DOES NOT RELIEVE THE OPERATOR OF THE RESPONSIBILITY TO CONDUCT THEIR OWN GEOHAZARD ANALYSIS PRIOR TO AND DURING DRILLING THIS WELL. A WORST CASE DISCHARGE ANALYSIS WAS NOT REQUESTED BY THE DISTRICT OFFICE AND IS NOT INCLUDED IN THIS REVIEW.

Well No: E-22 ST01

Operator: Venoco

Unit: Santa Clara

Lease OCS-P: 0205 (bottom)

Lease OCS-P: 0205 (top)

Field: Sockeye

Platform: Gail

KB Elevation: 108 ft

Water Depth: 739 ft

Locations (est.)	LAT	LON	MD (ft)	TVD (ft)
Surface (Slot No. 26; OCS-P 0205)	-119.401	64.125	+108	0
Kick-Off Point			3,500	3,366
Monterey M1			4,266	3,981
Monterey M2			5,176	4,312
Permit TD (OCS-P 0205)	-119.412	34.127	7,324	4,417

Summary of the Planned Operation

Venoco has submitted an Approval for Permit to Drill (APD) for the proposed well E-22 ST01, within the Santa Clara Unit, Offshore Ventura, California (Figure 1). The well is a new, single completion sidetrack well originating from Platform Gail targeting production from the M2 interval of the Monterey Formation within the Sockeye Field.

1. Geohazards Review Methodology:

This APD Geohazards review was carried out using 3D seismic reflection data, mud logs from previously drilled wells within the Sockeye field, shallow hazards mapping guidelines recommended in NTL 01-P01 and by the IODP, and results from the internal BSEE Sockeye Field Study to constrain well path lithology, shallow gas potential, and fault hazards and other safety-related concerns that may impact the success of the E-22 ST01 well drilling program.

2. Existing Wells:

No existing wells lie nearby the proposed E-22 ST01 kick-off point or well path. Baker Hughes has prepared a well anti-collision report showing the proposed E-22 ST01 well path does not intersect any existing wells.

3. Potential Oil and Gas Reservoirs

The target hydrocarbon zone for the E-22 ST01 as mapped by Venoco is the Miocene Monterey Formation. The well is to be drilled northwest through the crest of a regional northwest-southeast trending anticline and completed horizontally within the Monterey M2 Formation.

4. Regional Geologic Setting

The E-22 ST01 well lies within the eastern Santa Barbara Channel region of Western Transverse Ranges (WTR) Tectonic Province. The WTR is an east-west trending tectonic province characterized by strong north-south compression and widespread high-angle thrust faults due to transform motion on the San Andreas Fault to the east. Dominant structures near the Santa Clara Unit include the Pitas Point and Oak Ridge faults. The major hydrocarbon trap within the Sockeye field is a doubly-plunging anticline bounded by two high-angle thrust faults. Hydrocarbon production is constrained to rocks of Tertiary age, including the Miocene Monterey Topanga Formations.

5. Interpreted Well Stratigraphy

Stratigraphy for the E-22 ST01 well was constrained using logs from previous Sockeye wells and 3D time-migrated seismic reflection data. The E-22 ST01 well is interpreted to pass through 3 different stratigraphic zones during drilling operations: the Pliocene Pico Formation, the Miocene M1 Monterey Formation, and the Miocene M2 Monterey Formation. A tophole prognosis chart (Figure 2) shows anticipated well lithology to the total depth of 4,417' (TVD).

6. Possible Shallow Water Flow

There have been no previous instances of shallow water flow in any adjacent wells within the Sockeye Field.

7. Possible Lost Circulation Zones

No significant events of lost circulation were noted in the mud logs the primary E-22 development well. Although the proposed drilling program for well E-22 ST01 is similar to other sidetrack wells drilled in the Sockeye Field, lost circulation is common when drilling in the Monterey Formation and proper caution should be taken by Venoco during drilling operations.

8. Faulting

The Sockeye field is bounded by two high-angle thrust faults, and while other wells drilled within the Sockeye Field have cross minor bending moment faults associated with uplift of a regional anticline, the E-22 ST01 well path does not cross any interpreted fault splay. Thus, no fault hazards are interpreted for the E-22 ST01 well.

9. Possible Shallow Gas Zones

No zones of possible shallow gas were interpreted in the 3D seismic data within the vicinity of the E-22 ST01 well path. While gas has previously been encountered within the Pliocene Upper Pico Formation, the kick-off point lies well below the zone of gas-saturated sediments. In the event of encountering shallow gas during drilling operations, Venoco maintains a contingency plan to counteract the flow of gas by keeping sufficiently heavy drilling muds on hand on Platform Gail.

10. Possible Overpressured or Depleted Zones

Venoco does not anticipate encountering overpressured zones while drilling the E-22 ST01 well, as the kick-off point lies below the gas-charged Pico Formation. However, drilling mud weights are planned to average 9.0 ppg, which is above the highest expected pore pressure of 8.5 ppg. Venoco has well control contingency plan to account for any unexpected abnormal drilling pressures.

11. Logging/Coring

Venoco plans LWD gamma ray and Electric Logging in the entirety of the 8.5" downhole sections. Mud logging will commence with spudding of the well. Dry samples will be collected at 30' intervals within the 8.5" downhole section as well.

12. H₂S Gas

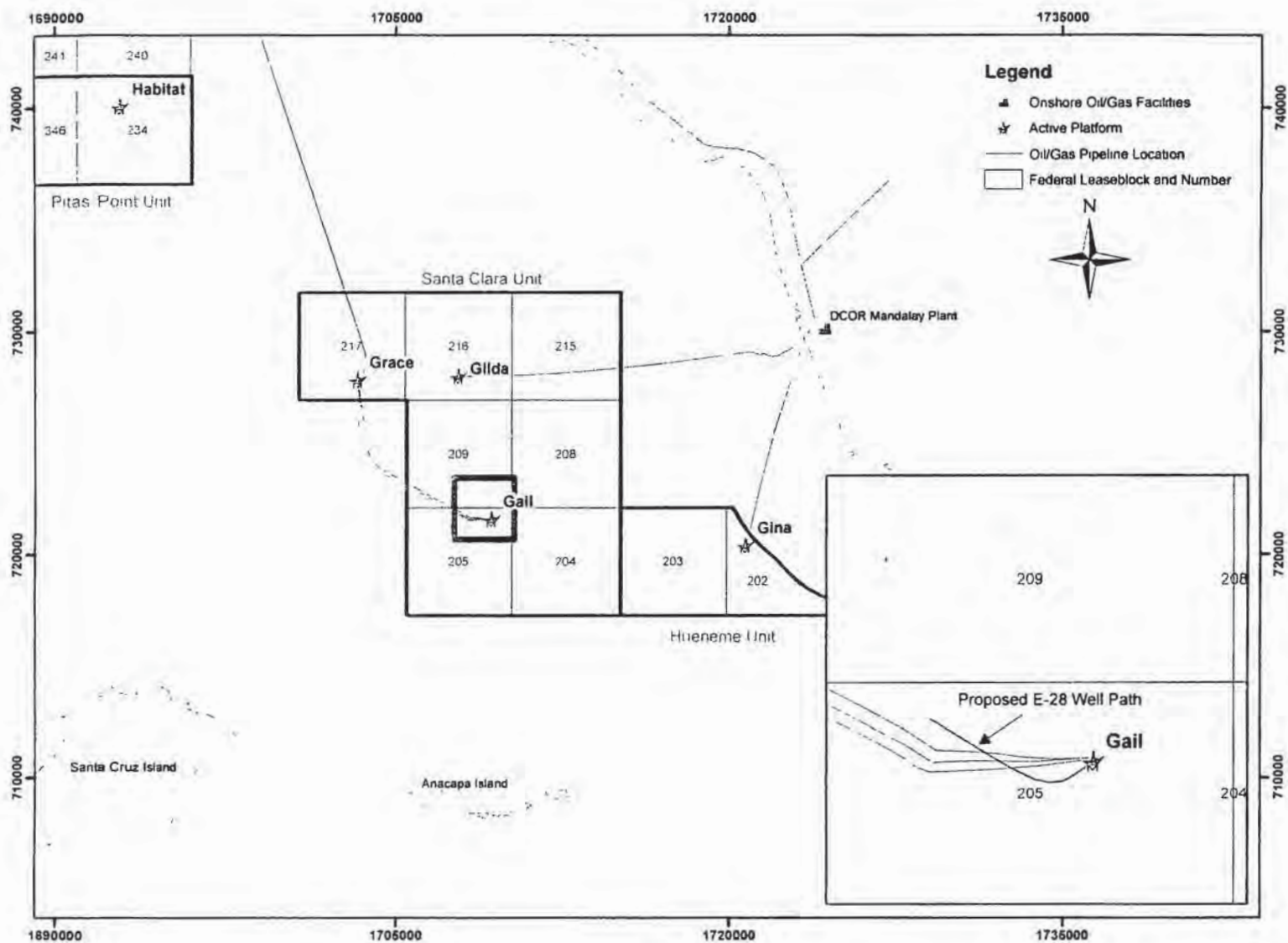
The Monterey Formation has the potential to contain H₂S gas. Based on the submitted APD, Venoco assumes any gas circulated to the surface will have hydrogen sulfide potential and will adhere to the BSEE approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan."

13. Worst Case Analysis

The District Supervisor did not request a worst case discharge analysis for this well. Should it be requested in the future, this would require modeling the maximum flow that could occur from an uncontrolled release of fluids derived from the uncased portion of the well within the Monterey Formation.

14. Conclusions and Recommendations

The E-22 ST01 development well appears favorable for development. No significant safety hazards are interpreted within the vicinity of the proposed well path.



E-22 ST01 WELL APD LOCATION

FIGURE 1



United States Department of the Interior

BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT

PACIFIC OCS REGION

770 Paseo Camarillo, 2nd Floor

Camarillo, CA 93010-6064

May 30, 2012

Memorandum

To: Regional Supervisor
Office of Field Operations

From: Kenneth R. Seeley
Regional Environmental Officer 

Subject: Categorical Exclusion Review (CER) – Veneco, Inc.'s Application for Permit to Drill, Well E-22, Platform Gail, Santa Clara Unit, Pacific OCS Region

I have reviewed Veneco's Application for a Permit to Drill (APD), dated April 30, 2012, for drilling a sidetracked well (E-22) from Platform Gail in the Santa Clara Unit. The California District has determined that approval of this APD for a sidetrack well will not require a Worst Case Discharge analysis. The proposed Well E-22 does not contain sufficient pressure to bring production to the surface and will be equipped with a down-hole electric submersible pump to artificially lift production fluids to the surface. Drilling this well is therefore expected to pose little or no risk of a blowout that could result in an oil spill.

Drilling of the proposed well is consistent with Veneco's Plan of Development (POD), dated January 29, 1986. The original E-22 well was initially drilled and successfully completed in 1996. BSEE and the Bureau of Ocean Energy Management (BOEM) are currently working with the U.S. Fish and Wildlife Service and the National Marine Fisheries Service on a programmatic level to update endangered species consultations per the Endangered Species Act for current offshore development and production activities.

Approval of Veneco's APD for Well E-22 meets the definition of the Categorical Exclusion for "Approval of an Application for Permit to Drill (APD) an offshore oil and gas exploration or development well, when said well and appropriate mitigation measures are described in an approved exploration plan, development plan, production plan, or Development Operations Coordination Document" [516 DM 15.4.C (12)]. We also reviewed the extraordinary circumstances found in the Departmental regulations at 43 CFR 46.215 and found that none exist (Table I). As a result, we have determined that Veneco's APD for Well E-22 is categorically excluded from further National Environmental Policy Act review.

Table 1. Review of Extraordinary Circumstances (43 CFR 46.215) for Veneco's Application for Permit to Drill (APD) for Well E-22, Platform Gail, Santa Clara Unit. The APD has been reviewed to determine whether any of the extraordinary circumstances criteria listed below exist for the categorical exclusion of minor revisions or minor variances [516 DM 15.4.C (11)].

EXTRAORDINARY CIRCUMSTANCE CRITERIA	DO THESE EXTRAORDINARY CIRCUMSTANCES EXIST FOR THIS ACTION?
2.1 Have significant impacts on public health or safety.	No: Drilling activities will be conducted offshore under applicable safety and environmental regulations. Drilling of this well is expected to have little or no risk of a blowout that could result in an oil spill.
2.2 Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas.	No: Platform Gail is not located near natural resources considered to be ecologically, historical or culturally important.
2.3 Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA Section 102(2)(E)].	No: Controversial environmental effects or unresolved conflicts on available resources are not expected for this area of the Federal OCS.
2.4 Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks.	No: The greatest environmental concern with the proposed activity is the risk of an oil spill. Risk of an oil spill is low for this proposal and any effects of an oil spill that may occur are well documented and have been evaluated in previous environmental reviews.
2.5 Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects.	No: Proposed activities are consistent with existing, approved development and production plans for the area.
2.6 Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects.	No: Past, present or reasonably foreseeable oil and gas development in the area have been evaluated and considered in previous environmental reviews.
2.7 Have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by either the bureau or office.	No: Proposed activities will not occur in the vicinity of properties listed, or eligible for listing, on the National Register of Historic Places.
2.8 Have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species.	No: The proposed activity will not have significant impacts on listed species or critical habitat.
2.9 Violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment.	No: Proposed activities will be conducted in compliance with all applicable laws imposed for the protection of the environment.
2.10 Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898).	No: The proposed activity will not disproportionately affect low income or minority populations.
2.11 Limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007).	No: Proposed activities will not limit access or ceremonial use of Indian sacred sites.
2.12 Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112).	No: Proposed activities will be conducted on the Federal OCS using existing local vessels (crewboats, workboats, etc.).

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco, Inc. 6267 Carpinteria, Ave, Suite 100 Carpinteria, CA 93013	
4 WELL NAME (CURRENT) E-3 Redrill	5 SIDETRACK NO (CURRENT) 00	6 BYPASS NO (CURRENT) 00		
7 PROPOSED START DATE July 10, 2006	8 PLAN CONTROL NO (NEW WELL ONLY)			
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112066600				
10 ☐ Revision	11 If revision, please list changes			
WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE		
12 LEASE NO P-0205		17 LEASE NO P-0205		
13 AREA NAME 6B		18 AREA NAME 6B		
14 BLOCK NO 4661		19 BLOCK NO 4661		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27)	16 LONGITUDE (☐ NAD 83 / ☒ NAD 27)	20 LATITUDE (☐ NAD 83 / ☒ NAD 27)	21 LONGITUDE (☐ NAD 83 / ☒ NAD 27)	
LIST OF SIGNIFICANT MARKERS ANTICIPATED				
22 NAME	23 TOP (MD)	24 TOP (TVD)	22 NAME	23 TOP (MD)
Monterey				
Upper Topanga				
25 LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250 414(b) through (g) or 30 CFR 250 1617 (c) and (d), as appropriate) Well prognosis with casing design, cementing details, BOP details, mud program, directional program and wellbore diagram.				
26 CONTACT NAME John Hood		27 CONTACT TELEPHONE NO 745-2164/745-2217 (fax)	28 CONTACT E-MAIL ADDRESS jhood@venocoinc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Roger Hamson		30 TITLE V. P. Southern Assets		
31 AUTHORIZING SIGNATURE <i>[Signature]</i>		32 DATE 6/28/06		
THIS SPACE FOR MMS USE ONLY				
APPROVED ☒ With Attached Conditions ☐ Without Conditions		BY <i>[Signature]</i>		TITLE for: District Manager
API WELL NO ASSIGNED TO THIS WELL 04-311-20666-01		DATE 7/27/06		

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain	☐ YES ☐ NO ☒ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2-5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name Venoco Inc.				2) Well Name (Proposed) E-3 ST 01 BP. 00			
3) Bottom Hole Lease P-0205				4) Surface Lease P-0205			
5) API Number 043112066600 (Current)				6) Type of Well ☐ Exploratory ☒ Development			
7) H ₂ S ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): 3750'			
9) Rig Name Kenai Rig #2				10) SubSea BOP ☐ Yes ☒ No			
11) Water Depth (ft) 739		12) RKB Height (ft) 107		13) Mineral Code			
14) Drive Pipe Size (in) .24		15) Drive Pipe Depth (ft) 1401		16) Anchors ☐ Yes ☒ No			

17) Well Design Information							
Interval Number: Existing Casing				Type:		Name:	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD
	18-5/8"	94.5	K-55	2420		780	2431
Window	13-3/8"	68	L-80	5020		2270	3710/3300
Window	9-5/8"	40#	L-80	5750		3090	3710/3300

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in)	Type	Annular Test (psi)			
Mud Weight (ppg)	Size (in)	BOP/Diverter Test (psi)			
Mud Type Code	Wellhead Rating (psi)	Mud Test Weight (ppg)			
Frac Gradient (ppg)	Annular Rating (psi)	Casing/Liner Test (psi)			
Liner Top Depth (ft)	BOP/Diverter Rating (psi)	Formation Test (ppg)			
Cement Volume (ft ³)					

Interval Number: Planned drilling				Type: 01		Name: E-3 Rednli	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD
1	7	26	L-80	7240		5410	11928/5518

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in) 8-1/2	Type Pipe/Variable/Shear Ram preventers	Annular Test (psi) 250/3000			
Mud Weight (ppg) 9.1	Size (in) 13-5/8	BOP/Diverter Test (psi) 250/3000			
Mud Type Code Water Based	Wellhead Rating (psi) 5000	Mud Test Weight (ppg) 9.1			
Frac Gradient (ppg) 10.5	Annular Rating (psi) 5000	Casing/Liner Test (psi) 3000			
Liner Top Depth (ft) 3500	BOP/Diverter Rating (psi) 5000	Formation Test (ppg) 10.5			
Cement Volume (ft ³) 1100					

Interval Number:				Type:		Name:	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in)	Type	Annular Test (psi)			
Mud Weight (ppg)	Size (in)	BOP/Diverter Test (psi)			
Mud Type Code	Wellhead Rating (psi)	Mud Test Weight (ppg)			
Frac Gradient (ppg)	Annular Rating (psi)	Casing/Liner Test (psi)			
Liner Top Depth (ft)	BOP/Diverter Rating (psi)	Formation Test (ppg)			
Cement Volume (ft ³)					

* NOTE* For additional casing/liner intervals, please submit an additional Form MMS-123S

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VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-3 REDRILL PROGRAM
API# 04-311-20666-01
LEASE OCS-P-0205
June 28, 2006

Objective: Redrill E-3 to a down-dip location in the Upper Topanga as a horizontal waterflood injector. The well will be a dual completion with the long string injecting water into the Upper Topanga. The short string will produce oil from the Monterey M4 zones.

Surface Location: OCS-P-205, Slot No. 33 (X= 1,046,687.29' & Y= 727,008.46')

Elevation: 739' WD, 107' Above MLLW, 846' Ocean Floor to Rig Floor

Proposed TD: OCS-P-205; 11,928' MD / 5,518' TVD / 5,411' SS

TD Location: 4801.26' S and 2075.18' E or (X = 1,048,762.47' and Y = 722,207.20')

Proposed and *Existing Casing: (USING NEW 107' DF)

*24", 201# X-52	1401'	1150 cf
*18 5/8", 94.5# K-55	2425'	2212 cf
*13 3/8", 68,72# L-80	3710' (window)	4069 cf DV @ 2786'
*9 5/8", 40,43,47 # L-80/SS-95	3710' (window)	1675 sx DV @ 5021'
*Top 4 jts 9 5/8" reported as 43.5# , remaining are 40# to below 3750')		
7", 26#, L-80 Hydril 513	11,928'	1100 cf top at 3,500'

Markers:	MD	TVD	SS	Est.Pressure
M2	5,440'	4,428'	-4,321'	7.0 PPG
M4	5,677'	4,605'	-4,498'	7.0 PPG
Upper Topanga	6,520'	5,361'	-5,254'	7.0 PPG
TD (U. Topanga)	11,928'	5,518'	-5,411'	7.0 PPG

Note: This procedure follows work to be performed under an approved APM for the abandonment of E-3.

DRILLING PROCEDURE

1. Move rig to Well E-3 (slot 33) or continue operations if rig is already on the well. If not already on, nipple up BOP equipped with 4 ram preventers (2 – double gates) and an annular. Test the BOP to 250/3000 psi with 5" drill pipe. The 13 5/8" BOPE will be configured for drilling operations, with 2 7/8" X 5" VBR pipe rams in the top of the upper double gate and blind/shear rams in the bottom of the upper double gate, the mud cross will be below the upper double gate, 5" rams will be located in the top of the lower double gate and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. All tests will be recorded on a chart for the MMS to review. The applicable BOPE will be tested every 14 days during the drilling phase of the operations. NOTE: If work is continuation of abandonment operation – Drilling Engineer will request MMS approval to convert the testing frequency from 7 days to 14 days based upon last BOPE test. The 2 3/8" rams will not be tested since they will not be required. ✓
2. Make up 9 5/8" 43.5#-40# bottom trip whipstock and starting mills. Tools to be designed to pass through 43.5# casing joints at surface. Lug will be designed to shear with 25M-30M#. Proposed window mill assembly: 8" starting mill, 8.215" lower watermelon mill, 9' flex joint, and 8.6" upper watermelon mill. Pick up an MWD. Run the equipment in the hole on the 5" drill pipe to 30' above the CIBP set at +/- 3750'. Orient the whipstock off of high side as per Sperry directional drilling supervisor using the measurements from the MWD. Set the whipstock on the CIBP and shear the tools off the whipstock face. Condition the water base mud as necessary for milling the window and to carry the metal cuttings out of the hole. Mill and dress the window through the 9-5/8" & 13-3/8" casing as required for a good exit point for sidetrack. Drill enough rat hole to pass all mills through the window and allow for the directional drilling BHA to be below the whipstock face when commence drilling. Mills must smoothly pass through the window. Perform a Formation Integrity Test to 10.5 ppg EMW. ✓ Reduce the viscosity of the mud to desired drilling parameters. Pull out hole and lay down the milling tools.
3. Pick up an 8-1/2" PDC bit and drilling assembly on a 6 3/4" steerable directional drilling assembly including LWD triple combo. Run in the hole and sidetrack the well. Directionally drill the 8-1/2" hole from +/- 3,750' to 11,928' MD / 5518' TVD. No overboard discharge of mud or cuttings will be allowed. ✓ Utilize MMS approved cuttings injector well E-4s for disposal of mud and cuttings. Record injection volumes, rates and pressures on a daily basis.
 - Review the attached directional program. Drill well per Halliburton Sperry-Sun (Slot 33) E-3 RD1 Plan 11 (15-Jun-06). All depths to be referenced to 107' DF elevation.
 - Mud loggers to start upon drilling out of the 9 5/8" casing window and continue through total depth.
 - The BHA should not be rotated on the face of the whipstock. Ensure there is adequate hole drilled below the whipstock to bury the BHA.

4. Circulate and condition the mud for casing. Wipe the hole to the 9 5/8" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.

5. Rig up casing crew and run the 7", 26#, L-80, Hydril 513 liner from +/- 3,500' to 11,928' as follows:

1. 7", 26#, L-80 insert float shoe
2. 2 Joints of 7", 26#, L-80 casing
3. 7", 26# L-80 insert float collar
4. 2 Joints of 7", 26# L-80 casing
5. 7", 26# L-80 Landing collar
6. +/- 8,200' of 7", 26#, L-80 Casing
7. 7" 26# X 9 5/8" 40#, Baker Flexlock Hydraulic Liner Hanger
8. RS Nipple with 6.188" Profile
9. ZXP Liner Top Packer, 7" x 9 5/8", HR Profile w/ 10' tie-back extension

Notes:

- The 7" flush joint liner will be centralized in the open hole with Weatherford stand-off bands.
- Contact Hydril and have them provide nubbins for the 7" casing.
- Drift DP and xo to ensure cementing dart will pass.
- Run in the hole slowly to avoid surging the formation.
- Contact Hydril and have them provide 7" Hyd 513 XO and have a circulating swage with a safety valve on the rig floor.

6. Run the liner in the hole, tag bottom and pick up 5' and circulate the well until the returns are clean. Reciprocate the liner while circulating. Drop the setting ball and set the liner hanger.

7. Mix and pump the cement job as per the attached program. Bump the plug with 500 psi above the final circulating pressure. Bleed the pressure back and check the floats. Pick up and set the liner packer at the top of the liner hanger. While waiting on cement, pull out of the hole and lay down and pick up drill pipe/tubing and drilling tools as required. Ensure BOP has been tested with all pipe sizes to be used to 250/3000 psi.

Notes:

- A detailed cementing program will be provided with slurry specifications.
- Cement volumes are based on 50% excess in the open hole and are calculated to bring cement to above the liner top.
- Do not circulate at the top of the liner prior to pulling out of the hole.
- Set the liner 3' off bottom.
- PIP tags will be installed on stop rings at specified depths in order to correlate future perforations from pending bond log run.

8. Pick up an 8 1/2" bit and run in the hole. Clean out to the top of the liner at +/- 3500'. Pressure test the liner top to 3000 psi. Pull out of the hole.

9. Pick up a clean out assembly with 6 1/8" bit and a few stands of 3-1/2" heavy weight. Run in the hole and clean out cement in the top of the liner (if any). Pull out of the hole and make up 7" scraper. Run in the hole while picking up 2-7/8" tubing for pending completion. Scrape the 7" liner to the landing collar or as indicated based upon completion intervals. Pressure test the 7" liner to 3000 psi. Change well over from water based mud to seawater. Add "Coastal Lube" lubricant to seawater to reduce friction for pending logging run. Pull out of the hole.
10. Rig up wireline and run a cement bond log (USIT/Spectral GR) across 7" liner. The high angle will require tubing/drill pipe conveyed equipment. Rig down wireline.
11. A detailed completion procedure will be provided after the LWD and cased hole logs have been evaluated.

GENERAL COMPLETION PROCEDURE

1. Perforate the Upper Topanga interval with TCP guns. Spot 10% acetic acid in lateral section.
2. Perforate and cup wash acidize the Monterey perforations with 15% HCl acid.
3. Run the dual completion equipment with the long string injecting into the Upper Topanga. The short string will produce the Monterey M4 zones (no sidestring).
4. Rig down and move the rig to the next well.

EVALUATION PROGRAM

Mudlogging Program for Horizontal Hole:

- Begin Mudlogging upon exiting shoe/casing above Monterey formation, including GR-Res curves on mudlog.
- Collect dry samples at 30' intervals throughout the well.

Testing Program

- None expected.

Open Hole Logging program

- LWD starting right out of casing with Sperry Gr-Res-Density-Neutron for the horizontal well. Real-time data images via Insite.

Cased Hole Logging program

- Substitute Spectral GR for standard GR on CBL/USIT log run on the 7".

Logging geologist: Dale Kunitomi

805-987-3026

Primary Geologist: Monica Carlsen

Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher

Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8
2	Setting Depth (feet - TVD)	3300
3	Expected Leak Off Test EMW at shoe (ppg)	10.5
4	Depth of next Casing (feet - TVD)	5518
5	Maximum Expected Formation Pressure (psi)	2009
6	Expected Mud Weight (ppg)	9.1
7	Formation Equivalent Mud Weight (ppg)	7.0
8	Expected Hydrostatic Pressure at TD (psi)	2611
9	Amount of Overbalance at TD (psi)	603
10	Fracture Gradient at shoe (psi/ft)	0.55
11	Fracture Pressure at shoe (psi)	1802
12	Hydrostatic Pressure at shoe (psi)	1562
13	Margin between Mud Weight and LOT (psi)	240

Maximum Anticipated Surface Pressures

1	Casing Size (in)	9-5/8
2	Setting Depth (feet - TVD)	3300
3	Expected Leak Off Test EMW at shoe (ppg)	10.5
4	Expected Mud Weight (ppg)	9.1
5	Depth of next Casing (feet - TVD)	5518
6	Maximum Expected Formation Pressure (psi)	2009
7	Expected gas gradient (psi/ft)	0.05
8	Formation Equivalent Mud Weight (ppg)	7.0
Max Pressures using 100% Gas to Surface		
9	Max Surface Pressure neglecting shoe (psi)	1733
10	Fracture Gradient at shoe (psi/ft)	0.55
11	Fracture Pressure at shoe (psi)	1802
12	Surface pressure to break down shoe (psi)	1637
13	Maximum Anticipated Surface Pressure (psi)	1637
Max Pressures using 70% Gas & 30% Mud		
14	Maximum Anticipated Surface Pressure (psi)	1032
15	Top of fluid (feet-TVD)	3863
16	Pressure at shoe (psi)	1197
17	Margin between pressure and breakdown(psi)	605

CASING PROGRAM

Hole Section	12.25*	8.5
Mud Weight	9.1	9.1
Buoyancy Factor	0.861	0.861
MASP (psi)	2398	1733
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9-5/8*	7 -
Setting Depth, MD (ft)	3710	11928
Setting Depth, TVD (ft)	3300	5518
Top of Casing, MD (ft)	0	3500
Weight (lb/ft)	40	26
Grade	L-80	L-80
Threads	STL	513
ID (in)	8.755	6.199
Drift diameter (in)	8.599	6.151
Collapse (psi)	3090	5410
Burst (psi)	5750	7240
Joint Strength (kips)	500	448
Body Strength (kips)	916	604
Collapse Safety Factor	1.98	2.07
Burst Safety Factor	2.40	4.02
Tensile Safety Factor	2.20	1.55

* Existing Casing

Notes:

Burst is calculated on the greater of MASP or gas lift pressure.

Collapse is based on mud outside of an evacuated casing string.

Tension is based on buoyed weight of casing string + 100 kips over pull.

CEMENTING PROGRAM

7" Production Liner

Objective: Cement 7" liner set across entire open hole interval. Liner will extend 200' back into the 9 5/8" casing. A liner top packer will be used to ensure pressure integrity.

General Information:

9 5/8", 40#, L-80 Casing Window 3710' (8.755" ID)
7", 26#, L-80 Liner (6.276" ID) Shoe at 11,928' & TOL at 3,500'
Lap Volume Factor is 0.1508 CF/FT
Open Hole Volume Factor is 0.1268 CF/FT ✓
Shoe Joint Volume Factor is 0.2148 CF/FT
Open Hole Excess 50% over theoretical
Static Temperature is 170° F at 5518' TVD

Slurry Volume:

1600 CF of cement total required to bring cement to the top of the 7" liner including 50% excess in the open hole.

Cement Slurry Details:

Pre-flush: 20 bbls of Ultra Flush

Tail Slurry: 249 CF (217 sx) of Class "G" + 6 gals/100 sx R21L + 6 gals/100 sx R-21L + 5 gals/100 sx CD-31-L + 2 gals/100 sx ASA-301L

Yield: 1.15 CF/sx
Water: 4.80 gal/sx
Weight: 15.8 ppg
Mix Water: Fresh Water
Height: 1221 Linear Feet

Note: Lab tests will be performed prior to cementing to verify slurry properties. Actual materials that will be used on location will be used to perform tests.

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Whipstock	Drilplex	8.6-8.8	NC	+/-10.5	40-50	+9-10 K
3750'- 11928'	SP 101	8.6-9.1	< 6.0	+/-8.5	15-20	+19-20 K

Whipstock: The fluid system used for the milling operations will be Drilplex. The products used for this interval are approved for offshore Region 9. The mud system and cuttings can be dumped overboard if all the environmental tests are negative. The low shear rate viscosity will be raised as necessary to transport metal cuttings out of the well with the use of Drilplex and Gelplex. Add soda ash to control total hardness and caustic soda to control the pH.

3750'- 11928': Convert over to SP 101 by adding 1.5 to 2.5 ppb of Sp 101 to the system. Continue with the additions of SP 101 for fluid loss reductions (<6.0 cc). Add dry NaCl to maintain the chloride content between 19,000 and 25,000. Stop additions of Durogel and build up the surface system with MI Gel pre-hydrated in fresh water at a concentration of 12 to 15 ppb. Maintain the mud weight as low as possible with the solids control equipment. Condition the mud with water to keep the MBT below 30 ppb and treat out calcium with Soda Ash to below 200 ppm. Reduced the mud weight and add calcium carbonate if mud losses are encountered while drilling this section.

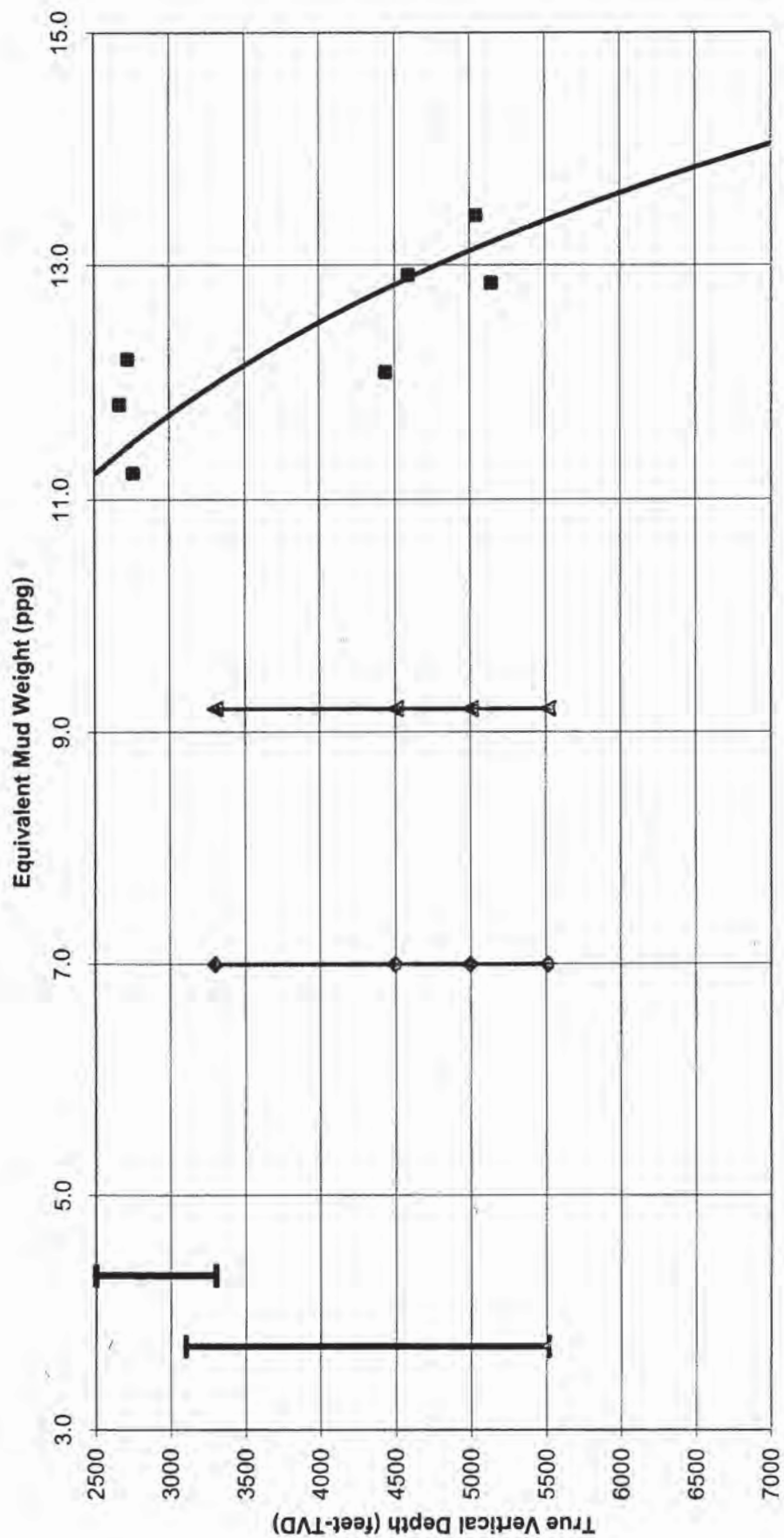
Notes:

1. Operate solids control equipment to maintain drill solids as low as possible.
2. Maintain supply of $ZnCO_3$ onboard to treat out H_2S .
3. A minimum of 750 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised 0.5 ppg using 1400 bbl total circulating volume (840 open hole volume & 560 bbl active system).
4. Add Calcium Carbonate to the mud system after drilling through the Monterey interval. This will help prevent lost circulation in the Upper Topanga.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

Platform Gail Well E-3 RD Horizontal Lateral Pore Pressure, Mud Weight & Fracture Pressure



LOT Data
 Planned Mud Weight
 Highest Expected PP
 9-5/8" Casing
 7" Liner
 Expon. (LOT Data)

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

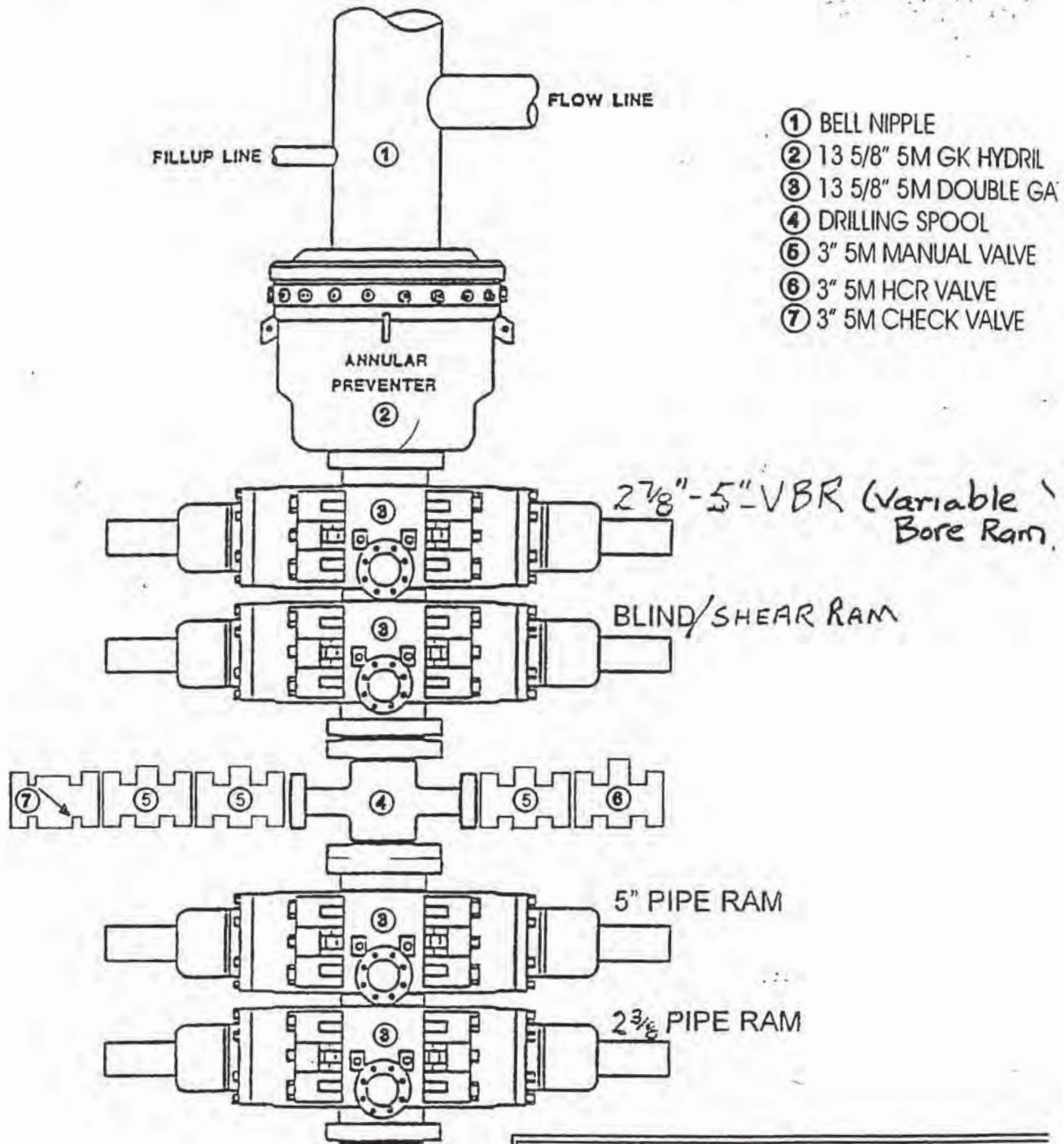
Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas.

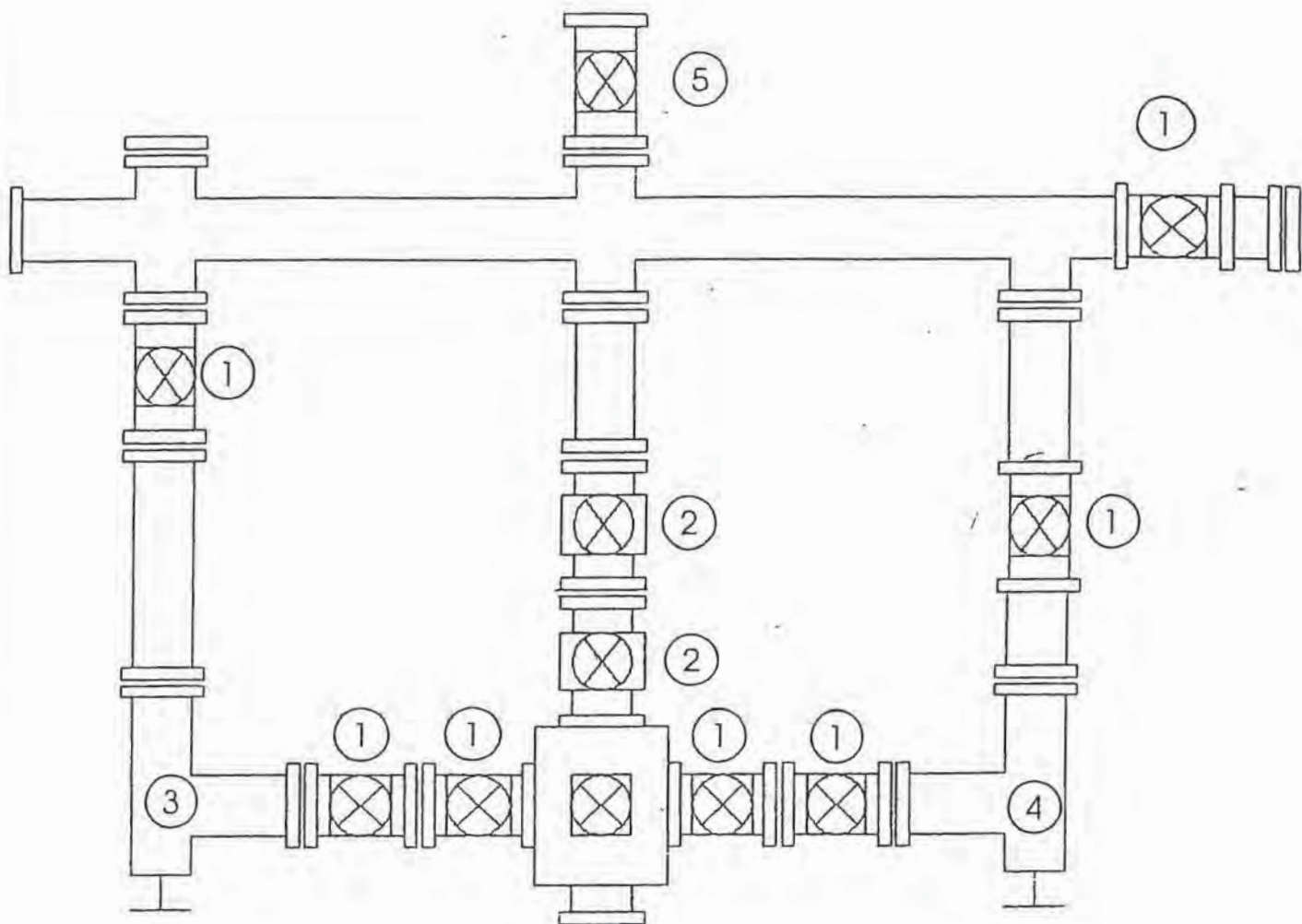
Assume any gas circulated to surface to have hydrogen sulfide potential.

Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

BOP STACK COMPLETION CONFIGURATION



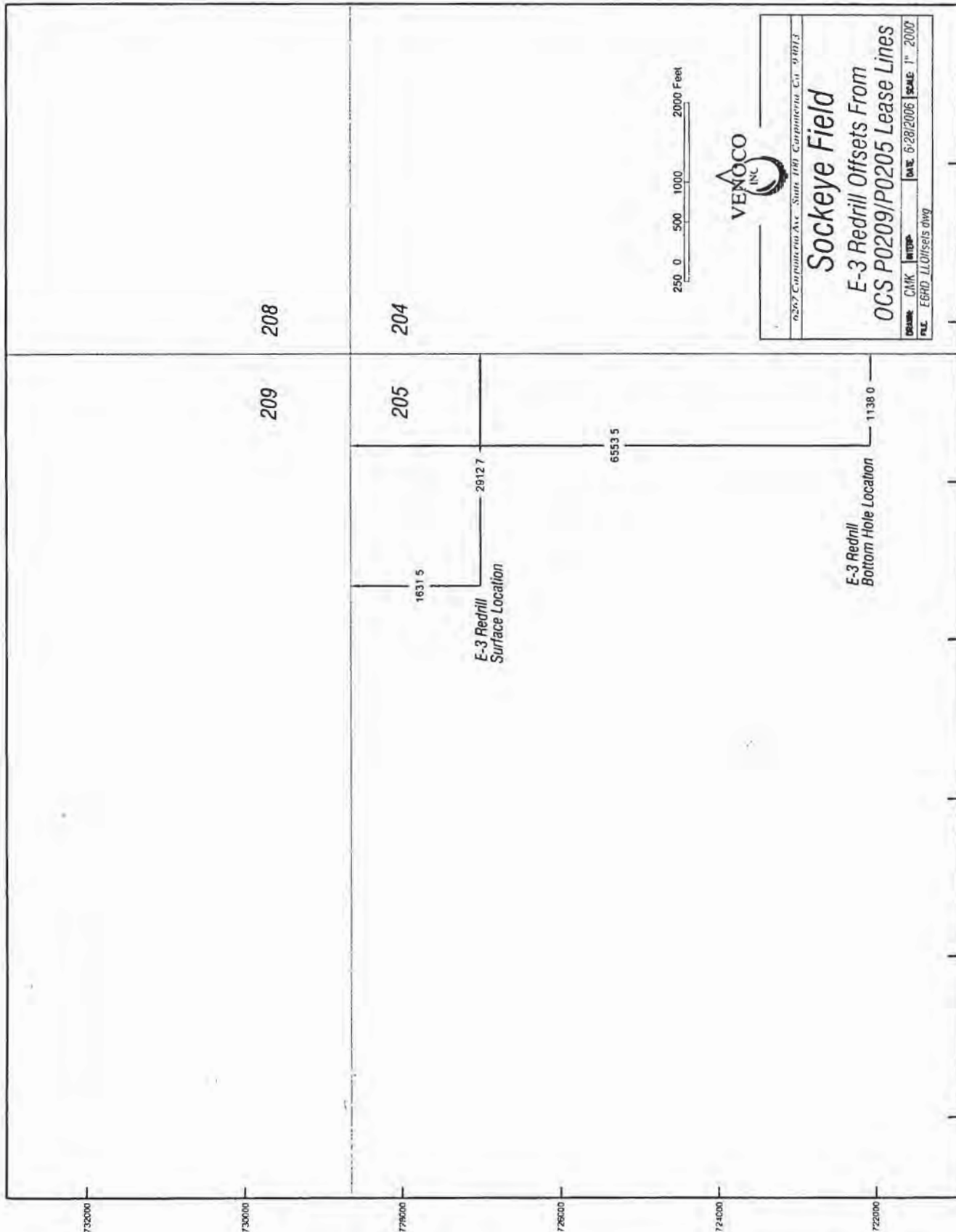
**BLOWOUT
PREVENTION SYSTEM
PLATFORM GAIL**



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD PLATFORM GAIL



P-209

P-205



VENOCO, INC.

6500 E. Carpinteria Ave. Suite 100 Carpinteria, CA 94014

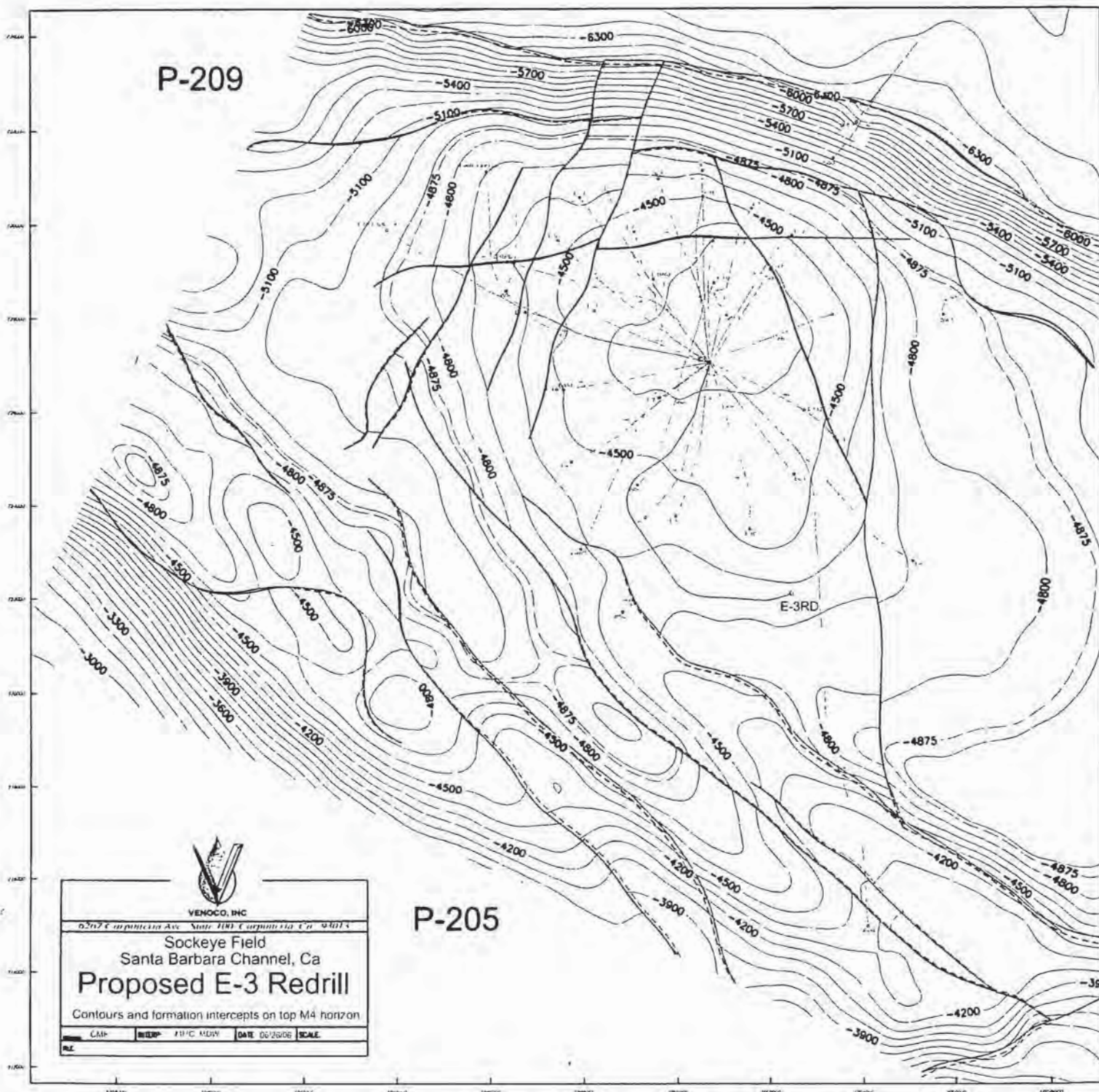
Sockeye Field
Santa Barbara Channel, Ca

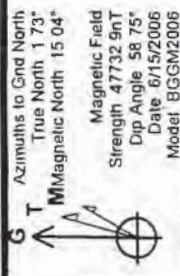
Proposed E-3 Redrill

Contours and formation intercepts on top M4 horizon

CMP: _____ REGR: 10' VC, 10' MIN DATE: 06/20/06 SCALE: _____

PL: _____

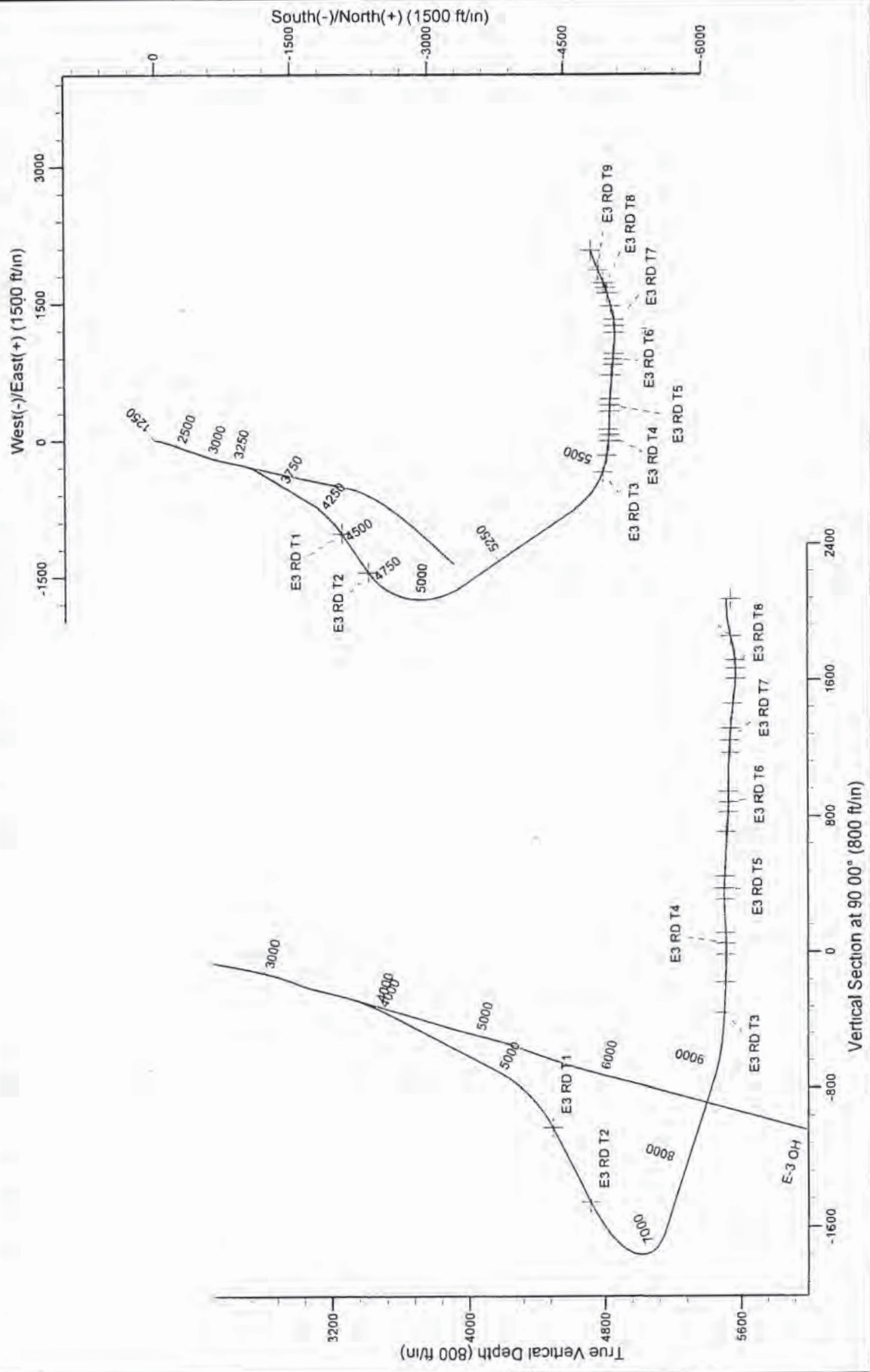




Venoco Inc
 Project Platform Gail
 Site Platform Gail
 Well (Slot 33) E-3
 RD1
 Plan #11 (15-Jun-06)

HALLIBURTON
 Sperry Drilling Services

(Slot 33) E-3
 NAD 1927 (NADCON CONUS)
 California VI 406
 Reference Grid
 Mean Sea Level
 Northing 727008 46
 Easting 1046687 29



Venoco Inc.

Platform Gail
Platform Gail
(Slot 33) E-3
RD1

Plan: Plan #11 (15-Jun-06)

Job No Plan #11 (15-Jun-06)

Sperry Drilling Services Combo Report

16 June, 2006

Well Coordinates 727 008 46 N, 1 046 687 29 E (34° 07' 30 48" N, 119° 24' 00 35" W)
Water Depth 739 00 ft

Local Coordinate Origin
Viewing Datum
TVDs to System
North Reference
Unit System
Centered on Well (Slot 33) E-3
Well @ 107 00ft (Original Well Elev)
Y
Grid
API - US Survey Feet

Version 2003 14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for (Slot 33) E-3 - RD1 - Plan #11 (15-Jun-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	107.00	-107.00	0.00 N	0.00 E	727,008.46	1,046,687.29	0.00	0.00	
100.00	0.00	0.00	7.00	-7.00	0.00 N	0.00 E	727,008.46	1,046,687.29	0.00	0.00	
200.00	0.00	0.00	-93.00	93.00	0.00 N	0.00 E	727,008.46	1,046,687.29	0.00	0.00	
300.00	0.00	0.00	-193.00	193.00	0.00 N	0.00 E	727,008.46	1,046,687.29	0.00	0.00	
400.00	0.00	0.00	-293.00	293.00	0.00 N	0.00 E	727,008.46	1,046,687.29	0.00	0.00	
500.00	0.00	0.00	-393.00	393.00	0.00 N	0.00 E	727,008.46	1,046,687.29	0.00	0.00	
600.00	0.00	0.00	-493.00	493.00	0.00 N	0.00 E	727,008.46	1,046,687.29	0.00	0.00	
700.00	0.00	0.00	-593.00	593.00	0.00 N	0.00 E	727,008.46	1,046,687.29	0.00	0.00	
800.00	0.00	0.00	-693.00	693.00	0.00 N	0.00 E	727,008.46	1,046,687.29	0.00	0.00	
900.00	0.04	258.61	-793.00	793.00	0.01 S	0.03 W	727,008.45	1,046,687.26	0.04	-0.03	
1,000.00	0.09	17.93	-893.00	893.00	0.06 N	0.04 W	727,008.52	1,046,687.25	0.12	-0.04	
1,100.00	0.19	14.32	-993.00	993.00	0.31 N	0.03 E	727,008.77	1,046,687.32	0.10	0.03	
1,200.00	0.03	336.78	-1,093.00	1,093.00	0.49 N	0.06 E	727,008.95	1,046,687.35	0.16	0.06	
1,300.00	0.08	275.37	-1,193.00	1,193.00	0.51 N	0.02 W	727,008.97	1,046,687.27	0.07	-0.02	
1,400.00	0.13	328.11	-1,293.00	1,293.00	0.62 N	0.16 W	727,009.08	1,046,687.13	0.10	-0.16	
1,500.00	0.05	261.22	-1,393.00	1,393.00	0.78 N	0.25 W	727,009.24	1,046,687.04	0.12	-0.25	
1,600.00	1.44	176.07	-1,492.99	1,492.99	0.37 S	0.26 W	727,008.09	1,046,687.03	1.44	-0.26	
1,700.00	3.11	174.22	-1,592.91	1,592.91	4.28 S	0.08 E	727,004.18	1,046,687.37	1.67	0.08	
1,800.00	5.22	177.59	-1,692.64	1,692.64	11.47 S	0.71 E	726,996.99	1,046,688.00	2.12	0.71	
1,900.00	7.37	182.68	-1,792.01	1,792.01	22.61 S	0.86 E	726,985.85	1,046,688.15	2.22	0.86	
2,000.00	9.83	188.54	-1,890.91	1,890.91	37.31 S	0.63 W	726,971.15	1,046,686.66	2.62	-0.63	
2,100.00	12.86	192.14	-1,988.94	1,988.94	56.67 S	4.18 W	726,951.79	1,046,683.11	3.10	-4.18	
2,200.00	15.73	196.10	-2,085.82	2,085.82	80.62 S	10.25 W	726,927.84	1,046,677.04	3.04	-10.25	
2,300.00	19.21	196.46	-2,181.18	2,181.18	109.38 S	18.99 W	726,899.08	1,046,668.30	3.47	-18.99	
2,400.00	21.13	197.04	-2,274.90	2,274.90	142.74 S	29.14 W	726,885.72	1,046,658.15	1.93	-29.14	
2,500.00	22.08	199.16	-2,367.86	2,367.86	177.80 S	40.49 W	726,830.66	1,046,646.80	1.23	-40.49	
2,600.00	22.99	201.21	-2,460.22	2,460.22	213.71 S	53.92 W	726,794.75	1,046,633.37	1.21	-53.92	
2,700.00	25.09	200.85	-2,551.74	2,551.74	251.27 S	68.47 W	726,757.19	1,046,618.82	2.10	-68.47	
2,800.00	30.86	200.06	-2,639.93	2,639.93	295.39 S	84.85 W	726,713.07	1,046,602.44	5.78	-84.85	
2,900.00	33.34	199.00	-2,724.47	2,724.47	345.78 S	102.51 W	726,662.68	1,046,584.78	2.54	-102.51	
3,000.00	37.93	197.19	-2,805.96	2,805.96	400.85 S	120.40 W	726,607.61	1,046,566.89	4.71	-120.40	
3,100.00	42.41	200.55	-2,882.17	2,882.17	461.96 S	141.61 W	726,546.50	1,046,545.68	4.97	-141.61	
3,200.00	46.59	200.53	-2,953.53	2,953.53	527.58 S	166.03 W	726,480.88	1,046,521.26	4.18	-166.03	
3,300.00	49.86	198.77	-3,019.95	3,019.95	597.88 S	191.40 W	726,410.58	1,046,495.89	3.53	-191.40	
3,400.00	49.59	192.76	-3,084.58	3,084.58	671.63 S	210.82 W	726,336.93	1,046,476.47	4.60	-210.82	
3,500.00	50.59	192.82	-3,148.74	3,148.74	746.43 S	227.83 W	726,262.03	1,046,459.46	1.00	-227.83	
3,600.00	51.36	192.37	-3,211.70	3,211.70	822.26 S	244.74 W	726,186.20	1,046,442.55	0.85	-244.74	
3,700.00	52.04	192.33	-3,273.67	3,273.67	898.92 S	261.53 W	726,109.54	1,046,425.76	0.88	-261.53	
3,750.00	52.32	192.21	-3,304.33	3,304.33	937.52 S	269.93 W	726,070.94	1,046,417.36	0.60	-269.93	Start DLS 5.00 TFO 121.01
3,800.00	51.07	194.96	-3,335.32	3,335.32	975.65 S	279.13 W	726,032.81	1,046,408.16	5.00	-279.13	

HALLIBURTON

Plan Report for (Slot 33) E-3 - RD1 - Plan #11 (15-Jun-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
3,900.00	48.76	200.76	-3,399.74	3,399.74	1,048.43 S	302.52 W	725,960.03	1,046,384.77	5.00	-302.52	
4,000.00	46.77	206.96	-3,467.00	3,467.00	1,116.10 S	332.38 W	725,892.36	1,046,354.91	5.00	-332.38	
4,066.37	45.64	211.28	-3,512.94	3,512.94	1,157.93 S	355.67 W	725,850.53	1,046,331.62	5.00	-355.67	Start 946 99 hold at 4066 37 MD
4,100.00	45.64	211.28	-3,536.46	3,536.46	1,178.48 S	368.15 W	725,829.98	1,046,319.14	0.00	-368.15	
4,200.00	45.64	211.28	-3,606.38	3,606.38	1,239.58 S	405.27 W	725,768.88	1,046,282.02	0.00	-405.27	
4,300.00	45.64	211.28	-3,676.30	3,676.30	1,300.67 S	442.39 W	725,707.79	1,046,244.90	0.00	-442.39	
4,400.00	45.64	211.28	-3,746.23	3,746.23	1,361.77 S	479.51 W	725,646.69	1,046,207.78	0.00	-479.51	
4,500.00	45.64	211.28	-3,816.15	3,816.15	1,422.87 S	516.63 W	725,585.59	1,046,170.66	0.00	-516.63	
4,600.00	45.64	211.28	-3,886.07	3,886.07	1,483.97 S	553.75 W	725,524.49	1,046,133.54	0.00	-553.75	
4,700.00	45.64	211.28	-3,955.99	3,955.99	1,545.06 S	590.87 W	725,463.40	1,046,096.42	0.00	-590.87	
4,800.00	45.64	211.28	-4,025.92	4,025.92	1,606.16 S	628.00 W	725,402.30	1,046,059.29	0.00	-628.00	
4,900.00	45.64	211.28	-4,095.84	4,095.84	1,667.26 S	665.12 W	725,341.20	1,046,022.17	0.00	-665.12	
5,000.00	45.64	211.28	-4,165.76	4,165.76	1,728.36 S	702.24 W	725,280.10	1,045,985.05	0.00	-702.24	
5,013.35	45.64	211.28	-4,175.10	4,175.10	1,736.51 S	707.19 W	725,271.95	1,045,980.10	0.00	-707.19	Start DLS 5.00 TFO 54 18
5,100.00	48.27	215.99	-4,234.26	4,234.26	1,789.17 S	742.29 W	725,219.29	1,045,945.00	5.00	-742.29	
5,200.00	51.53	220.95	-4,298.69	4,298.69	1,848.97 S	789.91 W	725,159.49	1,045,897.38	5.00	-789.91	
5,300.00	54.98	225.47	-4,358.52	4,358.52	1,907.28 S	844.79 W	725,101.18	1,045,842.50	5.00	-844.79	
5,400.00	58.58	229.62	-4,413.32	4,413.32	1,963.68 S	906.52 W	725,044.78	1,045,780.77	5.00	-906.52	
5,500.00	62.31	233.45	-4,462.65	4,462.65	2,017.73 S	974.63 W	724,990.73	1,045,712.66	5.00	-974.63	
5,570.63	65.00	236.00	-4,494.00	4,494.00	2,054.26 S	1,026.30 W	724,954.20	1,045,660.99	5.00	-1,026.30	Start DLS 5.00 TFO -0.47 - E3 RD T1
5,600.00	66.47	235.99	-4,506.07	4,506.07	2,069.23 S	1,048.49 W	724,939.23	1,045,638.80	5.00	-1,048.49	
5,606.54	66.80	235.98	-4,508.66	4,508.66	2,072.59 S	1,053.47 W	724,935.87	1,045,633.82	5.00	-1,053.47	Start 528 53 hold at 5606 54 MD
5,700.00	66.80	235.98	-4,545.49	4,545.49	2,120.64 S	1,124.67 W	724,887.82	1,045,562.62	0.00	-1,124.67	
5,800.00	66.80	235.98	-4,584.89	4,584.89	2,172.06 S	1,200.85 W	724,836.40	1,045,486.44	0.00	-1,200.85	
5,900.00	66.80	235.98	-4,624.29	4,624.29	2,223.48 S	1,277.04 W	724,784.98	1,045,410.25	0.00	-1,277.04	
6,000.00	66.80	235.98	-4,663.69	4,663.69	2,274.90 S	1,353.22 W	724,733.56	1,045,334.07	0.00	-1,353.22	
6,100.00	66.80	235.98	-4,703.09	4,703.09	2,326.31 S	1,429.40 W	724,682.15	1,045,257.89	0.00	-1,429.40	
6,135.08	66.80	235.98	-4,716.91	4,716.91	2,344.35 S	1,456.12 W	724,664.11	1,045,231.17	0.00	-1,456.12	
6,135.30	66.80	236.00	-4,717.00	4,717.00	2,344.46 S	1,456.29 W	724,664.00	1,045,231.00	7.00	-1,456.29	Start DLS 7.00 TFO -99.73 - E3 RD T2
6,200.00	66.11	231.12	-4,742.86	4,742.86	2,379.66 S	1,503.99 W	724,628.78	1,045,183.30	7.00	-1,503.99	
6,300.00	65.35	223.48	-4,784.01	4,784.01	2,441.42 S	1,570.94 W	724,567.04	1,045,116.35	7.00	-1,570.94	
6,400.00	64.98	215.78	-4,826.06	4,826.06	2,511.24 S	1,628.77 W	724,497.22	1,045,058.52	7.00	-1,628.77	
6,500.00	65.01	208.05	-4,868.38	4,868.38	2,588.09 S	1,676.63 W	724,420.37	1,045,010.66	7.00	-1,676.63	
6,600.00	65.44	200.36	-4,910.33	4,910.33	2,670.83 S	1,713.81 W	724,337.63	1,044,973.48	7.00	-1,713.81	
6,700.00	66.25	192.74	-4,951.30	4,951.30	2,758.21 S	1,739.76 W	724,250.25	1,044,947.53	7.00	-1,739.76	
6,800.00	67.43	185.23	-4,990.67	4,990.67	2,848.94 S	1,754.08 W	724,159.52	1,044,933.21	7.00	-1,754.08	
6,900.00	68.96	177.87	-5,027.86	5,027.86	2,941.67 S	1,756.56 W	724,066.79	1,044,930.73	7.00	-1,756.56	
7,000.00	70.79	170.68	-5,062.30	5,062.30	3,035.02 S	1,747.16 W	723,973.44	1,044,940.13	7.00	-1,747.16	
7,100.00	72.90	163.65	-5,093.50	5,093.50	3,127.58 S	1,726.03 W	723,880.88	1,044,961.25	7.00	-1,726.03	

Plan Report for (Slot 33) E-3 - RD1 - Plan #11 (15-Jun-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
7,200.00	75.24	156.79	-5,120.98	5,120.98	3,217.99 S	1,693.49 W	723,790.47	1,044,993.80	7.00	-1,693.49	
7,300.00	77.78	150.08	-5,144.32	5,144.32	3,304.88 S	1,650.00 W	723,703.58	1,045,037.29	7.00	-1,650.00	
7,366.18	79.55	145.71	-5,157.34	5,157.34	3,359.84 S	1,615.52 W	723,648.62	1,045,071.77	7.00	-1,615.52	Start 1551 92 hold at 7366 18 MD
7,400.00	79.55	145.71	-5,163.47	5,163.47	3,387.31 S	1,586.79 W	723,621.15	1,045,090.50	0.00	-1,586.79	
7,500.00	79.55	145.71	-5,181.60	5,181.60	3,468.57 S	1,541.39 W	723,539.89	1,045,145.90	0.00	-1,541.39	
7,600.00	79.55	145.71	-5,199.73	5,199.73	3,549.82 S	1,485.99 W	723,458.64	1,045,201.30	0.00	-1,485.99	
7,700.00	79.55	145.71	-5,217.87	5,217.87	3,631.08 S	1,430.59 W	723,377.38	1,045,256.70	0.00	-1,430.59	
7,800.00	79.55	145.71	-5,236.00	5,236.00	3,712.33 S	1,375.20 W	723,296.13	1,045,312.09	0.00	-1,375.20	
7,900.00	79.55	145.71	-5,254.13	5,254.13	3,793.59 S	1,319.80 W	723,214.87	1,045,367.49	0.00	-1,319.80	
8,000.00	79.55	145.71	-5,272.26	5,272.26	3,874.84 S	1,264.40 W	723,133.62	1,045,422.89	0.00	-1,264.40	
8,100.00	79.55	145.71	-5,290.40	5,290.40	3,956.10 S	1,209.00 W	723,052.36	1,045,478.29	0.00	-1,209.00	
8,200.00	79.55	145.71	-5,308.53	5,308.53	4,037.35 S	1,153.61 W	722,971.11	1,045,533.68	0.00	-1,153.61	
8,300.00	79.55	145.71	-5,326.66	5,326.66	4,118.60 S	1,098.21 W	722,889.86	1,045,589.08	0.00	-1,098.21	
8,400.00	79.55	145.71	-5,344.79	5,344.79	4,199.86 S	1,042.81 W	722,808.60	1,045,644.48	0.00	-1,042.81	
8,500.00	79.55	145.71	-5,362.93	5,362.93	4,281.11 S	987.41 W	722,727.35	1,045,699.88	0.00	-987.41	
8,600.00	79.55	145.71	-5,381.06	5,381.06	4,362.37 S	932.02 W	722,646.09	1,045,755.27	0.00	-932.02	
8,700.00	79.55	145.71	-5,399.19	5,399.19	4,443.62 S	876.62 W	722,564.84	1,045,810.67	0.00	-876.62	
8,800.00	79.55	145.71	-5,417.33	5,417.33	4,524.88 S	821.22 W	722,483.58	1,045,866.07	0.00	-821.22	
8,900.00	79.55	145.71	-5,435.46	5,435.46	4,606.13 S	765.82 W	722,402.33	1,045,921.47	0.00	-765.82	
8,918.11	79.55	145.71	-5,438.74	5,438.74	4,620.84 S	755.79 W	722,387.62	1,045,931.50	0.00	-755.79	Start DLS 7 00 TFO -80 20
9,000.00	80.58	139.99	-5,452.88	5,452.88	4,685.11 S	707.10 W	722,323.35	1,045,980.19	7.00	-707.10	
9,100.00	81.95	133.04	-5,468.08	5,468.08	4,756.77 S	639.12 W	722,251.69	1,046,048.17	7.00	-639.12	
9,200.00	83.45	126.15	-5,480.81	5,480.81	4,819.94 S	582.73 W	722,188.52	1,046,124.56	7.00	-582.73	
9,300.00	85.03	119.30	-5,490.86	5,490.86	4,873.68 S	479.07 W	722,134.78	1,046,208.22	7.00	-479.07	
9,400.00	86.88	112.48	-5,498.09	5,498.09	4,917.19 S	389.40 W	722,091.27	1,046,287.89	7.00	-389.40	
9,436.40	87.30	110.00	-5,500.00	5,500.00	4,930.36 S	355.52 W	722,078.10	1,046,331.77	7.00	-355.52	Start DLS 7 00 TFO -89 90 - E3 RD 13
9,500.00	87.32	105.54	-5,502.99	5,502.99	4,949.75 S	295.04 W	722,058.71	1,046,392.25	7.00	-295.04	
9,521.64	87.33	104.03	-5,504.00	5,504.00	4,955.26 S	274.14 W	722,053.20	1,046,413.15	7.00	-274.14	E3 RD d - E3 RD e
9,564.68	87.35	101.01	-5,506.00	5,506.00	4,964.58 S	232.17 W	722,043.88	1,046,455.12	7.00	-232.17	E3 RD a
9,600.00	87.37	98.54	-5,507.63	5,507.63	4,970.57 S	187.40 W	722,037.89	1,046,489.89	7.00	-187.40	
9,608.75	87.38	97.92	-5,508.03	5,508.03	4,971.82 S	188.76 W	722,036.64	1,046,498.53	7.00	-188.76	Start 126 10 hold at 9608 75 MD
9,651.94	87.38	97.92	-5,510.00	5,510.00	4,977.77 S	146.02 W	722,030.69	1,046,541.27	0.00	-146.02	E3 RD b
9,700.00	87.38	97.92	-5,512.20	5,512.20	4,984.38 S	99.47 W	722,024.08	1,046,588.82	0.00	-99.47	
9,734.85	87.38	97.92	-5,513.79	5,513.79	4,989.18 S	63.99 W	722,019.28	1,046,623.30	0.00	-63.99	Start DLS 7 00 TFO -46 54
9,739.70	87.61	97.68	-5,514.00	5,514.00	4,989.84 S	59.18 W	722,018.62	1,046,628.11	7.00	-59.18	E3 RD f
9,800.00	90.52	94.61	-5,514.98	5,514.98	4,996.29 S	0.75 E	722,012.17	1,046,688.04	7.00	0.75	
9,851.45	93.00	92.00	-5,513.40	5,513.40	4,999.26 S	52.08 E	722,009.20	1,046,739.37	7.00	52.08	Start 64 96 hold at 9851 45 MD - E3 RD 14
9,900.00	93.00	92.00	-5,510.86	5,510.86	5,000.95 S	100.53 E	722,007.51	1,046,787.82	0.00	100.53	

HALLIBURTON

Plan Report for (Slot 33) E-3 - RD1 - Plan #11 (15-Jun-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
9,916.42	93.00	92.00	-5,510.00	5,510.00	5,001.52 S	116.92 E	722,006.94	1,046,804.21	0.00	116.92	Start DLS 7 00 TFO -119 63 - E3 RD c
9,931.50	92.48	91.08	-5,509.28	5,509.28	5,001.93 S	131.98 E	722,006.53	1,046,819.27	7.00	131.98	Start 177 88 hold at 9931 50 MD
10,000.00	92.48	91.08	-5,506.32	5,506.32	5,003.22 S	200.40 E	722,005.24	1,046,887.69	0.00	200.40	
10,100.00	92.48	91.08	-5,502.00	5,502.00	5,005.11 S	300.29 E	722,003.35	1,046,987.58	0.00	300.29	
10,109.38	92.48	91.08	-5,501.59	5,501.59	5,005.28 S	309.66 E	722,003.18	1,046,986.95	0.00	309.66	Start DLS 7 00 TFO 156 79
10,178.97	88.00	93.00	-5,501.30	5,501.30	5,007.76 S	379.18 E	722,000.70	1,047,086.47	7.00	379.18	Start DLS 7 00 TFO 131 91 - E3 RD T5
10,200.00	87.02	94.10	-5,502.21	5,502.21	5,009.06 S	400.15 E	721,999.40	1,047,087.44	7.00	400.15	
10,205.72	86.75	94.40	-5,502.53	5,502.53	5,009.48 S	405.85 E	721,998.98	1,047,093.14	7.00	405.85	Start 442 23 hold at 10205 72 MD
10,300.00	86.75	94.40	-5,507.87	5,507.87	5,016.70 S	499.70 E	721,991.76	1,047,186.99	0.00	499.70	
10,400.00	86.75	94.40	-5,513.54	5,513.54	5,024.35 S	599.25 E	721,984.11	1,047,286.54	0.00	599.25	
10,500.00	86.75	94.40	-5,519.21	5,519.21	5,032.00 S	698.79 E	721,976.46	1,047,386.08	0.00	698.79	
10,600.00	86.75	94.40	-5,524.88	5,524.88	5,039.65 S	798.34 E	721,968.81	1,047,485.63	0.00	798.34	
10,619.77	86.75	94.40	-5,526.00	5,526.00	5,041.17 S	818.02 E	721,967.29	1,047,505.31	0.00	818.02	E3 RD n - E3 RD g
10,647.95	86.75	94.40	-5,527.60	5,527.60	5,043.32 S	846.07 E	721,965.14	1,047,533.36	0.00	846.07	Start DLS 7 00 TFO -31 82
10,685.77	89.00	93.00	-5,529.00	5,529.00	5,046.76 S	883.78 E	721,962.70	1,047,571.07	7.00	883.78	Start DLS 7 00 TFO 59 14 - E3 RD T6
10,700.00	89.51	93.86	-5,529.18	5,529.18	5,046.61 S	897.98 E	721,961.85	1,047,585.27	7.00	897.98	
10,713.91	90.01	94.69	-5,529.24	5,529.24	5,047.65 S	911.86 E	721,960.81	1,047,599.15	7.00	911.86	Start 178 61 hold at 10713 91 MD
10,800.00	90.01	94.69	-5,529.23	5,529.23	5,054.69 S	997.66 E	721,953.77	1,047,684.95	0.00	997.66	
10,892.52	90.01	94.69	-5,529.21	5,529.21	5,062.25 S	1,089.87 E	721,946.21	1,047,777.16	0.00	1,089.87	Start DLS 7 00 TFO -117 51
10,900.00	89.77	94.23	-5,529.22	5,529.22	5,062.84 S	1,097.32 E	721,945.62	1,047,784.61	7.00	1,097.32	
11,000.00	86.54	88.01	-5,532.44	5,532.44	5,064.79 S	1,197.19 E	721,943.67	1,047,884.48	7.00	1,197.19	
11,048.22	85.00	85.00	-5,536.00	5,536.00	5,061.86 S	1,245.18 E	721,946.60	1,047,932.47	7.00	1,245.18	Start DLS 7 00 TFO -91 71 - E3 RD T7
11,093.70	84.91	81.80	-5,540.00	5,540.00	5,056.65 S	1,290.19 E	721,951.81	1,047,977.48	7.00	1,290.19	E3 RD i - E3 RD j
11,100.00	84.90	81.36	-5,540.56	5,540.56	5,055.74 S	1,296.39 E	721,952.72	1,047,983.68	7.00	1,296.39	
11,127.35	84.86	79.44	-5,543.00	5,543.00	5,051.19 S	1,323.25 E	721,957.27	1,048,010.54	7.00	1,323.25	E3 RD n
11,136.38	84.84	78.81	-5,543.81	5,543.81	5,049.50 S	1,332.08 E	721,958.96	1,048,019.37	7.00	1,332.08	Start 70 29 hold at 11136 38 MD
11,200.00	84.84	78.81	-5,549.53	5,549.53	5,037.20 S	1,394.24 E	721,971.26	1,048,081.53	0.00	1,394.24	
11,206.67	84.84	78.81	-5,550.13	5,550.13	5,035.91 S	1,400.76 E	721,972.55	1,048,088.05	0.00	1,400.76	Start DLS 7 00 TFO -120 88
11,269.51	82.60	75.00	-5,557.00	5,557.00	5,021.76 S	1,461.58 E	721,966.70	1,048,148.87	7.00	1,461.58	Start 40 00 hold at 11269 51 MD - E3 RD k
11,300.00	82.60	75.00	-5,560.93	5,560.93	5,013.94 S	1,490.78 E	721,994.52	1,048,178.07	0.00	1,490.78	
11,309.51	82.60	75.00	-5,562.15	5,562.15	5,011.49 S	1,499.90 E	721,996.97	1,048,187.19	0.00	1,499.90	Start DLS 7 30 TFO -87 22
11,319.43	82.64	74.27	-5,563.43	5,563.43	5,008.89 S	1,509.38 E	721,999.57	1,048,196.67	7.30	1,509.38	Start 70 29 hold at 11319 43 MD
11,347.28	82.64	74.27	-5,567.00	5,567.00	5,001.40 S	1,535.97 E	722,007.06	1,048,223.26	0.00	1,535.97	Start DLS 7 30 TFO -2 90
11,385.86	85.45	74.13	-5,571.00	5,571.00	4,990.95 S	1,572.88 E	722,017.51	1,048,260.17	7.30	1,572.88	E3 RD m - E3 RD l
11,400.00	86.48	74.08	-5,572.00	5,572.00	4,987.09 S	1,586.45 E	722,021.37	1,048,273.74	7.30	1,586.45	
11,420.86	88.00	74.00	-5,573.00	5,573.00	4,981.36 S	1,606.48 E	722,027.10	1,048,293.77	7.30	1,606.48	Start DLS 7 30 TFO -32 00
11,500.00	92.90	70.94	-5,572.38	5,572.38	4,957.53 S	1,681.91 E	722,050.93	1,048,369.20	7.30	1,681.91	
11,600.00	99.08	67.03	-5,561.95	5,561.95	4,921.91 S	1,774.69 E	722,086.55	1,048,461.98	7.30	1,774.69	

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Plan Report for (Slot 33) E-3 - RD1 - Plan #11 (15-Jun-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
11,664.55	103.04	64.43	-5,549.56	5,549.56	4,895.88 S	1,832.43 E	722,112.58	1,048,519.72	7.30	1,832.43	Start 29.07 hold at 11664.55 MD
11,693.62	103.04	64.43	-5,543.00	5,543.00	4,883.66 S	1,857.98 E	722,124.80	1,048,545.27	0.00	1,857.98	Start DLS 7.30 TFO 145.18 - E3 RD T9
11,700.00	102.66	64.71	-5,541.58	5,541.58	4,880.99 S	1,863.59 E	722,127.47	1,048,550.88	7.30	1,863.59	
11,800.00	96.64	68.89	-5,524.82	5,524.82	4,842.21 S	1,954.16 E	722,166.25	1,048,641.45	7.30	1,954.16	
11,892.64	91.02	72.67	-5,518.63	5,518.63	4,811.81 S	2,041.38 E	722,196.65	1,048,728.67	7.30	2,041.38	Start 35.41 hold at 11892.64 MD
11,900.00	91.02	72.67	-5,518.50	5,518.50	4,809.61 S	2,048.41 E	722,198.85	1,048,735.70	0.00	2,048.41	
11,928.04	91.02	72.67	-5,518.00	5,518.00	4,801.26 S	2,075.18 E	722,207.20	1,048,762.47	0.00	2,075.18	TD at 11928.04

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Plan Report for (Slot 33) E-3 - RD1 - Plan #11 (15-Jun-06)

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Origin		Target		Angle	
		+N/-S (ft)	+E/-W (ft)	+N/-S (ft)	+E/-W (ft)	Azimuth (°)	Type	Type	Type
3,750.00	3,304.33	-937.52	-269.93	Start DLS 5.00 TFO 121.01					
4,066.37	3,512.94	-1,157.93	-355.67	Start 946.99 hold at 4066.37 MD					
5,013.35	4,175.10	-1,736.51	-707.19	Start DLS 5.00 TFO 54.18					
5,570.63	4,494.00	-2,054.26	-1,026.30	Start DLS 5.00 TFO -0.47					
5,605.54	4,508.66	-2,072.59	-1,053.47	Start 528.53 hold at 5606.54 MD					
6,135.30	4,717.00	-2,344.46	-1,456.29	Start DLS 7.00 TFO -99.73					
7,366.18	5,157.34	-3,359.84	-1,615.52	Start 1551.92 hold at 7366.18 MD					
8,918.11	5,438.74	-4,620.84	-755.79	Start DLS 7.00 TFO -80.20					
9,436.40	5,500.00	-4,930.36	-355.52	Start DLS 7.00 TFO -89.90					
9,608.75	5,508.03	-4,971.82	-188.76	Start 126.10 hold at 9608.75 MD					
9,734.85	5,513.79	-4,989.18	-63.99	Start DLS 7.00 TFO -46.54					
9,851.45	5,513.40	-4,999.26	52.08	Start 64.96 hold at 9851.45 MD					
9,916.42	5,510.00	-5,001.52	116.92	Start DLS 7.00 TFO -119.63					
9,931.50	5,509.28	-5,001.93	131.98	Start 177.88 hold at 9931.50 MD					
10,109.38	5,501.59	-5,005.28	309.66	Start DLS 7.00 TFO 156.79					
10,178.97	5,501.30	-5,007.76	379.18	Start DLS 7.00 TFO 131.91					
10,205.72	5,502.53	-5,009.48	405.85	Start 442.23 hold at 10205.72 MD					
10,647.95	5,527.60	-5,043.32	846.07	Start DLS 7.00 TFO -31.82					
10,685.77	5,529.00	-5,045.76	883.78	Start DLS 7.00 TFO 59.14					
10,713.91	5,529.24	-5,047.65	911.86	Start 178.61 hold at 10713.91 MD					
10,892.52	5,529.21	-5,062.25	1,089.87	Start DLS 7.00 TFO -117.51					
11,048.22	5,536.00	-5,061.86	1,245.18	Start DLS 7.00 TFO -91.71					
11,136.38	5,543.81	-5,049.50	1,332.08	Start 70.29 hold at 11136.38 MD					
11,206.67	5,550.13	-5,035.91	1,400.76	Start DLS 7.00 TFO -120.88					
11,269.51	5,557.00	-5,021.76	1,461.58	Start 40.00 hold at 11269.51 MD					
11,309.51	5,562.15	-5,011.49	1,499.90	Start DLS 7.30 TFO -87.22					
11,319.43	5,563.43	-5,008.89	1,509.38	Start 27.86 hold at 11319.43 MD					
11,347.28	5,567.00	-5,001.40	1,535.97	Start DLS 7.30 TFO -2.90					
11,420.86	5,573.00	-4,981.36	1,605.48	Start DLS 7.30 TFO -32.00					
11,664.55	5,549.56	-4,895.88	1,832.43	Start 29.07 hold at 11664.55 MD					
11,683.62	5,543.00	-4,883.66	1,857.98	Start DLS 7.30 TFO 145.18					
11,892.64	5,518.63	-4,811.81	2,041.38	Start 35.41 hold at 11892.64 MD					
11,928.04	5,518.00	-4,801.26	2,075.18	TD at 11928.04					

Vertical Section Information

User	Target	Azimuth (°)	Origin Type	+N/-S (ft)	+E/-W (ft)	Start TVD (ft)
	No Target (Freehand)	90.00	Slot	0.00	0.00	-107.00

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Plan Report for (Slot 33) E-3 - RD1 - Plan #11 (15-Jun-06)

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Plan Report for (Slot 33) E-3 - RD1 - Plan #11 (15-Jun-06)

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
E3 RD 1 - plan misses by 9.32ft at 10974.79ft MD (5531 10 TVD, -5085 32 N, 1172 03 E) - Point	0.00	360.00	5,540.00	-5,062.56	1,171.78	721,945.90	1,047,859.07	34 11133	-119 39572
E3 RD b - plan misses by 5.59ft at 9785.36ft MD (5515 02 TVD, -4995 02 N, -13 84 E) - Point	0.00	0.00	5,510.00	-4,997.46	-14.02	722,011.00	1,046,673.27	34 11141	-119 39964
E3 RD T8 - plan misses by 2.13ft at 11484.78ft MD (5573 02 TVD, -4962 43 N, 1667 51 E) - Point	0.00	360.00	5,575.00	-4,961.66	1,667.28	722,046.80	1,048,354.57	34 11164	-119 39410
E3 RD T6 - plan hits target - Point	0.00	0.00	5,529.00	-5,045.76	883.78	721,962.70	1,047,571.07	34 11135	-119 39668
E3 RD n - plan misses by 25.00ft at 11927.60ft MD (5518 01 TVD, -4801 39 N, 2074 75 E) - Point	0.00	360.00	5,543.00	-4,801.26	2,075.18	722,207.20	1,048,762.47	34 11212	-119 39277
E3 RD d - plan misses by 2.75ft at 10114.22ft MD (5501 39 TVD, -5005 38 N, 314 50 E) - Point	0.00	360.00	5,504.00	-5,006.26	314.48	722,002.20	1,047,001.77	34 11141	-119 39856
E3 RD f - plan misses by 10.38ft at 10510.55ft MD (5519 81 TVD, -5032 81 N, 709 29 E) - Point	0.00	0.00	5,514.00	-5,024.26	710.28	721,984.20	1,047,397.57	34 11139	-119 39725
E3 RD m - plan misses by 7.64ft at 11539.97ft MD (5569 50 TVD, -4944 01 N, 1719 41 E) - Point	0.00	0.00	5,571.00	-4,936.96	1,716.88	722,071.50	1,048,404.17	34 11172	-119 39394
E3 RD a - plan misses by 3.47ft at 9622.81ft MD (5508 67 TVD, -4973 76 N, -174 84 E) - Point	0.00	360.00	5,506.00	-4,975.96	-175.02	722,032.50	1,046,512.27	34 11145	-119 40018
E3 RD c - plan misses by 3.87ft at 9910.55ft MD (5510 31 TVD, -5001 32 N, 111 06 E) - Point	0.00	0.00	5,510.00	-4,997.46	111.18	722,011.00	1,046,798.47	34 11142	-119 39923
E3 RD T3 - plan hits target - Point	0.00	0.00	5,500.00	-4,930.36	-355.52	722,078.10	1,046,331.77	34 11156	-119 40078
E3 RD T4 - plan hits target	0.00	360.00	5,513.40	-4,999.26	52.08	722,009.20	1,046,739.37	34 11141	-119 39943

Plan Report for (Slot 33) E-3 - RD1 - Plan #11 (15-Jun-06)

[illegible]

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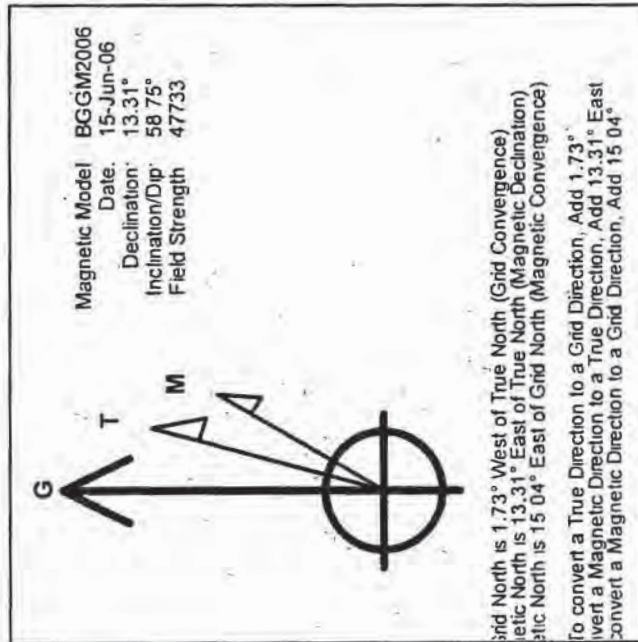
North Reference Sheet for Platform Gail - (Slot 33) E-3 - RD1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.
Vertical Depths are relative to Well @ 107 00ft (Original Well Elev). Northing and Easting are relative to (Slot 33) E-3.
Coordinate System is US State Plane 1927 (Exact solution), California VI 405 using datum NAD 1927 (NADCON CONUS) ellipsoid Clarke 1866.
Projection method is Lambert Conformal Conic (2 parallel).
Central Meridian is -116 25000", Longitude Origin 0 00000", Latitude Origin 33 88333".
False Easting 2,000 000 00ft, False Northing 0 00ft Scale Reduction 1 00004934.

Grid Coordinates of Well 727,008 45 ft N, 1,046,687 29 ft E
Geographical Coordinates of Well 34° 07' 30 48" N, 119° 24' 00 35" W
Grid Convergence at Surface is -1.73°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11 928 04ft
the Bottom Hole Displacement is 5,230 53ft in the Direction of 156 63° (Grid).

Magnetic Convergence at surface is -15 04° (15 June 2006, BGGM2006)



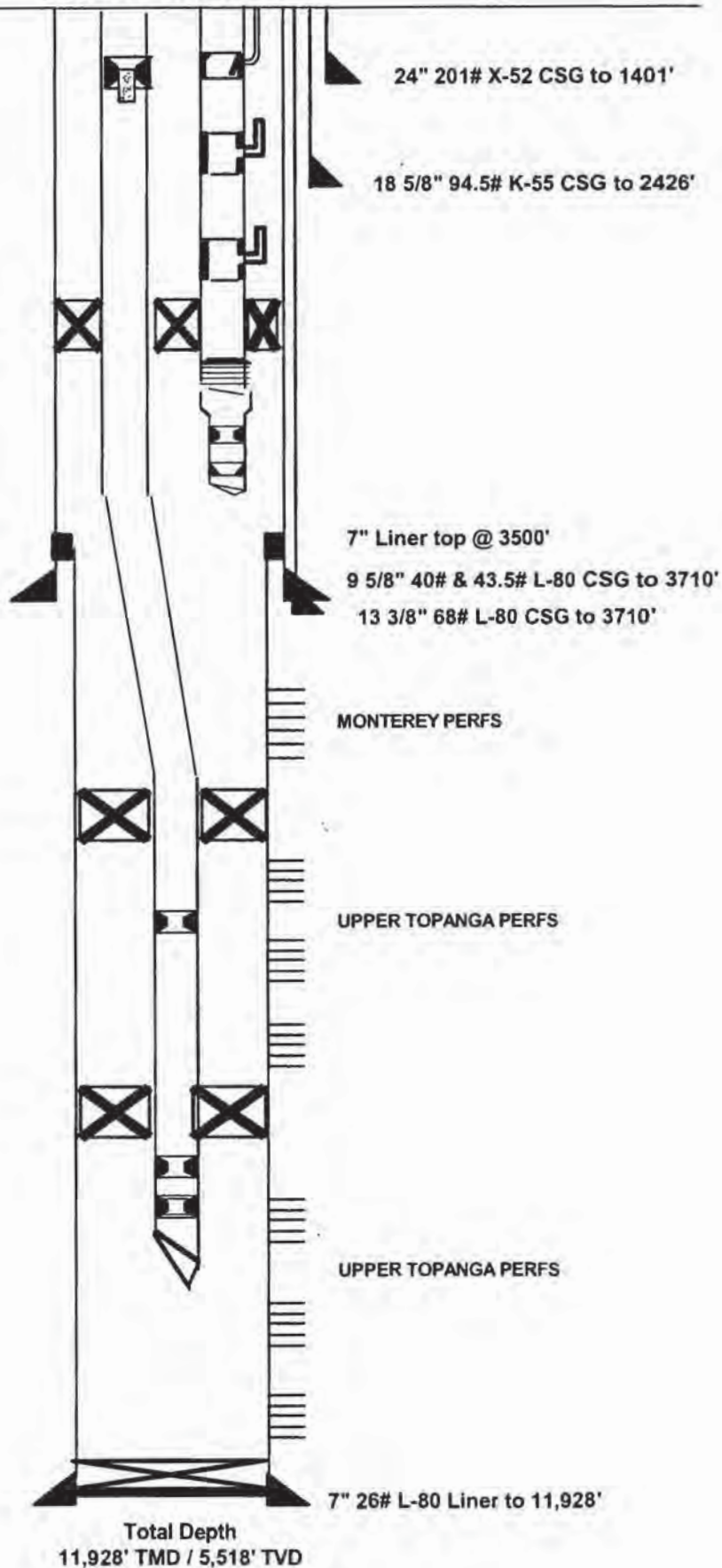
Vertical to 1580'
Max Angle.
D.F. Elevation: 107'
D.F. to Tubing Head:
Water Depth: 739'
Tree: FMC 5000 PSI WP

Lease: UCS-P-0205
SOCKEYE FIELD

Drawing Revision 06/26/06 JLH

WELL E-3
L - Upper Topanga Injector
S - Monterey Producer

PROPOSED





United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010-6064

7106

July 6, 2006

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation & Production

Subject: Geologic Hazards Analysis for Development Well P-0205 E-3RD

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Sockeye Oil Field
Lease: OCS-P 0205
Platform: Gail
Well/Slot: E-3RD in slot 33
Objective: Monterey production, Upper Topanga Injection
API: 04-311-20666-001 ~~515~~

Surface Location: X = 1,046,687 ft
Lambert Zone 6 Y = 727,008 ft

Estimated Top of Productive Zone X =
Y =

Estimated Bottom Hole Location X = 1,048,762 ft
Y = 722,207 ft

Elevation of KB: + 107 feet
Est. Total Depth (measured): - 11,928 feet (RKB)
Est. Total Depth (true vert.): - 5,518 feet (RKB)

Water Depth (Gail): 739 feet +/-

Overview of Proposal

Venoco, Inc., designated operator of the Sockeye Field within the Santa Clara Unit, proposes to drill well OCS-P 0205 #E-3RD into the Upper Topanga and Monterey. The objectives of the well are to exploit proven reservoirs in the Miocene Monterey M4 and waterflood injection into the Upper Topanga. The well is a planned dual completion.

The proposed well will be drilled using Kenai Rig #2 on Platform Gail to a bottom hole location in Lease OCS-P 0205, south of the platform. E-3RD is a redrill of well E-3 and within the current boundary of the field. The well kick off point will be at 3710 ft in the existing borehole.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Top Monterey M2	Miocene	5,440 feet	4,428 feet
Top Monterey M4	Miocene	5,677 feet	4,605 feet
Top Upper Topanga	L. Miocene	6,520 feet	5,361 feet
Total Depth	Oligocene	11,928 feet	5,518 feet

2. Potential Oil and Gas Reservoirs

Formation	Age	(TVD)	Thickness	HC Type
Monterey M4*	Miocene	4,474 feet	800 +/- feet	Oil/Gas

* Operator's stated objective.

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. Since this is a sidetrack well, most of all the water bearing zones are behind pipe.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of P-0205 E-3. The present operator and former operator of the Sockeye field have extensive drilling experience in this field. The proposed drilling program is similar to those utilized in drilling the production wells in the field. In the event a new pool is discovered, unrelated to the Main zones of the field, the operator

should be prepared for higher than expected formation pressure.

5. Faulting and Folding

Several important faults have been mapped by the Operator. Faulting is an important consideration for the success of the well. The well at total depth is located near a north/south trending fault on the crest of the anticline.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The P-0209-2 well did not find near surface gas, but did record gas shows in the Pliocene section.

7. Possible Over-pressured or Depleted Zones

Several ditch gas kicks are noted in the mud logs for E-3. However, as noted above, in the event of a new pool discovery the operator should be prepared for higher than expected formation pressures, similar to the original formation pressures noted at the discovery of the Sockeye field. The Operator has included a well control contingency plan with the Application.

8. Logging/Coring

The Operator plans a standard set of logs, as is the common practice with production wells in this area. A standard mud log will be taken to total depth. The E-logs will include gamma ray, density, neutron, and resistivity, taken on wire line surveys. An LWD with gamma ray will be used for directional surveys and correlation while drilling.

9. Other Comments

The Monterey and Topanga Formations may contain hydrogen sulfide gas. Oil and associated gas shows should be present throughout the entire section to be drilled based on the original mud log in E-3. The path of E3RD will intersect the old exploratory well OCS-P205-3 based on the plan view of the map.

APPLICATION FOR PERMIT TO DRILL

CHECK LIST

OPERATOR Venoco, Inc.
 LEASE NO. P-0205
 WELL NO. E-3 ST-01
 COPIES RECEIVED 3 P.I. 1
 GEOLOGIC/GEOPHYSICAL REVIEW COMPLETED BY F. Victor DATE 7/6/06
 COPIES ON FILE WITH APD Yes
 LEASE INSTRUMENT CHECKED NO
 DESIGNATION OF OPERATOR APPROVED yes
 SPECIAL LEASE STIPULATIONS NOTED Lease instrument not examined

POE/POD APPROVED DATE _____
 SPECIAL CONDITIONS OF APPROVAL Standard COAs to drill OCS well attached to all copies of APD

MOBIL DRILLING UNIT _____ TYPE PH, Rig. Kenai Rig #2
 ABS & COASTGUARD DOCUMENTS ON FILE _____
 FRONTIER AREA YES (NO)
 SEA FLOOR CONDITIONS EXAMINED, DOCUMENTED AND APPROVED _____

RIG DESCRIPTION AND SPECIFICATIONS ON FILE? Yes
 PLAT PROVIDED 2000 FEET/ONE INCH yes
 SURFACE LOCATION CHECKED yes
 SUBSURFACE LOCATION CHECKED yes
 RKB TO WATER 107' asl WD 739' RKB TO ML 846'
 TVD 5518' MD 11,928'

WELL DESIGN CRITERIA:

TAKEN FROM OFFSET WELL		CALCULATED	
CASING SIZE <u>18 5/8"</u>	<u>13 3/8"</u>	<u>9 5/8"</u>	<u>7" liner</u>
(MD/TVD) CASING DEPTH <u>2431' MD</u>	<u>5237' MD</u>	<u>7641' MD</u>	<u>11928' / 5518'</u>
PORE PRESS. <u>↑</u>	<u>↑</u>	<u>↑</u>	<u>2000 psi</u>
FRAC. PRESS. <u>↑</u>	<u>↑</u>	<u>↑</u>	<u>10.5 ppg.</u>
ANTICIPATED SURFACE PRESS. <u>existing</u>	<u>existing</u>	<u>existing</u>	<u>1733 psi*</u>
MUD WEIGHT <u>↓</u>	<u>↓</u>	<u>↓</u>	<u>9.1 ppg WBM</u>
LOST CIRCULATION ZONES <u>None Anticipated</u>			
SHALLOW HAZARDS FROM GEOLOGIC/GEOPHYSICAL REVIEW <u>All shallow formations are already protected by existing csqs.</u>			

BOPE

NO. AND TYPE	ANNULAR	PIPE RAMS	BLIND/SHEAR RAMS
	<u>1-13 5/8"-5M-Hydril</u>	<u>3-13 5/8"-5M</u>	<u>1-13 5/8"-5M</u>

- 1-2 1/2" X 5" VBR
- 1-5"
- 1-2 3/4"

* Assumes 100% gas to surface using gas gradient of 0.05 psi/ft

BOP TEST PRESSURES REQUIRED

CASING SIZE 9 5/8" existing 7" Liner
 RAM-TYPE & RELATED _____
 EQUIPMENT 250/3000 psi 250/3000 psi
 ANNULAR 250/3000 psi 250/3000 psi

DIAGRAMS

BOP SCHEMATIC OK DIVERTER SYSTEM OK CHOKE MANIFOLD N/A

CASING PROGRAM

CASING SIZE 9 5/8" existing 7" Liner
 TEST PRESSURE 3000 psi 3000 psi
 * tested during PB to ST phase

SAFETY FACTORS (EACH STRING):

TENSION N/A 1.55
 COLLAPSE 1.98 2.07
 BURST 2.40 4.02

GEOLOGIC FORMATIONS SS-Monterey MG-oil CORING

LOGGING PROGRAM GR-IL-P-CNL
 Mud loggers on @ ROP
 CBL

CEMENTING PROGRAM

CASING SIZE: 9 5/8" 7" Liner 249 ft. tail
 AMOUNT EXISTING 1100 ft³
 (% EXCESS) EXISTING TOC calcd @ 3250' → 1600 ft³ includes
circ. Liner 50% excess in OH

MUD REQUIREMENTS

ACTIVE VOLUME OH: 840 Bbls; 560 Bbls (pits) RESERVE VOLUME _____

CASING SIZE/HOLE SIZE VOLUME CHECKED:
 I. 3750 (0.0758) + 8232 (0.0702) = 285 + 578 = 863 Bbls OK

* mud pH will be well below 10 pH required in 30 CFR 250.490 for H₂S concerns. ZnCO₃ will
 MINIMUM QUANTITIES OF MUD MATERIALS AT SITE be onboard to treat H₂S if present. 522

BARITE 750s min. [Enough to raise MW 0.5 ppg using 1400 Bbls system total]

GELs needed to maintain FL < 6.0, YP: 15-20 (DUROGEL) - Pre hydrated

ADDITIVES (MAJOR) CaCO₃ for lost circ

MUD TRANSPORT. FROM SHORE ADDRESSED: YES _____ NO N/A

DIRECTIONAL PROGRAM PROVIDED: YES X NO _____ CHECKED Yes

PLOT OF PORE PRESS., FRAC. GRADS, & MUD WEIGHT: YES _____ NO _____

H₂S PLAN APPROVED PREVIOUSLY yes - will be activated @ KOP ~ 3750 MD

H₂S PLAN INCLUDED FOR APPROVAL NO

WELDING & BURNING PLAN APPROVED? yes - previously

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Manager.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, etc., shall be verbally reported immediately to the District Manager.
6. The District Manager shall be notified in advance in the event of production tests.
7. One copy of all logs, including the mud log to date, shall be furnished to the Office of Reservoir Evaluation and Production immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Manager shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.

10. The pertinent and applicable reports required under 30 CFR 250.100 through 250.400 of the Consolidated Offshore Operating Rules for Oil and Gas Operations will be properly and timely submitted. Electric logs and other logging surveys, core description and conventional analysis, stratigraphic determination, formation tests, log and history shall be reported on Form MMS-125 End of Operations Report (EOR) submitted in triplicate, plus a Public Information Copy to this office within 30 days after the completion, suspension or abandonment of the well.
11. Approval of this Application to Drill (APD) does not constitute approval to do other operations, including the setting of anchor pilings, unless details of these operations are submitted with this application. If anchor pilings are necessary, a letter requesting approval and containing the following information shall be filed: number of anchor pilings, depth of pilings, and design of piling method of removing piling or top of piling upon completion or abandonment of the well in order that the ocean floor will be kept clean. Verbal approval may be given by the California District Manager (MMS) provided a written application is filed for approval.
12. This APD is approved subject to the requirement that, should the well be successfully completed for production or re-completed and production resumed after being off of production more than 90 days, this office must be notified when it is placed in a producing status. Such notification may be received in this office by no later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following information items:
 - 1) Operator name.
 - 2) Platform and well name, number and location.
 - 3) Date well began or resumed production.
 - 4) The lease number and, if applicable, unit participation area to which the well's production is attributable.
13. This APD is valid for one year from the date it is approved.

Revised 03/31/06

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco, Inc. 6267 Carpinteria Ave., Suite 100 Carpinteria, CA 93013		
4 WELL NAME (CURRENT) E-3 Redrill	5 SIDETRACK NO (CURRENT) 01	6 BYPASS NO (CURRENT)			
7 PROPOSED START DATE 8/14/06	8 PLAN CONTROL NO (NEW WELL ONLY)				
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112066601					
10 ☐ Revision	11 If revision, please list changes				
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE		
12 LEASE NO P-0205			17 LEASE NO P-0205		
13 AREA NAME 6B			18 AREA NAME 6B		
14 BLOCK NO 4661			19 BLOCK NO 4661		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27)		16 LONGITUDE (☐ NAD 83 / ☒ NAD 27)	20 LATITUDE (☐ NAD 83 / ☒ NAD 27)		
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME Monterey M2	23 TOP (MD) 5440	24 TOP (TVD) 4428	22 NAME Monterey M4	23 TOP (MD) 5677	24 TOP (TVD) 4605
Upper Topanga	8674	5507			
25 LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250.414(b) through (g) or 30 CFR 250.1617 (c) and (d) as appropriate) Includes Mud Program. Procedure and Directional Plan. Includes Casing & Cement Design.					
26 CONTACT NAME John Hood		27 CONTACT TELEPHONE NO 745-2164/745-2217 (fax)		28 CONTACT E-MAIL ADDRESS jhood@venocoinc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Roger Hanson		30 TITLE V. P. Southern Assets			
31 AUTHORIZING SIGNATURE <i>[Signature]</i>		32 DATE 8-11-06			
THIS SPACE FOR MMS USE ONLY					
APPROVED ☒ With Attached Conditions ☐ Without Conditions		BY <i>[Signature]</i>		TITLE District Manager	
API WELL NO ASSIGNED TO THIS WELL		04.311.20666.02		DATE 8/24/06	

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is with in 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain	☐ YES ☐ NO ☒ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C 3501 et seq) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-3 REDRILL PROGRAM
API# 04-311-20666-012
LEASE OCS-P-0205
August 11, 2006

Objective: Redrill E-3 to a down-dip location in the Upper Topanga as a waterflood injector. The well will be a dual completion with the long string injecting water into the Upper Topanga. The short string will produce oil from the Monterey M4 zones.

Surface Location: OCS-P-205, Slot No. 33 (X= 1,046,687.29' & Y= 727,008.46')

Elevation: 739' WD, 107' Above MLLW, 846' Ocean Floor to Rig Floor

Proposed TD: OCS-P-205; 10,022' MD / 6,000' TVD / 5,893' SS

TD Location: 5,342.27' S and 3,034.31' E or (X = 1,049,721.60' and Y = 721,666.19')

Proposed and *Existing Casing: (USING NEW 107' DF)

*24", 201#, X-52	1401'	1150 cf
*18 5/8", 94.5# K-55	2425'	2212 cf
*13 3/8", 68,72# L-80	3731' (window)	4069 cf DV @ 2786'
*9 5/8", 40,43,47 # L-80/SS-95	3731' (window)	1675 sx DV @ 5021'
*Top 4 jts 9 5/8" reported as 43.5# , remaining are 40# to below 3750')		
7", 26#, L-80 Hydril 513	10,022'	1300 cf top at 3,500'

Markers:	MD	TVD	SS	Est.Pressure
M2	5,440'	4,428'	-4,321'	7.0 PPG
M4	5,677'	4,605'	-4,498'	7.0 PPG
Upper Topanga	8,674'	5,507'	-5,400'	7.0 PPG
TD (U. Sespe)	10,022'	6,000'	-5,893'	7.0 PPG

Note: This procedure follows work to be performed under an approved APM for the abandonment of E-3 ST01.

DRILLING PROCEDURE

1. BOP equipped with 4 ram preventers (2 – double gates) and an annular. The BOP will be tested as per step #3 of the approved APM (dated 8-11-06) just prior to commencing the following proposed sidetrack operations. ✓
2. Pick up an 8-1/2" PDC bit and drilling assembly on a 6 3/4" steerable directional drilling assembly including LWD GR/RES. Run in the hole and sidetrack the well. Directionally drill the 8-1/2" hole from +/- 3,800' to 10,022' MD / 6,000' TVD. No overboard discharge of mud or cuttings will be allowed. Utilize MMS approved cuttings injector well E-4s for disposal of mud and cuttings. Record injection volumes, rates and pressures on a daily basis.
 - Review the attached directional program. Drill well per Halliburton Sperry-Sun (Slot 33) E-3 ST2 Option 1 Plan #2 (10-Aug-06). All depths to be referenced to 107' DF elevation.
 - Mud loggers to start upon drilling out of the 9 5/8" casing window and continue through total depth.
 - The BHA should not be rotated on the face of the whipstock. Ensure there is adequate hole drilled below the whipstock to bury the BHA.
3. Circulate and condition the mud for casing. Wipe the hole to the 9 5/8" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
4. Rig up casing crew and run the 7", 26#, L-80, Hydril 513 liner from +/- 3,500' to 10,022' as follows:
 1. 7", 26#, L-80 insert float shoe
 2. 2 Joints of 7", 26#, L-80 casing
 3. 7", 26# L-80 insert float collar
 4. 2 Joints of 7", 26# L-80 casing
 5. 7", 26# L-80 Landing collar
 6. +/- 6,300' of 7", 26#, L-80 Casing
 7. 7" 26# X 9 5/8" 40#, Baker Flexlock Hydraulic Liner Hanger
 8. RS Nipple with 6.188" Profile
 9. ZXP Liner Top Packer, 7" x 9 5/8", HR Profile w/ 10' tie-back extension

Notes:

- The 7" flush joint liner will be centralized in the open hole with Weatherford stand-off bands.
- Contact Hydril and have them provide nubbins for the 7" casing.
- Drift DP and xo to ensure cementing dart will pass.
- Run in the hole slowly to avoid surging the formation.
- Contact Hydril and have them provide 7" Hyd 513 XO and have a circulating swage with a safety valve on the rig floor.

5. Run the liner in the hole, tag bottom and pick up 5' and circulate the well until the returns are clean. Reciprocate the liner while circulating. Drop the setting ball and set the liner hanger.
6. Mix and pump the cement job as per the attached program. Bump the plug with 500 psi above the final circulating pressure. Bleed the pressure back and check the floats. Pick up and set the liner packer at the top of the liner hanger. While waiting on cement, pull out of the hole and lay down and pick up drill pipe/tubing and drilling tools as required. Ensure BOP has been tested with all pipe sizes to be used to 250/3000 psi.
Notes:
 - A detailed cementing program will be provided with slurry specifications.
 - Cement volumes are based on 50% excess in the open hole and are calculated to bring cement to above the liner top.
 - Do not circulate at the top of the liner prior to pulling out of the hole.
 - Set the liner 3' off bottom.
 - PIP tags will be installed on stop rings at specified depths in order to correlate future perforations from pending bond log run.
7. Pick up an 8 1/2" bit and run in the hole. Clean out to the top of the liner at +/- 3500'. Pressure test the liner top to 3000 psi. Pull out of the hole.
8. Pick up a clean out assembly with 6 1/8" bit and a few stands of 4" heavy weight. Run in the hole and clean out cement in the top of the liner (if any). Pull out of the hole and make up 7" scraper. Run in the hole while picking up 2-7/8" tubing for pending completion. Scrape the 7" liner to the landing collar or as indicated based upon completion intervals. Pressure test the 7" liner to 3000 psi. Change well over from water based mud to seawater. Add "Safe Lube" lubricant to seawater to reduce friction for pending logging run. Pull out of the hole.
9. Rig up wireline and run a cement bond log (USIT/Spectral GR) across 7" liner. The high angle may require tubing/drill pipe conveyed equipment. Rig down wireline.
10. A detailed completion procedure will be provided after the LWD and cased hole logs have been evaluated.

GENERAL COMPLETION PROCEDURE

1. Perforate the Upper Topanga interval with TCP guns. Spot 15% HCL across perms.
2. Perforate and cup wash acidize the Monterey perforations with 15% HCl acid.
3. Run the dual completion equipment with the long string injecting into the Upper Topanga. The short string will produce the Monterey M4 zones (no sidestring).

EVALUATION PROGRAM

Mudlogging Program:

- Begin Mudlogging upon exiting shoe/casing above Monterey formation, including GR-Res curves on mudlog.
- Collect dry samples at 30' intervals throughout the well.

Testing Program

- None expected.

Open Hole Logging program

- LWD starting right out of casing with Sperry Gr-Res. Real-time data images via Insite. Open hole logs may be performed on drill pipe FMI/GR.

Cased Hole Logging program

- Substitute Spectral GR for standard GR on CBL/USIT log run on the 7".

Logging geologist: Dale Kunitomi 805-987-3026

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8
2	Setting Depth (feet - TVD)	3300
3	Expected Leak Off Test EMW at shoe (ppg)	10.5
4	Depth of next Casing (feet - TVD)	6000
5	Maximum Expected Formation Pressure (psi)	2184
6	Expected Mud Weight (ppg)	9.1
7	Formation Equivalent Mud Weight (ppg)	7.0
8	Expected Hydrostatic Pressure at TD (psi)	2839
9	Amount of Overbalance at TD (psi)	655
10	Fracture Gradient at shoe (psi/ft)	0.55
11	Fracture Pressure at shoe (psi)	1802
12	Hydrostatic Pressure at shoe (psi)	1562
13	Margin between Mud Weight and LOT (psi)	240

Maximum Anticipated Surface Pressures

1	Casing Size (in)	9-5/8
2	Setting Depth (feet - TVD)	3300
3	Expected Leak Off Test EMW at shoe (ppg)	10.5
4	Expected Mud Weight (ppg)	9.1
5	Depth of next Casing (feet - TVD)	6000
6	Maximum Expected Formation Pressure (psi)	2184
7	Expected gas gradient (psi/ft)	0.05
8	Formation Equivalent Mud Weight (ppg)	7.0
	Max Pressures using 100% Gas to Surface	
9	Max Surface Pressure neglecting shoe (psi)	1884
10	Fracture Gradient at shoe (psi/ft)	0.55
11	Fracture Pressure at shoe (psi)	1802
12	Surface pressure to break down shoe (psi)	1637
13	Maximum Anticipated Surface Pressure (psi)	1637
	Max Pressures using 70% Gas & 30% Mud	
14	Maximum Anticipated Surface Pressure (psi)	1122
15	Top of fluid (feet-TVD)	4200
16	Pressure at shoe (psi)	1287
17	Margin between pressure and breakdown(psi)	515

CASING PROGRAM

Hole Section	12.25	8 1/2" Hole
Mud Weight	9.1	9.1
Buoyancy Factor	0.861	0.861
MASP (psi)	2398	1733
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9-5/8*	7
Setting Depth, MD (ft)	3731	11928
Setting Depth, TVD (ft)	3300	6000
Top of Casing, MD (ft)	0	3500
Weight (lb/ft)	40	26
Grade	L-80	L-80
Threads	STC 6182	513
ID (in)	8.755	6.199
Drift diameter (in)	8.599	6.151
Collapse (psi)	3090	5410
Burst (psi)	5750	7240
Joint Strength (kips)	500	448
Body Strength (kips)	916	604
Collapse Safety Factor	1.98	1.91
Burst Safety Factor	2.40	4.02
Tensile Safety Factor	2.19	1.55

* Existing Casing

Notes:

Burst is calculated on the greater of MASP or gas lift pressure.

Collapse is based on mud outside of an evacuated casing string.

Tension is based on buoyed weight of casing string + 100 kips over pull.

CEMENTING PROGRAM

7" Production Liner

Objective: Cement 7" liner set across entire open hole interval. Liner will extend 200' back into the 9 5/8" casing. A liner top packer will be used to ensure pressure integrity.

General Information:

9 5/8", 40#, L-80 Casing Window 3731' (8.755" ID)
7", 26#, L-80 Liner (6.276" ID) Shoe at 10,022' & TOL at 3,500'
Lap Volume Factor is 0.1508 CF/FT
Open Hole Volume Factor is 0.1268 CF/FT
Shoe Joint Volume Factor is 0.2148 CF/FT
Open Hole Excess 50% over theoretical
Static Temperature is 170° F at 6000' TVD

Slurry Volume:

1300 CF of cement total required to bring cement to the top of the 7" liner including 50% excess in the open hole.

Cement Slurry Details:

Pre-flush: 20 bbls of Ultra Flush

Tail Slurry: 1300 CF (1130 sx) of Class "G" + 6 gals/100 sx R21L + 6 gals/100 sx R-21L + 5 gals/100 sx CD-31-L + 2 gals/100 sx ASA-301L

Yield: 1.15 CF/sx
Water: 4.80 gal/sx
Weight: 15.8 ppg
Mix Water: Fresh Water
Height: 1221 Linear Feet

Note: Lab tests will be performed prior to cementing to verify slurry properties. Actual materials that will be used on location will be used to perform tests.

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
3800'- 10022'	SP 101	8.6-9.1	< 6.0	+/-8.5	15-20	+19-20 K

3750'- 11928': Continue use of SP 101 by adding 1.5 to 2.5 ppb of Sp 101 to the system. Continue with the additions of SP 101 for fluid loss reductions (<6.0 cc). Add dry NaCl to maintain the chloride content between 19,000 and 25,000. Stop additions of Durogel and build up the surface system with MI Gel pre-hydrated in fresh water at a concentration of 12 to 15 ppb. Maintain the mud weight as low as possible with the solids control equipment. Condition the mud with water to keep the MBT below 30 ppb and treat out calcium with Soda Ash to below 200 ppm. Reduced the mud weight and add calcium carbonate if mud losses are encountered while drilling this section.

Notes:

1. Operate solids control equipment to maintain drill solids as low as possible.
2. Maintain supply of ZnCO_3 onboard to treat out H_2S .
3. A minimum of 750 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised 0.5 ppg using 1400 bbl total circulating volume (840 open hole volume & 560 bbl active system).
4. Add Calcium Carbonate to the mud system after drilling through the Monterey interval. This will help prevent lost circulation in the Upper Topanga.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.
Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.
Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).
Read drill pipe pressure.
Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.
Shut down pump and close choke at the same time. SEE NOTE.
Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

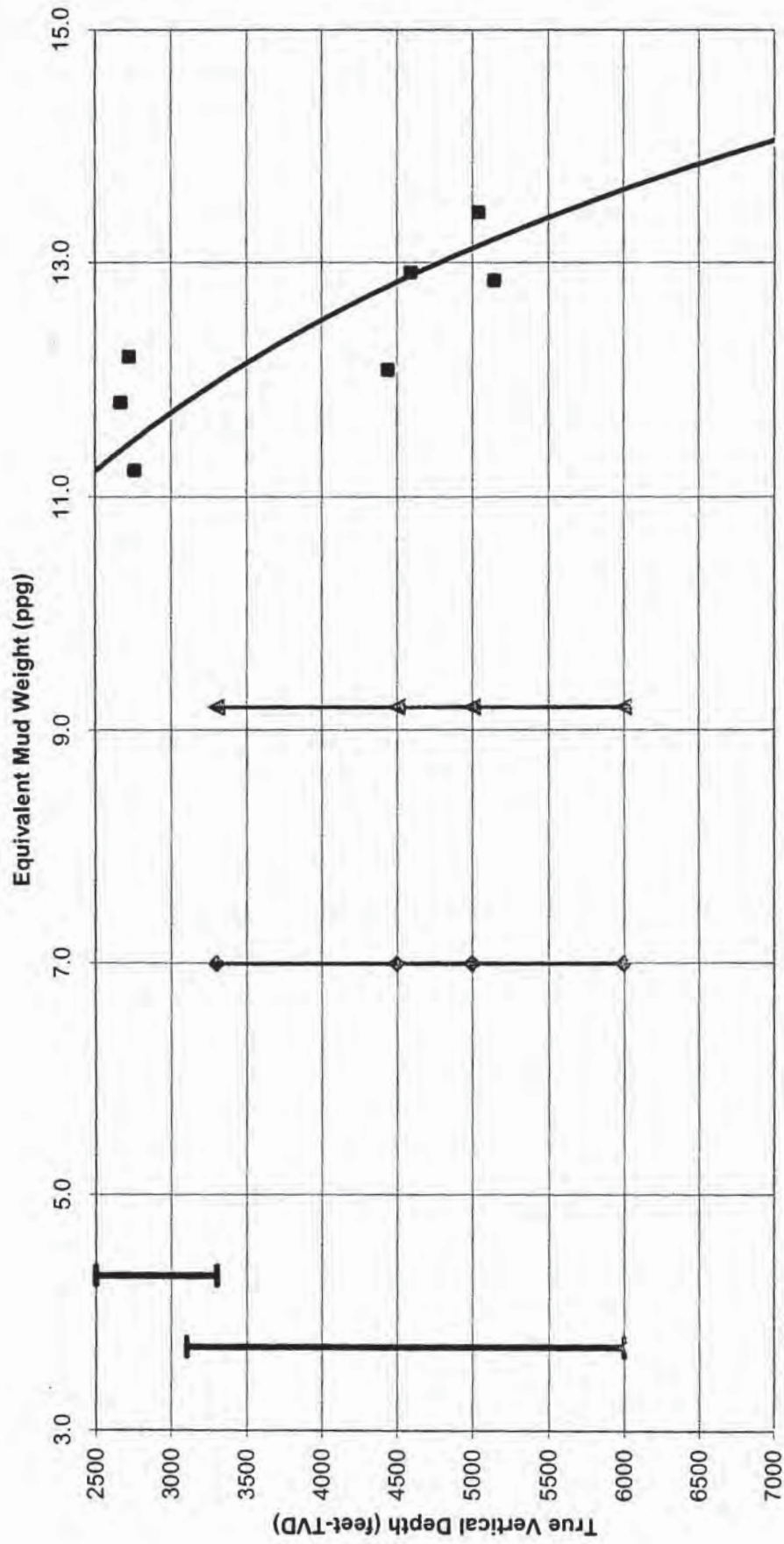
1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas.
Assume any gas circulated to surface to have hydrogen sulfide potential.
Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

Platform Gail Well E-3 RD Upper Topanga Water Injector Pore Pressure, Mud Weight & Fracture Pressure



LOT Data
 Planned Mud Weight
 Highest Expected PP
 9-5/8\" Casing
 7\" Liner
 Expon. (LOT Data)



Azimuths to Grid North
 True North 1 73°
 Magnetic North 15 02°
 Magnetic Field
 Strength 47721 nT
 Dip Angle 58 75°
 Date 8/9/2006
 Model BGGM2006

Venoco Inc

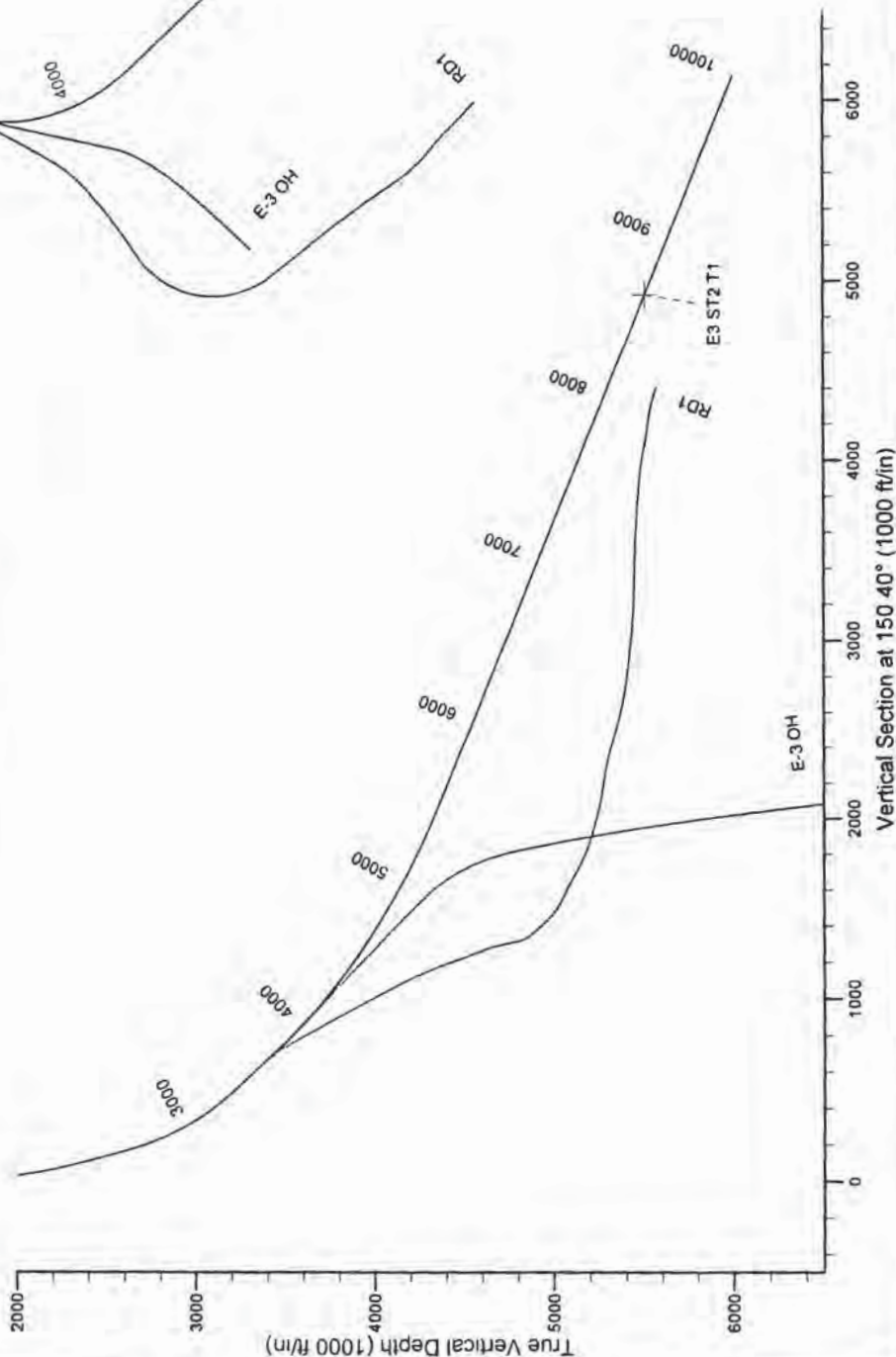
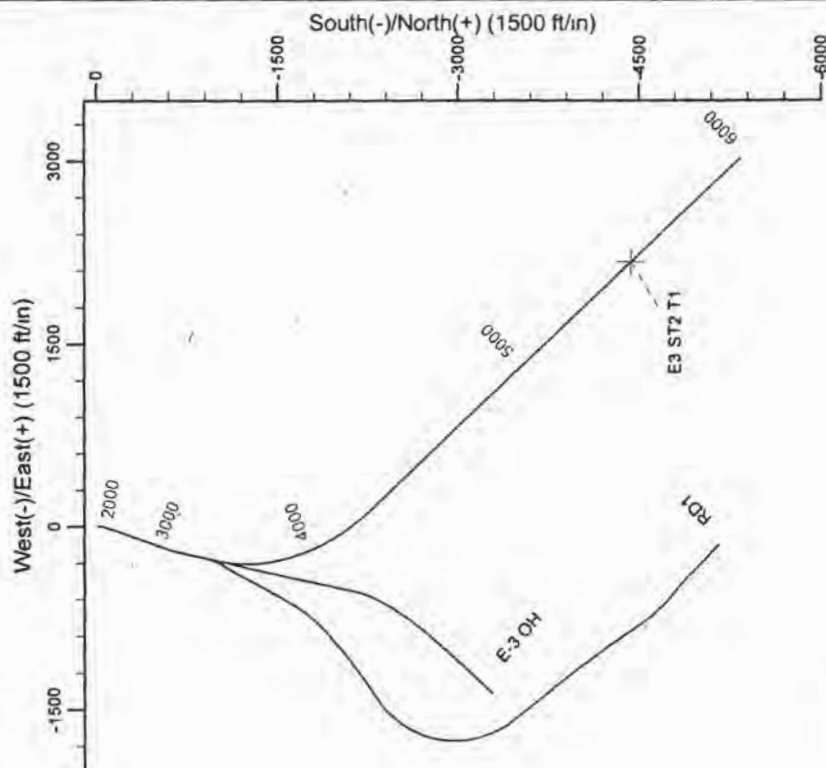
Project Platform Gail
 Site Platform Gail
 Well (Slot 33) E-3
 ST2 Option 1
 Plan #2 (10-Aug-06)

(Slot 33) E-3
 NAD 1927 (NADCON CONUS)
 California VI 406
 Gnd
 Well @ 107 00ft (Original Well Elev)
 Northing 727008 46
 Easting 1046687 29

HALIBURTON
 Sperry Drilling Services

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	3731 00	51 03	195 52	3400 01	-922 39	-287 51	0 00	0 00	669 93	
2	5491 81	68 55	136 67	4343 49	-2275 16	140 96	3 00	-88 67	2047 94	
3	8673 76	68 55	136 67	5507 00	-4429 46	2173 21	0 00	0 00	4924 85	E3 ST2 T1
4	10022 00	68 55	136 67	6000 00	-5342 27	3034 31	0 00	0 00	6143 85	



Venoco Inc.

Platform Gail

Platform Gail

(Slot 33) E-3

ST2 Option 1

Plan: Plan #2 (10-Aug-06)

Job No Plan #2 (10-Aug-06)

Sperry Drilling Services Combo Report

10 August, 2006

Well Coordinates 727 008 46 N, 1 046 687 29 E (34° 07' 30 48" N, 119° 24' 00 35" W)
Water Depth 739 00 ft

Local Coordinate Origin
Viewing Datum
TVDs to System
North Reference
Unit System

Centered on Well (Slot 33) E-3
Well @ 107 00ft (Original Well Elev)
N
Grid
API - US Survey Feet

Version 2003 14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for (Slot 33) E-3 - ST2 Option 1 - Plan #2 (10-Aug-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
3,731.00	51.03	195.52	-3,293.01	3,400.01	922.39 S	267.51 W	726.086 07	1,046,419.78	0.00	669.93	Start DLS 3 00 TFO -88.67
3,800.00	51.10	192.86	-3,336.38	3,443.38	974.42 S	280.67 W	726.034 04	1,046,408.62	3.00	708.67	
3,900.00	51.32	189.02	-3,399.03	3,506.03	1,050.93 S	295.46 W	725.957 53	1,046,391.83	3.00	767.89	
4,000.00	51.67	185.22	-3,461.30	3,568.30	1,128.56 S	305.15 W	725.879 90	1,046,382.14	3.00	830.61	
4,100.00	52.14	181.45	-3,523.02	3,630.02	1,207.09 S	309.72 W	725.801 37	1,046,377.57	3.00	896.65	
4,200.00	52.72	177.74	-3,584.01	3,691.01	1,286.33 S	309.14 W	725.722.13	1,046,378.15	3.00	965.82	
4,300.00	53.42	174.09	-3,644.10	3,751.10	1,366.04 S	303.44 W	725.642.42	1,046,383.85	3.00	1,037.95	
4,400.00	54.23	170.51	-3,703.14	3,810.14	1,446.00 S	292.61 W	725.562.46	1,046,394.58	3.00	1,112.83	
4,500.00	55.14	167.01	-3,760.96	3,867.96	1,526.01 S	276.69 W	725.482.45	1,046,410.60	3.00	1,190.26	
4,600.00	56.15	163.58	-3,817.41	3,924.41	1,605.84 S	255.72 W	725.402.62	1,046,431.57	3.00	1,270.03	
4,700.00	57.25	160.24	-3,872.32	3,979.32	1,685.26 S	229.77 W	725.323.20	1,046,457.52	3.00	1,351.91	
4,800.00	58.44	156.99	-3,925.55	4,032.55	1,764.07 S	198.89 W	725.244.39	1,046,488.40	3.00	1,435.69	
4,900.00	59.71	153.82	-3,976.95	4,083.95	1,842.05 S	163.18 W	725.166.41	1,046,524.11	3.00	1,521.13	
5,000.00	61.05	150.74	-4,026.38	4,133.38	1,918.98 S	122.74 W	725.089.48	1,046,564.55	3.00	1,608.00	
5,100.00	62.46	147.73	-4,073.71	4,180.71	1,994.66 S	77.67 W	725.013.80	1,046,609.62	3.00	1,696.06	
5,200.00	63.94	144.80	-4,118.80	4,225.80	2,068.87 S	28.10 W	724.939.59	1,046,659.19	3.00	1,785.07	
5,300.00	65.47	141.95	-4,161.54	4,268.54	2,141.41 S	25.84 E	724.867.05	1,046,713.13	3.00	1,874.78	
5,400.00	67.06	139.17	-4,201.80	4,308.80	2,212.08 S	83.98 E	724.796.38	1,046,771.28	3.00	1,964.96	
5,491.81	68.55	136.67	-4,236.49	4,343.49	2,275.16 S	140.98 E	724.733.30	1,046,828.25	3.00	2,047.94	Start 3181 95 hold at 5491 81 MD
5,500.00	68.55	136.67	-4,239.48	4,346.48	2,280.70 S	146.19 E	724.727.76	1,046,833.48	0.00	2,055.35	
5,600.00	68.55	136.67	-4,276.05	4,383.05	2,348.41 S	210.08 E	724.660.05	1,046,897.35	0.00	2,145.76	
5,700.00	68.55	136.67	-4,312.61	4,419.61	2,416.11 S	273.93 E	724.592.35	1,046,961.22	0.00	2,236.17	
5,800.00	68.55	136.67	-4,349.18	4,456.18	2,483.81 S	337.80 E	724.524.65	1,047,025.09	0.00	2,326.59	
5,900.00	68.55	136.67	-4,385.74	4,492.74	2,551.52 S	401.67 E	724.456.94	1,047,088.96	0.00	2,417.00	
6,000.00	68.55	136.67	-4,422.31	4,529.31	2,619.22 S	465.53 E	724.389.24	1,047,152.82	0.00	2,507.41	
6,100.00	68.55	136.67	-4,458.88	4,565.88	2,686.93 S	529.40 E	724.321.53	1,047,216.69	0.00	2,597.83	
6,200.00	68.55	136.67	-4,495.44	4,602.44	2,754.63 S	593.27 E	724.253.83	1,047,280.56	0.00	2,688.24	
6,300.00	68.55	136.67	-4,532.01	4,639.01	2,822.33 S	657.14 E	724.186.13	1,047,344.43	0.00	2,778.65	
6,400.00	68.55	136.67	-4,568.57	4,675.57	2,890.04 S	721.01 E	724.118.42	1,047,408.30	0.00	2,869.07	
6,500.00	68.55	136.67	-4,605.14	4,712.14	2,957.74 S	784.87 E	724.050.72	1,047,472.16	0.00	2,959.48	
6,600.00	68.55	136.67	-4,641.71	4,748.71	3,025.45 S	848.74 E	723.983.01	1,047,536.03	0.00	3,049.90	
6,700.00	68.55	136.67	-4,678.27	4,785.27	3,093.15 S	912.61 E	723.915.31	1,047,599.90	0.00	3,140.31	
6,800.00	68.55	136.67	-4,714.84	4,821.84	3,160.85 S	976.48 E	723.847.61	1,047,663.77	0.00	3,230.72	
6,900.00	68.55	136.67	-4,751.40	4,858.40	3,228.56 S	1,040.35 E	723.779.90	1,047,727.64	0.00	3,321.14	
7,000.00	68.55	136.67	-4,787.97	4,894.97	3,296.26 S	1,104.21 E	723.712.20	1,047,791.50	0.00	3,411.55	
7,100.00	68.55	136.67	-4,824.54	4,931.54	3,363.96 S	1,168.08 E	723.644.50	1,047,855.37	0.00	3,501.96	
7,200.00	68.55	136.67	-4,861.10	4,968.10	3,431.67 S	1,231.95 E	723.576.79	1,047,919.24	0.00	3,592.38	
7,300.00	68.55	136.67	-4,897.67	5,004.67	3,499.37 S	1,295.82 E	723.509.09	1,047,983.11	0.00	3,682.79	
7,400.00	68.55	136.67	-4,934.24	5,041.24	3,567.08 S	1,359.69 E	723.441.38	1,048,046.98	0.00	3,773.20	
7,500.00	68.55	136.67	-4,970.80	5,077.80	3,634.78 S	1,423.55 E	723.373.68	1,048,110.84	0.00	3,863.62	

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Plan Report for (Slot 33) E-3 - ST2 Option 1 - Plan #2 (10-Aug-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (*100ft)	Vertical Section (ft)	Comments
7,600.00	68.55	136.67	-5,007.37	5,114.37	3,702.48 S	1,487.42 E	723,305.98	1,048,174.71	0.00	3,954.03	
7,700.00	68.55	136.67	-5,043.93	5,150.93	3,770.19 S	1,551.29 E	723,238.27	1,048,238.58	0.00	4,044.44	
7,800.00	68.55	136.67	-5,080.50	5,187.50	3,837.89 S	1,615.16 E	723,170.57	1,048,302.45	0.00	4,134.86	
7,900.00	68.55	136.67	-5,117.07	5,224.07	3,905.59 S	1,679.03 E	723,102.87	1,048,366.32	0.00	4,225.27	
8,000.00	68.55	136.67	-5,153.63	5,260.63	3,973.30 S	1,742.89 E	723,035.16	1,048,430.18	0.00	4,315.68	
8,100.00	68.55	136.67	-5,190.20	5,297.20	4,041.00 S	1,806.76 E	722,967.46	1,048,494.05	0.00	4,406.10	
8,200.00	68.55	136.67	-5,226.76	5,333.76	4,108.71 S	1,870.63 E	722,899.75	1,048,557.92	0.00	4,496.51	
8,300.00	68.55	136.67	-5,263.33	5,370.33	4,176.41 S	1,934.50 E	722,832.05	1,048,621.79	0.00	4,586.92	
8,400.00	68.55	136.67	-5,299.90	5,406.90	4,244.11 S	1,998.36 E	722,764.35	1,048,685.65	0.00	4,677.34	
8,500.00	68.55	136.67	-5,336.46	5,443.46	4,311.82 S	2,062.23 E	722,696.64	1,048,749.52	0.00	4,767.75	
8,600.00	68.55	136.67	-5,373.03	5,480.03	4,379.52 S	2,126.10 E	722,628.94	1,048,813.39	0.00	4,858.17	Start 1348 24 hold at 8673 76 MD - E3
8,673.76	68.55	136.67	-5,400.00	5,507.00	4,429.46 S	2,173.21 E	722,579.00	1,048,860.50	0.00	4,924.85	ST2 T1
8,700.00	68.55	136.67	-5,409.59	5,516.59	4,447.23 S	2,189.97 E	722,561.23	1,048,877.26	0.00	4,948.58	
8,800.00	68.55	136.67	-5,446.16	5,553.16	4,514.93 S	2,253.84 E	722,493.53	1,048,941.13	0.00	5,038.99	
8,900.00	68.55	136.67	-5,482.73	5,589.73	4,582.63 S	2,317.70 E	722,425.83	1,049,004.99	0.00	5,129.41	
9,000.00	68.55	136.67	-5,519.29	5,626.29	4,650.34 S	2,381.57 E	722,358.12	1,049,068.86	0.00	5,219.82	
9,100.00	68.55	136.67	-5,555.86	5,662.86	4,718.04 S	2,445.44 E	722,290.42	1,049,132.73	0.00	5,310.23	
9,200.00	68.55	136.67	-5,592.43	5,699.43	4,785.74 S	2,509.31 E	722,222.72	1,049,196.60	0.00	5,400.65	
9,300.00	68.55	136.67	-5,628.99	5,735.99	4,853.45 S	2,573.18 E	722,155.01	1,049,260.47	0.00	5,491.06	
9,400.00	68.55	136.67	-5,665.56	5,772.56	4,921.15 S	2,637.04 E	722,087.31	1,049,324.33	0.00	5,581.47	
9,500.00	68.55	136.67	-5,702.12	5,809.12	4,988.86 S	2,700.91 E	722,019.60	1,049,388.20	0.00	5,671.89	
9,600.00	68.55	136.67	-5,738.69	5,845.69	5,056.56 S	2,764.78 E	721,951.90	1,049,452.07	0.00	5,762.30	
9,700.00	68.55	136.67	-5,775.26	5,882.26	5,124.26 S	2,828.65 E	721,884.20	1,049,515.94	0.00	5,852.71	
9,800.00	68.55	136.67	-5,811.82	5,918.82	5,191.97 S	2,892.52 E	721,816.49	1,049,579.81	0.00	5,943.13	
9,900.00	68.55	136.67	-5,848.39	5,955.39	5,259.67 S	2,956.38 E	721,748.79	1,049,643.67	0.00	6,033.54	
10,000.00	68.55	136.67	-5,884.95	5,991.95	5,327.37 S	3,020.25 E	721,681.09	1,049,707.54	0.00	6,123.95	
10,022.00	68.55	136.67	-5,893.00	6,000.00	5,342.27 S	3,034.31 E	721,686.19	1,049,721.60	0.00	6,143.85	TD at 10022.00

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
3,731.00	3,400.01	-922.39	-267.51	Start DLS 3.00 TFO-88.67
5,491.81	4,343.49	-2,275.16	140.96	Start 3181 95 hold at 5491 81 MD
8,673.76	5,507.00	-4,429.46	2,173.21	Start 1348 24 hold at 8673 76 MD
10,022.00	6,000.00	-5,342.27	3,034.31	TD at 10022.00

HALLIBURTON

Plan Report for (Slot 33) E-3 - ST2 Option 1 - Plan #2 (10-Aug-06)

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/S (ft)	Origin +E/W (ft)	Start TVD (ft)
TD	No Target (Freehand)	150.40	Slot	0.00	0.00	0.00

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/S (ft)	+E/W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
E3 ST2 T1	0.00	360.00	5,507.00	-4,429.46	2,173.21	722,579.00	1,048,860.50	34.11315	-119.39248
- hit/miss target									
- Shape									
- plan hits target									
- Point									

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North Reference Sheet for Platform Gail - (Slot 33) E-3 - ST2 Option 1

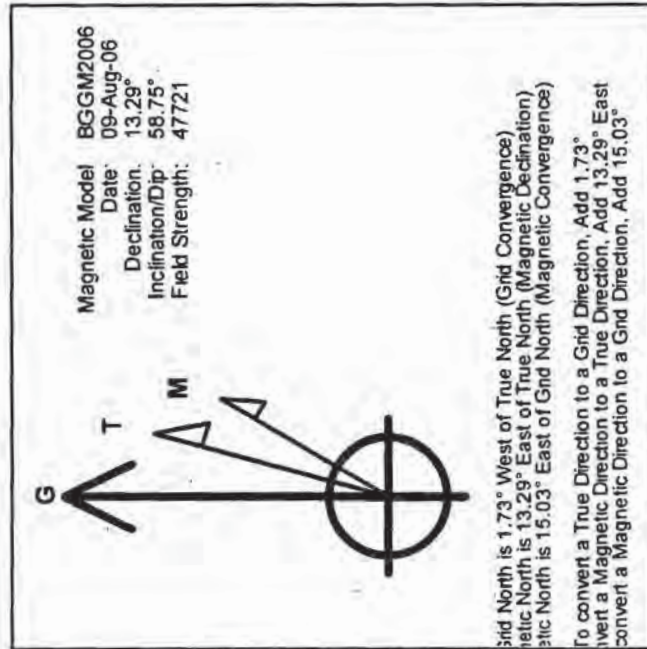
All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference. Vertical Depths are relative to Well @ 107' 00ft (Original Well Elev). Northing and Easting are relative to (Slot 33) E-3.

Coordinate System is US State Plane 1927 (Exact solution) California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866. Projection method is Lambert Conformal Conic (2 parallel). Central Meridian is -116 250000'. Longitude Origin 0 000000'. Latitude Origin 33 883333'. False Easting 2,000 000 00ft, False Northing 0 00ft, Scale Reduction 1 00004934.

Grid Coordinates of Well 727 008 46 ft N, 1,046,687 29 ft E
Geographical Coordinates of Well 34° 07' 30 48" N, 119° 24' 00 35" W
Grid Convergence at Surface is -1 73°

Based upon Minimum Curvature type calculations, at a Measured Depth of 10,022 00ft the Bottom Hole Displacement is 6,143 85ft in the Direction of 150 40° (Grid)

Magnetic Convergence at surface is -15 03° (9 August 2006, . BGGM2006)



Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco, Inc				2) Well Name (Proposed): E-3 Rednli ST: 02 BP*			
3) Bottom Hole Lease: P-0209				4) Surface Lease: P-0205			
5) API Number: 043112066601				6) Type of Well: ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): Surface			
9) Rig Name: Kenai Rig #2				10) SubSea BOP: ☐ Yes ☒ No			
11) Water Depth (ft): 739		12) RKB Height (ft): 107		13) Mineral Code:			
14) Drive Pipe Size (in): 24		15) Drive Pipe Depth (ft): 1401		16) Anchors: ☐ Yes ☒ No			

17) Well Design Information								
Interval Number:			Type:			Name:		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
	18-5/8	94.5	K-55	2420		780	2431	
Window	13-3/8	68	L-80	5020		2270	3731/3300	
Window	9-5/8	40	L-80	5750		3090	3731/3300	

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in)		Type		Annular Test (psi)	
Mud Weight (ppg)		Size (in)		BOP/Diverter Test (psi)	
Mud Type Code		Wellhead Rating (psi)		Mud Test Weight (ppg)	
Frac Gradient (ppg)		Annular Rating (psi)		Casing/Liner Test (psi)	
Liner Top Depth (ft)		BOP/Diverter Rating (psi)		Formation Test (ppg)	
Cement Volume (ft ³)					

Interval Number: Planned Drilling			Type: 02			Name: E-3 Rednli		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
1	7	26	L-80	7240		5410	10022/6000	2184

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in): 8-1/2		Type: Pipe/Variable/Shear/annular		Annular Test (psi): 250/3000 psi	
Mud Weight (ppg): 9.1		Size (in): 13-5/8"		BOP/Diverter Test (psi): 250/3000	
Mud Type Code: Water Based		Wellhead Rating (psi): 5000 psi		Mud Test Weight (ppg): 9.1	
Frac Gradient (ppg): 10.5		Annular Rating (psi): 5000 psi		Casing/Liner Test (psi): 3000 psi	
Liner Top Depth (ft): 3500		BOP/Diverter Rating (psi): 5000		Formation Test (ppg): 10.5	
Cement Volume (ft ³): 1300					

Interval Number:			Type:			Name:		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in)		Type		Annular Test (psi)	
Mud Weight (ppg)		Size (in)		BOP/Diverter Test (psi)	
Mud Type Code		Wellhead Rating (psi)		Mud Test Weight (ppg)	
Frac Gradient (ppg)		Annular Rating (psi)		Casing/Liner Test (psi)	
Liner Top Depth (ft)		BOP/Diverter Rating (psi)		Formation Test (ppg)	
Cement Volume (ft ³)					

* NOTE* For additional casing/liner intervals, please submit an additional Form MMS-123S

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123S, is estimated to average between 1-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Manager.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, etc., shall be verbally reported immediately to the District Manager.
6. The District Manager shall be notified in advance in the event of production tests.
7. One copy of all logs, including the mud log to date, shall be furnished to the Office of Reservoir Evaluation and Production immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Manager shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.

10. The pertinent and applicable reports required under 30 CFR 250.100 through 250.400 of the Consolidated Offshore Operating Rules for Oil and Gas Operations will be properly and timely submitted. Electric logs and other logging surveys, core description and conventional analysis, stratigraphic determination, formation tests, log and history shall be reported on Form MMS-125 End of Operations Report (EOR) submitted in triplicate, plus a Public Information Copy to this office within 30 days after the completion, suspension or abandonment of the well.
11. Approval of this Application to Drill (APD) does not constitute approval to do other operations, including the setting of anchor pilings, unless details of these operations are submitted with this application. If anchor pilings are necessary, a letter requesting approval and containing the following information shall be filed: number of anchor pilings, depth of pilings, and design of piling method of removing piling or top of piling upon completion or abandonment of the well in order that the ocean floor will be kept clean. Verbal approval may be given by the California District Manager (MMS) provided a written application is filed for approval.
12. This APD is approved subject to the requirement that, should the well be successfully completed for production or re-completed and production resumed after being off of production more than 90 days, this office must be notified when it is placed in a producing status. Such notification may be received in this office by no later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following information items:
 - 1) Operator name.
 - 2) Platform and well name, number and location.
 - 3) Date well began or resumed production.
 - 4) The lease number and, if applicable, unit participation area to which the well's production is attributable.
13. This APD is valid for one year from the date it is approved.

Revised 03/31/06



United States Department of the Interior

MINERALS MANAGEMENT SERVICE
Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010-6064

7106

August 14, 2006

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation & Production

Subject: Geologic Hazards Analysis for Development Well P-0205 E-3 RD#2

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Sockeye Oil Field
Lease: OCS-P 0205
Platform: Gail
Well/Slot: E-3RD in slot 33
Objective: Monterey production, Upper Topanga Injection
API: 04-311-20666-02

Surface Location: X = 1,046,687 ft
Lambert Zone 6 Y = 727,008 ft

Estimated Top of Productive Zone X =
Y =

Estimated Bottom Hole Location X = 1,049,721 ft
Y = 721,666 ft

Elevation of KB: + 107 feet
Est. Total Depth (measured): - 10,022 feet (RKB)
Est. Total Depth (true vert.): - 6,000 feet (RKB)

Water Depth (Gail): 739 feet +/-

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Overview of Proposal

Venoco, Inc., designated operator of the Sockeye Field within the Santa Clara Unit, proposes to drill well OCS-P 0205 #E-3 RD2 into the Upper Topanga and Monterey. The objectives of the well are to exploit proven reservoirs in the Miocene Monterey M4 and water flood injection into the Upper Topanga. The well is a planned dual completion. This well is a second re-drill after E-3 RD#1 became "lost".

The proposed well will be drilled using Kenai Rig #2 on Platform Gail to a bottom hole location in Lease OCS-P 0205, south of the platform. E-3RD is a redrill of well E-3 RD#1 and within the current boundary of the field. The well kick off point will be at 3710 ft in the existing borehole.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Top Monterey M2	Miocene	5,440 feet	4,428 feet
Top Monterey M4	Miocene	5,677 feet	4,605 feet
Top Upper Topanga	L. Miocene	8,674 feet	5,507 feet
Total Depth	Oligocene	10,022 feet	6,000 feet

2. Potential Oil and Gas Reservoirs

Formation	Age	(TVD)	Thickness	HC Type
Monterey M4*	Miocene	4,605 feet	800 +/- feet	Oil/Gas

* Operator's stated objective.

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. Since this is a sidetrack well, most of all the water bearing zones are behind pipe.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of P-0205 E-3. The present operator and former operator of the Sockeye field have extensive drilling experience in this

field. The proposed drilling program is similar to those utilized in drilling the production wells in the field. In the event a new pool is discovered, unrelated to the Main zones of the field, the operator should be prepared for higher than expected formation pressure.

5. Faulting and Folding

Several important faults have been mapped by the Operator. Faulting is an important consideration for the success of the well. The well at total depth is located near a north/south trending fault on the crest of the anticline.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The P-0209-2 well did not find near surface gas, but did record gas shows in the Pliocene section.

7. Possible Over-pressured or Depleted Zones

Several ditch gas kicks are noted in the mud logs for E-3. However, as noted above, in the event of a new pool discovery the operator should be prepared for higher than expected formation pressures, similar to the original formation pressures noted at the discovery of the Sockeye field. The Operator has included a well control contingency plan with the Application.

8. Logging/Coring

The Operator plans a standard set of logs, as is the common practice with production wells in this area. A standard mud log will be taken to total depth. The E-logs will include gamma ray, density, neutron, and resistivity, taken on wire line surveys. An LWD with gamma ray will be used for directional surveys and correlation while drilling.

9. Other Comments

The Monterey and Topanga Formations may contain hydrogen sulfide gas. Oil and associated gas shows should be present throughout the entire section to be drilled based on the original mud log in E-3. The path of E3RD will intersect the old exploratory well OCS-P205-3 based on the plan view of the map.

Dual Completion Planned; SS - Monterey Oil (M4)
LS - Uppertopanga - WIW

APPLICATION FOR PERMIT TO DRILL

CHECK LIST

OPERATOR Venoco, Inc. ENGRG. REVIEW BY SJ Shaw
LEASE NO. P-0205 DATE COMPLETED _____
WELL NO. E-3 ST-02 API# 04.311.20666.02
COPIES RECEIVED 3 P.I. 1
GEOLOGIC/GEOPHYSICAL REVIEW COMPLETED BY F. Victor DATE 8/14/06
COPIES ON FILE WITH APD Yes
LEASE INSTRUMENT CHECKED No
DESIGNATION OF OPERATOR APPROVED Yes
SPECIAL LEASE STIPULATIONS NOTED Lease instrument not examined

POE/POD APPROVED DATE _____
SPECIAL CONDITIONS OF APPROVAL Standard COAS to drill OCS well attached to all copies of APD.

MOBIL DRILLING UNIT NO TYPE Platform Rig
ABS & COASTGUARD DOCUMENTS ON FILE N/A
FRONTIER AREA YES/NO NO
SEA FLOOR CONDITIONS EXAMINED, DOCUMENTED AND APPROVED Yes; Previously

RIG DESCRIPTION AND SPECIFICATIONS ON FILE? Yes; Kenai Rig #2
PLAT PROVIDED 2000 FEET/ONE INCH OK

SURFACE LOCATION CHECKED Yes
SUBSURFACE LOCATION CHECKED Yes
RKB TO WATER 107' asl WD 739' RKB TO ML 846'
TVD 6000' MD 10,022' (5893' SS)

WELL DESIGN CRITERIA:

Taken from Existing! Yes TOL @ ~ 3500' MD KOP @ ~ 3800' MD
CASING SIZE 9 5/8" 40# 7" (liner); 26# CALCULATED _____
CASING DEPTH 3800' MD (KOP) 10,022' / 600'
PORE PRESS. 2184 psi 2184 psi
FRAC. PRESS. 1802 psi 10.5 ppq
ANTICIPATED
* SURFACE PRESS. 1884 psi 1884 psi
MUD WEIGHT 9.1 ppq 9.1 ppq
LOST CIRCULATION ZONES Not Anticipated but possible in highly fractured Monterey
SHALLOW HAZARDS FROM GEOLOGIC/GEOPHYSICAL REVIEW None for this well as these potential hazards are already cased-off

BOPE

NO. AND TYPE 1-5M-13 5/8" ANNULAR 3-2 pipes (3 1/2" 22 7/8") 5M-1-5M-13 5/8" PIPE RAMS BLIND/SHEAR RAMS
1 VBR

* Assume 100% gas to surf (0.05 psi/ft gradient) and neglecting shoe.

BOP TEST PRESSURES REQUIRED * MASP = 1884 psi

CASING SIZE 9 5/8" 7" (liner)
RAM-TYPE & RELATED _____
EQUIPMENT 250/3000 psi 250/3000 psi
ANNULAR 250/3000 psi 250/3000 psi

DIAGRAMS * - previously submitted w/APD for E-3 ST-01 on file

BOP SCHEMATIC * DIVERTER SYSTEM N/A CHOKE MANIFOLD *

CASING PROGRAM

CASING SIZE 9 5/8" / 40# 7" (liner) / 26#
TEST PRESSURE 3000 psi 3000 psi

SAFETY FACTORS (EACH STRING): L80 STC L80-Hydnl

TENSION N/A 1.55
COLLAPSE 1.98 1.91
BURST 2.40 4.02

GEOLOGIC FORMATIONS Monterey & UT CORING None LOGGING PROGRAM LWD (GR/RES)
30' dry samples Mudloggers on @ KOP (Spectral)
(8 1/2") 7.885 g/cc CBL/USIT

CEMENTING PROGRAM

CASING SIZE: 9 5/8" 7" (flush-jt)
AMOUNT (Existing) 1300 ft³ (1130 cu yd) 15.8 ppg "G"
(% EXCESS) (Existing) TCCO resurf
(circ liner)

MUD REQUIREMENTS 1400 Bbl Total

-840 Bbl OH

ACTIVE VOLUME -560 Bbl active

RESERVE VOLUME _____

CAPS:
7 5/8" : 0.0758 Bbl/ft
I
7 1/2" : 0.0702 Bbl/ft

CASING SIZE/HOLE SIZE VOLUME CHECKED:
3800' (0.0758) + 6222' (0.0702) = 288 + 437 Bbl = 725 Bbls

MINIMUM QUANTITIES OF MUD MATERIALS AT SITE

BARITE 750 sx (enough to raise MW 0.5 ppg using 1400 Bbl total circulating volume)

GEL MI gel for FL 26.0 & YP (15-20) = 12 to 15 ppb

ADDITIVES (MAJORY) CaCO₃ to prevent lost circ. in UT.

MUD TRANSPORT. FROM SHORE ADDRESSED: YES _____ NO X

DIRECTIONAL PROGRAM PROVIDED: YES X NO _____ CHECKED yes

PLOT OF PORE PRESS., FRAC. GRADS & MUD WEIGHT: YES X NO _____

H₂S PLAN APPROVED PREVIOUSLY yes - treat out H₂S w/ ZnCO₃ (pH 8.5)

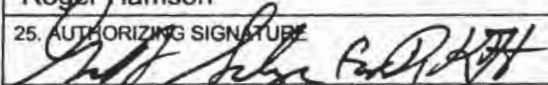
H₂S PLAN INCLUDED FOR APPROVAL NO

WELDING & BURNING PLAN APPROVED? yes - previously

→ Activation @ surface (onset of operations)

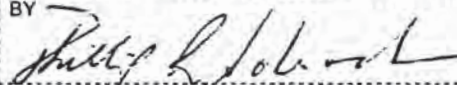
10/14/05

Application for Permit to Drill (APD)

1. PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2. MMS OPERATOR NO 02309	3. OPERATOR NAME and ADDRESS (Submitting Office) Venoco, Inc. 5464 Carpinteria Ave. Suite J Carpinteria, CA 93013-1423	
4. WELL NAME (Current) E-4	5. SIDETRACK NO. (Current) 00	6. BYPASS NO. (Current) 00		
7. PROPOSED START DATE 20051011	8. PLAN CONTROL NO. (New Well Only)			
9. API WELL NO. (Current Sidetrack / Bypass) (12 Digits) 043112066700				
WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE		
10. LEASE NO P-0205	11. AREA NAME 6B	12. BLOCK NO 4661	13. LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)	14. LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)
15. LEASE NO P-0205	16. AREA NAME 6B	17. BLOCK NO 4661	18. LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)	19. LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)
RECEIVED OCT 17 2005 MINERALS MANAGEMENT SERVICE CARMARILLO DISTRICT				
LIST OF SIGNIFICANT MARKERS ANTICIPATED				
20. NAME Monterey (Top)	21. TOP (MD) 4759'	20. NAME Monterey M4	21. TOP (MD) 5558'	
Upper Topanga	7158'	Sespe C-1	7916'	
T/ middle Sespe	8378'			
22. LIST ALL ATTACHMENTS (Attach Complete Well Prognosis and Attachments Required by 30 CFR 250.414(B) through (G) or 30 CFR 250.1617(C) and (D), As Appropriate) Redrill Program (includes: design criteria for well, BOPE, casing program, drilling prognosis), cementing program, drilling mud program, directional program and surface/subsurface well location plat map, Supplemental APD Information Sheet				
23. AUTHORIZING OFFICIAL (Type or Print Name) Roger Hamson		24. TITLE V. P. Southern Assets		
25. AUTHORIZING SIGNATURE 		26. DATE 20051006		

PI COPY SENT
FAXED
10/14/05

THIS SPACE FOR MMS USE ONLY

APPROVED ☒ With Attached Conditions ☐ Without Conditions	BY 	TITLE District Manager
API WELL NO. ASSIGNED TO THIS WELL 04-311-20667-01		DATE 10/14/05

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT The PRA (44 U.S.C. 3501 et seq.) Requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 2 1/4 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, N.W., Washington, DC 20240.

Supplemental APD Information Sheet

1. OPERATOR NAME Venoco, Inc.		5. WELL NAME (Proposed) E-4		6. TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11. WATER DEPTH 739'		12. ELEVATION AT KB 113'	
2. API WELL NO. (Proposed) (12 Digits) 043112066701		3. BOTTOM LEASE NO. (Proposed) P-0205		7. SIDETRACK NO. (Proposed) 01		8. BYPASS NO. (Proposed) 00		13. H ₂ S DESIGNATION ☒ KNOWN ☐ UNKNOWN ☐ ABSENT	
4. TOTAL DEPTH (Proposed) MD 10852'		9. RIG NAME Kenai Drilling Rig No. 2		10. RIG TYPE PF		14. H ₂ S ACTIVATION PLAN DEPTH FT (TVD) 4705' MD / 4120' TVD (Kick off Point)			

15. ENGINEERING DATA																							
Hole Size (in)	Casing ID (in)	Casing Wall Thick (in)	Weight (lb/ft)	Burst Rating (psi)	Collapse Rating (psi)	Type of Connection	MASP (psi)	Safety Factors			Casing Depth (ft)		Top of Line	Well-head Rating (psi)	BOP Size (in)	Test Pressures			Cement (ft)	Drilling Fluid Type (Oil Base, Water, Base, Synthetic)			
								B	C	T	MD	TVD				PP	MW	FO			Annular/ Diverter (psi)	Casing Test (psi)	MW Used for Test (psi)
26	24		201									1474	existing										
22	18 5/8		94/117									1832	existing										
17.5	13 3/8		72									4655	existing										
12.25	9 5/8		43.5	8330			2452	2.58	1.85	1.82		4705			13 5/8	5000	5000	3000				Existing	
8.5	7		28	7240			3525	2.05	1.73	2.43		4120			13 5/8"	5000	5000	3000				Water	
6.125	5		15	8280			3525	2.35	1.66	1.85		8255			13 5/8"	5000	5000	3000				Water	
												10852				5000	5000	3000					
												8780				5000	5000	3000					

16. CONTACT NAME John Hood		17. CONTACT PHONE NO (805) 745-2164		18. CONTACT E-MAIL ADDRESS jhood@venoco.com	
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19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?		☒ YES ☐ NO
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20. REMARKS:	
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PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain well status, well and casing test, and well casing configuration data. MMS uses this information to have accurate data and information on all wells under its jurisdiction and to ensure compliance with approved plans. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 1 hour per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

MMS FORM MMS-123S (October 2002 - Supersedes all previous versions of form MMS-123S which may not be used)

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-4 REDRILL PROGRAM
API# 04-311-20667-01
LEASE OCS-P-0205
October 7, 2005

Objective: The redrill of E-4 is designed to drill into the crestal position of a parasitic drag fold (Bocacio) on the north side of the south Sockeye fault system and will be completed as a gas producer. At the Upper Topanga this E-4 redrill will most likely be completed as an injector with a contingency to complete as an Upper Topanga producer based upon log analysis.

Surface Location: OCS-P-205, Slot No. 30 (X= 1,046,696.30' & Y= 727,014.45')

Elevation: 739' WD, 113' Above MLLW, 852' Ocean Floor to Rig Floor

Proposed TD: OCS-P-205; 10852' MD / 8760' TVD / -8647' SS

TD Location: 3956.44' S and 2730" W or (X = 1,043,966.30' and Y = 723,058.01') ✓

<u>Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. Press.(psi)</u>
T/ Mont	4761	4160	-4047	1800 psi
M4	5441	4573	-4460	1800 psi
Upper Topanga (6.5)	7158	5457	-5344	2100 psi
Sespe C-1 Sand (5 33)	7916	5924	-5811	1200 psi
Middle Sespe	8378	6328	-6215	2900 psi
T/ Middle Sespe Pay	8696	6637	-6524	2900 psi

Existing Casing:

24", 201#, X-52	1474'	Cmtd w/ 1299 cf
18 5/8", 117.5/94#, K-55	1632'	Cmtd w/ 907 cf,
13 3/8", 68 & 72#, L-80	4655'	Cmtd w/ 4265 cf, DV @ 2411'
9 5/8", 43.5#, TCA-80	7174'	Cmtd w/ 2847 cf, DV @ 4432'

Proposed Casing:

24", 201#, X-52	1474' Existing
18 5/8", 117.5/94#, K-55	1632' Existing
13 3/8", 68 & 72#, L-80	4655' Existing
9 5/8", 43.5#, TCA-80	4705' Existing (New-KOP @ 4705')
7", 26#, L-80, Hydril 513	4500'-8300'
5", 15#, L-80, Hydril 513	8100' - 10852'

The well will be abandoned as per the attached drawing. The work is being performed under a previously submitted APM.

Drilling Procedure

Note: This procedure picks up from the abandonment procedure submitted in the approved APM (approved 10/7/05). The existing completion in the well will be abandoned, the casing will have been tested to 3000 psi and the BOP will have been tested to 250/3000 psi with 3-1/2" & 5" drill pipe. The well will be full of mud and ready for sidetracking. The 13 5/8" BOPE (RSRDA) will be configured for drilling operations, with 5" drill pipe rams in the top of the double gate and blind rams in the bottom. The 2 7/8" to 5" VBR rams will be located in the single gate below the mud cross. All tests will be recorded on a chart for the MMS to review. The BOPE will be tested every 14 days during the drilling phase of the operations.

1. Make up a 9 5/8", 43.5# bottom trip whipstock and starting mills. Pick up an MWD. Run the equipment in the hole on the 5" drill pipe in the derrick to 30' above the CIBP set at 4725' (collars at 4604', 4648', 4692', 4736'). Orient the whipstock 45 degrees right of high side using the measurements from the MWD. Set the whipstock on the CIBP and shear the tools off the whipstock face. Condition the mud in the hole to higher viscosity for milling the window and carry the metal cuttings out of the hole. Mill and dress the window as required obtaining good exit point for sidetrack. Drill enough rathole to pass all mills through the window. Mills must smoothly pass through the window before finalizing milling operations. Perform a Formation Integrity Test to 11.0 ppg EMW (13 3/8" casing shoe at 4655" had a 12.9 ppg EMW leak off test). Reduce the viscosity of the mud to desired drilling parameters. Pull out hole and lay down the milling tools.

Note: Mill assembly will include 8.195" window mill, 8.213" lower watermelon mill and 8.6" upper watermelon mill, lug set for 25M# -30M# shear off.

2. Pick up an 8 1/2" bit on a steerable directional drilling assembly including MWD with GR. Run in the hole and sidetrack the well. Continue directionally drilling an 8 1/2" hole from 4705' to 8300' MD / 6255' TVD. The 8 1/2" hole will be drilled with a SP 101 drilling fluid system. This hole section will be drilled through the Monterey, Upper and Lower Topanga formations that are pressure depleted. There could be problems with lost circulation and differential sticking. Make bit and wiper trips as necessary.

Notes:

- See the attached drilling fluids program.
- Review the attached directional program.

1. Target No. 1: Middle Sespe X=1,044,156, Y=723470 or 3544.45'S and 2540.30' W at 8362' MD / 6313' TVD / -6200' SS
2. Target No. 2: Total Depth; X=1,043,966.30, Y=723,058.01 or

3956.44' S and 2730' W at 10852' MD / 8760' TVD / -8647' SS

- Mud loggers to start upon drilling out of the 9 5/8" casing window.
 - The Top Sespe estimated at 8362' MD. Geology will monitor the GR and we will set pipe above the T/ Middle Sespe in competent shale.
3. Circulate and condition the mud for logging. Wipe the hole to the 9 5/8" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
 4. Rig up wire line and run open hole logs (see attached logging program). Condition the hole if necessary between runs.
 5. Run back to bottom with an 8 1/2" bit and circulate and condition the hole for the 7" liner. Wipe the hole to the 9 5/8" casing shoe. Pull out of the hole and stand the 5" drill pipe back.
 6. Rig up casing crew and run the 7", 26#, L-80, Hydril 513 liner from +/- 4500' to 8300' as follows:
 1. 7", 26#, L-80 Float Shoe
 2. 1 Joints of 7", 26#, L-80 Casing
 3. 7", 26#, L-80 Float Collar
 4. 1 Joint of 7", 26#, L-80 Casing
 5. 7", 26#, L-80 Landing Collar
 6. +/- 3700' of 7", 26#, L-80 Casing
 7. 7", 26#, Flexlock Hydraulic Liner Hanger
 8. RS Nipple with 6.188" Profile
 9. ZXP Liner Top Packer, 7" x 9 5/8", HR Profile w/ 10' tie-back extension
- Notes:
- Centralize the 7" liner inside the 8 1/2" open hole using positive stand-off centralizers with stop rings. Centralizer spacing will be determined after the directional work is completed. Consider running one centralizer in the middle of each joint through the production intervals. Have 60 centralizers available.
 - Drift DP and xo to ensure cementing dart will pass.
 - Run in the hole slowly to avoid surging the formation.
 - A circulating swage with a safety valve will be on the rig floor.
7. Run the liner in the hole, tag bottom and pick up 5' and circulate the well until the returns are clean. Reciprocate the liner while circulating. Drop the setting ball and set the liner hanger.
 8. Mix and pump the cement job as per the attached program. Bump the plug with 500 psi above the final circulating pressure. Bleed the pressure back and check the floats. Pick up and set the liner packer at the top of the liner hanger. While waiting on cement, pull out of the hole and lay down and pick up drill pipe and drilling tools as required for the 6 1/8" hole section.

Notes:

- See attached cementing program for slurry specifications.
 - Cement volumes are based on 50% excess in the open hole.
 - Do not circulate at the top of the liner prior to pulling out of the hole.
 - Set the liner 5' off bottom.
 - The 3 1/2" drill pipe needed to clean out the 7" liner will be in the derrick.
9. Pick up an 8 1/2" bit and run in the hole. Clean out to the top of the liner at 4500'. Pressure test the liner top to 3000 psi. Pull out of the hole.
10. Pick up a clean out assembly with 6 1/8" bit and 3 1/2" drill pipe and run in the hole. Clean out the 7" liner to 20' above the 7" shoe. Pressure test the 7" liner to 3000 psi. Clean out cement and float shoe and drill 10' of new hole. Circulate and condition mud to a 9.6 ppg MW. Perform a Formation Integrity Test to 11.0 ppg EMW. Pull out of the hole with the clean out assembly.
11. Pick up a 6 1/8" bit on a steerable directional drilling assembly including MWD. Run in the hole and continue directionally drilling a 6 1/8" hole from 8300' to 10952' per directional drilling program. The 6 1/8" hole will be drilled with a 9.6 ppg SP 101 drilling fluid system. This hole section will be drilled through the Middle Sespe section. This hole section should be at or slightly above normal pressure. There could be unforeseen problems with lost circulation and differential sticking. Make bit and wiper trips as necessary.

Notes:

- See the attached drilling fluids program.
 - Review the attached directional program.
 - 1. Target No. 1: Middle Sespe X=1,044,156, Y=723470 or 3544.45'S and 2540.30' W at 8362' MD / 6313' TVD / -6200' SS
 - 2. Target No. 2: Total Depth; X=1,043,966.30, Y=723,058.01 or 3956.44' S and 2730' W at 10852' MD / 8760' TVD / -8647' SS
 - Mud loggers will continue in this hole section.
12. Circulate and condition the mud for logging. Wipe the hole to the 7" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
13. Rig up wire line and prepare to run open hole logs (see attached logging program). Condition the hole if necessary between runs.
14. Run back to bottom with an 6 1/8" bit and circulate and condition the hole for the 5" liner. Wipe the hole to the 7" casing shoe. Pull out of the hole.
15. Rig up casing crew and run the 5", 15#, L-80, Hydril 513 liner from 8100' to 10852' as follows:
- 1. 5", 15#, L-80 Float Shoe
 - 2. 1 Joints of 5", 15#, L-80 Casing

3. 5", 15#, L-80 Float Collar
4. 1 Joint of 5", 15#, L-80 Casing
5. 5", 15#, L-80 Landing Collar
6. +/- 2652' of 5", 15#, L-80 Casing
7. 5", 15#, Flex lock Hydraulic Liner Hanger
8. RS Nipple with 4.375" Profile
9. ZXP Liner Top Packer, 5" x 7", HR Profile w/ 10' tie-back extension

Notes:

- Centralize the 5" liner inside the 6 1/8" open hole using positive stand-off centralizers with stop rings. Centralizer spacing will be determined after the directional work is completed. Consider running one centralizer in the middle of each joint through the production intervals (approximately 60 centralizers needed).
- Drift DP and xo to ensure cementing dart will pass.
- Run in the hole slowly to avoid surging the formation.
- A circulating swage with a safety valve will be on the rig floor.

16. Run the liner in the hole, tag bottom and pick up 5' and circulate the well until the returns are clean. Reciprocate the liner while circulating. Drop the setting ball and set the liner hanger.

17. Mix and pump the cement job as per the attached program. Bump the plug with 500 psi above the final circulating pressure. Bleed the pressure back and check the floats. Pick up and set the liner packer at the top of the liner hanger. While waiting on cement, pull out of the hole and rack the drill pipe back and lay down any drilling tools that will not be needed.

Notes:

- See attached cementing program for slurry specifications.
- Cement volumes are based on 50% excess in the open hole.
- Do not circulate at the top of the liner prior to pulling out of the hole.
- Set the liner 5' off bottom.
- The drill pipe needed to clean out the 5" liner will need to be picked up.

18. Pick up an 6 1/8" bit and run in the hole. Clean out to the top of the liner at 8100'. Pressure test the liner top to 3000 psi. Pull out of the hole.

19. Pick up a 4 1/4" bit and 2 3/8" drill pipe and run in the hole. Clean out the 5" liner to the landing collar. Pressure test the 5" liner to 3000 psi. Displace the drilling fluid out of the hole with clean filtered sea water. Circulate the well until return fluids are clean. Pull out of the hole with the 3 1/2" drill pipe.

20. Pick up and run in the hole with a 5", 15# casing scraper and 7", 26# casing scraper spaced out to scrape 5" and 7" casing. Circulate the well with clean filtered sea water. Pull out of the hole with the drill pipe.

21. Rig up wireline and run a cement bond log (USIT/GR) across the 5" liner and across the 7" liner. Squeeze the liner if necessary. Have 1 – bridge plug and 2 - cement retainers for each pipe size and 2- 2' perforation guns for each size casing available on location.
22. A detailed completion procedure will be provided after the open hole logs have been evaluated. After successfully completing the previous steps including the 3000 psi pressure test of the casing and liners, close the blind rams and change the upper pipe rams from 5" to 2-3/8" in preparation for completion activities.

GENERAL COMPLETION PROCEDURE

Note: For the completion mode, the 13-5/8" 5M BOPE will be configured with 2-3/8" pipe rams in the top of the double gate and blind rams in the bottom. The 2 7/8" to 5" VBR rams will be located in the single gate below the mud cross. Prior to initiating completion operations below, the BOP will be tested with 2-3/8", 2-7/8", 3-1/2" and 5" pipe to 250/3000 psi (the blind rams to 250/3000 psi). All tests will be recorded. The BOPE will be tested every 7 days during the completion phase of the operation.

1. Perforate the Middle Sespe with TCP guns. Isolate the lower perforated interval.
2. Perforate the Upper Topanga interval with TCP guns.
3. If the well is an injector proceed with running completion equipment. If the well is going to be a producer a 4" SSWW screen will be run and gravel packed in the Upper Topanga.
4. Run the dual production completion equipment with the long string producing from the Middle Sespe. The short string will inject into or produce from the Upper Topanga.
5. Rig down and move the rig to the next well.

EVALUATION PROGRAM

1) MUD LOGGING

8 1/2" and 6 1/8" Hole Sections - Mud logging will be used from the kick off point at 4705' through to the total depth of 10852'.

2) ELECTRIC LOGGING

8 1/2" Hole Section

The following logs will be run using wire line:

Run #1: PEX-HALS-NGT

Run #2 – FMI – GR (across Monterey)

Actual logging runs will depend on hole conditions.

6 1/8" Hole Section

The following logs will be run using wire line:

Run #1: PEX-HALS-NGT

Actual logging runs will depend on hole conditions.

Notify Geologist to witness all logs.

Primary Geologist: Mike Wracher

Work: 805-745-2272

Home: 805-682-4780

Cell: 805-689-8666

Back-up Geologist: Marc Kamerling

Work: 805-745-2177

Home: 805-898-7975

Cell: 805-450-0612

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8	7
2	Setting Depth (feet – TVD)	4120	6255
3	Expected Leak Off Test EMW at shoe (ppg)	12.5	13.8
4	Depth of next Casing (feet - TVD)	6255	8760
5	Maximum Expected Formation Pressure (psi)	2765	3963
6	Expected Mud Weight (ppg)	9.6	9.6
7	Formation Equivalent Mud Weight (ppg)	8.5	8.7
8	Expected Hydrostatic Pressure at TD (psi)	3122	4373
9	Amount of Overbalance at TD (psi)	358	410
10	Fracture Gradient at shoe (psi/ft)	0.65	0.72
11	Fracture Pressure at shoe (psi)	2678	4489
12	Hydrostatic Pressure at shoe (psi)	2057	3122
13	Margin between Mud Weight and LOT (psi)	621	1366

Maximum Anticipated Surface Pressures

1	Casing Size (in)	9-5/8	7"
2	Setting Depth (feet – TVD)	4120	6255
3	Expected Leak Off Test EMW at shoe (ppg)	12.5	13.8
4	Expected Mud Weight (ppg)	9.6	9.6
5	Depth of next Casing (feet - TVD)	6255	8760
6	Maximum Expected Formation Pressure (psi)	2765	3963
7	Expected gas gradient (psi/ft)	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.5	8.7
	Max Pressures using 100% Gas to Surface		
9	Max Surface Pressure neglecting shoe (psi)	2452	3525
10	Fracture Gradient at shoe (psi/ft)	0.65	0.72
11	Fracture Pressure at shoe (psi)	2678	4489
12	Surface pressure to break down shoe (psi)	2472	4176
13	Maximum Anticipated Surface Pressure (psi)	2452	3525
	Max Pressures using 70% Gas & 30% Mud		
14	Maximum Anticipated Surface Pressure (psi)	1609	2345
15	Top of fluid (feet-TVD)	4379	6132
16	Pressure at shoe (psi)	1815	2713
17	Margin between pressure and breakdown(psi)	863	1776

CASING PROGRAM

Hole Section	12.25*	8.5	6.125
Mud Weight	9.6	9.6	9.6
Buoyancy Factor	0.853	0.853	0.853
MASP (psi)	2452	3525	3525
Gas Lift Pressure (psi)	1800	1800	1800
Casing Size (in)	9-5/8*	7	5
Setting Depth, MD (ft)	4705	8300	10852
Setting Depth, TVD (ft)	4120	6255	8760
Top of Casing, MD (ft)	0	4500	8100
Weight (lb/ft)	43.5	26	15
Grade	TCA80	L-80	L-80
Threads	STL	513	513
ID (in)	8.755	6.199	4.327
Drift diameter (in)	8.599	6.151	4.283
Collapse (psi)	3810	5410	7250
Burst (psi)	6330	7240	8290
Joint Strength (kips)	500 (est)	448	250
Body Strength (kips)	1005	604	350
Collapse Safety Factor	1.85	1.73	1.66
Burst Safety Factor	2.58	2.05	2.35
Tensile Safety Factor	1.82	2.43	1.85

* Existing Casing

Notes:

Burst is calculated on the greater of MASP or gas lift pressure.

Collapse is based on mud outside of an evacuated casing string.

Tension is based on buoyed weight of casing string + 100 kips over pull.

CEMENTING PROGRAM

7" Production Liner

Objective: Cement 7" liner set across the 8 ½" open hole interval. Liner will extend 200' back into the 9 5/8" casing and cement will be brought back 200' over the top of the liner hanger. A liner top packer will be used to ensure pressure integrity of the lap for the productive life of the well since it will be exposed to gas lift.

General Information:

9 5/8", 43.5#, L-80 Casing Window 4705' (8.835" ID)
7", 26#, L-80 Liner (6.276" ID) Shoe at 8300' & TOL at 4500'
Lap Volume Factor is 0.1508 CF/FT
Open Hole Volume Factor is 0.1268 CF/FT
Shoe Joint Volume Factor is 0.2148 CF/FT
Open Hole Excess 50% over theoretical
Static Temperature is 183 F (@ 6539' TVD)

Slurry Volume:

816 CF of cement total required to bring cement to 200' above the top of the 7" liner including 50% excess in the open hole. Actual volumes will be determined from the caliper log volumes.

Cement Slurry Details:

Pre-flush: 20 bbls of Ultra Flush II

Lead Cement: 408 CF (171 sx) of Class "G" + additives to be determined.

Yield: 2.38 CF/sx
Water: 13.61 gal/sx
Weight: 12.2 ppg
Mix Water: Seawater
Height: 1800 lineal feet (4705-6500)

Tail Slurry: 408 CF (354 sx) of Class "G" + additives to be determined.

Yield: 1.15 CF/sx
Water: 4.80 gal/sx
Weight: 15.8 ppg
Mix Water: Fresh Water
Height: 1800 lineal feet (6500-8300)

Note: Lab tests will be performed prior to cementing to verify slurry properties. Actual materials that will be used on location will be used to perform tests.

5" Production Liner

Objective: Cement 5" liner set across the 6 1/8" open hole interval. Liner will extend 200' back into the 7" casing and cement will be brought back 200' over the top of the liner hanger. A liner top packer will be used to ensure pressure integrity of the lap for the productive life of the well since it will be exposed to gas lift.

General Information:

7", .26#, L-80 Casing set at 8300' MD (6.276" ID) & TOL at 4500'

5", 15#, L-80 Liner (4.408" ID) Shoe at 10852 & TOL at 8100'

Lap Volume Factor is 0.0785 CF/FT

Open Hole Volume Factor is 0.0683 CF/FT

Shoe Joint Volume Factor is 0.1060 CF/FT

Open Hole Excess 50% over theoretical

Static Temperature is 222 F (@ 8760' TVD)

Cement Slurry Details:

Pre-flush: 20 bbls of Ultra Flush II

Cement: 329 CF (286 sx) of Class "G" + additives to be determined.

Yield: 1.15 CF/sx

Water: 4.80 gal/sx

Weight: 15.8 ppg

Mix Water: Fresh Water

Height: 2752'

Note: Lab tests will be performed prior to cementing to verify slurry properties. Actual materials that will be used on location will be used to perform tests.

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Whipstock	Gel - water	9.0-9.6	NC	+/-10.5	40-50	+9-10 K
4705 - 8300'	SP 101	9.0-9.6	<6	+/-8.5	15-20	+19-20 K
8300 - 10852'	SP 101	9.0-9.6	<6	+/-8.5	15-20	+19-20 K

Whipstock: The fluid system used for the milling operations will be gel based. The products used for this interval are approved for offshore Region 9. The mud system and cuttings can be dumped overboard if all the environmental tests are negative. The low shear rate viscosity will be raised as necessary to transport metal cuttings out of the hole. Add soda ash to control total hardness and caustic soda to control the pH.

4705'-10852': Convert over to SP 101 by adding 1.5 to 2.5 ppb of SP 101 to the system. Continue with the additions of SP 101 for fluid loss reductions (<6.0 cc). Add dry NaCl to maintain the chloride content between 19,000 and 25,000. Stop additions of Durogel and build up the surface system with MI Gel pre-hydrated in fresh water at a concentration of 12 to 15 ppb. Maintain the mud weight as required with the solids control equipment. Condition the mud with water to keep the MBT below 30 ppb and treat out calcium with Soda Ash to below 200 ppm. Reduce the mud weight and add calcium carbonate if mud losses are encountered while drilling this section.

Notes:

1. Operate solids control equipment to maintain drill solids as low as possible.
2. Maintain supply of $ZnCO_3$ onboard to treat out H_2S .
3. A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised a minimum of 0.5 ppg using +/- 1100 bbl total circulating volume (640 (8 1/2" hole) or 580 bbls (6 1/8" hole) open hole volume & 390 bbl active system).
4. Add Calcium Carbonate to the mud system after drilling through the Monterey interval. This will help prevent lost circulation in the Upper Topanga.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.
Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.
Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).
Read drill pipe pressure.
Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.
Shut down pump and close choke at the same time. SEE NOTE.
Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas.

Assume any gas circulated to surface to have hydrogen sulfide potential.

Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

Vertical to 1929'
Max Angle 45 deg @3385' and 33.5 deg at 7064'
D F Elevation 113'
D F to Tubing Head 59.23'
Water Depth 739'
Tree FMC 5000 PSI WP

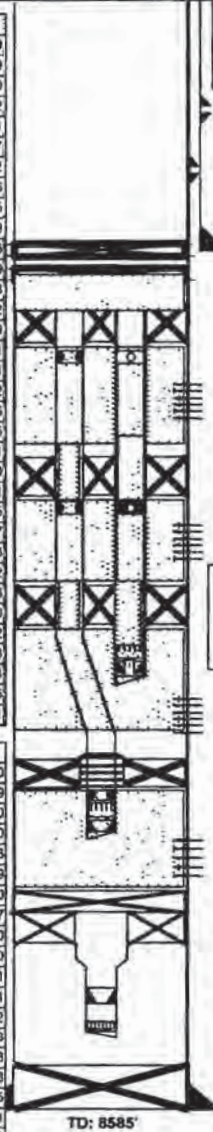
SOCKEYE FIELD
WELL E-4
Lease OCS-P-0205
L-Injector / S-Producer

Drawing Revision 8/29/05 DHB
proposed P&A

Completion Date: 11/88
Recompletion 3/90, 3/26/93, 6/24/97,
7/17/98, 12/2/00

Short String Description	ID	LENGTH	DEPTH
KB		59.00	0
Tbg Hanger	2.441"	1.10	59
2-7/8" L-80 6.5# 8rd ELJE pup/jt	2.441"	1.75	60
29 fts 2-7/8" L-80 6.5# 8rd ELJE tbg	2.441"	869.09	62
1 pup/jt as above	2.441"	6.15	951
Baker "T-5" SCSSV	2.313"	4.76	957
1 pup/jt as above	2.441"	4.09	962
75 fts 2-7/8" tbg as above	2.441"	2378.82	966
1 pup/jt as above	2.441"	4.00	3345
GLMA-1 Mandrel (GLV-1.0R 1600 PSI)		7.03	3349
1 pup/jt as above	2.441"	3.60	3366
43 fts 2-7/8" tbg as above	2.441"	1388.58	3369
1 pup/jt as above	2.441"	4.02	4748
GLMA-1 Mandrel (1454" Orifice 1450 PSI)		7.03	4752
1 ft 2-7/8" tbg as above	2.441"	32.31	4759
Baker Model "G1" Dual Packer (40K Shear)	2.441"	9.84	4791
1 ft 2-7/8" tbg as above	2.441"	30.99	4801
Baker 2-7/8" "CMU" Sliding Sleeve	2.313"	4.02	4832
12 fts 2-7/8" tbg as above	2.441"	388.45	4836
1 pup/jt as above	2.441"	6.10	5225
Baker Model "G1" Dual Packer (40K Shear)	2.441"	9.12	5231
1 ft 2-7/8" tbg as above	2.441"	30.98	5240
Baker 2-7/8" "CMU" Sliding Sleeve	2.313"	4.02	5271
5 fts 2-7/8" tbg as above	2.441"	162.38	5275
1 pup/jt as above	2.441"	6.10	5437
Baker Model "G1" Dual Packer (40K Shear)	2.441"	9.12	5443
1 pup/jt as above	2.441"	5.98	5462
Baker "X" Nipple	2.313"	1.13	5456
1 ft 2-7/8" tbg as above	2.441"	32.29	5460
Baker "E" Hydro-Trip Pressure Sub	2.375"	1.34	5492
1 ft 2-7/8" tbg as above	2.441"	31.01	5493
Baker "XN" Nipple w/pup/jt (0801)	2.205"	1.36	5524
Wireline Re-Entry Guide		0.67	5526
Tail			5526.21

Long String Description	ID	LENGTH	DEPTH
KB		59.00	0
Tbg Hanger	2.441"	1.10	59
5 fts 2-7/8" L-80 6.5# 8rd ELJE pup/jt	2.441"	30.04	60
26 fts 2-7/8" L-80 6.5# 8rd ELJE tbg	2.441"	863.04	90
1 pup/jt as above	2.441"	6.10	983
Baker "X" Nipple w/ Injection Valve	2.313"	1.12	989
1 pup/jt as above	2.441"	6.10	990
122 fts 2-7/8" tbg as above	2.441"	3753.69	997
2 fts 20# Elast Joint	2.441"	40.27	4750
Model "K" Anchor Steel Nipple	2.441"	0.87	4790
Baker Model "G1" Dual Packer (40K Shear)	2.441"	9.84	4791
1 ft 2-7/8" tbg as above	2.441"	30.94	4801
Baker "X" Nipple	2.313"	1.12	4832
Telescoping Swivel Sub	2.441"	4.55	4833
Steel Sub	2.313"	0.50	4838
12 fts 2-7/8" tbg as above	2.441"	388.35	4838
1 pup/jt as above	2.441"	6.10	5225
Baker Model "G1" Dual Packer (40K Shear)	2.441"	9.12	5231
1 ft 2-7/8" tbg as above	2.441"	31.88	5240
Baker "X" Nipple	2.313"	1.12	5272
Telescoping Swivel Sub	2.441"	4.57	5273
Steel Sub	2.313"	0.50	5277
5 fts 2-7/8" tbg as above	2.441"	159.36	5278
1 pup/jt as above	2.441"	6.10	5437
Baker Model "G1" Dual Packer (40K Shear)	2.441"	9.12	5443
19 fts 2-7/8" tbg as above	2.441"	617.16	5453
1 pup/jt as above	2.441"	6.05	6070
Locator Seal Assembly	2.441"	1.05	6076
Baker Model "D" Packer w/ Steel Bore Extension	2.441"	13.68	6077
1 ft 2-7/8" tbg as above	2.441"	32.25	6090
Baker "X" Nipple	2.312"	1.13	6123
1 ft 2-7/8" tbg as above	2.441"	32.29	6124
Baker "E" Hydro-Trip Pressure Sub	2.375"	1.32	6156
1 pup/jt as above	2.441"	10.10	6157
Baker "XN" Nipple	2.205"	1.32	6168
Wireline Re-Entry Guide	2.441"	0.62	6169
Tail			6169.46



24" 201# X-52 CSG to 1474'

18 5/8" 117.5#, 94.5# K-55 CSG to 1632'
Stage Collar @ 2411

Stage Collar @ 4423

13 3/8" 72# L-80 CSG to 4855'

P&A Bridge plug set near 4700'

5000 - 5200

Retainer set near 4745' and cement squeezed thru tbg cuts at 5475', 5250', 4820' with 400 cf pumped and squeezed through perfs 5000'-5810'

5280 - 5350

PLUG #1 - Thru long string tail with 105 cf pumped and sqz through perfs 6220'-6302' Pressure tested to 2000 psi

5560 - 5610, 5625 - 5675
5690 - 5730, 5760 - 5810

6249'-6258' bad spots in csg (milled thru restrictions (8-14") 12/1/00)

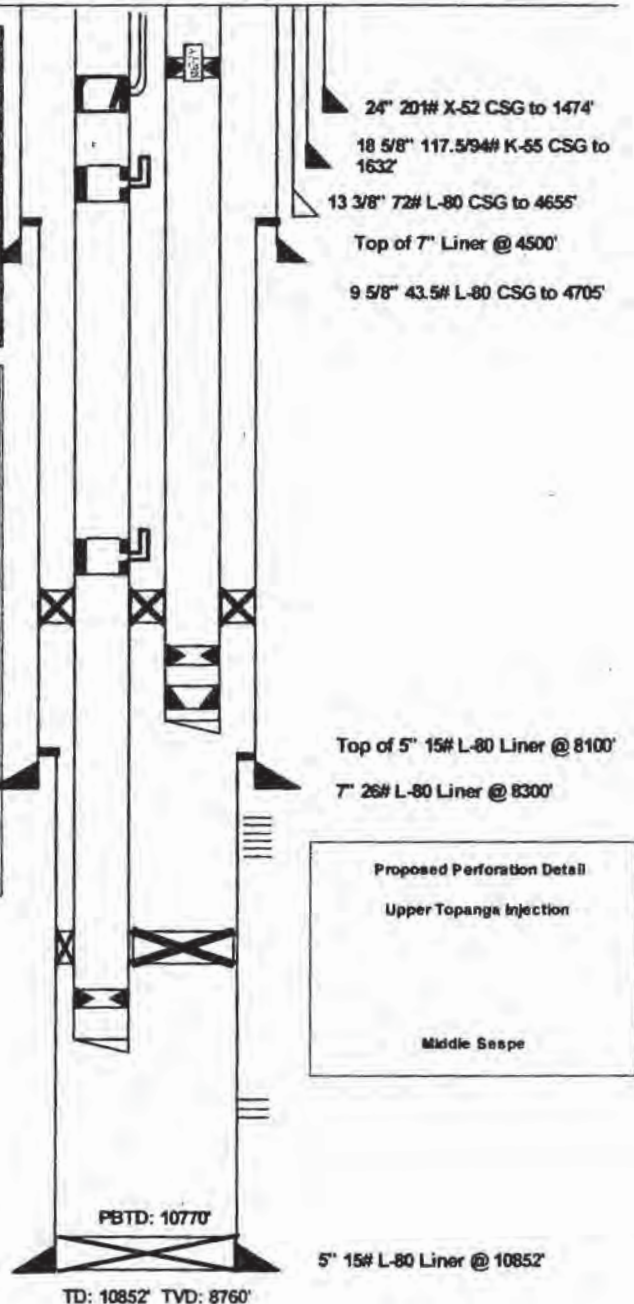
6220 - 6230, 6245 - 6275
6278 - 6282, 6289 - 6296
6299 - 6302

Junk 6463' cmt retainer on top of bridge plug
6490' Baker Model "D" Packer
6566' HES "XN" Nipple (2 205" ID)
6575' Baker Hydro Trip Sub
6578' Tubing Tail (Rotating Muleshoe)

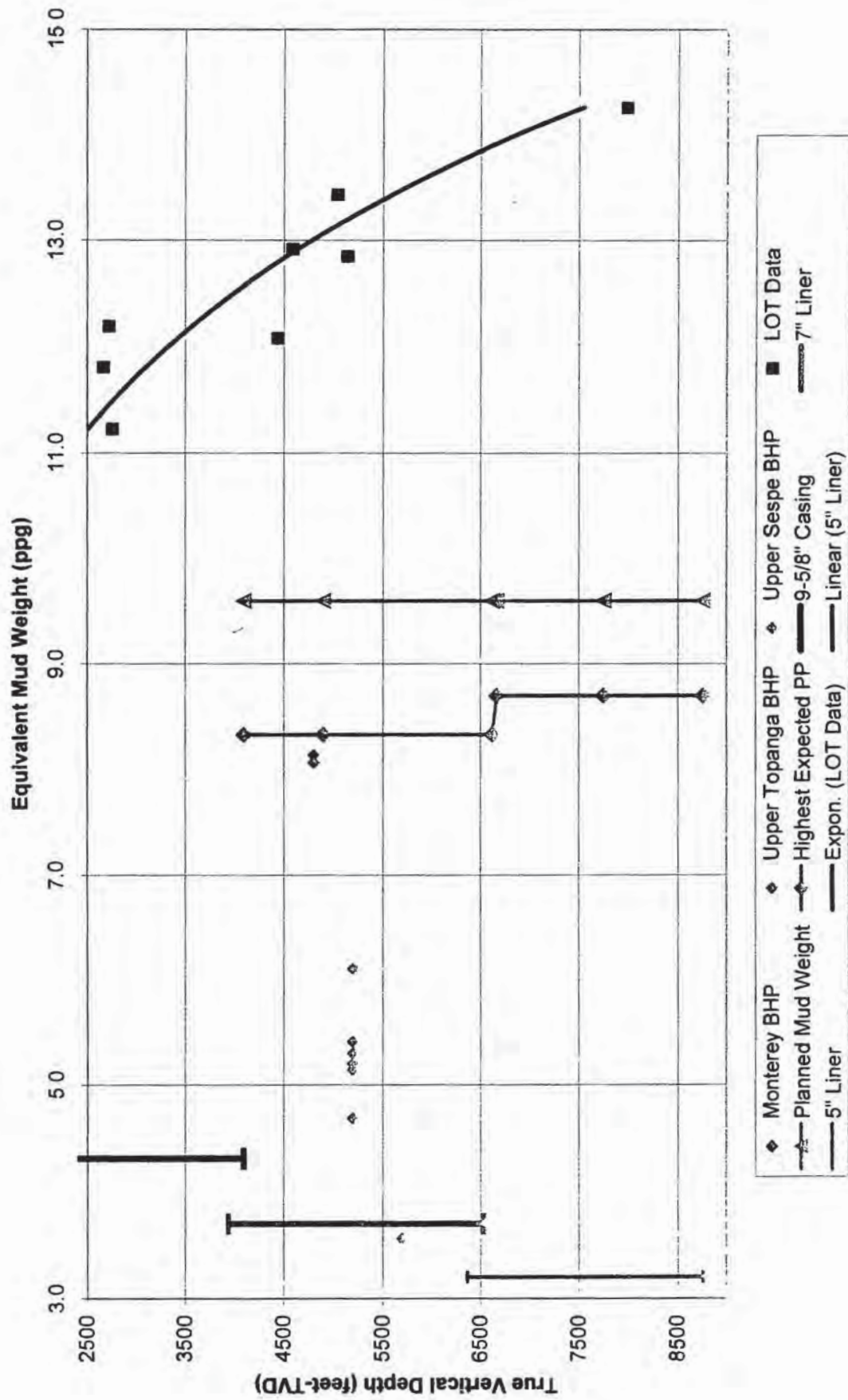
FISH Lost Office Valve 6/30/97

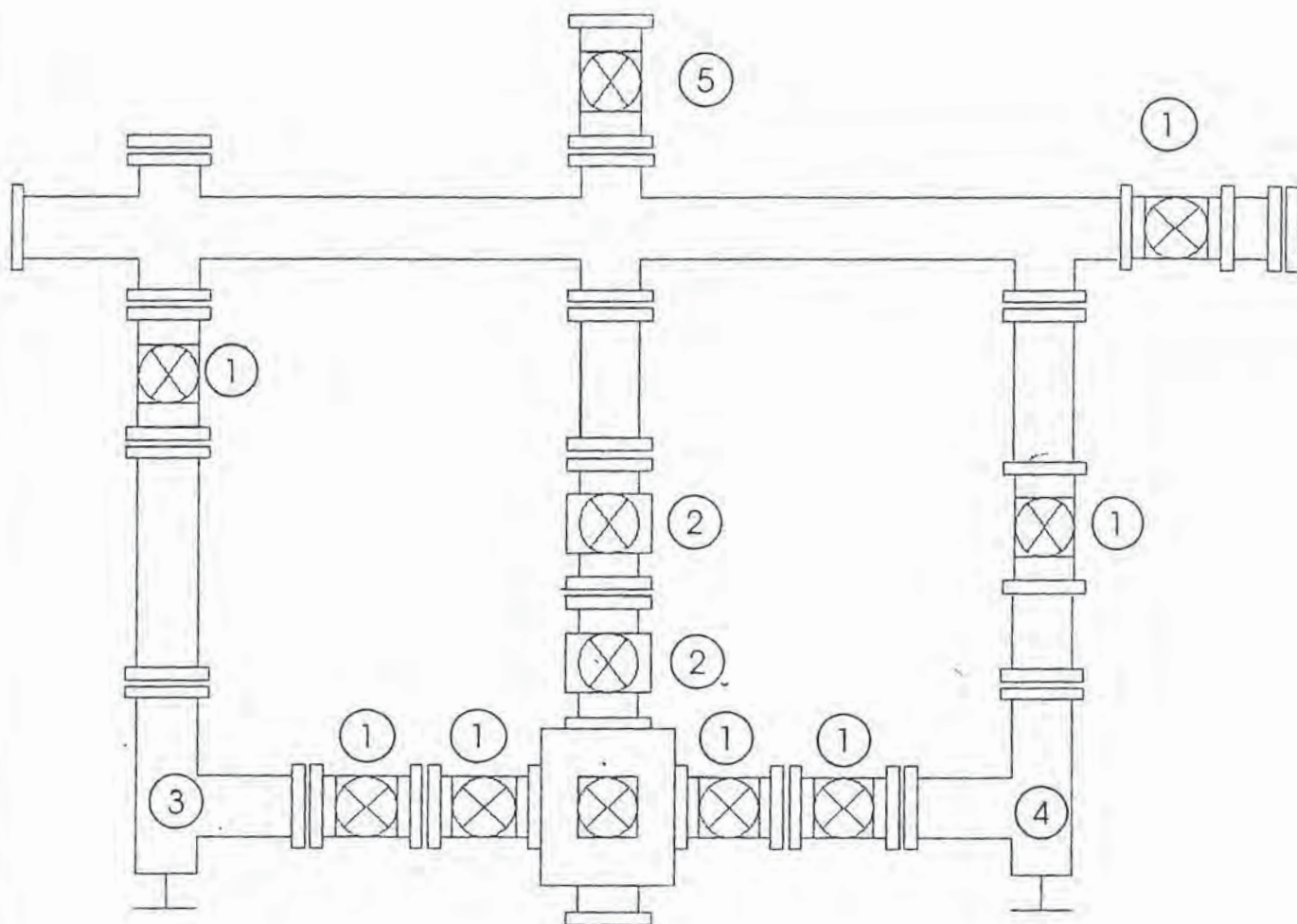
8 5/8" 43.5# TCA-80 CSG to 7174'

Perforation Detail					
Monterey	5000-5200'	Sept-1/2"	Prod	8/01 (Is'd 12/00 Prod 6/97)	
Monterey	5280-5350'	Sept-1/2"	Is'd	12/00 (Reperf 6/97, Prod 3/93)	
Monterey	5350-5480'	7xpt	Abdn	6/97 (Prod 3/93)	
Monterey	5560-5610'	Sept-1/2"	Is'd	8/01 (Prod 12/00)	
Monterey	5625-5675'	Sept-1/2"	Is'd	8/01 (Prod 12/00)	
Monterey	5690-5730'	Sept-1/2"	Is'd	8/01 (Prod 12/00)	
Monterey	5760-5810'	Sept-1/2"	Is'd	8/01 (Prod 12/00)	
Monterey	5825-5831'	Sept-1/2"	Sqzd	12/00	
Upper Topanga	6220-6230'	12xpt-46"	Prod	7/88	
Upper Topanga	6246-6276'	4xpt-30"	Prod	6/97 (6266-6268' 4xpt-30" Reperf 7/87)	
Upper Topanga	6278-6282'	4xpt-30"	Prod	6/97	
Upper Topanga	6289-6296'	4xpt-30"	Prod	6/97	
Upper Topanga	6299-6302'	4xpt-30"	Prod	6/97	
Upper Sespe	6630-6647'	7xpt	Abdn	6/97 (Prod 3/93)	
Upper Sespe	6681-6693'	7xpt	Abdn	6/97 (Prod 3/93)	
Upper Sespe	6697-6697'	7xpt	Abdn	6/97 (Prod 11/88)	
Upper Sespe	6700-6718'	7xpt	Abdn	6/97 (Reperf 3/93 Sqzd 3/90 Prod 11/88)	
Upper Sespe	6730-6752'	7xpt	Abdn	6/97 (Reperf 3/90 Prod 11/88)	
Upper Sespe	6760-6788'	7xpt	Abdn	6/97 (Reperf 3/90 Prod 11/88)	
Upper Sespe	6806-6850'	7xpt	Abdn	6/97 (Reperf 3/90 Prod 11/88)	
Upper Sespe	6855-6855'	7xpt	Abdn	6/97 (Prod 11/88)	
Upper Sespe	6860-6862'	7xpt	Sqzd	3/90	
Upper Sespe	6868-6876'	7xpt	Abdn	6/97 (Prod 11/91)	
Upper Sespe	6898-6910'	7xpt	Abdn	6/97 (Prod 5/92)	
Upper Sespe	6916-6924'	7xpt	Abdn	6/97 (Prod 2/91)	



Platform Gail Well E-4 ST Pore Pressure, Mud Weight & Fracture Pressure

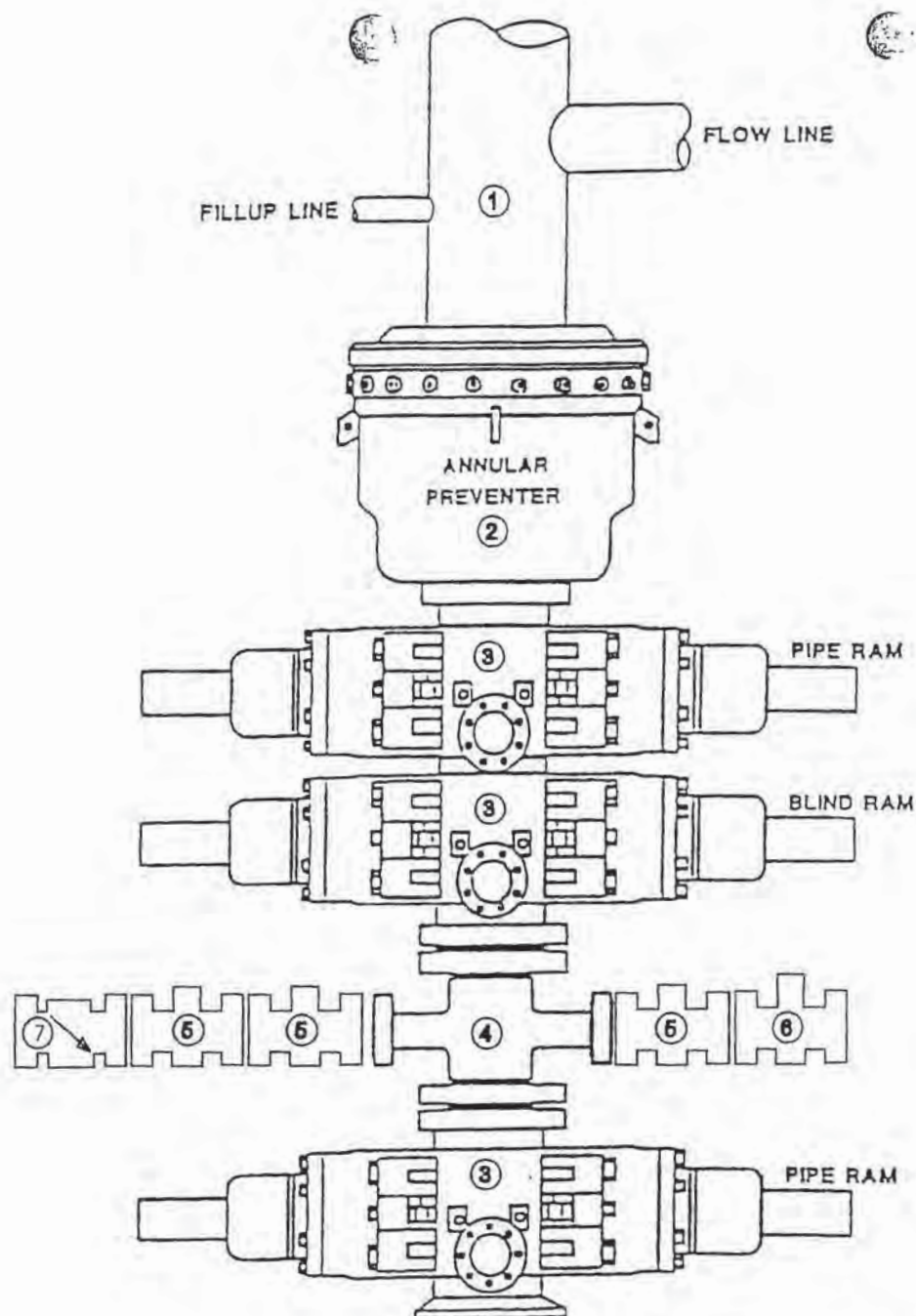




- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



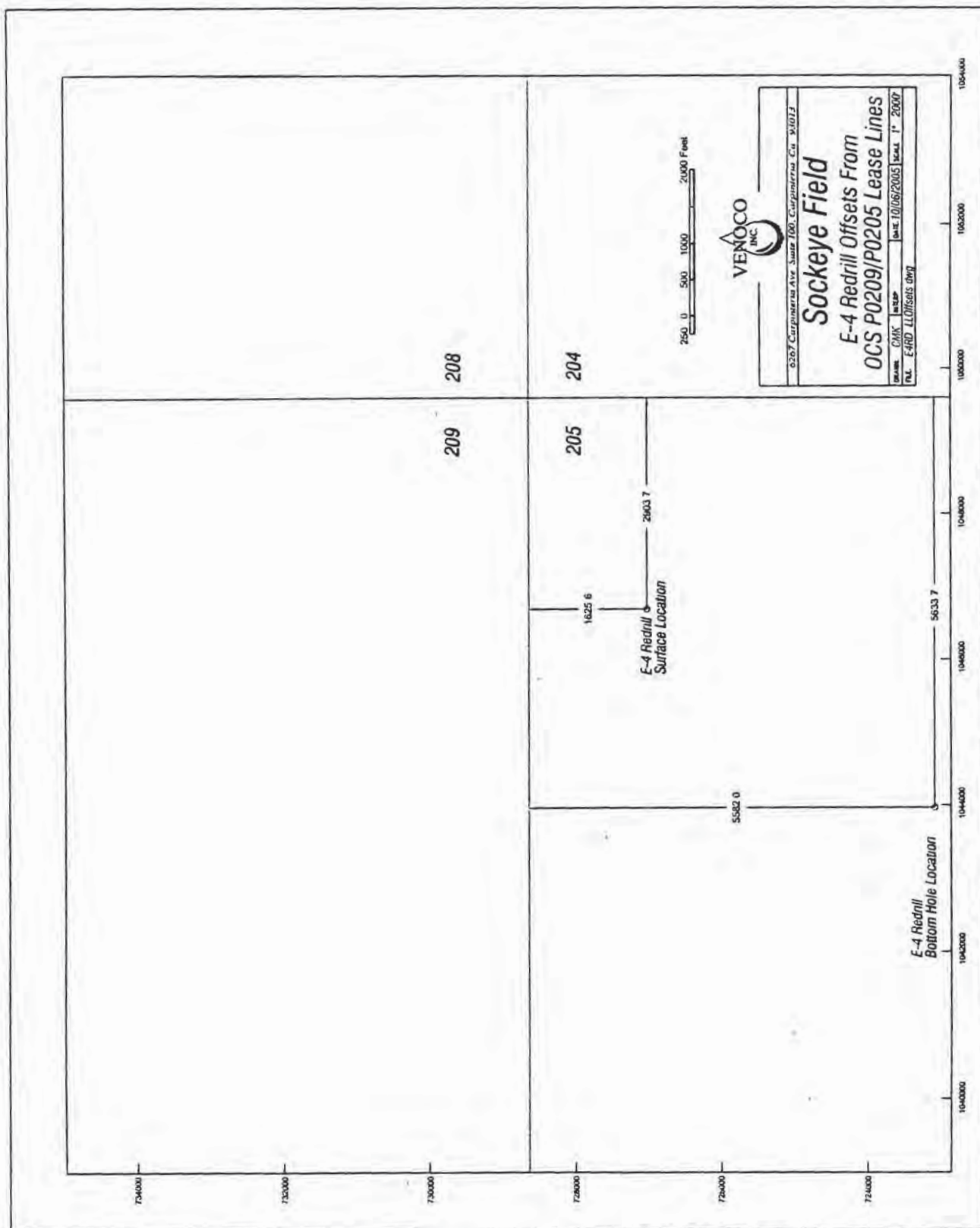
CHOKE MANIFOLD PLATFORM GAIL



- ① BELL NIPPLE
- ② 13 5/8" 5M GK HYDRILL
- ③ 13 5/8" 5M DOUBLE GATE
- ④ DRILLING SPOOL
- ⑤ 3" 5M MANUAL VALVE
- ⑥ 3" 5M HCR VALVE
- ⑦ 3" 5M CHECK VALVE

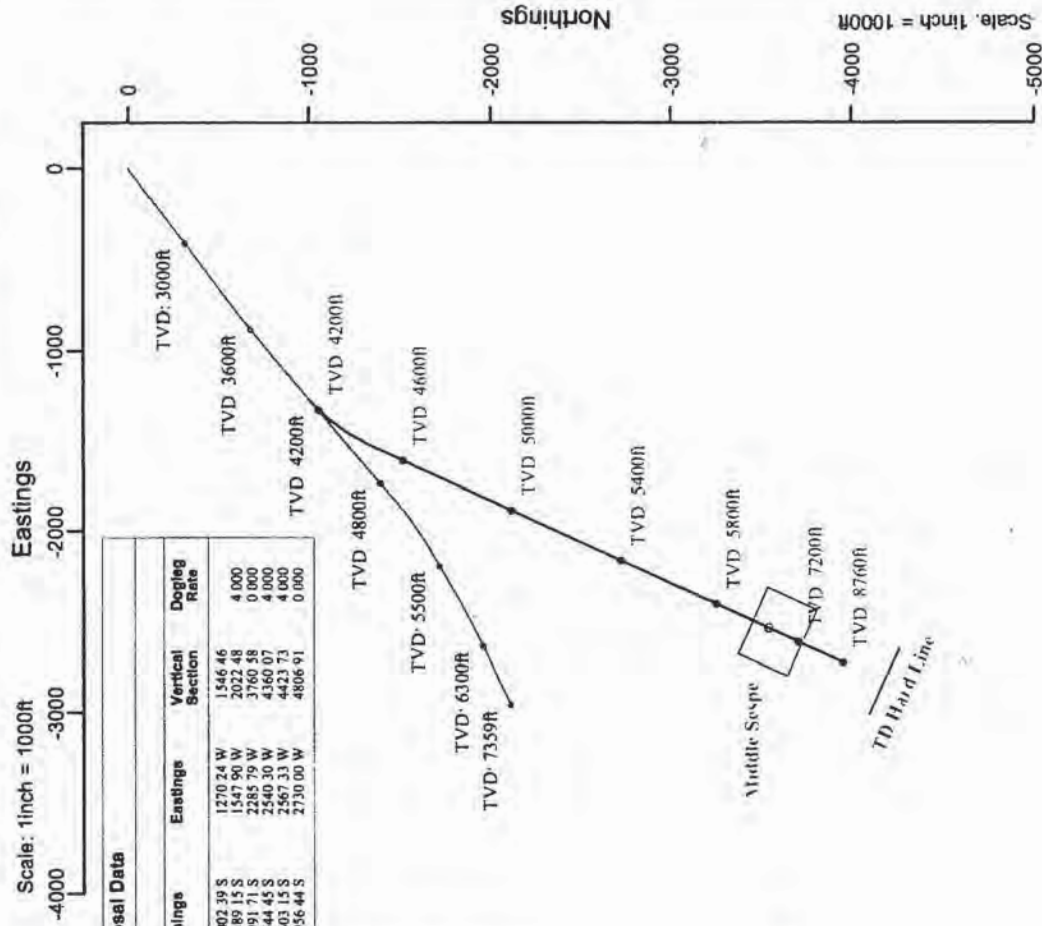


BLOWOUT PREVENTION SYSTEM PLATFORM GAIL



RD1 Plan 4 (05-Oct-05) Proposal Data

Current Well Properties	
Well	(Slot 30) E-4
Horizontal Coordinates	
Ref Global Coordinates	727014.45 N 1046888.30 E
Ref Local Coordinates	
Ref Geographical Coordinates	34 12515021' N, 119 40008772' W
RKB Elevation	113.00R above Mean Sea Level
Grid North Convergence	-1 731'
North Reference	Grid North
Unit	Feet (US)





**Venoco Inc.
Sockeye Field
Platform Gail
(Slot 30) E-4 - RD1 Plan 4 (05-Oct-05)**

Sperry-Sun

Proposal Report

6 October, 2005

Surface Coordinates: 727014.45 N, 1046696.30 E (34.12515021° N, 119.40006772° W)
Grid Coordinate System: NAD27 California State Planes, Zone VI

RKB Elevation: 113.00ft above Mean Sea Level
Water Depth 739.00ft

Proposal Ref: pro149315

HALLIBURTON

Proposal Report for Platform Gail - (Slot 30) E-4

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft) Eastings (ft)	Global Coordinates Northings (ft) Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
0.00	0.000	0.000	113.00	0.00	0.00 N 0.00 E	727014.45 N 1046696.30 E		0.00	
852.00	0.000	0.000	-739.00	852.00	0.00 N 0.00 E	727014.45 N 1046696.30 E	0.000	0.00	
900.00	0.233	249.033	-787.00	900.00	0.03 S 0.09 W	727014.42 N 1046696.21 E	0.486	0.08	
1000.00	0.117	194.200	-887.00	1000.00	0.21 S 0.31 W	727014.24 N 1046695.99 E	0.192	0.34	
1100.00	0.283	129.700	-987.00	1100.00	0.46 S 0.14 W	727013.99 N 1046696.16 E	0.256	0.46	
1200.00	0.317	85.800	-1087.00	1200.00	0.60 S 0.32 E	727013.85 N 1046696.82 E	0.226	0.31	
1300.00	0.283	39.250	-1187.00	1300.00	0.39 S 0.76 E	727014.06 N 1046697.06 E	0.239	-0.11	
1400.00	0.183	359.400	-1287.00	1400.00	0.04 S 0.91 E	727014.41 N 1046697.21 E	0.185	-0.49	
1500.00	0.367	309.567	-1386.99	1499.99	0.33 N 0.66 E	727014.78 N 1046696.96 E	0.285	-0.64	
1600.00	0.400	308.717	-1486.99	1599.99	0.75 N 0.14 E	727015.20 N 1046696.44 E	0.034	-0.70	
1700.00	1.400	251.017	-1586.98	1699.98	0.57 N 1.28 W	727015.02 N 1046695.02 E	1.233	0.26	
1800.00	3.367	244.917	-1686.89	1799.89	1.07 S 5.10 W	727013.38 N 1046691.20 E	1.980	3.78	
1900.00	5.517	232.850	-1786.58	1899.58	5.22 S 11.59 W	727009.23 N 1046684.71 E	2.333	10.88	
2000.00	7.883	229.550	-1885.90	1998.90	12.57 S 20.64 W	727001.88 N 1046675.66 E	2.397	22.07	
2100.00	11.500	232.933	-1984.45	2097.45	23.04 S 33.82 W	726991.41 N 1046662.48 E	3.660	38.17	
2200.00	14.700	232.450	-2081.84	2194.84	36.78 S 51.84 W	726977.67 N 1046644.46 E	3.202	59.71	
2300.00	17.800	234.117	-2177.83	2290.83	53.48 S 74.29 W	726960.97 N 1046622.01 E	3.135	86.20	
2400.00	20.500	233.067	-2272.29	2385.29	72.96 S 100.67 W	726941.49 N 1046595.63 E	2.722	117.23	
2500.00	24.583	232.283	-2364.63	2477.63	96.22 S 131.13 W	726918.23 N 1046565.17 E	4.094	153.67	
2600.00	27.817	230.750	-2454.34	2567.34	123.71 S 165.67 W	726890.74 N 1046530.63 E	3.303	195.91	
2700.00	30.150	231.283	-2541.81	2654.81	154.19 S 203.34 W	726860.26 N 1046492.96 E	2.348	242.39	
2800.00	33.267	233.033	-2626.88	2739.88	186.40 S 244.85 W	726828.05 N 1046451.45 E	3.249	292.48	
2900.00	36.867	233.433	-2708.71	2821.71	220.77 S 290.88 W	726793.68 N 1046405.42 E	3.607	346.91	
3000.00	39.733	232.500	-2787.18	2900.18	258.11 S 340.34 W	726756.34 N 1046355.96 E	2.924	405.73	
3100.00	42.983	232.100	-2862.23	2975.23	298.52 S 392.61 W	726715.93 N 1046303.69 E	3.261	468.67	
3200.00	44.700	232.850	-2934.36	3047.36	340.70 S 447.54 W	726673.75 N 1046248.76 E	1.794	534.59	
3300.00	45.033	232.567	-3005.23	3118.23	383.44 S 503.67 W	726631.01 N 1046192.63 E	0.389	601.65	
3400.00	45.167	232.950	-3075.82	3188.82	426.31 S 560.06 W	726588.14 N 1046136.24 E	0.303	668.96	
3500.00	44.683	232.233	-3146.62	3259.62	469.21 S 616.15 W	726545.24 N 1046080.15 E	0.700	736.12	
3600.00	44.667	232.883	-3217.73	3330.73	511.95 S 671.97 W	726502.50 N 1046024.33 E	0.457	803.01	

E-4 Original Hole

Proposal Report for Platform Gail - (Slot 30) E-4

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
3700.00	44.500	232.200	-3288.96	3401.96	554.64 S	727.69 W	726459.81 N	1045968.61 E	0.508	889.79	
3800.00	44.833	232.017	-3360.08	3473.08	597.81 S	783.17 W	726416.64 N	1045913.13 E	0.357	936.83	
3900.00	44.400	230.817	-3431.26	3544.26	641.61 S	838.07 W	726372.84 N	1045858.23 E	0.948	1004.06	
4000.00	44.567	231.167	-3502.61	3615.61	685.72 S	692.52 W	726328.73 N	1045803.78 E	0.297	1071.29	
4100.00	44.700	230.350	-3573.77	3686.77	730.16 S	946.93 W	726284.29 N	1045749.37 E	0.589	1138.77	
4200.00	44.617	230.550	-3644.90	3757.90	774.92 S	1001.13 W	726239.53 N	1045695.17 E	0.163	1206.39	
4300.00	44.333	230.233	-3716.26	3829.26	819.58 S	1055.10 W	726194.87 N	1045641.20 E	0.360	1273.81	
4400.00	44.500	229.283	-3787.68	3900.68	864.79 S	1108.53 W	726149.66 N	1045587.77 E	0.685	1341.36	
4500.00	44.367	229.867	-3859.09	3972.09	910.19 S	1161.82 W	726104.26 N	1045534.48 E	0.430	1408.99	
4600.00	44.400	229.550	-3930.56	4043.56	955.42 S	1215.17 W	726059.03 N	1045481.13 E	0.224	1476.52	
4700.00	42.833	229.533	-4002.95	4115.95	1000.18 S	1267.66 W	726014.27 N	1045428.64 E	1.567	1543.17	Tied on at 4705.00ft
4705.00	42.832	229.535	-4006.62	4119.62	1002.39 S	1270.24 W	726012.06 N	1045426.06 E	0.028	1546.46	

RD1 Plan 4 (05-Oct-05)

4800.00	44.913	224.945	-4075.12	4188.12	1047.10 S	1318.52 W	725967.35 N	1045377.78 E	4.000	1610.67	
4900.00	47.287	220.476	-4144.47	4257.47	1100.05 S	1367.33 W	725914.40 N	1045328.97 E	4.000	1681.98	
5000.00	49.822	216.346	-4210.67	4323.67	1158.79 S	1413.83 W	725855.66 N	1045282.47 E	4.000	1756.74	
5100.00	52.492	212.521	-4273.40	4386.40	1223.03 S	1457.82 W	725791.42 N	1045238.48 E	4.000	1834.59	
5200.00	55.278	208.966	-4332.35	4445.35	1292.46 S	1499.06 W	725721.99 N	1045197.24 E	4.000	1915.16	
5300.00	58.160	205.647	-4387.23	4500.23	1366.74 S	1537.36 W	725647.71 N	1045158.94 E	4.000	1998.05	
5329.02	59.011	204.724	-4402.35	4515.35	1389.15 S	1547.90 W	725625.30 N	1045148.40 E	4.000	2022.48	End of Build/Turn at 5329.02ft
5400.00	59.011	204.724	-4438.90	4551.90	1444.42 S	1573.35 W	725570.03 N	1045122.95 E	0.000	2082.42	
5500.00	59.011	204.724	-4490.38	4603.38	1522.29 S	1609.20 W	725492.16 N	1045087.10 E	0.000	2166.88	
5600.00	59.011	204.724	-4541.87	4654.87	1600.16 S	1645.06 W	725414.29 N	1045051.24 E	0.000	2251.33	
5700.00	59.011	204.724	-4593.36	4706.36	1678.03 S	1680.91 W	725336.42 N	1045015.39 E	0.000	2335.79	
5800.00	59.011	204.724	-4644.84	4757.84	1755.90 S	1716.77 W	725258.55 N	1044979.53 E	0.000	2420.24	
5900.00	59.011	204.724	-4696.33	4809.33	1833.77 S	1752.62 W	725180.68 N	1044943.68 E	0.000	2504.70	
6000.00	59.011	204.724	-4747.82	4860.82	1911.64 S	1788.48 W	725102.81 N	1044907.82 E	0.000	2589.15	
6100.00	59.011	204.724	-4799.30	4912.30	1989.51 S	1824.33 W	725024.94 N	1044871.97 E	0.000	2673.61	

Proposal Report for Platform Gail - (Slot 30) E-4

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
6200.00	59.011	204.724	-4850.79	4963.79	2067.37 S	1860.19 W	724947.08 N	1044836.11 E	0.000	2758.06	
6300.00	59.011	204.724	-4902.28	5015.28	2145.24 S	1896.04 W	724869.21 N	1044800.26 E	0.000	2842.52	
6400.00	59.011	204.724	-4953.76	5066.76	2223.11 S	1931.89 W	724791.34 N	1044764.41 E	0.000	2926.97	
6500.00	59.011	204.724	-5005.25	5118.25	2300.98 S	1967.75 W	724713.47 N	1044728.55 E	0.000	3011.43	
6600.00	59.011	204.724	-5056.74	5169.74	2378.85 S	2003.80 W	724635.60 N	1044692.70 E	0.000	3095.88	
6700.00	59.011	204.724	-5108.22	5221.22	2456.72 S	2039.46 W	724557.73 N	1044656.84 E	0.000	3180.34	
6800.00	59.011	204.724	-5159.71	5272.71	2534.59 S	2075.31 W	724479.88 N	1044620.99 E	0.000	3264.79	
6900.00	59.011	204.724	-5211.20	5324.20	2612.46 S	2111.17 W	724401.99 N	1044585.13 E	0.000	3349.25	
7000.00	59.011	204.724	-5262.68	5375.68	2690.33 S	2147.02 W	724324.12 N	1044549.28 E	0.000	3433.70	
7100.00	59.011	204.724	-5314.17	5427.17	2768.20 S	2182.88 W	724246.25 N	1044513.42 E	0.000	3518.16	
7200.00	59.011	204.724	-5365.66	5478.66	2846.06 S	2218.73 W	724168.39 N	1044477.57 E	0.000	3602.61	
7300.00	59.011	204.724	-5417.14	5530.14	2923.93 S	2254.58 W	724090.52 N	1044441.72 E	0.000	3687.07	
7387.04	59.011	204.724	-5461.96	5574.96	2991.71 S	2285.79 W	724022.74 N	1044410.51 E	0.000	3760.58	Start Drop/Turn at 7387.04ft
7400.00	58.493	204.724	-5468.68	5581.68	3001.77 S	2290.43 W	724012.68 N	1044405.87 E	4.000	3771.49	
7500.00	54.493	204.724	-5523.87	5636.87	3077.50 S	2325.29 W	723936.95 N	1044371.01 E	4.000	3853.62	
7600.00	50.493	204.724	-5584.75	5697.75	3149.54 S	2358.46 W	723864.91 N	1044337.84 E	4.000	3931.76	
7700.00	46.493	204.724	-5651.00	5764.00	3217.55 S	2389.78 W	723796.90 N	1044306.52 E	4.000	4005.52	
7800.00	42.493	204.724	-5722.32	5835.32	3281.19 S	2419.08 W	723733.26 N	1044277.22 E	4.000	4074.55	
7900.00	38.493	204.724	-5798.36	5911.36	3340.17 S	2446.24 W	723674.28 N	1044250.06 E	4.000	4138.51	
8000.00	34.493	204.724	-5878.73	5991.73	3394.18 S	2471.11 W	723620.27 N	1044225.19 E	4.000	4197.08	
8100.00	30.493	204.724	-5963.06	6076.06	3442.96 S	2493.57 W	723571.49 N	1044202.73 E	4.000	4250.00	
8200.00	26.493	204.724	-6050.93	6163.93	3486.29 S	2513.52 W	723528.16 N	1044182.78 E	4.000	4296.98	
8300.00	22.493	204.724	-6141.91	6254.91	3523.94 S	2530.85 W	723490.51 N	1044165.45 E	4.000	4337.82	
8362.33	20.000	204.724	-6200.00	6313.00	3544.45 S	2540.30 W	723470.00 N	1044156.00 E	4.000	4360.07	Continue Drop at 8362.33ft Target - Middle Sespe, Current Target
8400.00	18.493	204.724	-6235.57	6348.57	3555.73 S	2545.49 W	723458.72 N	1044150.81 E	4.000	4372.30	
8500.00	14.493	204.724	-6331.43	6444.43	3581.51 S	2557.37 W	723432.94 N	1044138.93 E	4.000	4400.26	
8600.00	10.493	204.724	-6429.04	6542.04	3601.16 S	2566.41 W	723413.29 N	1044129.89 E	4.000	4421.57	
8612.33	10.000	204.724	-6441.18	6554.18	3603.15 S	2567.33 W	723411.30 N	1044128.97 E	4.000	4423.73	End of Drop at 8612.33ft
8700.00	10.000	204.724	-6527.52	6640.52	3616.98 S	2573.70 W	723397.47 N	1044122.60 E	0.000	4438.73	
8800.00	10.000	204.724	-6626.00	6739.00	3632.75 S	2580.96 W	723381.70 N	1044115.34 E	0.000	4455.84	

Proposal Report for Platform Gail - (Slot 30) E-4

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
8900.00	10.000	204.724	-6724.48	6837.48	3648.52 S	2588.22 W	723365.93 N	1044108.08 E	0.000	4472.94	
9000.00	10.000	204.724	-6822.96	6935.96	3664.30 S	2595.48 W	723350.15 N	1044100.82 E	0.000	4490.05	
9100.00	10.000	204.724	-6921.44	7034.44	3680.07 S	2602.75 W	723334.38 N	1044093.55 E	0.000	4507.16	
9200.00	10.000	204.724	-7019.92	7132.92	3695.84 S	2610.01 W	723318.61 N	1044086.29 E	0.000	4524.27	
9300.00	10.000	204.724	-7118.40	7231.40	3711.62 S	2617.27 W	723302.83 N	1044079.03 E	0.000	4541.37	
9400.00	10.000	204.724	-7216.88	7329.88	3727.39 S	2624.54 W	723287.06 N	1044071.76 E	0.000	4558.48	
9500.00	10.000	204.724	-7315.36	7428.36	3743.16 S	2631.80 W	723271.29 N	1044064.50 E	0.000	4575.59	
9600.00	10.000	204.724	-7413.84	7526.84	3758.93 S	2639.06 W	723255.52 N	1044057.24 E	0.000	4592.69	
9700.00	10.000	204.724	-7512.32	7625.32	3774.71 S	2646.32 W	723239.74 N	1044049.98 E	0.000	4609.80	
9800.00	10.000	204.724	-7610.80	7723.80	3790.48 S	2653.59 W	723223.97 N	1044042.71 E	0.000	4626.91	
9900.00	10.000	204.724	-7709.29	7822.29	3806.25 S	2660.85 W	723208.20 N	1044035.45 E	0.000	4644.02	
10000.00	10.000	204.724	-7807.77	7920.77	3822.03 S	2668.11 W	723192.42 N	1044028.19 E	0.000	4661.12	
10100.00	10.000	204.724	-7906.25	8019.25	3837.80 S	2675.37 W	723176.65 N	1044020.93 E	0.000	4678.23	
10200.00	10.000	204.724	-8004.73	8117.73	3853.57 S	2682.64 W	723160.88 N	1044013.66 E	0.000	4695.34	
10300.00	10.000	204.724	-8103.21	8216.21	3869.35 S	2689.90 W	723145.10 N	1044006.40 E	0.000	4712.44	
10400.00	10.000	204.724	-8201.69	8314.69	3885.12 S	2697.16 W	723129.33 N	1043999.14 E	0.000	4729.55	
10500.00	10.000	204.724	-8300.17	8413.17	3900.89 S	2704.43 W	723113.56 N	1043991.87 E	0.000	4746.66	
10600.00	10.000	204.724	-8398.65	8511.65	3916.67 S	2711.69 W	723097.78 N	1043984.61 E	0.000	4763.77	
10700.00	10.000	204.724	-8497.13	8610.13	3932.44 S	2718.95 W	723082.01 N	1043977.35 E	0.000	4780.87	
10800.00	10.000	204.724	-8595.61	8708.61	3948.21 S	2726.21 W	723066.24 N	1043970.09 E	0.000	4797.98	
10852.18	10.000	204.724	-8647.00	8760.00	3956.44 S	2730.00 W	723058.01 N	1043966.30 E	0.000	4806.91	Total Depth at 10852.18ft

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.
Global Northings and Eastings are relative to NAD27 California State Planes, Zone VI.

The Dogleg Severity is in Degrees per 100 feet (US).

Vertical Section is from Well and calculated along an Azimuth of 214.606° (Grid).

Based upon Minimum Curvature type calculations, at a Measured Depth of 10852.18ft.,
The Bottom Hole Displacement is 4806.91ft., in the Direction of 214.606° (Grid)

HALLIBURTON

Venoco Inc.
Sockeye Field
Platform Gail

Proposal Report for Platform Gail - (Slot 30) E-4

Comments

Measured Depth (ft)	TVD (ft)	Station Coordinates Northings (ft)	Eastings (ft)	Comment
4705.00	4119.62	1002.39 S	1270.24 W	Tied on at 4705.00ft
5329.02	4515.35	1389.15 S	1547.90 W	End of Build/Turn at 5329.02ft
7387.04	5574.96	2991.71 S	2285.79 W	Start Drop/Turn at 7387.04ft
8362.33	6313.00	3544.45 S	2540.30 W	Continue Drop at 8362.33ft
8612.33	6554.18	3603.15 S	2567.33 W	End of Drop at 8612.33ft
10852.18	8760.00	3956.44 S	2730.00 W	Total Depth at 10852.18ft

Targets associated with this well/path

Target Name	Target TVD (ft)	Target Entry Coordinates Northings (ft)	Target Entry Coordinates Eastings (ft)	Target Shape	Target Type
Middle Sespe	6313.00 -8200.00	3544.45 S 723470.00 N 34.11520423° N	2540.30 W 1044156.00 E 119.40810204° W	Polygon	Current Target
TD Hard Line	8760.00 -8647.00	4182.52 S 722831.93 N 34.11342727° N	2834.56 W 1043861.74 E 119.40900983° W	Polygon	Current Target

North Reference Sheet for Platform Gail - (Slot 30) E-4

Coordinate System is NAD27 California State Planes, Zone VI, US Foot
Source: Snyder, J.P., 1987, Map Projections - A Working Manual

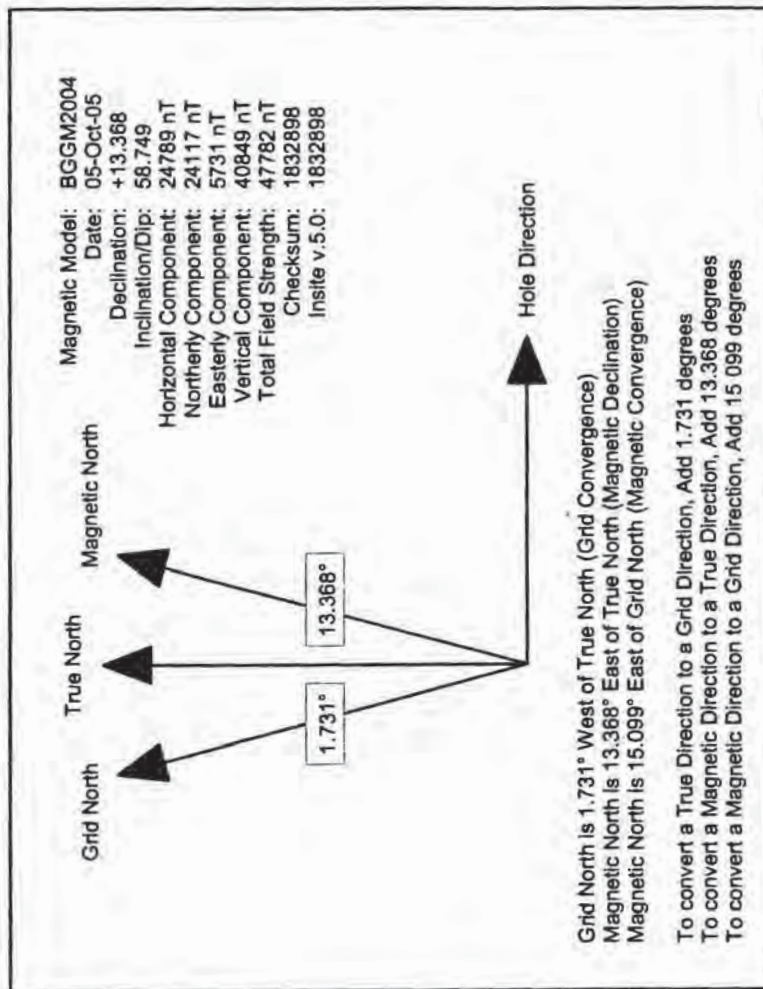
Datum is North American Datum of 1927 (US48, AK, HI, and Canada)

Spheroid is Clarke - 1866
Equatorial Radius: 6378206.400m.
Polar Radius: 6356583.800m.
Inverse Flattening: 294.978698213901

Projection method is Lambert Conformal Conic Projection

Central Meridian is -116.250°
Longitude Origin: -116.250°
Latitude Origin: 32.167°
False Easting: 609600.00m
False Northing: 0.00m
Scale Reduction: 1.000000000

Grid Coordinates of Well: 727014.45 N, 1046696.30 E
Geographical Coordinates of Well: 34.12515021° N, 119.40006772° W
Surface Elevation of Well: 113.00ft
Grid Convergence at Surface is -1.731°
Magnetic Convergence at Surface is -15.099° (5 October, 2005)





United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010-6064

7200

October 13, 2005

Memorandum

To: District Supervisor, Camarillo District
From: *Mike Brickey*
Mike Brickey, Geologist, Office of Reservoir Evaluation and Production
Subject: Geologic Review for Development Well APD (Proprietary)

Well No: 205 E-4/E-4 ST01BP00

Operator: Venoco, Inc.

Unit: Santa Clara

Lease OCS-P: 0205 (bottom)

Lease OCS-P: 0205 (top)

Field: Sockeye

Platform: Gail

KB Elev: 113 ft

Water Depth: 739 ft

Locations (est.)	X (ft)	Y (ft)	MD (ft)	TVD SS (ft)
Surface	1,046,696	727,014	0	113
Kickoff Point	1,045,426	726,012	4705	-3894
Top Monterey	1,045,399	725,986	4759	-3931
Monterey M4	1,045,066	725,447	5558	-4519
Upper Topanga	1,044,493	724,401	7158	-5345
Sespe C-1	1,044,246	723,665	7916	-5817
Middle Sespe	1,044,152	723,465	8378	-6215
Top Middle Sespe Pay	1,044,123	723,398	8696	-6524
Bottom	1,043,966	723,058	10852	-8647

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Venoco plans to sidetrack E-4. E-4 was producing at least as recently as February 2005. Average daily production during that month was 155 barrels of oil, 135 Mcf of gas, and 2,810 barrels of water. 4,300 barrels per day of water were injected in February 2005. The proposed bottom-hole location is 1,800 feet south-south-southeast of the E-4 bottom-hole location. This specific area has not been drilled before. The 205-2 exploration well was drilled southeast of the proposed location in the same fault block. The objective is to penetrate the Topanga and Sespe formations. The well will terminate in the Sespe. Venoco expects to complete the well as a Topanga injector and Sespe producer, according to the APD. However, per a conversation between Armen Voskanian and Bob Zahner, an engineer with Venoco, on October 13, 2005, they plan to produce from the Topanga, with the option of injecting into the Topanga, based on log analysis. This would be in addition to Sespe production.

1. Nearby Wells:

Nearby wells at depth include E-3, E-4, 205-2, and 205-3. The well will not cross the paths of any other wells below the kickoff point. The deeper part of the well will be no closer than 250 feet to other wells.

2. Potential Oil and Gas Reservoirs

The Monterey, Topanga, and Sespe formations are potential oil or gas reservoirs.

3. Possible Fresh Water Flow, Depth/Thickness

The E-4 and 205-2 geologic reviews do not mention problems with freshwater flow. The upper part of the well is the existing E-4 casing, so any shallow aquifers will be behind casing. Freshwater zones have not been a problem in other Sockeye wells.

4. Possible Lost Circulation Zones

The E-4 and 205-2 geologic reviews do not mention problems with lost circulation zones at depth. The 205-2 geologic review says that lost circulation is possible in the Pliocene sandstones. Venoco will add calcium carbonate after drilling through the Monterey to prevent lost circulation in the Upper Topanga. Lost circulation zones have not been a problem in other Sockeye wells.

5. Faulting and Folding

The target is a parasitic fold associated with the southern Sockeye fault system. The well will cross a NW-SE trending fault.

6. Possible Shallow Gas Zones

The E-4 geologic review does not mention problems with shallow gas zones. The 205-2 geologic review states that the shallowest potential gas sand is at a depth of 4,700'. Shallow gas zones have not been a problem in other Sockeye wells.

7. Possible Overpressured or Depleted Zones

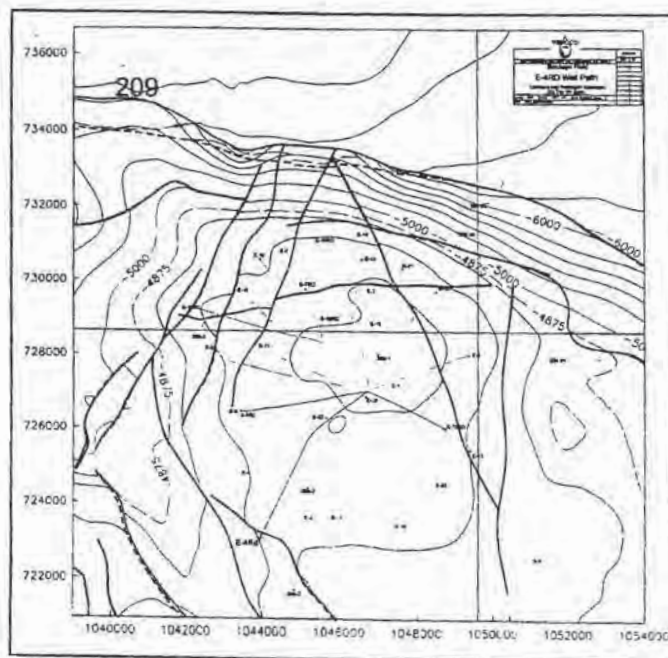
The E-4 and 205-2 geologic reviews do not mention problems with over-pressured or depleted zones. Over-pressured or depleted zones have not been a problem in other Sockeye wells. However, since this is the first production or injection in this fault block, the operator should be prepared for abnormal pressures.

8. Logging/Coring

Venoco plans to run PEX, HALS, NGT, FMI, and GR logs. Venoco plans to mud log from 4705' MD to 10852' MD, the bottom of the hole.

9. Remarks

Hydrogen sulfide from the Monterey and Topanga formations could be a problem.
Addendum added October 31, 2005: The well will be drilled into the Channel Islands Marine Sanctuary.



cc: File: 1101-02(b) Well File OCS-P 0205, E-4ST01BP00, Sockeye Field Chron

APPLICATION FOR PERMIT TO DRILL

CHECK LIST

OPERATOR Venoco, Inc.
 LEASE NO. P-0205
 WELL NO. E-4 ST-01
 COPIES RECEIVED 3 P.I. 1
 GEOLOGIC/GEOPHYSICAL REVIEW COMPLETED BY M. Bricker DATE 10/13/05
 COPIES ON FILE WITH APD Yes
 LEASE INSTRUMENT CHECKED No
 DESIGNATION OF OPERATOR APPROVED Yes
 SPECIAL LEASE STIPULATIONS NOTED Lease instrument not examined

POE/POD APPROVED DATE
 SPECIAL CONDITIONS OF APPROVAL standard COAS for drilling OCS well
attached to all copies of APD.

MOBIL DRILLING UNIT NO TYPE Platform Rig
 ABS & (COASTGUARD) DOCUMENTS ON FILE Yes
 FRONTIER AREA YES/NO (NO)
 SEA FLOOR CONDITIONS EXAMINED, DOCUMENTED AND APPROVED Yes - Previously

RIG DESCRIPTION AND SPECIFICATIONS ON FILE? Kenai Rig #2
 PLAT PROVIDED 2000 FEET/ONE INCH Yes
 SURFACE LOCATION CHECKED Yes
 SUBSURFACE LOCATION CHECKED Yes
 RKB TO WATER 113' WD 739' RKB TO ML 852'
 TVD 8760' MD 10,852'

WELL DESIGN CRITERIA: Existing KOPE @ 4705'/4120' MD/TVD
 TAKEN FROM OFFSET WELL X CALCULATED X
 CASING SIZE 9 5/8" (existing) 7" (liner) 5" (liner)
 CASING DEPTH 4705' MD 8300'/6255' MD/TVD 10,852'/8760' MD/TVD
 PORE PRESS. 8.5 ppg 8.7 ppg 8.7 ppg
 FRAC. PRESS. 12.5 ppg 13.8 ppg 13.8 ppg
 ANTICIPATED SURFACE PRESS. 1609 psi 2345 psi 2345 psi
 MUD WEIGHT 9.6 ppg 9.6 ppg 9.6 ppg
 LOST CIRCULATION ZONES Possible in Monterey & Upper Tertiary. Operator has contingency plan.
 SHALLOW HAZARDS FROM GEOLOGIC/GEOPHYSICAL REVIEW Any present are
already behind shallow casing(s). Shallowest potential gas sand
noted @ ~4700' MD.

BOPE
 NO. AND TYPE 1-13 5/8" - 5M - GK ANNULAR HYDRIL
 PIPE RAMS* 2-13 3/8" - 5M
Double Gate
* one pipe VBR below drilling
spool, & the other
above blind ram.
BLIND/SHEAR RAMS*
1-13 3/8" - 5M
* immediately
above mud cross.

... to 5000 psi which is 2500 psi above MASP allowing
for reduction from using 70% gas & 30% mud hole. Rated 30PE
pressure is 5Mpsi.

per 30 CFR 250.448(b)

BOP TEST PRESSURES REQUIRED

CASING SIZE	9 5/8"	7" (liner)	5" (liner)
RAM-TYPE & RELATED			
EQUIPMENT	250/3000psi	250/3000psi	250/3000psi
ANNULAR	250/3000psi	250/3000psi	250/3000psi

DIAGRAMS

BOP SCHEMATIC OK DIVERTER SYSTEM N/A CHOKE MANIFOLD OK

CASING PROGRAM

CASING SIZE	9 5/8"	7" (liner)	5" (liner)
TEST PRESSURE	3000psi	3000psi	3000psi
		(2.6 ppg)	(2.6 ppg)

SAFETY FACTORS (EACH STRING):

TENSION	1.82 (N/A)	2.43	1.85
COLLAPSE	1.85	1.73	1.66
BURST	2.58	2.05	2.35

GEOLOGIC FORMATIONS UT & Sespe targets DRILLING None Planned LOGGING PROGRAM PEX-HALS-

CEMENTING PROGRAM

CASING SIZE	9 5/8"	7" (liner)	5" (liner)
AMOUNT		816 ft ³	329 ft ³
(% EXCESS)	<u>EXISTING</u>	TOL @ 1865'	TOL @ 6032'
		TOL @ 4500'	TOL @ 8100'

8.5" x 7" = 7.8859 ft³ 6.125" x 5" = 14.674 ft³ NGT-FMI-GR (mudloggers) across Monterey

MUD REQUIREMENTS

ACTIVE VOLUME 640 Bbls / 580 Bbls RESERVE VOLUME 390 Bbls

capacities: (Bbl/ft)

CASING SIZE/HOLE SIZE	VOLUME CHECKED:
9 5/8" : 0.0744	I. (4705)(0.0744) + (3595)(0.0702) = 350 + 252 = 602 Bbls (✓)
7" : 0.0382	II. (4500)(0.0744) + (3795)(0.0382) + (2552)(0.0364) = 335 + 145 + 93 = 573 Bbls (✓)
5" : 0.0702	
4 1/2" : 0.0364	

MINIMUM QUANTITIES OF MUD MATERIALS AT SITE

BARITE 500 gx - allows MW to 0.5 ppg for planned mud volumes.
GELS as needed for thixotropic properties for good hole cleaning.
ADDITIVES (MAJOR) CaCO₃ for lost circ. in U. Topanga

MUD TRANSPORT. FROM SHORE ADDRESSED: YES NO X

DIRECTIONAL PROGRAM PROVIDED: YES X NO CHECKED Yes

PLOT OF PORE PRESS., FRAC. GRADS, & MUD WEIGHT: YES X NO

H₂S PLAN APPROVED PREVIOUSLY Yes; 7/13/2000

H₂S PLAN INCLUDED FOR APPROVAL NO

WELDING & BURNING PLAN APPROVED? Yes - previously

pH to be maintained @ 8.5 through Monterey & U. Topanga instead
of 10.0 per 30 CFR 250.490(m)(4)(ii) to preserve tubulars.

EnCO₃ supply maintained to treat out H₂S

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Supervisor.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, etc., shall be verbally reported immediately to the District Supervisor.
6. The District Supervisor shall be notified in advance in the event of production tests.
7. Two copies of all logs, including the mud log to date, shall be furnished to this office immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Supervisor shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.

hp officejet 7130
printer/fax/scanner/copier

Fax-History Report for

Oct 14 2005 1:41pm

Last Transaction

<u>Date</u>	<u>Time</u>	<u>Type</u>	<u>Identification</u>	<u>Duration</u>	<u>Pages</u>	<u>Result</u>
Oct 14	1:39pm	Fax Sent	818053832315	1:27	3	OK

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☒ DEEPEN		2 MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco, Inc. 6267 Carpinteria Ave., Suite 100 Carpinteria, CA 93013	
4 WELL NAME (CURRENT) E-4RD1	5 SIDETRACK NO (CURRENT) 02 OK	6 BYPASS NO (CURRENT) 00		
7 PROPOSED START DATE February 14, 2007	8 PLAN CONTROL NO (NEW WELL ONLY)			
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112066703 OK				
10 ☐ Revision	11 If revision, please list changes			
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE	
12 LEASE NO P-0205			17 LEASE NO P-0205	
13 AREA NAME 6B			18 AREA NAME 6B	
14 BLOCK NO 4661			19 BLOCK NO 4661	
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) X = 1,048,671.19'			21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) Y = 727,014.45'	
16 LONGITUDE (☐ NAD 83 / ☒ NAD 27) Y = 721,258.09'			20 LATITUDE (☐ NAD 83 / ☒ NAD 27) X = 1,046,696.30'	
LIST OF SIGNIFICANT MARKERS ANTICIPATED				
22 NAME	23 TOP (MD)	24 TOP (TVD)	22 NAME	23 TOP (MD)
Monterey M1	4738'	4141'		
Monterey M2	5265'	4374'		
25 LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250 414(b) through (g) or 30 CFR 250 1617 (c) and (d), as appropriate) Well prognosis, schematic, surface plat, structure map, mud weight curve, directional plot and plan, BOP diagram, mud program				
26 CONTACT NAME John Hood		27 CONTACT TELEPHONE NO	28 CONTACT E-MAIL ADDRESS	
29 AUTHORIZING OFFICIAL (Type or print name) Roger Hamson		30 TITLE V. P. Southern Assets		
31 AUTHORIZING SIGNATURE <i>[Signature]</i> for Roger Hamson		32 DATE 1/24/07		
THIS SPACE FOR MMS USE ONLY				
APPROVED ☒ With Attached Conditions ☐ Without Conditions		TITLE District Manager		
API WELL NO ASSIGNED TO THIS WELL 043112066703		DATE 2/6/07		

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain	☐ YES ☐ NO ☒ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2-5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name Venoco Inc				2) Well Name (Proposed) E-4 ST 03 BP 00			
3) Bottom Hole Lease P-0205				4) Surface Lease P-0205			
5) API Number 043112066701				6) Type of Well ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft) Surface 5 g.			
9) Rig Name Kenai Rig #2				10) SubSea BOP ☐ Yes ☒ No			
11) Water Depth (ft) 739		12) RKB Height (ft) 107		13) Mineral Code			
14) Drive Pipe Size (in) 24"		15) Drive Pipe Depth (ft) 1468'		16) Anchors ☐ Yes ☒ No			

17) Well Design Information							
Interval Number: Existing Casing				Type:		Name:	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD
	13-3/8"	72	L-80				4649
	9-5/8"	43.5	TCA-80	6330		3810	4705/4120 1821
	7"	26	L-80	7240		5410	4750/4151 1850

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in) 6-1/8"		Type AP/Variable/Shear/Pipe/Pipe		Annular Test (psi) 250/3000	
Mud Weight (ppg) 9.1		Size (in) 13-5/8		BOP/Diverter Test (psi) 250/3000	
Mud Type Code Water Based		Wellhead Rating (psi) 5000		Mud Test Weight (ppg) 9.1	
Frac Gradient (ppg) 10.5		Annular Rating (psi) 5000		Casing/Liner Test (psi) 2500	
Liner Top Depth (ft) N/A		BOP/Diverter Rating (psi) 5000		Formation Test (ppg) 10.5	
Cement Volume (ft ³) N/A					

Interval Number:				Type:		Name:	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in)		Type		Annular Test (psi)	
Mud Weight (ppg)		Size (in)		BOP/Diverter Test (psi)	
Mud Type Code		Wellhead Rating (psi)		Mud Test Weight (ppg)	
Frac Gradient (ppg)		Annular Rating (psi)		Casing/Liner Test (psi)	
Liner Top Depth (ft)		BOP/Diverter Rating (psi)		Formation Test (ppg)	
Cement Volume (ft ³)					

Interval Number:				Type:		Name:	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in)		Type		Annular Test (psi)	
Mud Weight (ppg)		Size (in)		BOP/Diverter Test (psi)	
Mud Type Code		Wellhead Rating (psi)		Mud Test Weight (ppg)	
Frac Gradient (ppg)		Annular Rating (psi)		Casing/Liner Test (psi)	
Liner Top Depth (ft)		BOP/Diverter Rating (psi)		Formation Test (ppg)	
Cement Volume (ft ³)					

* NOTE* For additional casing/liner intervals, please submit an additional Form MMS-123S

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United States Department of the Interior

MINERALS MANAGEMENT SERVICE
Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010-6064

7106

Feb 7, 2007

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation & Production

Subject: Geologic Hazards Analysis for Development Well P-0205 E-4RD3

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Sockeye Oil Field
Lease: OCS-P 0205 (Bottom location in OCS-P 0204)
Platform: Gail
Well/Slot: E-4RD3 in slot 30
Objective: Monterey production
API: 04-311-20667-03

Surface Location: X = 1,046,696 ft
Lambert Zone 6 Y = 727,014 ft

Estimated Top of X =
Productive Zone Y =

Estimated Bottom X = 1,048,671 ft
Hole Location Y = 721,258 ft

Elevation of KB: + 107 feet
Est. Total Depth (measured): - 12,497 feet (RKB)
Est. Total Depth (true vert.): - 4,671 feet (RKB)

Water Depth (Gail): 739 feet +/-

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Overview of Proposal

Venoco, Inc., designated operator of the Sockeye Field within the Santa Clara Unit, proposes to drill well OCS-P 0205 #E-4RD3 into the Monterey Formation. The objective of the well is to exploit proven reservoirs in the Miocene Monterey M2. The well is a planned open hole completion which has proven to be very successful in previous sidetracks. The well is considered to be a horizontal well.

The proposed well will be drilled using Kenai Rig #2 on Platform Gail to a bottom hole location in Lease OCS-P 0205, southeast of the platform. E-4RD3 is a redrill of well E-4RD2 and within the current boundary of the field. The well kick off point will be at +/- 4800 ft MD in the existing borehole.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Top Monterey M1	Miocene	4,738 feet	4,141 feet
Top Monterey M2	Miocene	5,265 feet	4,267 feet
Total Depth	Miocene	12,497 feet	4,671 feet

2. Potential Oil and Gas Reservoirs

Formation	Age	(TVD)	Thickness	HC Type
Monterey M2*	Miocene	4,267 feet	400 +/- feet	Oil/Gas

* Operator's stated objective.

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. Since this is a sidetrack well, most of all the water bearing zones are behind pipe.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of P-0205 E-4. The present operator and former operator of the Sockeye field have extensive drilling experience in this field. The proposed drilling program is similar to those utilized in drilling the production wells in

the field. In the event a new pool is discovered, unrelated to the Main zones of the field, the operator should be prepared for higher than expected formation pressure.

5. Faulting and Folding

Several important faults have been mapped by the Operator. Faulting is an important consideration for the success of the well. The well at total depth is located near a north/south trending fault on the eastern flank of the anticline.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The P-0209-2 well did not find near surface gas, but did record gas shows in the Pliocene section.

7. Possible Over-pressured or Depleted Zones

Several ditch gas kicks are noted in the mud logs for E-4. However, as noted above, in the event of a new pool discovery the operator should be prepared for higher than expected formation pressures, similar to the original formation pressures noted at the discovery of the Sockeye field. The Operator has included a well control contingency plan with the Application.

8. Logging/Coring

The Operator plans a standard set of logs, as is the common practice with production wells in this area. A standard mud log (with GR-Res) will be taken to total depth from the kick off point. An LWD with Gamma Ray-Res-Density will be used for the horizontal well. Real time data images will be via Insite.

9. Other Comments

The Monterey Formations may contain hydrogen sulfide gas. Oil and associated gas shows should be present throughout the entire section to be drilled based on the original mud log in E-4 and all the surrounding field wells.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-4 REDRILL PROGRAM
API# 04-311-20667-03
LEASE OCS-P-0205
January 23, 2007

Objective: Redrill E-4RD1 to a Southeast location on the opposite side of the field from successful Monterey M2 producers E-8 redrill and E-17 redrill. The well will be a high angle Monterey M2 producer with the completion being left open hole to maximize production from the fractured Monterey shale.

Surface Location: OCS-P-205, Slot No. 30 (X= 1,046,696.30' & Y= 727,014.45')

Elevation: 739' WD, 107' Above MLLW, 846' Ocean Floor to Rig Floor

Proposed TD: OCS-P-205; 12,497' MD / 4,671' TVD / 4,563' SS

TD Location: 5,756.36' S and 1,974.89' E or (X = 1,048,671.19' and Y = 721,258.09')

Existing Casing (*Depths modified from 113' KB to 107' RF):

24", 201#, X-52	*1,468'	1299 CF
18 5/8", 117.5#, 94.5# K-55	*1,626'	907 CF
13 3/8", 72#, L-80	*4,649'	4265 CF
9 5/8", 43.5#, TCA-80	*4,705'	2847 CF
7", 26#, L-80 Hydril 513	4,490' to 8,300'	730 CF
5", 15#, L-80 Hydril 513	8,092' to 11,200'	325 CF

<u>Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est.Pressure</u>
Monterey M1	4,738'	4,141'	-4,034'	8.5 PPG
Monterey M2	5,265'	4,374'	-4,267'	8.5 PPG

Note: This procedure follows work to be performed under a proposed APD for the redrill of E-4RD1 (E-4RD2).

DRILLING PROCEDURE

1. Test BOP equipped with 4 ram preventers (2 – double gates) and an annular. Test the BOP to 250/3000 psi with 5" drill pipe, 4" drill pipe and 2-7/8" tubing. The 13 5/8" BOPE will be configured for drilling operations, with 2 7/8" X 5" VBR pipe rams in the top of the upper double gate and blind/shear rams in the bottom of the upper double gate, the mud cross will be below the upper double gate, 5" rams will be located in the top of the lower double gate and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. All tests will be recorded on a chart for the MMS to review. The applicable BOPE will be tested every 14 days during the drilling phase of the operations. NOTE: If work is continuation of abandonment operation – Drilling Engineer will request MMS approval to convert the testing frequency from 7 days to 14 days based upon last BOPE test performed during the isolation operations. The 2 3/8" rams will not be tested since they will not be required.
2. Make up 7" 26# bottom trip whipstock and starting mills. Tools to be designed to pass through 26# casing. Lug will be designed to shear with 25M-30M#. Proposed window mill assembly: starting mill, lower watermelon mill, 9' flex joint, and upper watermelon mill. Pick up an MWD. Run the equipment in the hole on drill pipe to 30' above the CIBP set at +/- 4,820'. The retrievable whipstock will have an extension on it so that the window for this sidetrack will be milled +/- 50' above the previous window milled for the previous sidetrack. Orient the whipstock off of high side as per Sperry directional drilling supervisor using the measurements from the MWD. Set the whipstock on the CIBP and shear the tools off the whipstock face. Condition the water base mud as necessary for milling the window and to carry the metal cuttings out of the hole. Mill and dress the window through the 7" casing as required for a good exit point for sidetrack. Drill enough rat hole to pass all mills through the window and allow for the directional drilling BHA to be below the whipstock face when commence drilling. Mills must smoothly pass through the window. Perform a Formation Integrity Test to 10.5 ppg EMW. Reduce the viscosity of the mud to desired drilling parameters. Pull out hole and lay down the milling tools.
3. Pick up an 6-1/8" PDC bit and drilling assembly on a 4 3/4" steerable directional drilling assembly including LWD triple combo. Run in the hole and sidetrack the well. Directionally drill the 6-1/8" hole from +/- 4,750' to 12,497' MD / 4,671' TVD. No overboard discharge of mud or cuttings will be allowed. Haul mud and cuttings to onshore disposal facility.
 - Review the attached directional program. Drill well per Halliburton Sperry-Sun (Slot 30) E-4 RD South Leg Plan 4 (21-Dec-06). All depths to be referenced to 107' DF elevation.
 - Mud loggers to start upon drilling out of the 7" casing window and continue through total depth.
 - The BHA should not be rotated on the face of the whipstock. Ensure there is adequate hole drilled below the whipstock to bury the BHA.

4. Circulate the hole clean. Pull out of the hole and lay down directional drilling tools. Run in the hole with 6-1/8" fixed hole opener. Circulate the well clean. Wipe the hole to the 7" casing window. Run back to bottom, circulate the well clean and pull out of the hole.
5. Rig up Schlumberger drill pipe conveyed logging equipment and run FMI/GR log to +/- 12,497' MD, or as requested by Geologist. If the entire open hole is logged, two latches will be required. Pull out of the hole and rig down Schlumberger.
6. Run in the hole with 6-1/8" fixed hole opener. Circulate the well clean. Wipe the hole to the 7" casing window. Run back to bottom, circulate the well clean. Displace the +/- 9.1 ppg water based mud with 9.1 ppg brine fluid. This weight brine was successful in completing well E-8 and E-17 without well control issues. Monitor fluid loss rate. Maintain a hole filling rate to keep fluid level near the surface. Pull out of the hole.
7. Retrieve whipstock and prepare for completion of well. The completion will be a dual, with the long string injectin sour water into the Upper Topanga and the short string producing the two open hole Monterey M2 laterals. A separate completion procedure will be filed after the completion of drilling the second lateral.

EVALUATION PROGRAM

Mudlogging Program for Horizontal Hole:

- Begin Mudlogging upon exiting shoe/casing above Monterey formation, including GR-Res curves on mudlog.
- Collect dry samples at 30' intervals throughout the well.

Testing Program

- None expected.

Open Hole Logging program

- LWD starting right out of casing with Sperry Gr-Res-Density for the horizontal well. Real-time data images via Insite.
- Drill Pipe conveyed FMI/GR tool provided by Schlumberger (two latches max).

Cased Hole Logging program

- None – No cementing and/or perforating required.

Logging geologist: Dale Kunitomi

805-987-3026

Primary Geologist: Monica Carlsen

Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher

Work 805-745-2272
Home 805-682-4780
Cell 805-698-5751

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8	7
2	Setting Depth (feet - TVD)	4120	4151
3	Expected Leak Off Test EMW at shoe (ppg)	10.5	10.5
4	Depth of next Casing (feet - TVD)	4671	4671
5	Maximum Expected Formation Pressure (psi)	2065	2065
6	Expected Mud Weight (ppg)	9.1	9.1
7	Formation Equivalent Mud Weight (ppg)	8.5	8.5
8	Expected Hydrostatic Pressure at TD (psi)	2210	2210
9	Amount of Overbalance at TD (psi)	146	146
10	Fracture Gradient at shoe (psi/ft)	0.55	0.55
11	Fracture Pressure at shoe (psi)	2250	2266
12	Hydrostatic Pressure at shoe (psi)	1950	1964
13	Margin between Mud Weight and LOT (psi)	300	302

Maximum Anticipated Surface Pressures

1	Casing Size (in)	9-5/8	7"
2	Setting Depth (feet - TVD)	4120	4151
3	Expected Leak Off Test EMW at shoe (ppg)	10.5	10.5
4	Expected Mud Weight (ppg)	9.1	9.1
5	Depth of next Casing (feet - TVD)	4671	4671
6	Maximum Expected Formation Pressure (psi)	2065	2065
7	Expected gas gradient (psi/ft)	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.5	8.5
Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	1831	1831
10	Fracture Gradient at shoe (psi/ft)	0.55	0.55
11	Fracture Pressure at shoe (psi)	2250	2266
12	Surface pressure to break down shoe (psi)	2044	2059
13	Maximum Anticipated Surface Pressure (psi)	1831	1831
Max Pressures using 70% Gas & 30% Mud			
14	Maximum Anticipated Surface Pressure (psi)	1238	1238
15	Top of fluid (feet-TVD)	3270	3270
16	Pressure at shoe (psi)	1804	1819
17	Margin between pressure and breakdown(psi)	446	448

CASING PROGRAM

Hole Section	12.25	8 1/2" Hole
Mud Weight	9.1	9.1
Buoyancy Factor	0.861	0.861
MASP (psi)	1831	1831
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9-5/8*	7
Setting Depth, MD (ft)	4705	4750
Setting Depth, TVD (ft)	4120	4151
Top of Casing, MD (ft)	0	4490
Weight (lb/ft)	43.5	26
Grade	L-80	L-80
Threads	STL	513
ID (in)	8.755	6.199
Drift diameter (in)	8.599	6.151
Collapse (psi)	3810	5410
Burst (psi)	6330	7240
Joint Strength (kips)	825	448
Body Strength (kips)	1005	604
Collapse Safety Factor	1.95	2.75
Burst Safety Factor	3.46	3.95
Tensile Safety Factor	2.99	4.23

* Existing Casing

Notes:

Burst is calculated on the greater of MASP or gas lift pressure.

Collapse is based on mud outside of an evacuated casing string.

Tension is based on buoyed weight of casing string + 100 kips over pull.

CEMENTING PROGRAM – NONE REQUIRED AND/OR ANTICIPATED

MUD PROGRAM

INTERVAL MUD PROPERTIES for WBM System

Depth MD (ft)	Mud Weight (ppg)	Fluid Loss (ml/30 min)	Plastic Viscosity (cp)	Yield Point (lb/100ft ²)	YS	Chlorides (kmg/l)	PH
+/- 4,750' Milling	8.6 - 8.8	<20	12 - 20	20 - 30	>20	18 - 20	8.5-9.5
4,750' - 12,497'	8.9 - 9.2	< 6 cc	12 - 20	18 - 30	>10	+23 - 25 K	+/- 9.0

Whipstock:

The fluid system used for the milling operations will be Durogel and Duovis. This will provide adequate viscosity and carrying capacity for the milling operations. These products mix easily with seawater, which will be in the well after abandoning the Upper Topanga formation in the Original Hole.

4,750' - 12,497':

Convert over to SP 101 by adding 1.5 to 2.5 ppb of Sp 101 to the system. Continue with the additions of SP 101 for fluid loss reductions (<6.0 cc). Add dry NaCl to maintain the chloride content between 23,000 and 25,000. Stop additions of Durogel and build up the surface system with MI Gel pre-hydrated in fresh water at a concentration of 12 to 15 ppb. Maintain the mud weight as low as possible with the solids control equipment. Condition the mud with water to keep the MBT below 30 ppb and treat out calcium with Soda Ash to below 200 ppm. Reduce the mud weight or add calcium carbonate if mud losses are excessive while drilling this section.

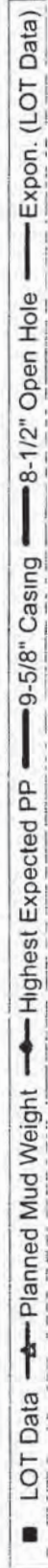
Notes:

1. Operate solids control equipment to maintain drill solids as low as possible.
2. Maintain supply of ZnCO₃ onboard to treat out H₂S.
3. A minimum of 750 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised 0.5 ppg using 1400 bbl total circulating volume (800 open hole volume & 600 bbl active system).
4. Do not add Calcium Carbonate to the mud system after drilling into the Monterey interval, unless mud losses are excessive. Any LCM material must be acid soluble since this will be the only practical method available to restore formation productivity to its undamaged state.

Hydrogen Sulfide Considerations:

The Monterey has the potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

Equivalent Mud Weight (ppg)



SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

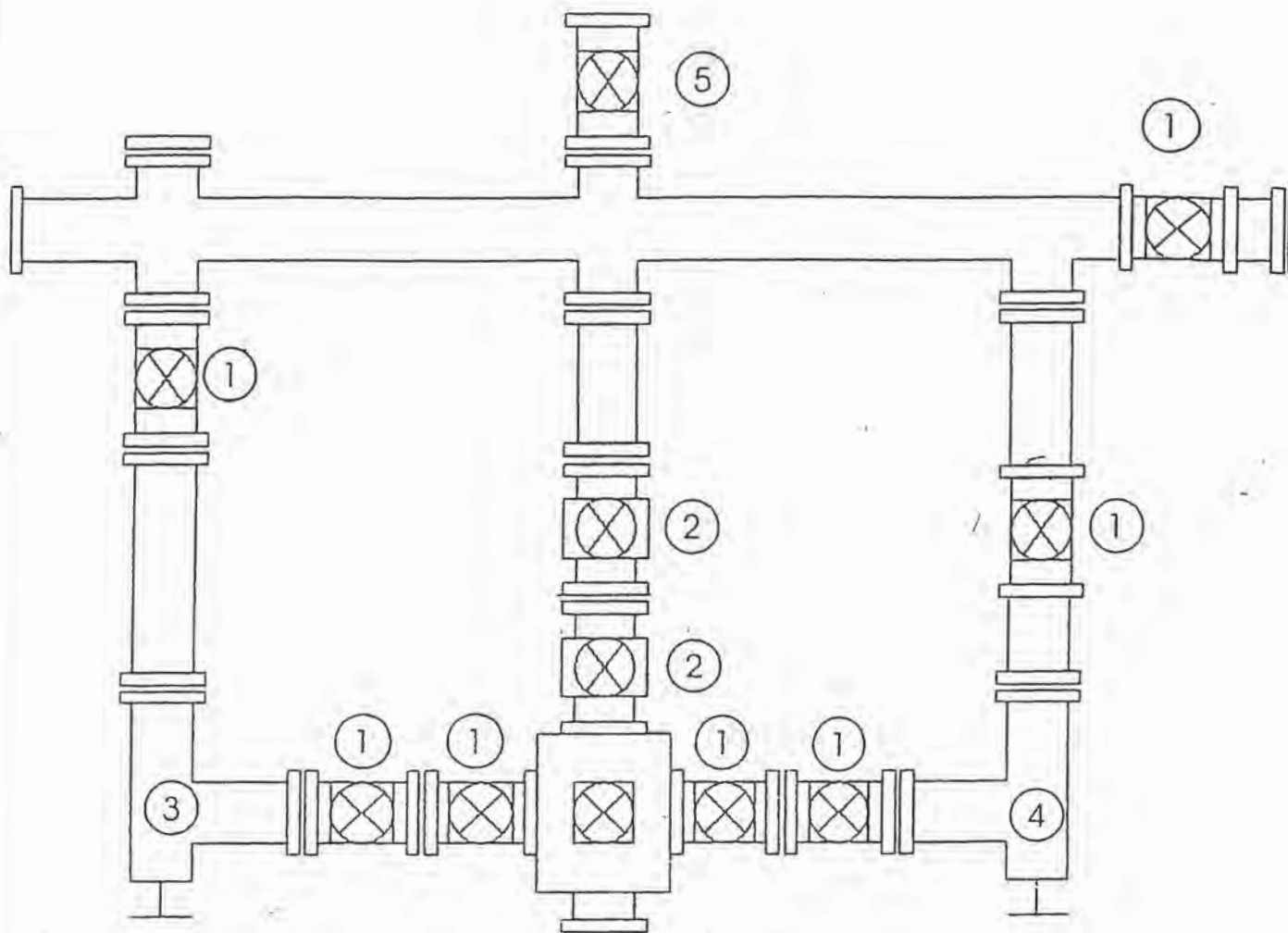
Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

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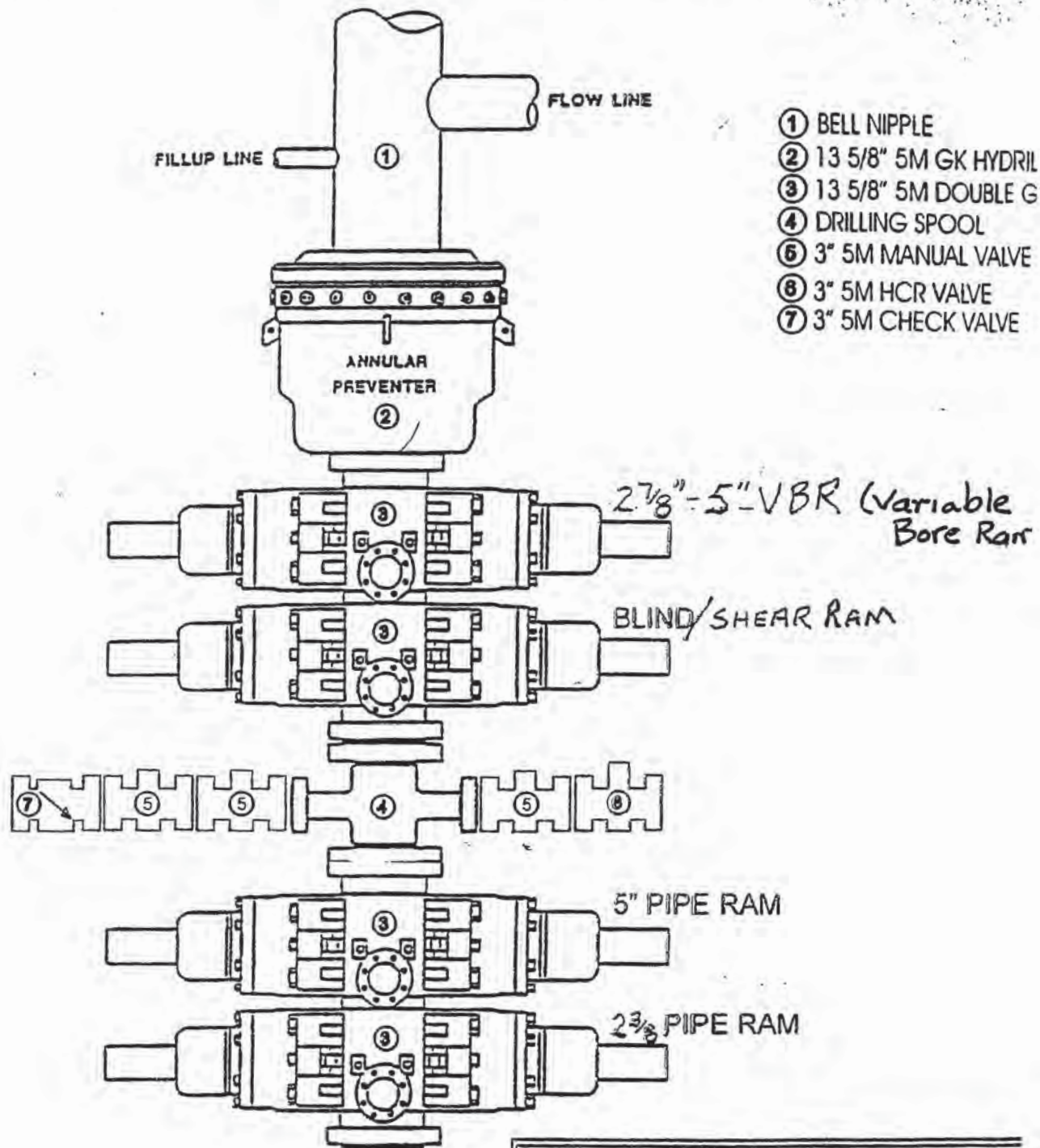


- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE

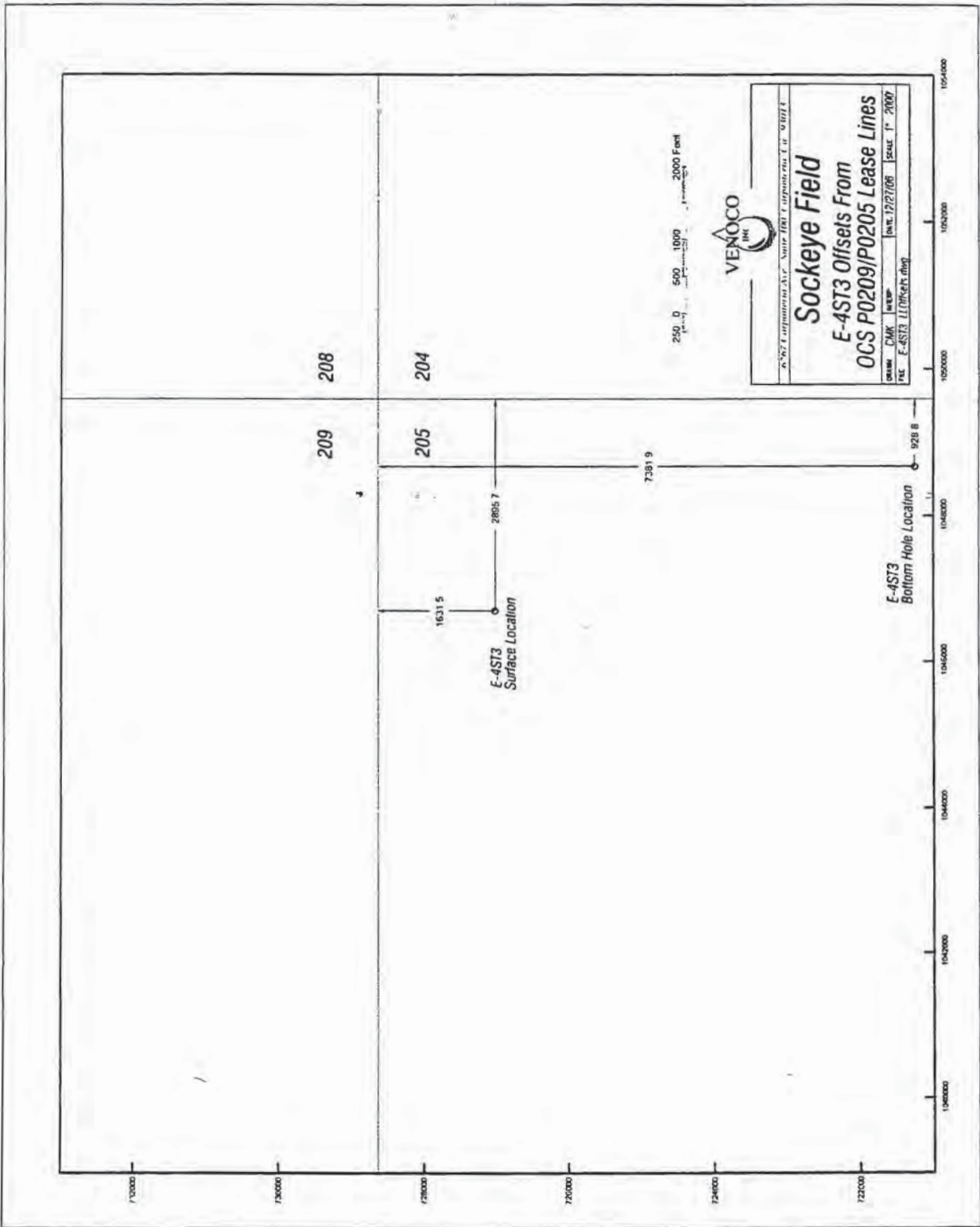


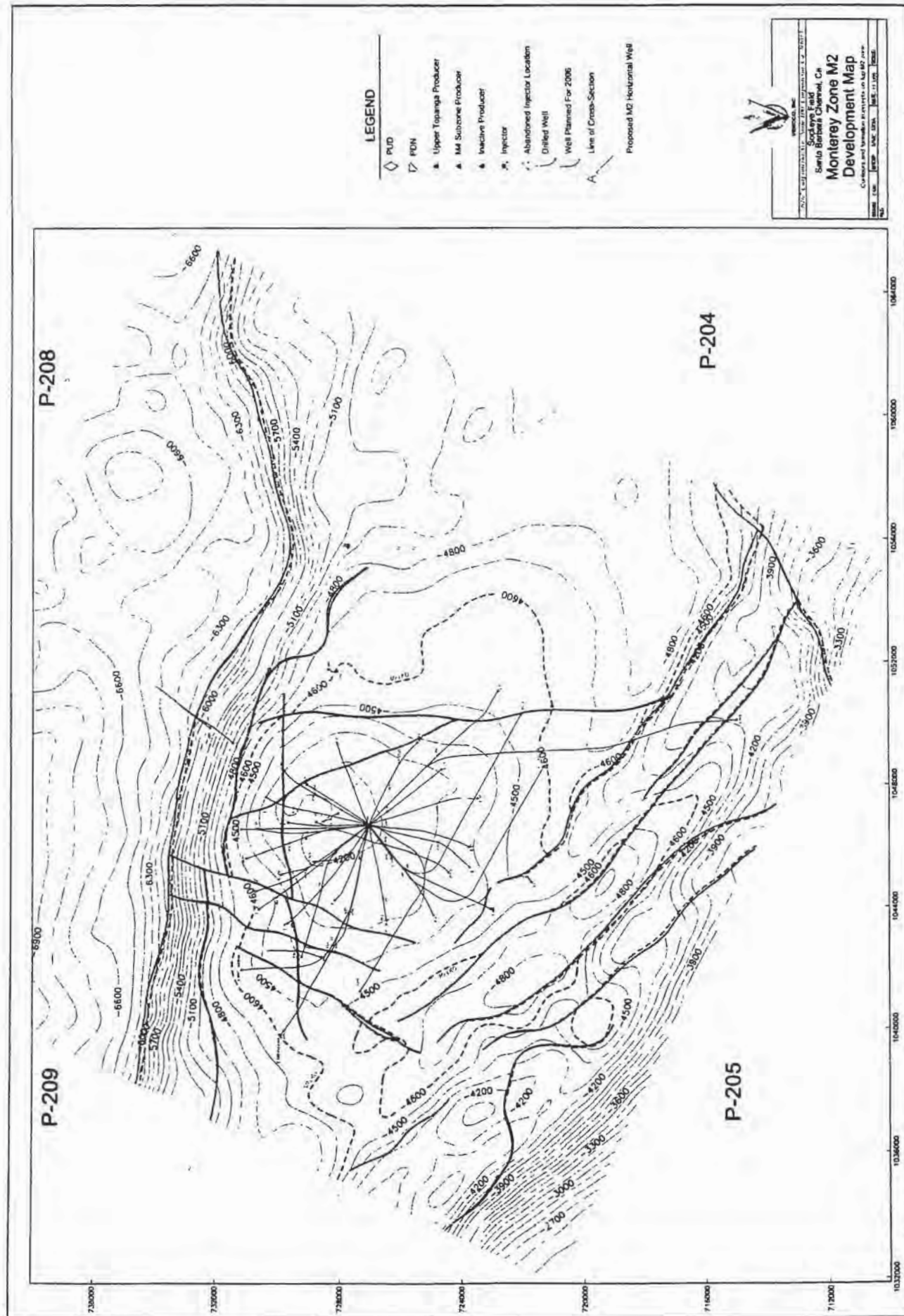
CHOKE MANIFOLD PLATFORM GAIL

BOP STACK COMPLETION CONFIGURATION



**BLOWOUT
 PREVENTION SYSTEM
 PLATFORM GAIL**





Azimuths to Grid North
True North 1 73°
Magnetic North 14 99°
Magnetic Field
Strength 47694 nT
Dip Angle 58 75°
Date 12/12/2006
Model BGGM2006

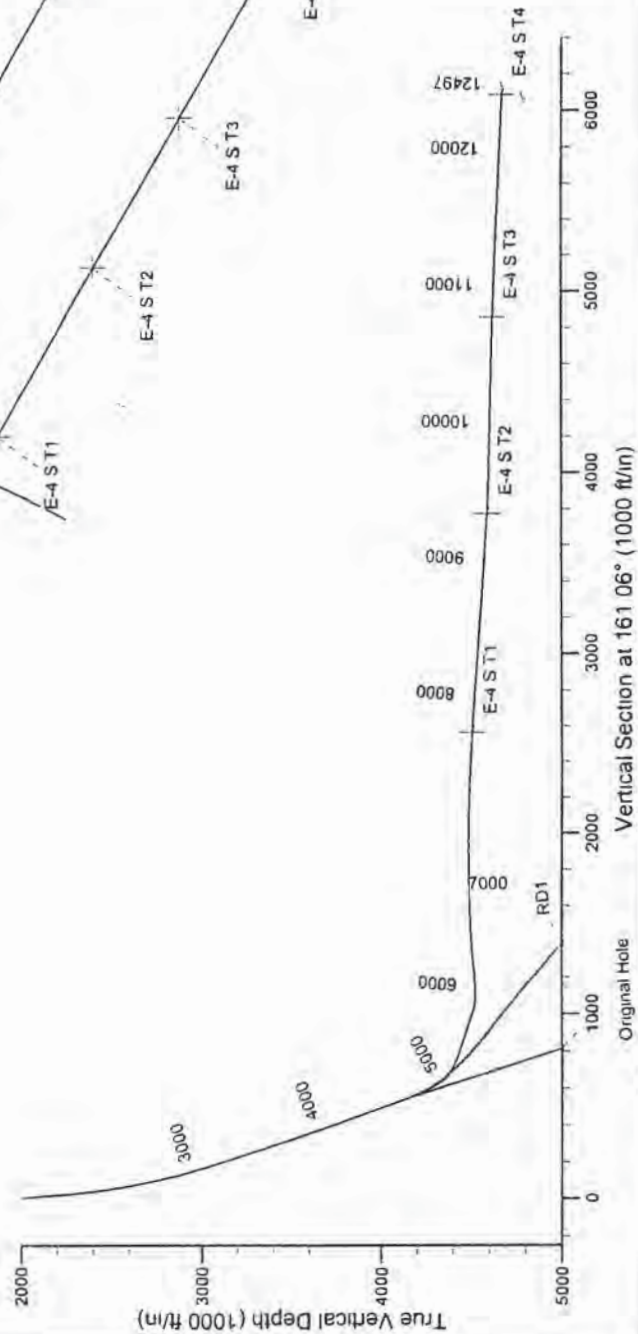
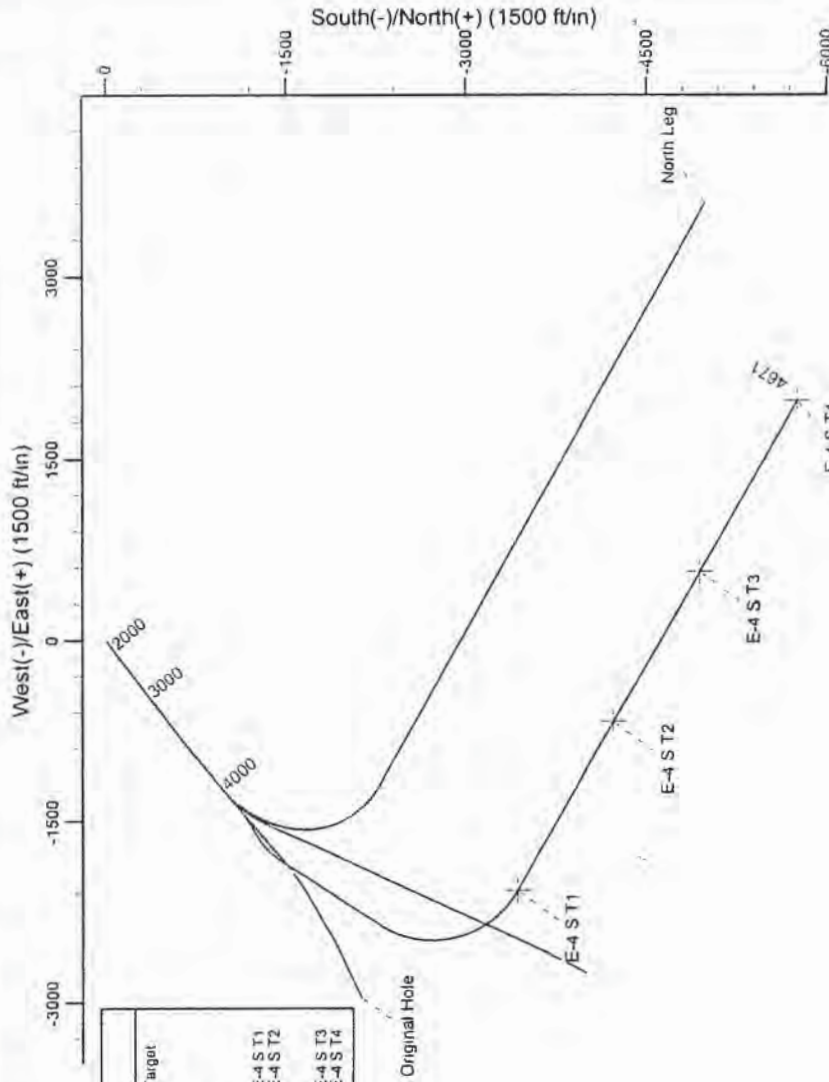
Venoco Inc.

Project Platform Gail
Site Platform Gail
Well (Slot 30) E-4
South Leg
Plan #4 (21-Dec-06)

(Slot 30) E-4
NAD 1927 (NADCON CONUS)
California VI 406
Grid
Well @ 108 00ft (Original Well Elev)
Northing 727014 45
Easting 1046696 30

HALLIBURTON
Sperry Drilling Services

SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec	Target	
1	4750.00	44.65	227.14	4150.58	-1025.62	-1296.07	0.00	0.00	549.52		
2	5188.83	78.00	240.00	4358.85	-1244.72	-1604.69	8.00	22.25	656.62		
3	5518.82	78.00	213.00	4428.70	-1464.67	-1836.47	8.00	32.86	789.45		
4	5888.82	78.00	213.00	4505.62	-1768.20	-2033.58	8.00	0.00	1012.58		
5	6073.69	92.78	212.87	4520.43	-1922.43	-2133.49	8.00	-0.48	1126.04		
6	6487.28	92.78	212.87	4500.30	-2269.37	-2357.72	7.00	0.00	1361.45		
7	7021.54	86.95	119.62	4504.19	-3426.60	-2074.60	7.00	-32.89	2567.52	E-4 ST1	
8	9432.19	86.95	119.62	4589.78	-4221.43	-876.34	0.00	0.00	3773.49	E-4 ST2	
9	9523.50	88.84	120.06	4593.35	-4269.83	-552.00	2.00	13.93	3846.84		
10	10831.57	98.84	120.06	4619.26	-4923.41	-539.62	0.00	0.00	4633.95		
11	10868.89	98.23	120.07	4620.55	-4940.75	-566.11	2.00	-178.50	4632.97	E-4 ST3	
12	12456.62	98.23	120.07	4670.83	-5756.36	-1974.89	0.00	0.00	6065.71	E-4 ST4	



Venoco Inc.

Platform Gail
Platform Gail
(Slot 30) E-4
South Leg

Plan: Plan #4 (21-Dec-06)

Job No Plan #4 (21-Dec-06)

Sperry Drilling Services Combo Report

21 December, 2006

Well Coordinates 727,014.45 N, 1,046,696.30 E (34° 07' 30.54" N, 119° 24' 00.24" W)
Water Depth 739.00 ft

Local Coordinate Origin
Viewing Datum
TVDs to System
North Reference
Unit System
Centered on Well (Slot 30) E-4
Well @ 108.00ft (Original Well Elev)
N
Gnd
API - US Survey Feet

Version 2003.14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for (Slot 30) E-4 - South Leg - Plan #4 (21-Dec-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	108.00	0.00	0.00 N	0.00 E	727.014 45	1.046.696 30	0.00	0.00	
847.00	0.00	0.00	-739.00	847.00	0.00 N	0.00 E	727.014 45	1.046.696 30	0.00	0.00	
895.00	0.23	249.03	-787.00	895.00	0.03 S	0.09 W	727.014 42	1.046.696 21	0.49	0.00	
995.00	0.12	194.20	-887.00	995.00	0.21 S	0.31 W	727.014 24	1.046.695 99	0.19	0.10	
1,095.00	0.28	129.70	-987.00	1,095.00	0.46 S	0.14 W	727.013 99	1.046.696 16	0.26	0.39	
1,195.00	0.32	85.80	-1,087.00	1,195.00	0.60 S	0.32 E	727.013 85	1.046.696 62	0.23	0.67	
1,295.00	0.28	39.25	-1,187.00	1,295.00	0.39 S	0.76 E	727.014 06	1.046.697 06	0.24	0.61	
1,395.00	0.18	359.40	-1,287.00	1,395.00	0.04 S	0.91 E	727.014 41	1.046.697 21	0.18	0.33	
1,495.00	0.37	309.57	-1,386.99	1,494.99	0.33 N	0.66 E	727.014 78	1.046.696 96	0.29	-0.09	
1,595.00	0.40	308.72	-1,486.99	1,594.99	0.75 N	0.14 E	727.015 20	1.046.696 44	0.03	-0.66	
1,695.00	1.40	251.02	-1,586.98	1,694.98	0.57 N	1.28 W	727.015 02	1.046.695 02	1.23	-0.95	
1,795.00	3.37	244.92	-1,686.89	1,794.89	1.07 S	5.10 W	727.013 38	1.046.691 20	1.98	-0.64	
1,895.00	5.52	232.85	-1,786.58	1,894.58	5.22 S	11.59 W	727.009 23	1.046.684 71	2.33	1.18	
1,995.00	7.88	229.55	-1,885.90	1,993.90	12.57 S	20.64 W	727.001 88	1.046.675 66	2.40	5.20	
2,095.00	11.50	232.93	-1,984.45	2,092.45	23.04 S	33.82 W	726.991 41	1.046.662 48	3.66	10.81	
2,195.00	14.70	232.45	-2,081.84	2,189.84	36.78 S	51.84 W	726.977 67	1.046.644 46	3.20	17.97	
2,295.00	17.80	233.12	-2,177.83	2,285.83	53.48 S	74.29 W	726.960 97	1.046.622 01	3.13	26.48	
2,395.00	20.50	233.07	-2,272.28	2,380.29	72.96 S	100.67 W	726.941 49	1.046.595 63	2.72	36.34	
2,495.00	24.58	232.28	-2,364.63	2,472.63	96.22 S	131.13 W	726.918 23	1.046.565 17	4.09	48.46	
2,595.00	27.82	230.75	-2,454.34	2,562.34	123.71 S	165.67 W	726.890 74	1.046.530 63	3.30	63.26	
2,695.00	30.15	231.28	-2,541.81	2,649.81	154.19 S	203.34 W	726.860 26	1.046.492 96	2.35	79.86	
2,795.00	33.27	233.03	-2,626.88	2,734.88	186.40 S	244.85 W	726.828 05	1.046.451 45	3.25	96.85	
2,895.00	36.87	233.43	-2,708.71	2,816.71	220.77 S	290.88 W	726.793 68	1.046.405 42	3.61	114.43	
2,995.00	39.73	232.50	-2,787.18	2,895.18	258.11 S	340.34 W	726.756 34	1.046.355 96	2.92	133.70	
3,095.00	42.98	232.10	-2,862.23	2,970.23	298.52 S	392.61 W	726.715 93	1.046.303 69	3.26	154.95	
3,195.00	44.70	232.85	-2,934.36	3,042.36	340.70 S	447.54 W	726.673 75	1.046.248 76	1.79	177.03	
3,295.00	45.03	232.57	-3,005.23	3,113.23	383.44 S	503.67 W	726.631 01	1.046.192 63	0.39	199.24	
3,395.00	45.17	232.95	-3,075.82	3,183.82	426.31 S	560.06 W	726.588 14	1.046.136 24	0.30	221.49	
3,495.00	44.68	232.23	-3,146.52	3,254.62	469.21 S	616.15 W	726.545 24	1.046.080 15	0.70	243.86	
3,595.00	44.67	232.88	-3,217.73	3,325.73	511.95 S	671.97 W	726.502 50	1.046.024 33	0.46	266.18	
3,695.00	44.50	232.20	-3,288.96	3,396.96	554.64 S	727.69 W	726.459 81	1.045.968 61	0.51	288.48	
3,795.00	44.83	232.02	-3,360.08	3,468.08	597.81 S	783.17 W	726.416 64	1.045.913 13	0.36	311.31	
3,895.00	44.40	230.82	-3,431.26	3,539.26	641.61 S	838.07 W	726.372 84	1.045.858 23	0.95	334.92	
3,995.00	44.57	231.17	-3,502.61	3,610.61	685.72 S	892.52 W	726.328 73	1.045.803 78	0.30	358.97	
4,095.00	44.70	230.35	-3,573.77	3,681.77	730.16 S	946.93 W	726.284 29	1.045.749 37	0.59	383.35	
4,195.00	44.62	230.55	-3,644.90	3,752.90	774.92 S	1,001.13 W	726.239 53	1.045.695 17	0.16	408.10	
4,295.00	44.33	230.23	-3,716.26	3,824.26	819.58 S	1,055.10 W	726.194 87	1.045.641 20	0.36	432.83	
4,395.00	44.50	229.28	-3,787.68	3,895.68	864.79 S	1,108.53 W	726.149 66	1.045.587 77	0.69	458.26	
4,495.00	44.37	229.87	-3,859.09	3,967.09	910.19 S	1,161.82 W	726.104 26	1.045.534 48	0.43	483.91	
4,595.00	44.40	229.55	-3,930.56	4,038.56	955.42 S	1,215.17 W	726.059 03	1.045.481 13	0.22	509.38	

HALLIBURTON

Plan Report for (Slot 30) E-4 - South Leg - Plan #4 (21-Dec-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastng (ft)	Map Coordinates Northing (ft)	Eastng (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
4,750.00	44.65	227.14	-4,042.58	4,150.58	1,025.62 S	1,296.07 W	725,988.83	1,045,400.23	1.10	549.52	Start DLS 8.00 TFO 22.25
4,800.00	48.37	229.16	-4,076.98	4,184.98	1,049.80 S	1,323.10 W	725,964.65	1,045,373.20	8.00	563.62	
4,850.00	52.12	230.97	-4,108.95	4,216.95	1,074.46 S	1,352.58 W	725,939.99	1,045,343.72	8.00	577.38	
4,900.00	55.90	232.59	-4,138.33	4,246.33	1,099.47 S	1,384.36 W	725,914.98	1,045,311.94	8.00	590.73	
4,950.00	59.70	234.08	-4,164.97	4,272.97	1,124.72 S	1,418.30 W	725,889.73	1,045,278.00	8.00	603.59	
5,000.00	63.51	235.46	-4,188.75	4,296.75	1,150.08 S	1,454.23 W	725,864.37	1,045,242.07	8.00	615.92	
5,050.00	67.34	236.74	-4,209.54	4,317.54	1,175.43 S	1,491.97 W	725,839.02	1,045,204.33	8.00	627.65	
5,100.00	71.17	237.96	-4,227.25	4,335.25	1,200.64 S	1,531.33 W	725,813.81	1,045,164.97	8.00	638.73	
5,150.00	75.01	239.13	-4,241.79	4,349.79	1,225.60 S	1,572.13 W	725,788.85	1,045,124.17	8.00	649.09	
5,188.83	78.00	240.00	-4,250.85	4,358.85	1,244.72 S	1,604.69 W	725,769.73	1,045,091.61	8.00	656.62	Start DLS 8.00 TFO -92.86
5,200.00	77.96	239.09	-4,253.17	4,361.17	1,250.26 S	1,614.10 W	725,764.19	1,045,082.20	8.00	658.80	
5,250.00	77.80	235.00	-4,263.68	4,371.68	1,276.85 S	1,655.11 W	725,737.60	1,045,041.19	8.00	670.64	
5,300.00	77.70	230.91	-4,274.29	4,382.29	1,306.28 S	1,694.10 W	725,708.17	1,045,002.20	8.00	685.82	
5,350.00	77.67	226.81	-4,284.96	4,392.96	1,338.41 S	1,730.88 W	725,676.04	1,044,965.42	8.00	704.28	
5,400.00	77.70	222.72	-4,295.63	4,403.63	1,373.08 S	1,765.28 W	725,641.37	1,044,931.02	8.00	725.92	
5,450.00	77.78	218.63	-4,306.25	4,414.25	1,410.13 S	1,797.11 W	725,604.32	1,044,899.19	8.00	750.63	
5,500.00	77.93	214.54	-4,316.77	4,424.77	1,449.37 S	1,826.24 W	725,565.08	1,044,870.06	8.00	778.30	
5,518.82	78.00	213.00	-4,320.70	4,428.70	1,464.67 S	1,836.47 W	725,549.78	1,044,859.93	8.00	789.45	Start 370.00 hold at 5518.82 MD
5,600.00	78.00	213.00	-4,337.57	4,445.57	1,531.27 S	1,879.71 W	725,483.18	1,044,816.59	0.00	838.41	
5,700.00	78.00	213.00	-4,358.37	4,466.37	1,613.30 S	1,932.99 W	725,401.15	1,044,763.31	0.00	898.71	
5,800.00	78.00	213.00	-4,379.16	4,487.16	1,695.34 S	1,986.26 W	725,319.11	1,044,710.04	0.00	959.02	
5,888.82	78.00	213.00	-4,397.62	4,505.62	1,768.20 S	2,033.58 W	725,246.25	1,044,662.72	0.00	1,012.58	Start DLS 8.00 TFO -0.48
5,900.00	78.89	212.99	-4,399.86	4,507.86	1,777.39 S	2,039.54 W	725,237.06	1,044,656.76	8.00	1,019.34	
5,950.00	82.89	212.96	-4,407.77	4,515.77	1,818.80 S	2,066.41 W	725,195.65	1,044,629.89	8.00	1,049.79	
6,000.00	86.89	212.92	-4,412.22	4,520.22	1,860.58 S	2,093.49 W	725,153.87	1,044,602.81	8.00	1,080.53	
6,050.00	90.89	212.89	-4,413.19	4,521.19	1,902.54 S	2,120.64 W	725,111.91	1,044,575.66	8.00	1,111.40	
6,073.69	92.79	212.87	-4,412.43	4,520.43	1,922.43 S	2,133.49 W	725,092.02	1,044,562.81	8.00	1,126.04	
6,100.00	92.79	212.87	-4,411.15	4,519.15	1,944.50 S	2,147.76 W	725,069.95	1,044,548.54	0.00	1,142.29	
6,200.00	92.79	212.87	-4,406.28	4,514.28	2,028.38 S	2,201.97 W	724,986.07	1,044,494.33	0.00	1,204.04	
6,300.00	92.79	212.87	-4,401.41	4,509.41	2,112.27 S	2,256.19 W	724,902.18	1,044,440.11	0.00	1,265.80	
6,400.00	92.79	212.87	-4,396.55	4,504.55	2,196.16 S	2,310.40 W	724,818.29	1,044,385.90	0.00	1,327.55	
6,487.28	92.79	212.87	-4,392.30	4,500.30	2,269.37 S	2,357.72 W	724,745.08	1,044,338.58	0.00	1,381.45	Start DLS 7.00 TFO -92.89
6,500.00	92.74	211.98	-4,391.69	4,499.69	2,280.10 S	2,364.54 W	724,734.35	1,044,331.76	7.00	1,389.38	
6,550.00	92.56	208.49	-4,389.37	4,497.37	2,323.24 S	2,389.66 W	724,691.21	1,044,306.62	7.00	1,422.03	
6,600.00	92.37	204.99	-4,387.22	4,495.22	2,367.85 S	2,412.15 W	724,646.60	1,044,284.15	7.00	1,456.93	
6,650.00	92.16	201.49	-4,385.25	4,493.25	2,413.75 S	2,431.86 W	724,600.70	1,044,264.44	7.00	1,493.95	
6,700.00	91.95	197.99	-4,383.45	4,491.45	2,460.77 S	2,448.74 W	724,553.68	1,044,247.56	7.00	1,532.95	
6,750.00	91.74	194.50	-4,381.84	4,489.84	2,508.75 S	2,462.72 W	724,505.70	1,044,233.58	7.00	1,573.79	
6,800.00	91.51	191.01	-4,380.42	4,488.42	2,557.48 S	2,473.75 W	724,456.97	1,044,222.55	7.00	1,616.31	

HALLIBURTON

Plan Report for (Slot 30) E-4 - South Leg - Plan #4 (21-Dec-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
6,850.00	91.28	187.51	-4,379.20	4,487.20	2,606.81 S	2,481.78 W	724,407.64	1,044,214.51	7.00	1,660.36	
6,900.00	91.05	184.02	-4,378.19	4,486.19	2,656.54 S	2,486.81 W	724,357.91	1,044,209.49	7.00	1,705.77	
6,950.00	90.81	180.53	-4,377.38	4,485.38	2,706.49 S	2,488.78 W	724,307.96	1,044,207.51	7.00	1,752.37	
7,000.00	90.57	177.03	-4,376.78	4,484.78	2,756.46 S	2,487.73 W	724,257.99	1,044,208.57	7.00	1,799.99	
7,050.00	90.32	173.54	-4,376.39	4,484.39	2,806.29 S	2,483.62 W	724,208.16	1,044,212.68	7.00	1,848.45	
7,100.00	90.08	170.05	-4,376.21	4,484.21	2,855.77 S	2,476.49 W	724,158.68	1,044,219.81	7.00	1,897.56	
7,150.00	89.83	166.56	-4,376.25	4,484.25	2,904.72 S	2,466.35 W	724,109.73	1,044,229.95	7.00	1,947.16	
7,200.00	89.59	163.07	-4,376.50	4,484.50	2,952.97 S	2,453.26 W	724,061.48	1,044,243.04	7.00	1,997.04	
7,250.00	89.35	159.58	-4,376.96	4,484.96	3,000.32 S	2,437.25 W	724,014.13	1,044,259.05	7.00	2,047.03	
7,300.00	89.11	156.08	-4,377.64	4,485.64	3,046.62 S	2,418.39 W	723,967.83	1,044,277.91	7.00	2,096.94	
7,350.00	88.87	152.59	-4,378.52	4,486.52	3,091.67 S	2,396.74 W	723,922.78	1,044,299.56	7.00	2,146.58	
7,400.00	88.64	149.10	-4,379.61	4,487.61	3,135.32 S	2,372.39 W	723,879.13	1,044,323.91	7.00	2,195.77	
7,450.00	88.41	145.61	-4,380.90	4,488.90	3,177.40 S	2,345.43 W	723,837.05	1,044,350.87	7.00	2,244.32	
7,500.00	88.19	142.11	-4,382.39	4,490.39	3,217.75 S	2,315.96 W	723,796.70	1,044,380.34	7.00	2,292.05	
7,550.00	87.97	138.62	-4,384.06	4,492.06	3,256.23 S	2,284.09 W	723,758.22	1,044,412.21	7.00	2,338.79	
7,600.00	87.76	135.12	-4,385.92	4,493.92	3,292.69 S	2,249.93 W	723,721.76	1,044,446.37	7.00	2,384.36	
7,650.00	87.56	131.62	-4,387.96	4,495.96	3,326.99 S	2,213.62 W	723,687.46	1,044,482.68	7.00	2,428.59	
7,700.00	87.37	128.12	-4,390.17	4,498.17	3,359.01 S	2,175.28 W	723,655.44	1,044,521.01	7.00	2,471.31	
7,750.00	87.19	124.62	-4,392.54	4,500.54	3,388.62 S	2,135.09 W	723,625.83	1,044,561.21	7.00	2,512.37	
7,800.00	87.02	121.12	-4,395.06	4,503.06	3,415.72 S	2,093.15 W	723,598.73	1,044,603.15	7.00	2,551.61	
7,821.54	86.95	119.62	-4,396.19	4,504.19	3,426.60 S	2,074.60 W	723,587.85	1,044,621.71	7.00	2,567.92	T1 / Start 1610 65 hold at 7821 54 MID
7,900.00	86.95	119.62	-4,400.36	4,508.36	3,465.32 S	2,006.48 W	723,549.13	1,044,689.92	0.00	2,626.65	
8,000.00	86.95	119.62	-4,405.68	4,513.68	3,514.67 S	1,919.67 W	723,499.78	1,044,776.63	0.00	2,701.50	
8,100.00	86.95	119.62	-4,410.99	4,518.99	3,564.01 S	1,832.85 W	723,450.44	1,044,863.45	0.00	2,776.35	
8,200.00	86.95	119.62	-4,416.30	4,524.30	3,613.36 S	1,746.04 W	723,401.09	1,044,950.26	0.00	2,851.20	
8,300.00	86.95	119.62	-4,421.62	4,529.62	3,662.71 S	1,659.23 W	723,351.74	1,045,037.07	0.00	2,926.05	
8,400.00	86.95	119.62	-4,426.93	4,534.93	3,712.06 S	1,572.42 W	723,302.39	1,045,123.88	0.00	3,000.90	
8,500.00	86.95	119.62	-4,432.25	4,540.25	3,761.41 S	1,485.60 W	723,253.04	1,045,210.70	0.00	3,075.75	
8,600.00	86.95	119.62	-4,437.56	4,545.56	3,810.76 S	1,398.79 W	723,203.69	1,045,297.51	0.00	3,150.60	
8,700.00	86.95	119.62	-4,442.87	4,550.87	3,860.11 S	1,311.98 W	723,154.34	1,045,384.32	0.00	3,225.45	
8,800.00	86.95	119.62	-4,448.19	4,556.19	3,909.45 S	1,225.16 W	723,105.00	1,045,471.14	0.00	3,300.30	
8,900.00	86.95	119.62	-4,453.50	4,561.50	3,958.80 S	1,138.35 W	723,055.65	1,045,557.95	0.00	3,375.15	
9,000.00	86.95	119.62	-4,458.82	4,566.82	4,008.15 S	1,051.54 W	723,006.30	1,045,644.76	0.00	3,450.00	
9,100.00	86.95	119.62	-4,464.13	4,572.13	4,057.50 S	964.73 W	722,956.95	1,045,731.57	0.00	3,524.85	
9,200.00	86.95	119.62	-4,469.44	4,577.44	4,106.85 S	877.91 W	722,907.60	1,045,818.39	0.00	3,599.70	
9,300.00	86.95	119.62	-4,474.76	4,582.76	4,156.20 S	791.10 W	722,858.25	1,045,905.20	0.00	3,674.55	
9,400.00	86.95	119.62	-4,480.07	4,588.07	4,205.55 S	704.29 W	722,808.90	1,045,992.01	0.00	3,749.40	
9,432.19	86.95	119.62	-4,481.78	4,589.78	4,221.43 S	676.34 W	722,793.02	1,046,019.96	0.00	3,773.49	T2 / Start DLS 2.00 TFO 13.93
9,500.00	88.27	119.94	-4,484.61	4,592.61	4,255.08 S	617.54 W	722,759.37	1,046,078.76	2.00	3,824.40	

HALLIBURTON

Plan Report for (Slot 30) E-4 - South Leg - Plan #4 (21-Dec-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
9,529.50	88.84	120.08	-4,485.35	4,593.35	4,269.83 S	592.00 W	722,744.62	1,046,104.30	2.00	3,846.64	Start 1308.07 hold at 9529.50 MD
9,600.00	88.84	120.08	-4,486.77	4,594.77	4,305.16 S	531.01 W	722,709.29	1,046,165.29	0.00	3,899.85	
9,700.00	88.84	120.08	-4,488.79	4,596.79	4,355.28 S	444.50 W	722,659.17	1,046,251.80	0.00	3,975.33	
9,800.00	88.84	120.08	-4,490.81	4,598.81	4,405.40 S	357.99 W	722,609.05	1,046,338.31	0.00	4,050.81	
9,900.00	88.84	120.08	-4,492.83	4,600.83	4,455.52 S	271.48 W	722,558.93	1,046,424.82	0.00	4,126.29	
10,000.00	88.84	120.08	-4,494.85	4,602.85	4,505.64 S	184.97 W	722,508.81	1,046,511.33	0.00	4,201.77	
10,100.00	88.84	120.08	-4,496.87	4,604.87	4,555.75 S	98.46 W	722,458.70	1,046,597.84	0.00	4,277.25	
10,200.00	88.84	120.08	-4,498.89	4,606.89	4,605.87 S	11.95 W	722,408.58	1,046,684.35	0.00	4,352.73	
10,300.00	88.84	120.08	-4,500.91	4,608.91	4,655.99 S	74.56 E	722,358.46	1,046,770.86	0.00	4,428.21	
10,400.00	88.84	120.08	-4,502.93	4,610.93	4,706.11 S	161.07 E	722,308.34	1,046,857.37	0.00	4,503.69	
10,500.00	88.84	120.08	-4,504.95	4,612.95	4,756.22 S	247.59 E	722,258.23	1,046,943.89	0.00	4,579.17	
10,600.00	88.84	120.08	-4,506.97	4,614.97	4,806.34 S	334.10 E	722,208.11	1,047,030.40	0.00	4,654.65	
10,700.00	88.84	120.08	-4,508.99	4,616.99	4,856.46 S	420.61 E	722,157.99	1,047,116.91	0.00	4,730.13	
10,800.00	88.84	120.08	-4,511.01	4,619.01	4,906.58 S	507.12 E	722,107.87	1,047,203.42	0.00	4,805.60	
10,837.57	88.84	120.08	-4,511.76	4,619.76	4,925.41 S	539.62 E	722,089.04	1,047,235.92	0.00	4,833.96	Start DLS 2.00 TFO -178.50
10,868.19	88.23	120.07	-4,512.55	4,620.55	4,940.75 S	566.11 E	722,073.70	1,047,262.41	2.00	4,857.07	T3 / Start 1628.63 hold at 10868.19 MD
10,900.00	88.23	120.07	-4,513.53	4,621.53	4,956.68 S	593.63 E	722,057.77	1,047,289.93	0.00	4,881.07	
11,000.00	88.23	120.07	-4,516.62	4,624.62	5,006.76 S	680.13 E	722,007.69	1,047,376.43	0.00	4,956.51	
11,100.00	88.23	120.07	-4,519.70	4,627.70	5,056.84 S	766.63 E	721,957.61	1,047,462.93	0.00	5,031.95	
11,200.00	88.23	120.07	-4,522.79	4,630.79	5,106.92 S	853.13 E	721,907.53	1,047,549.43	0.00	5,107.39	
11,300.00	88.23	120.07	-4,525.88	4,633.88	5,157.00 S	939.63 E	721,857.45	1,047,635.93	0.00	5,182.83	
11,400.00	88.23	120.07	-4,528.97	4,636.97	5,207.07 S	1,026.13 E	721,807.38	1,047,722.43	0.00	5,258.27	
11,500.00	88.23	120.07	-4,532.05	4,640.05	5,257.15 S	1,112.63 E	721,757.30	1,047,808.93	0.00	5,333.71	
11,600.00	88.23	120.07	-4,535.14	4,643.14	5,307.23 S	1,199.13 E	721,707.22	1,047,895.43	0.00	5,409.15	
11,700.00	88.23	120.07	-4,538.23	4,646.23	5,357.31 S	1,285.64 E	721,657.14	1,047,981.94	0.00	5,484.59	
11,800.00	88.23	120.07	-4,541.32	4,649.32	5,407.39 S	1,372.14 E	721,607.06	1,048,068.44	0.00	5,560.03	
11,900.00	88.23	120.07	-4,544.40	4,652.40	5,457.47 S	1,458.64 E	721,556.98	1,048,154.94	0.00	5,635.47	
12,000.00	88.23	120.07	-4,547.48	4,655.48	5,507.55 S	1,545.14 E	721,506.90	1,048,241.44	0.00	5,710.91	
12,100.00	88.23	120.07	-4,550.58	4,658.58	5,557.63 S	1,631.64 E	721,456.82	1,048,327.94	0.00	5,786.35	
12,200.00	88.23	120.07	-4,553.66	4,661.66	5,607.71 S	1,718.14 E	721,406.74	1,048,414.44	0.00	5,861.79	
12,300.00	88.23	120.07	-4,556.75	4,664.75	5,657.79 S	1,804.64 E	721,356.66	1,048,500.94	0.00	5,937.23	
12,400.00	88.23	120.07	-4,559.84	4,667.84	5,707.87 S	1,891.15 E	721,306.58	1,048,587.45	0.00	6,012.67	
12,496.82	88.23	120.07	-4,562.83	4,670.83	5,756.36 S	1,974.89 E	721,256.09	1,048,671.19	0.00	6,085.71	T4 / TD at 12496.82

HALLIBURTON

Plan Report for (Slot 30) E-4 - South Leg - Plan #4 (21-Dec-06)

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
4,750.00	4,150.58	-1,025.62	-1,296.07	Start DLS 8 00 TFO 22 25
5,188.83	4,358.85	-1,244.72	-1,604.69	Start DLS 8 00 TFO -92 86
5,518.82	4,428.70	-1,464.67	-1,836.47	Start 370 00 hold at 5518 82 MD
5,888.82	4,505.62	-1,768.20	-2,033.58	Start DLS 8 00 TFO -0 49
6,073.69	4,520.43	-1,922.43	-2,133.49	Start 413 59 hold at 6073 69 MD
6,487.28	4,500.30	-2,269.37	-2,357.72	Start DLS 7 00 TFO -92 89
7,821.54	4,504.19	-3,426.60	-2,074.60	T1 / Start 1610 65 hold at 7821 54 MD
9,432.19	4,589.78	-4,221.43	-676.34	T2 / Start DLS 2 00 TFO 13 93
9,529.50	4,593.35	-4,269.83	-592.00	Start 1308 07 hold at 9529 50 MD
10,837.57	4,619.76	-4,925.41	539.62	Start DLS 2 00 TFO -178 50
10,868.19	4,620.55	-4,940.75	566.11	T3 / Start 1628 63 hold at 10868 19 MD
12,496.82	4,670.83	-5,756.36	1,974.89	T4 / TD at 12496 82

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	+E/-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	161.06	Slot	0.00	0.00	0.00

HALLIBURTON**Plan Report for (Slot 30) E-4 - South Leg - Plan #4 (21-Dec-06)****Targets**

Target Name	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target - Shape									
E-4 S T3	0.00	0.00	4,620.55	-4,940.75	566.11	722,073.70	1,047,262.41	34 111627	-119 397706
- plan hits target - Point									
E-4 S T1	0.00	0.00	4,504.19	-3,426.60	-2,074.60	723,587.85	1,044,621.71	34 115567	-119 406576
- plan hits target - Point									
E-4 S T2	0.00	0.00	4,589.78	-4,221.43	-676.34	722,793.02	1,045,019.96	34 113500	-119 401880
- plan hits target - Point									
E-4 S T4	0.00	360.00	4,670.83	-5,756.36	1,974.89	721,258.09	1,048,671.19	34 109504	-119 392973
- plan hits target - Point									

HALLIBURTON

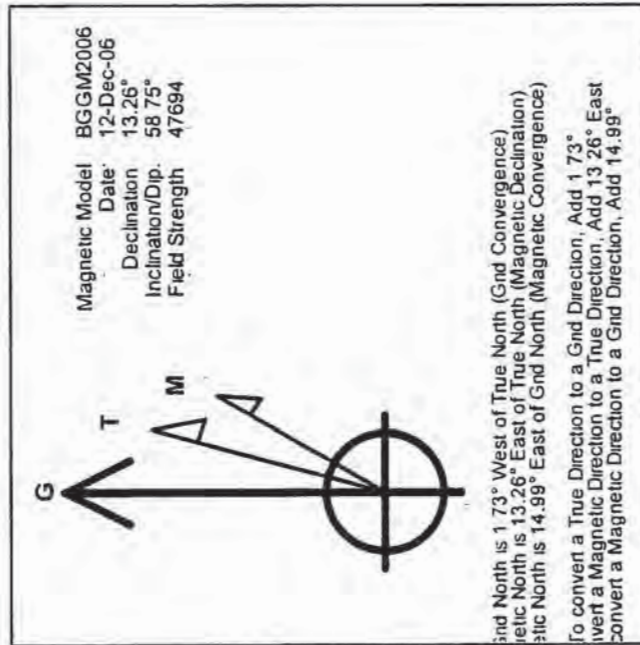
North Reference Sheet for Platform Gail - (Slot 30) E-4 - South Leg

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference. Vertical Depths are relative to Well @ 108 00ft (Original Well Elev) Northing and Easting are relative to (Slot 30) E-4. Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866. Projection method is Lambert Conformal Conic (2 parallel). Central Meridian is -116 250000", Longitude Origin 0 000000" Latitude Origin 33 883333". False Easting 2,000,000 00ft, False Northing 0 00ft, Scale Reduction 1 00004934.

Grid Coordinates of Well 727,014 45 ft N, 1,046,696 30 ft E
Geographical Coordinates of Well 34° 07' 30 54" N, 119° 24' 00 24" W
Grid Convergence at Surface is -1 73°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,496 82ft the Bottom Hole Displacement is 6,085 71ft in the Direction of 161 06° (Grid)

Magnetic Convergence at surface is -14 99° (12 December 2006, BGGM2006)



Vertical to 1600'
 Max Angle: 90°
 D F Elevation: 107'
 D F. to Tubing Head. 50.85'
 Water Depth: 739'
 Tree. FMC 5000 PSI WP

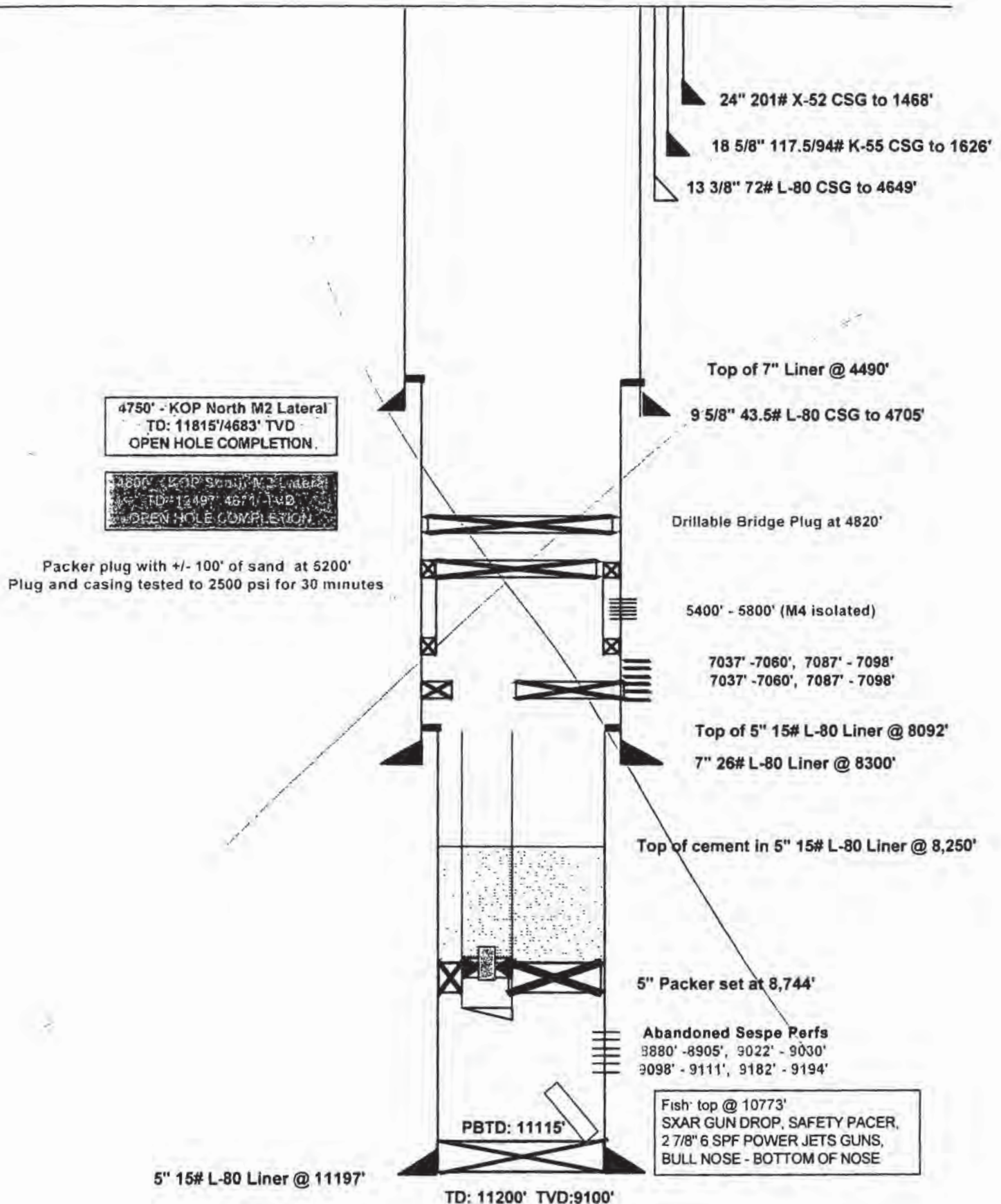
Lease: OCS-P-0205

Drawing Revision 1/23/07 JLH

SOCKEYE FIELD
WELL E-4 RD2&3
 L-UT Injector / S- Dual M2 Producer
PROPOSED

Depths Corrected to 107' RF

Completion Date: 12/11/05



hp officejet 7130
printer/fax/scanner/copier

Fax-History Report for

Feb 06 2007 3:09pm

Last Transaction

<u>Date</u>	<u>Time</u>	<u>Type</u>	<u>Identification</u>	<u>Duration</u>	<u>Pages</u>	<u>Result</u>
Feb 6	3:08pm	Fax Sent	818057452217	0:35	1	OK

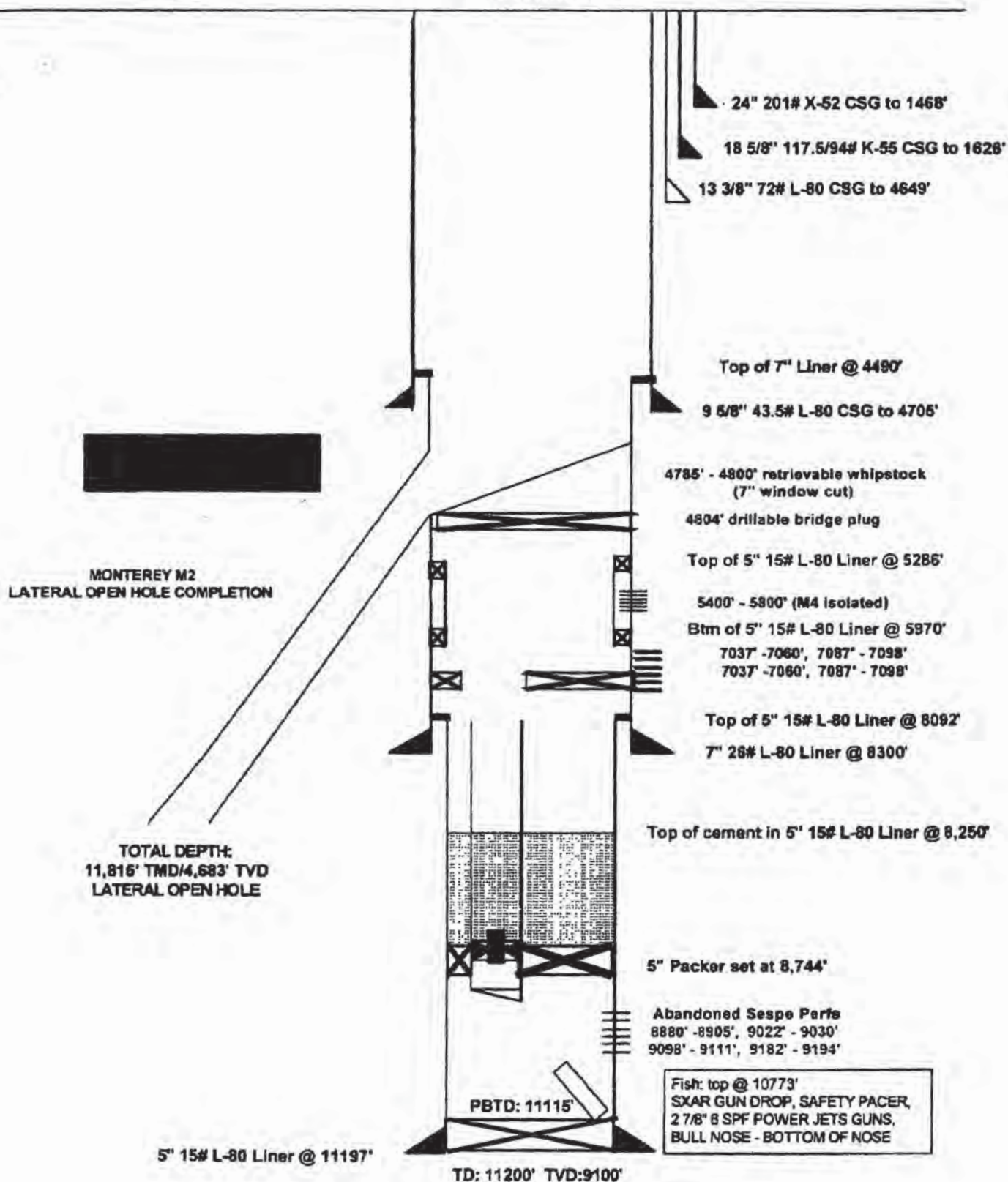
Vertical to 1600'
 Max Angle: 90°
 D.F. Elevation: 107'
 D F to Tubing Head: 50.85'
 Water Depth: 739'
 Tree: FMC 5000 PSI WP

Lease: OCS-P-0205
SOCKEYE FIELD
WELL E-4 RD2
 L-UT Injector / S-M2 Producer
PROPOSED

Drawing Revision 1/25/07 JLH

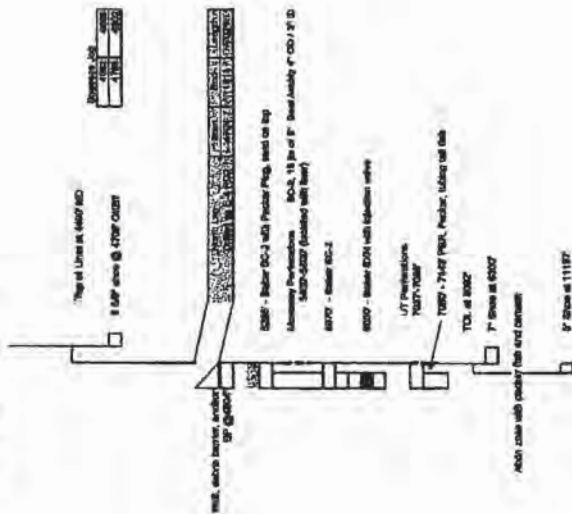
Depths Corrected to 107' RF

Completion Date: 12/11/05

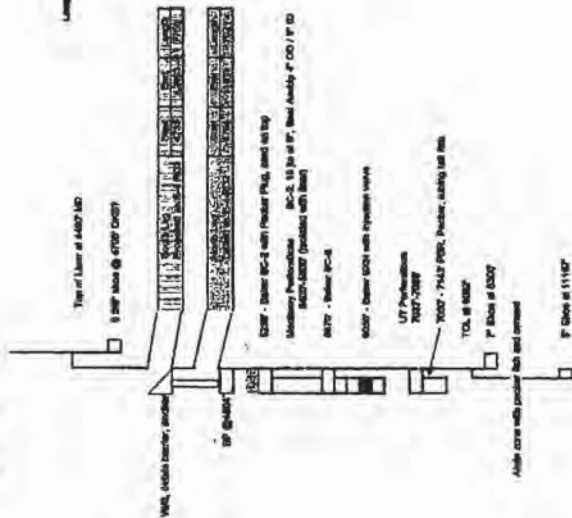


Platform Well 0458-P-5008, Well E-4 1002.3

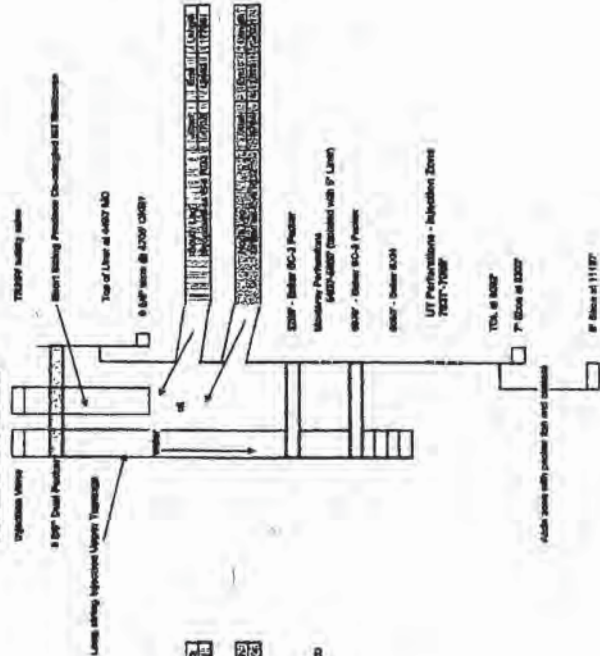
Well E-4 1002



Well E-4 1002



Well E-4 1002.3, Data Communications



Application for Permit to Drill (APD)

Releasable to public
Name: SPH Date: 5/13/13

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309		3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013	
4 WELL NAME (CURRENT) E-4		5 SIDETRACK NO (CURRENT) 03		6 BYPASS NO. (CURRENT) 00	
7 PROPOSED START DATE 04/11/10		8 PLAN CONTROL NO (NEW WELL ONLY)			
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04-311-2066703					
10 ☐ Revision		11 If revision, please list changes			
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE		
12 LEASE NO P-0205			17 LEASE NO P-0205		
13 AREA NAME 6B			18 AREA NAME 6B		
14 BLOCK NO 4661			19 BLOCK NO 4661		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) 1,046434.77		16 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 722447.12		21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 727014.95	
20 LATITUDE (☐ NAD 83 / ☒ NAD 27) 1046696.30					
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME Monterey M1		23 TOP (MD) 4738		24 TOP (TVD) 4141	
Monterey M2		5265		4374	
25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250 414 or 30 CFR 250 1617(c) and (d) as appropriate) Well prognosis, MMS-123S					
26 CONTACT NAME Jody Robins		27 CONTACT TELEPHONE NO 805-745-2153		28 CONTACT E-MAIL ADDRESS jody.robins@venocoinc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Gary Lower		30 TITLE Operations Manager			
31 AUTHORIZING SIGNATURE <i>Gary Lower</i>		32 DATE 04/09/2010			
THIS SPACE FOR MMS USE ONLY					
APPROVED <i>Previously attached</i> ☒ With Attached Conditions ☐ Without Conditions		BY <i>D. J. K.</i>		TITLE District Manager	
API WELL NO ASSIGNED TO THIS WELL 043112066704		DATE 4/9/10			

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain	☐ YES ☒ NO ☐ N/A	Approved Field drilling rules.

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 5438, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco Inc				2) Well Name (Proposed): E-4 ST: 04 BP:			
3) Bottom Hole Lease: P-0205				4) Surface Lease: P-0205			
5) API Number: 04-311-2066703				6) Type of Well: ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): 4000'			
9) Rig Name: Kenai 2				10) SubSea BOP: ☐ Yes ☒ No			
11) Water Depth (ft): 739'		12) RKB Height (ft): 107'		13) Mineral Code:			
14) Drive Pipe Size (in): 24"		15) Drive Pipe Depth (ft): 1468'		16) Anchors ☐ Yes ☐ No			
17) Well Design Information							
Interval Number:				Type:		Name:	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
	4.5	11.6	L-80	7780	6350	10,000	8.7
						4607	
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION	
Hole Size (in) 6 1/8			Type Surface			Annular Test (psi) 2500	
Mud Weight (ppg) 9.2			Size (in) 13 5/8			BOP/Diverter Test (psi) 2500	
Mud Type Code			Wellhead Rating (psi) 5000			Mud Test Weight (ppg) 9.2	
Frac Gradient (ppg) 12.5			Annular Rating (psi) 5000			Casing/Liner Test (psi) N/A Slotted	
Liner Top Depth (ft) 4300'			BOP/Diverter Rating (psi) 5000			Formation Test (ppg) 10.5	
Cement Volume (ft ³) None							
Interval Number: Type: Name:							
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION	
Hole Size (in)			Type			Annular Test (psi)	
Mud Weight (ppg)			Size (in)			BOP/Diverter Test (psi)	
Mud Type Code			Wellhead Rating (psi)			Mud Test Weight (ppg)	
Frac Gradient (ppg)			Annular Rating (psi)			Casing/Liner Test (psi)	
Liner Top Depth (ft)			BOP/Diverter Rating (psi)			Formation Test (ppg)	
Cement Volume (ft ³)							
Interval Number: Type: Name:							
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION	
Hole Size (in)			Type			Annular Test (psi)	
Mud Weight (ppg)			Size (in)			BOP/Diverter Test (psi)	
Mud Type Code			Wellhead Rating (psi)			Mud Test Weight (ppg)	
Frac Gradient (ppg)			Annular Rating (psi)			Casing/Liner Test (psi)	
Liner Top Depth (ft)			BOP/Diverter Rating (psi)			Formation Test (ppg)	
Cement Volume (ft ³)							

* NOTE* For additional casing/liner intervals, please submit an additional Form MMS-123S.

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123S, is estimated to average between 1-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 5438, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-4 ST4 Drilling Program
API# 04-311-2066704
LEASE OCS-P-0205
April 8, 2010 (attach to MMS APD)

Objective: To drill a 6 1/8" sidetrack to 10,000' MD/4607' TVD twinning the E-4 ST3 Monterey lateral. It will be completed with a 4 1/2" slotted liner with swell packers. Currently, we are in the process of abandoning the current wellbore below 4721' due to collapsed casing.

Surface Location: OCS-P-205, Slot No. 30 (X= 1,046,696.30' & Y= 727,014.45')

Elevation: 739' WD, 107' Above MLLW, 846' Ocean Floor to Rig Floor

Proposed TD: OCS-P-205 E-4 ST4 10,000' MD/4607' TVD

TD Location: X = 1,046,434.77' & Y = 722,447.12'

Existing Casing:

24", 201#, X-52	1468'	1299 CF
18 5/8", 117.5#, 94.5# K-55	1626'	907 CF
13 3/8", 72#, L-80	4649'	4265 CF
9 5/8", 43.5#, TCA-80	4705'	2847 CF
7", 26#, L-80 Hydril 513	4490' to 8300'	730 CF
NOTE: 7" casing collapsed at 4721'		
5", 15#, L-80 Hydril 513	8092' to 11,200'	325 CF

Markers:

Monterey M1 – 4738' MD/4141' TVD
Monterey M2 – 5265' MD/4374' TVD

Proposed Liner

4 1/2" 11.6# L-80 GEOCON (buttress type thread) 4300' – 10,000' MD

It will not be cemented – it will be slotted and installed with swell packer equipment

BOPE Equipment and Testing

- BOPE will be tested every 14 days during proposed operations.
- BOP equipped with 4 ram preventers and an annular. Test the BOP to 250/2500 psi with 5" drill pipe, 3 1/2" drill pipe, and 2 7/8" tubing. The well has 2 7/8" tubing installed. The 13 5/8" BOPE will be configured for drilling or re-completion operations, with 2 7/8" X 5" VBR pipe rams in the top gate and blind/shear rams in the second gate from top, the mud cross will be below the blind/shear rams, and double gate with 5" rams at top and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. The 2 3/8" rams will not be tested as we are not working with 2 3/8" tubing in this well. All tests will be recorded on a chart for the MMS to review.
- Before commencing well work operations it will be necessary to insure that fluids can be pumped down the tubing and casing simultaneously through equipment tested to 2500

psi. A 2 1/16 5M casing valve will be installed below the tubing hanger with a 1502 tee and a pressure gauge, a check valve and high pressure hose. It will be tested to 250/2500 psi for 5 minutes as part of the initial and regular BOPE tests. This connection will allow seawater to be pumped into the annulus at 3 bpm below the tubing hanger landing profile to keep the well under control. It will also prevent visual obstruction when landing the oriented tubing hanger.

Hydrogen Sulfide Considerations:

The Monterey has the potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

NOTE: Have H2S scavengers on board suitable for use in mud in the event they are required.

Drilling Fluids:

- It is proposed to use 9.2 ppg SP101 Seawater/Gel system
- There will be no discharge of drilling fluids during the well operations.

Sidetrack Procedure

1. Cement retainer to be set at +/-4675' during previous P&A operations
2. RIH with Baker whipstock assembly and Sperry MWD tools to cement retainer. Orient whipstock and set whipstock per Baker. Change well over to 9.2 ppg SP101 drilling fluid
3. Mill window in 7" liner and 9 5/8" casing per Baker. Trip for new mills as necessary. Periodically pump rope fiber sweeps to clean up metal shavings. Mill 10' of rathole into formation and pull above window. Get 10.5 ppg FIT. POOH.
4. RIH with 6 1/8" PDC bit on directional BHA. Build to horizontal and drill per attached Sperry directional to 10,000' TD.
5. Make short trip to window and run back to TD. Circulate and condition mud for logging. POOH.
6. Run in with Weatherford tubing-conveyed logging tools and log lateral. POOH.
7. Run in hole to TD with clean-out BHA (per TAM Packers) and circulate and condition hole to run liner. POOH.
8. Rig up casing crew and run the 4 1/2", 11.6# L-80, GEOCON liner from +/-10,000' to +/-4300'
 - One swell packer will be set near the top of the M2
 - Spacing of packers to be determined from logs
 - 9 5/8" Liner Hanger to be set at +/- 4300' MD
 - Run liner on drill pipe and with HWDP spaced out as needed per torque and drag prediction program and if hole conditions dictate to push liner to bottom.
 - Run centralizers above and below each swell packer
 - Run in the hole slowly to avoid surging the formation.

- A circulating swage with a safety valve will be on the rig floor.
9. Run the liner in the hole to +/-10,000'. Circulate the well until the returns are clean. Drop the setting ball and set the liner hanger. Release running tool from liner hanger.
 10. After setting liner hanger packer, the hanger and casing will be pressure tested to 2500 psi for 30 minutes with weighted seawater in the hole. Pull out of hole with running tools
 11. Pull wear bushing.
 12. Production tubing to be yellow band or better 3 1/2" 9.3# L-80 EUE 8rd. Hydrotest tubing to 4000 psi while running in the hole.
 13. Pick up the completion equipment in following order:
 - 3 1/2" Baker 'BXN' seating nipple with ball seat made up on pin of nipple
 - 1 joint of 3 1/2" EUE 8rd Tubing
 - 3 1/2" Baker 'BX' seating nipple
 - 1 joints of 3 1/2" EUE 8rd Tubing
 - Baker 9 5/8" HS Packer w/ 6' pup joints made up to the top and bottom of the packer
 - XX joints of 3 1/2" EUE 8rd Tubing
 - 3 1/2" GLM
 - XX joints of 3 1/2" EUE 8rd Tubing
 - 3 1/2" GLM
 - XX joints of 3 1/2" EUE 8rd Tubing
 - 3 1/2" Baker TE-5 TRSSSV
 - XX joints of 3 1/2" EUE 8rd Tubing
 - Cameron Tubing Hanger
- NOTE: Instead of HS Packer a seal assembly may be installed in 4.5" liner top and tested to 2500 psi
14. After pick up TRSSSV, install control line and pressure test to 7000 psi. Run in hole with tubing and control line banding the line to the tubing with 2 bands per joint. Run in to landing depth, pick up and install Cameron tubing hanger and install control line and pressure test to 7000 psi. Pump XX bbls packer fluid and place from packer set depth to above the bottom GLM. Get up and down weight prior to landing. Follow Cameron procedure for landing tubing hanger. At no time will hanger hold down pin be removed. Pressure test tubing hanger void.
 15. After tubing hanger is landed and tested, drop X.XX" OD, Kirksite setting ball down tubing. Pressure up tubing to 3000psi in 500 psi increments to set the HS packer and hold 3000 psi on tubing for 15 minutes, slowly bleed pressure off of tubing. Pressure test the packer and annulus to 2500 psi. Continue to pressure up to 3500 psi and blow the packer setting ball.
 16. Bleed off control line pressure to close TRSSSV and install BPV into tubing hanger. Nipple down BOPE and nipple up Cameron 3 1/2" tree with adapter. Install blanking plug and pressure test bonnet void and tree to 3000 psi. Remove blanking plug.
 17. Release rig and turn well over to production.

Drawing Revision 4/2/07 CWH
Completion Date 12/11/05
Recompletion 7/12/06 & 13/07

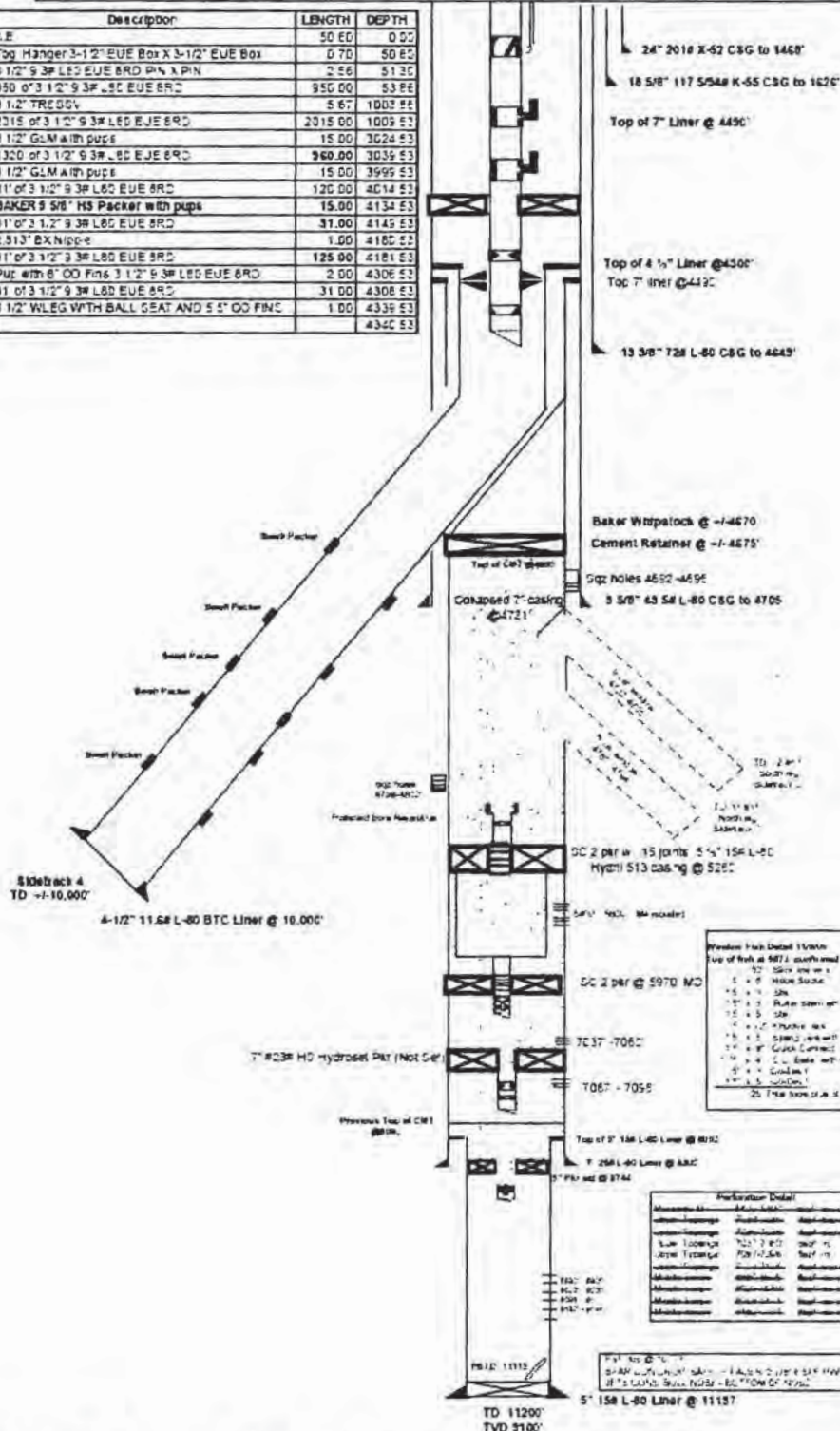
5" 15# L-80 Liner @ 11197

Vertical to 1600'
 Max Angle 60° @ 5512'
 ST 4 Lateral Max 90° From 5988' to 10,000'
 D.F. Elevation 107'
 D.F. to Tubing Head 50.25'
 Water Depth 732'
 Tree: Cameron 5000 PSI WF

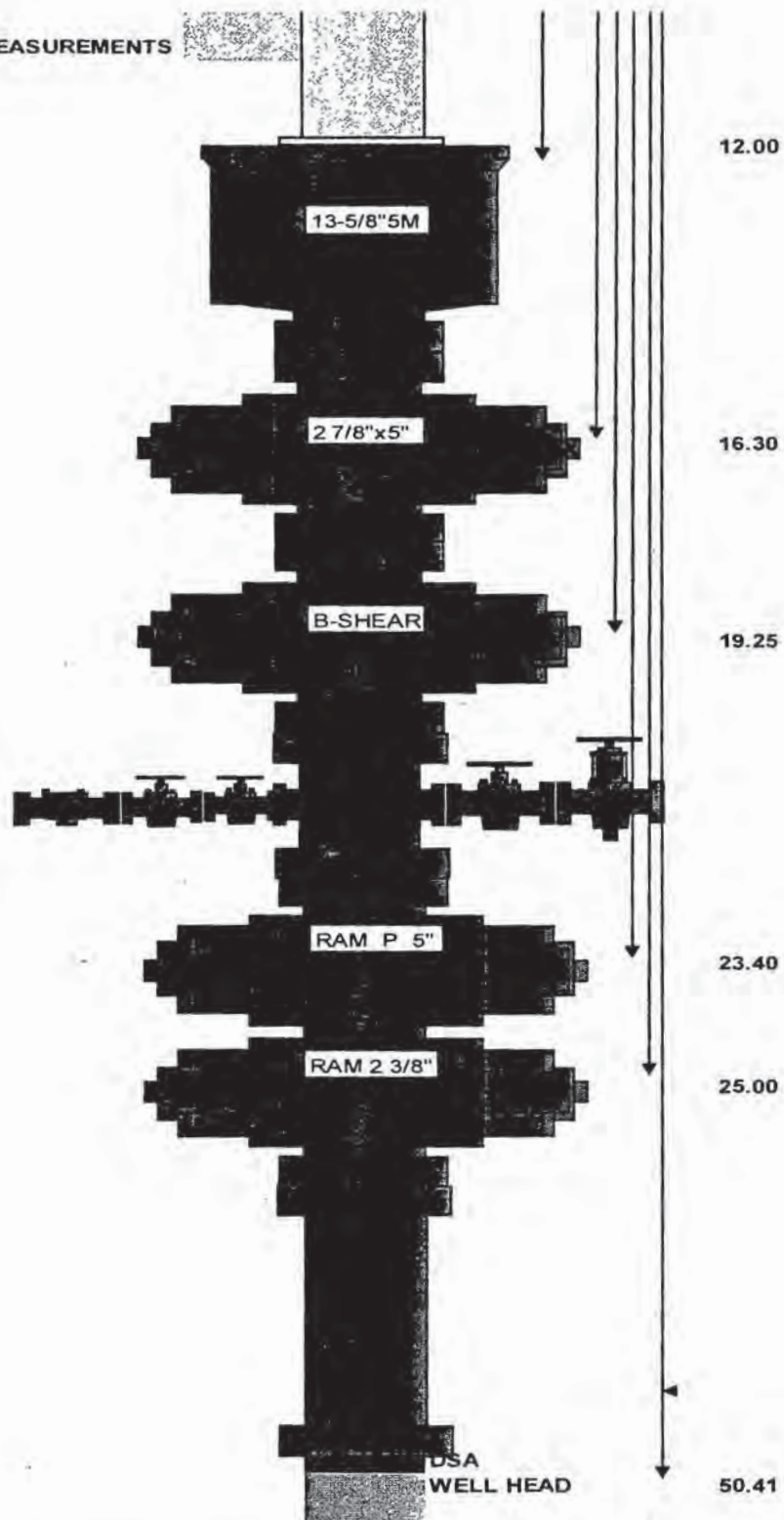
PROPOSED
 Lease OCS-P-0205
SOCKEYE FIELD
WELL E-4 RD ST 4
 M2 Producer

Drawing Revision 04.08/10 JCS
 Completion Date 12.11.05
 Recomputer 7.12.06 3:13:07

Description	LENGTH	DEPTH
N.B.	50.00	0.00
Top Hanger 3-1/2" EUE Box X 3-1/2" EUE Box	0.70	50.00
3 1/2" 9 3/8" L80 EUE BRD PIN X PIN	2.56	51.30
950 0" 3 1/2" 9 3/8" L80 EUE BRD	950.00	53.86
3 1/2" TRC SSV	5.67	100.00
2315 0" 3 1/2" 9 3/8" L80 EUE BRD	2015.00	100.00
3 1/2" GLM with pups	15.00	3024.53
1320 0" 3 1/2" 9 3/8" L80 EUE BRD	960.00	3039.53
3 1/2" GLM with pups	15.00	3995.53
31' of 3 1/2" 9 3/8" L80 EUE BRD	120.00	4014.53
BAKER 9 5/8" HS Packer with pups	15.00	4134.53
31' of 3 1/2" 9 3/8" L80 EUE BRD	31.00	4145.53
2.513" BXRISSE	1.00	4180.53
31' of 3 1/2" 9 3/8" L80 EUE BRD	125.00	4181.53
Pup with 6" OD Fine 3 1/2" 9 3/8" L80 EUE BRD	2.00	4306.53
31' of 3 1/2" 9 3/8" L80 EUE BRD	31.00	4308.53
3 1/2" WLEG WITH BALL SEAT AND 5 1/2" OD FINE	1.00	4336.53
		4340.53



BOPE
KENAI BOPE
RIG FLOOR MEASUREMENTS



MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
2,650'-6,820' (12-1/4" hole)	SW/Gelite/Gel/SP-101	8.9 - 9.5	<6	8.0-9.5	18-25	23k-29k

4,675'-10,000'

The objective in this interval is to drill an 6 1/8" hole from the 7" window to 10,000 ft and run 4.5" 11.6# liner from TD to 4300'. The fluid system recommended is a Seawater/MI Gel/Gelite/SP101 system. Maintain the 3 RPM reading higher than 10, with additions of Duovis.

Notes:

- 1) Operate solids control equipment to maintain drill solids as low as possible.
- 2) Maintain supply of ZnO₂ onboard to treat out H₂S.
- 3) A minimum amount of barite shall be kept on the platform at all times to raise the mud weight .5 ppg or as per MMS regulations.

Hydrogen Sulfide Considerations:

The Monterey has potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

EVALUATION PROGRAM

1) MUD LOGGING

6 1/8" Hole Section – Continuous mud logging shall be performed from drilling out the shoe of the 7" window to the total depth. Collect dry samples at 30' intervals.

2) CORING – none

3) LOGGING WHILE DRILLING - NONE

6 1/8" Hole Section – An MWD/GR will be used for directional surveys.

4) ELECTRIC LOGGING

6 1/8" Hole Section

Log Run #1

Triple Combo

Logging interval: Total Depth to 4675' MD

Log Run #2

Compact Micro Imager (CMI) and 6-Arm Caliper

Logging Interval: Total Depth to 4675' MD

Notify Geologist to witness all logs.

Primary Geologist: Chris Peltonen

805-745-2266 office

805-732-8846 cell

Back-up Geologist: Monica Carlsen

805-745-2115 office

805-448-5622 cell

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. **Assume any gas circulated to surface to have hydrogen sulfide potential.** Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.



E-26

Bottom Hole Location:

Northing: 728638.1

Easting: 1044250.2

(SPCS27 - CA6)

22 ft North of P-0205

5334 ft West of P-0208

P-0209 P-0208
P-0205 P-0204

Platform Gail

Slot 18

Surface Location:

Northing: 727032.45

Easting: 1046696.33

(SPCS27 - CA6)

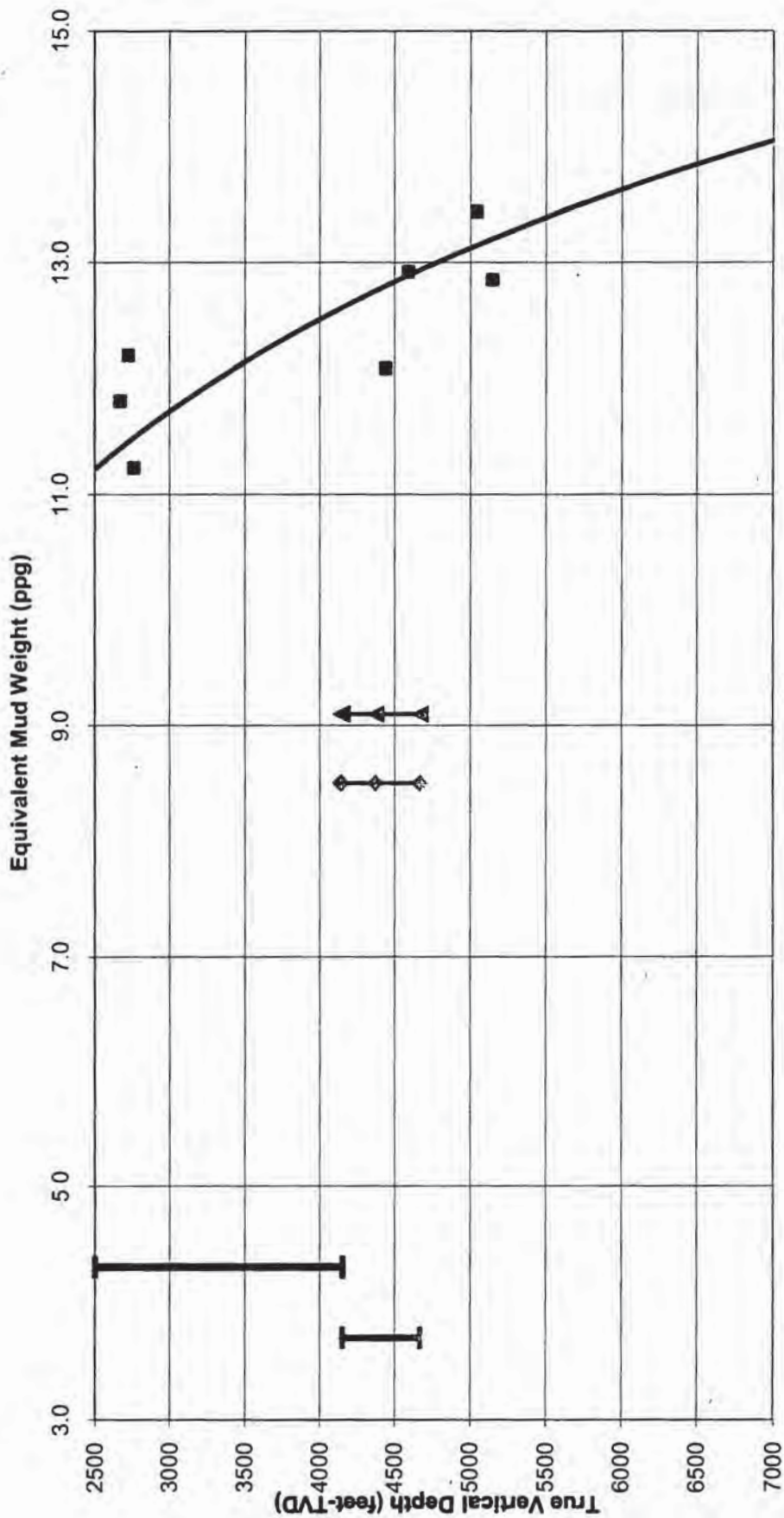
1589.6' South of P-0209

2886.7' West of P-0204

	STATE FIELD
K20 Standard form	
Mr. J. H. H. H.	Geologist, State Museum

1 inch = 3503 feet

Platform Gail Well E-4 RD 4 Horizontal Lateral Pore Pressure, Mud Weight & Fracture Pressure



LOT Data
 Planned Mud Weight
 Highest Expected PP
 9-5/8" Casing
 6-1/8" Open Hole
 Expon. (LOT Data)



P-0209 P-0208

P-0205 P-0204

Platform Gall

Slot 30

Datum: 108' (KB)

Northing: 727014.4

Easting: 1046696.3

Latitude: 34° 7' 30.54"

Longitude: -119° 24' 0.24"

(SPCS27 - CA6)

E-4514_Plan2

Bottom Hole Location:

Northing: 722447.0

Easting: 1046434.8

Latitude: 34° 6' 45.3"

Longitude: -119° 24' 1.71"

(SPCS27 - CA6)

TD 10,000'

TVD 4607'

6155' South of P-0209

3148' West of P-0204



SOUTHEASTERN FIELD

E&S TR Bottomhole location - Lease Area Office

Date: 12 April 2010

Geologist: Chris Peterson

1 inch = 3503 feet



Azimuths to Grid North
True North 1.73°
Magnetic North 14.69°
Magnetic Field
Strength 47412 TnT
Dip Angle 58.70°
Date 4/6/2010
Model IGRF2010

Vanoco Inc.

Project: Platform Gail
Well: (Slot 30) E-4
ST4

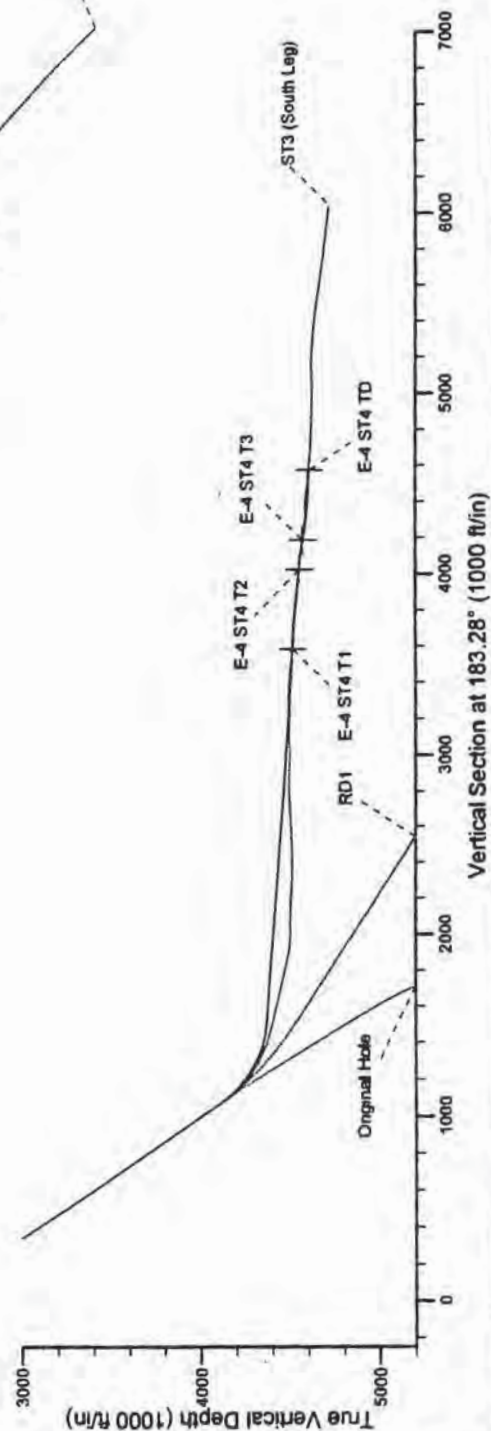
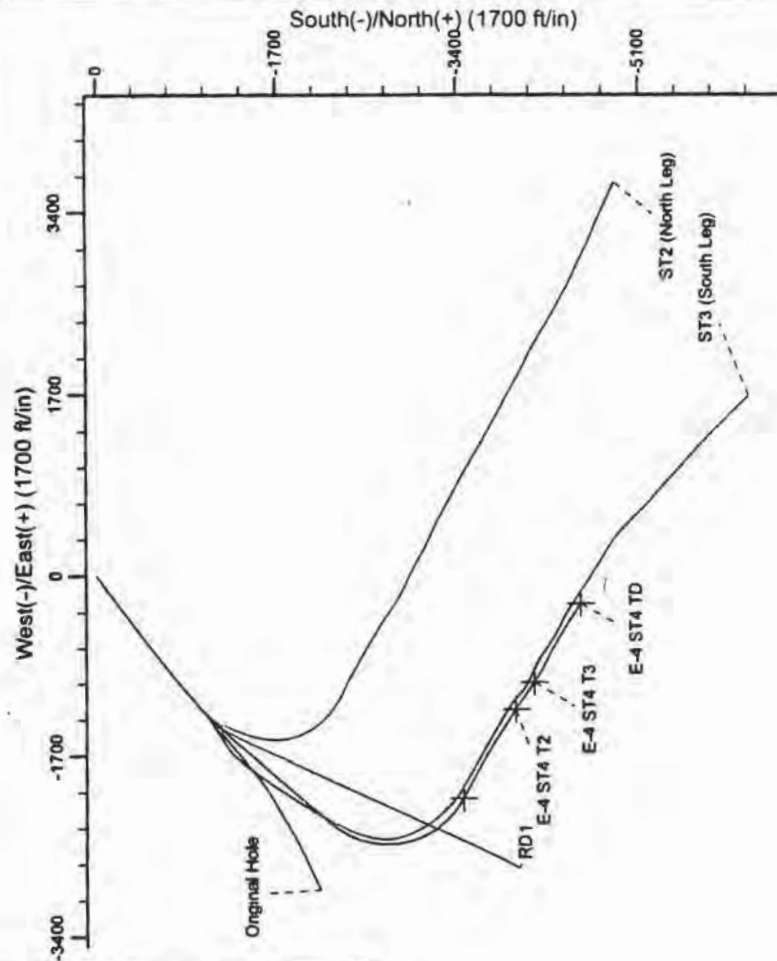
Plan #2 (08-Apr-10)

(Slot 30) E-4
NAD 1927 (NADCON CONUS)
Grid
California VI 408
Well @ 108 001 (Original Well Elev)
Northing 727014.45
Easting 1046696.30

HALLIBURTON
Sperry Drilling Services

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSec	Target
1	4875.00	43.15	228.54	4098.32	-891.33	-1257.28	0.00	0.00	1081.58	
2	4735.00	46.19	225.42	4139.00	-1019.88	-1286.32	7.00	-45.00	1091.83	
3	5313.13	86.43	220.53	4366.64	-1401.55	-1639.12	7.00	-7.53	1492.95	
4	6391.51	86.43	220.53	4433.78	-2219.56	-2338.59	0.00	0.00	2349.81	
5	7854.98	89.00	118.00	4515.00	-3470.60	-2100.00	7.00	-91.81	3584.97	E-4 ST4 T1
6	8154.88	89.00	118.00	4520.24	-3611.42	-1835.18	0.00	0.00	3710.42	
7	8261.07	87.12	121.81	4523.83	-3664.27	-1743.28	4.00	118.37	3757.92	
8	8762.23	87.12	121.81	4550.53	-3943.88	-1292.43	0.00	0.00	4011.29	
9	8822.39	87.30	123.00	4552.00	-3960.00	-1287.00	4.00	81.37	4025.95	E-4 ST4 T2
10	8853.88	86.89	124.10	4553.85	-3977.37	-1240.81	4.00	118.85	4041.79	
11	9117.96	86.89	124.10	4568.86	-4125.21	-1022.49	0.00	0.00	4176.91	
12	9135.49	88.00	124.00	4570.00	-4135.00	-1008.00	4.00	-171.46	4185.88	E-4 ST4 T3
13	9359.84	88.00	115.00	4595.89	-4245.14	-813.33	4.00	-90.31	4284.69	
14	9409.94	88.00	115.00	4588.16	-4266.22	-768.12	0.00	0.00	4303.15	
15	9825.14	88.80	122.00	4598.95	-4368.74	-579.34	3.50	68.36	4394.71	
16	10000.00	88.80	122.00	4606.80	-4587.34	-261.51	0.00	0.00	4574.82	E-4 ST4 TD



Venoco Inc.

Platform Gall
Block # 47N 60W
(Slot 30) E-4

ST4

Plan: Plan #2 (08-Apr-10)

Job No. E-4 Original Hole

Sperry Drilling Services Combo Report

08 April, 2010

Well Coordinates 727.014 45 N. 1,046,696 30 E (34° 07' 30.54" N. 119° 24' 00.24" W)
Water Depth 739.00 ft

Local Coordinate Origin
Viewing Datum
TVDs to System
North Reference
Unit System

Centered on Well (Slot 30) E-4
Well @ 108.00ft (Original Well Elev)
N
Grd
API - US Survey Feet

Version 2003 14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for (Slot 30) E-4 - Plan #2 (08-Apr-10)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	108.00	0.00	0.00 N	0.00 E	727.014.45	1,046.696.30	0.00	0.00	
847.00	0.00	0.00	-739.00	847.00	0.00 N	0.00 E	727.014.45	1,046.696.30	0.00	0.00	
895.00	0.23	249.03	-787.00	895.00	0.03 S	0.09 W	727.014.42	1,046.696.21	0.49	0.04	
995.00	0.12	194.20	-887.00	995.00	0.21 S	0.31 W	727.014.24	1,046.695.98	0.19	0.22	
1,095.00	0.28	129.70	-987.00	1,095.00	0.46 S	0.14 W	727.013.99	1,046.696.16	0.26	0.47	
1,195.00	0.32	85.80	-1,087.00	1,195.00	0.60 S	0.32 E	727.013.85	1,046.696.62	0.23	0.58	
1,295.00	0.28	39.25	-1,187.00	1,295.00	0.39 S	0.76 E	727.014.06	1,046.697.06	0.24	0.35	
1,395.00	0.18	359.40	-1,287.00	1,395.00	0.04 S	0.91 E	727.014.41	1,046.697.21	0.18	-0.01	
1,495.00	0.37	309.57	-1,386.99	1,494.99	0.33 N	0.65 E	727.014.78	1,046.696.98	0.29	-0.36	
1,595.00	0.40	308.72	-1,486.99	1,594.99	0.75 N	0.14 E	727.015.20	1,046.696.44	0.03	-0.78	
1,695.00	1.40	251.02	-1,586.98	1,694.98	0.57 N	1.28 W	727.015.02	1,046.695.02	1.23	-0.49	
1,795.00	3.37	244.92	-1,686.89	1,794.89	1.07 S	5.10 W	727.013.38	1,046.691.20	1.98	1.36	
1,895.00	5.52	232.85	-1,786.58	1,894.58	5.22 S	11.59 W	727.009.23	1,046.684.71	2.33	5.88	
1,995.00	7.88	229.55	-1,885.90	1,993.90	12.57 S	20.64 W	727.001.88	1,046.675.66	2.40	13.73	
2,095.00	11.50	232.93	-1,984.45	2,092.45	23.04 S	33.62 W	726.991.41	1,046.662.46	3.66	24.93	
2,195.00	14.70	232.45	-2,081.84	2,189.84	36.78 S	51.64 W	726.977.67	1,046.644.48	3.20	39.68	
2,295.00	17.80	234.12	-2,177.83	2,285.83	53.48 S	74.29 W	726.960.97	1,046.622.01	3.13	57.84	
2,395.00	20.50	233.07	-2,272.28	2,380.29	72.96 S	100.67 W	726.941.49	1,046.595.63	2.72	78.60	
2,495.00	24.58	232.28	-2,364.83	2,472.83	96.22 S	131.13 W	726.918.23	1,046.565.17	4.09	103.56	
2,595.00	27.82	230.75	-2,454.34	2,582.34	123.71 S	165.67 W	726.890.74	1,046.530.63	3.30	132.98	
2,695.00	30.15	231.28	-2,541.81	2,649.81	154.19 S	203.34 W	726.860.26	1,046.492.86	2.35	165.56	
2,795.00	33.27	233.03	-2,626.88	2,734.88	186.40 S	244.85 W	726.828.05	1,046.451.45	3.25	200.09	
2,895.00	36.87	233.43	-2,708.71	2,816.71	220.77 S	290.88 W	726.793.68	1,046.405.42	3.61	237.04	
2,995.00	39.73	232.50	-2,787.16	2,895.16	258.11 S	340.34 W	726.756.34	1,046.355.96	2.92	277.14	
3,095.00	42.98	232.10	-2,862.23	2,970.23	298.52 S	392.61 W	726.715.93	1,046.303.69	3.26	320.47	
3,195.00	44.70	232.85	-2,934.36	3,042.36	340.70 S	447.54 W	726.673.75	1,046.248.78	1.79	365.72	
3,295.00	45.03	232.57	-3,005.23	3,113.23	383.44 S	503.67 W	726.631.01	1,046.192.83	0.39	411.60	
3,395.00	45.17	232.95	-3,075.82	3,183.82	426.31 S	560.06 W	726.588.14	1,046.136.24	0.30	457.62	
3,495.00	44.88	232.23	-3,146.82	3,254.82	469.21 S	616.15 W	726.545.24	1,046.080.15	0.70	503.66	
3,595.00	44.67	232.88	-3,217.73	3,325.73	511.85 S	671.97 W	726.502.50	1,046.024.33	0.46	549.52	
3,695.00	44.50	232.20	-3,288.96	3,396.96	554.64 S	727.69 W	726.459.81	1,045.968.81	0.51	595.33	
3,795.00	44.83	232.02	-3,360.08	3,468.08	597.81 S	783.17 W	726.416.64	1,045.913.13	0.36	641.61	
3,895.00	44.40	230.82	-3,431.26	3,539.26	641.61 S	838.07 W	726.372.84	1,045.858.23	0.95	688.47	
3,995.00	44.57	231.17	-3,502.61	3,610.61	685.72 S	892.52 W	726.328.73	1,045.803.78	0.30	735.62	
4,095.00	44.70	230.35	-3,573.77	3,681.77	730.16 S	946.93 W	726.284.29	1,045.749.37	0.59	783.10	
4,195.00	44.82	230.55	-3,644.90	3,752.90	774.92 S	1,001.13 W	726.239.53	1,045.695.17	0.16	830.88	
4,295.00	44.33	230.23	-3,716.26	3,824.26	819.58 S	1,055.10 W	726.194.87	1,045.641.20	0.36	878.55	
4,395.00	44.50	229.28	-3,787.68	3,895.68	864.79 S	1,108.53 W	726.149.66	1,045.587.77	0.68	926.75	
4,495.00	44.37	229.87	-3,859.09	3,967.09	910.19 S	1,161.82 W	726.104.26	1,045.534.46	0.43	975.12	
4,595.00	44.40	229.55	-3,930.56	4,038.56	955.42 S	1,215.17 W	726.059.03	1,045.461.13	0.22	1,023.32	

HALLIBURTON

Plan Report for (Slot 30) E-4 - Plan #2 (08-Apr-10)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
4,675.00	43.15	229.54	-3,988.32	4,096.32	991.33 S	1,257.28 W	726,023.12	1,045,439.02	1.57	1,061.58	Start DLS 7.00 TFO -45.00
4,700.00	44.40	227.77	-4,006.38	4,114.38	1,002.76 S	1,270.26 W	726,011.89	1,045,426.04	7.00	1,073.73	
4,735.00	46.19	225.42	-4,031.00	4,139.00	1,019.86 S	1,288.32 W	725,994.59	1,045,407.98	7.00	1,091.83	Start DLS 7.00 TFO -7.53
4,750.00	47.23	225.23	-4,041.28	4,149.28	1,027.53 S	1,298.09 W	725,986.92	1,045,400.21	7.00	1,099.94	
4,800.00	50.71	224.65	-4,074.10	4,182.10	1,054.23 S	1,322.73 W	725,960.22	1,045,373.57	7.00	1,128.12	
4,850.00	54.18	224.12	-4,104.57	4,212.57	1,082.55 S	1,350.45 W	725,931.90	1,045,345.85	7.00	1,157.98	
4,900.00	57.66	223.64	-4,132.59	4,240.59	1,112.40 S	1,379.15 W	725,902.05	1,045,317.15	7.00	1,189.42	
4,950.00	61.14	223.20	-4,158.04	4,268.04	1,143.86 S	1,408.72 W	725,870.79	1,045,287.58	7.00	1,222.31	
5,000.00	64.62	222.78	-4,180.83	4,288.83	1,176.21 S	1,439.06 W	725,838.24	1,045,257.24	7.00	1,256.54	
5,050.00	68.10	222.38	-4,200.87	4,308.87	1,209.93 S	1,470.04 W	725,804.52	1,045,226.26	7.00	1,291.98	
5,100.00	71.58	222.01	-4,218.10	4,326.10	1,244.70 S	1,501.56 W	725,769.75	1,045,194.74	7.00	1,328.50	
5,150.00	75.06	221.65	-4,232.45	4,340.45	1,280.38 S	1,533.49 W	725,734.06	1,045,162.81	7.00	1,365.95	
5,200.00	78.55	221.30	-4,243.86	4,351.86	1,316.66 S	1,565.73 W	725,697.59	1,045,130.57	7.00	1,404.20	
5,250.00	82.03	220.96	-4,252.29	4,360.29	1,353.98 S	1,598.14 W	725,660.47	1,045,098.16	7.00	1,443.11	
5,300.00	85.52	220.62	-4,257.72	4,365.72	1,391.60 S	1,630.60 W	725,622.85	1,045,065.70	7.00	1,482.54	
5,313.13	88.43	220.53	-4,258.64	4,366.64	1,401.55 S	1,639.12 W	725,612.90	1,045,057.18	7.00	1,482.95	Start 1078.38 hold at 5313.13 MD
5,400.00	88.43	220.53	-4,264.05	4,372.05	1,467.45 S	1,695.47 W	725,547.00	1,045,000.63	0.00	1,581.96	
5,500.00	88.43	220.53	-4,270.27	4,378.27	1,543.30 S	1,760.33 W	725,471.15	1,044,935.97	0.00	1,641.40	
5,600.00	88.43	220.53	-4,276.50	4,384.50	1,619.16 S	1,825.19 W	725,395.29	1,044,871.11	0.00	1,720.84	
5,700.00	88.43	220.53	-4,282.73	4,390.73	1,695.01 S	1,890.08 W	725,319.44	1,044,806.24	0.00	1,800.28	
5,800.00	88.43	220.53	-4,288.95	4,396.95	1,770.67 S	1,954.92 W	725,243.58	1,044,741.38	0.00	1,879.72	
5,900.00	86.43	220.53	-4,295.18	4,403.18	1,846.72 S	2,019.78 W	725,167.73	1,044,676.52	0.00	1,959.16	
6,000.00	86.43	220.53	-4,301.41	4,409.41	1,922.58 S	2,084.64 W	725,091.87	1,044,611.68	0.00	2,038.60	
6,100.00	86.43	220.53	-4,307.63	4,415.63	1,998.43 S	2,149.51 W	725,016.02	1,044,546.79	0.00	2,118.04	
6,200.00	86.43	220.53	-4,313.86	4,421.86	2,074.29 S	2,214.37 W	724,940.16	1,044,481.93	0.00	2,197.48	
6,300.00	86.43	220.53	-4,320.09	4,428.09	2,150.14 S	2,279.23 W	724,864.31	1,044,417.07	0.00	2,276.91	
6,391.51	86.43	220.53	-4,325.78	4,433.78	2,219.56 S	2,338.59 W	724,794.89	1,044,357.71	0.00	2,349.61	Start DLS 7.00 TFO -91.81
6,400.00	86.41	219.94	-4,326.31	4,434.31	2,226.03 S	2,344.06 W	724,788.42	1,044,352.24	7.00	2,358.38	
6,450.00	86.31	216.43	-4,329.49	4,437.49	2,265.24 S	2,374.91 W	724,749.21	1,044,321.39	7.00	2,397.29	
6,500.00	86.22	212.93	-4,332.75	4,440.75	2,306.27 S	2,403.29 W	724,708.18	1,044,293.01	7.00	2,439.87	
6,550.00	86.15	209.42	-4,336.07	4,444.07	2,348.95 S	2,429.11 W	724,665.50	1,044,267.19	7.00	2,483.96	
6,600.00	86.09	205.91	-4,339.46	4,447.46	2,393.12 S	2,452.27 W	724,621.33	1,044,244.03	7.00	2,529.38	
6,650.00	86.04	202.40	-4,342.89	4,450.89	2,438.63 S	2,472.68 W	724,575.82	1,044,223.62	7.00	2,575.98	
6,700.00	86.01	198.90	-4,346.36	4,454.36	2,485.30 S	2,490.27 W	724,529.15	1,044,206.03	7.00	2,623.58	
6,750.00	86.00	195.39	-4,349.84	4,457.84	2,532.95 S	2,504.96 W	724,481.50	1,044,191.34	7.00	2,672.00	
6,800.00	86.00	191.88	-4,353.33	4,461.33	2,581.42 S	2,516.72 W	724,433.03	1,044,179.58	7.00	2,721.06	
6,850.00	86.01	188.37	-4,356.82	4,464.82	2,630.51 S	2,525.48 W	724,383.94	1,044,170.82	7.00	2,770.57	
6,900.00	86.04	184.86	-4,360.28	4,468.28	2,680.05 S	2,531.23 W	724,334.40	1,044,165.07	7.00	2,820.36	
6,950.00	86.09	181.35	-4,363.72	4,471.72	2,729.85 S	2,533.93 W	724,284.60	1,044,162.37	7.00	2,870.23	

HALLIBURTON

Plan Report for (Slot 30) E-4 - Plan #2 (08-Apr-10)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
7,000.00	86.15	177.85	-4,367.10	4,475.10	2,779.73 S	2,533.58 W	724,234.72	1,044,162.72	7.00	2,920.01	
7,050.00	86.22	174.34	-4,370.43	4,478.43	2,829.49 S	2,530.18 W	724,164.98	1,044,186.12	7.00	2,989.50	
7,100.00	86.31	170.83	-4,373.69	4,481.69	2,878.96 S	2,523.75 W	724,135.49	1,044,172.55	7.00	3,018.52	
7,150.00	86.41	167.33	-4,376.87	4,484.87	2,927.95 S	2,514.30 W	724,088.50	1,044,182.00	7.00	3,066.88	
7,200.00	86.52	163.82	-4,379.96	4,487.96	2,976.27 S	2,501.87 W	724,038.18	1,044,194.43	7.00	3,114.42	
7,250.00	86.65	160.32	-4,382.94	4,490.94	3,023.75 S	2,488.50 W	723,990.70	1,044,209.80	7.00	3,160.94	
7,300.00	86.79	156.02	-4,385.80	4,493.80	3,070.21 S	2,468.26 W	723,944.24	1,044,228.04	7.00	3,206.28	
7,350.00	86.94	153.31	-4,388.53	4,496.53	3,115.48 S	2,447.22 W	723,898.97	1,044,249.08	7.00	3,250.27	
7,400.00	87.11	149.81	-4,391.13	4,499.13	3,159.38 S	2,423.44 W	723,855.07	1,044,272.88	7.00	3,292.74	
7,450.00	87.28	146.31	-4,393.58	4,501.58	3,201.75 S	2,397.03 W	723,812.70	1,044,299.27	7.00	3,333.53	
7,500.00	87.46	142.81	-4,395.87	4,503.87	3,242.44 S	2,368.07 W	723,772.01	1,044,328.23	7.00	3,372.50	
7,550.00	87.66	139.32	-4,398.00	4,506.00	3,281.29 S	2,336.69 W	723,733.16	1,044,359.81	7.00	3,409.49	
7,600.00	87.86	135.82	-4,399.96	4,507.96	3,318.16 S	2,302.98 W	723,696.29	1,044,393.32	7.00	3,444.38	
7,650.00	88.07	132.32	-4,401.73	4,509.73	3,352.91 S	2,267.09 W	723,661.54	1,044,429.21	7.00	3,477.02	
7,700.00	88.29	128.83	-4,403.32	4,511.32	3,385.41 S	2,229.13 W	723,629.04	1,044,467.17	7.00	3,507.30	
7,750.00	88.51	125.33	-4,404.72	4,512.72	3,415.54 S	2,189.27 W	723,598.91	1,044,507.03	7.00	3,535.10	
7,800.00	88.74	121.84	-4,405.92	4,513.92	3,443.19 S	2,147.63 W	723,571.26	1,044,548.67	7.00	3,560.32	Start 300.00 hold at 7854.98 MD - E-4
7,854.98	89.00	118.00	-4,407.00	4,515.00	3,470.60 S	2,100.00 W	723,543.85	1,044,596.30	7.00	3,584.97	ST4 T1
7,900.00	89.00	118.00	-4,407.79	4,515.79	3,491.73 S	2,060.25 W	723,522.72	1,044,636.05	0.00	3,603.79	
8,000.00	89.00	118.00	-4,409.53	4,517.53	3,536.67 S	1,971.97 W	723,475.78	1,044,724.33	0.00	3,645.81	
8,100.00	89.00	118.00	-4,411.28	4,519.28	3,585.91 S	1,883.69 W	723,428.84	1,044,812.81	0.00	3,687.43	
8,154.98	89.00	118.00	-4,412.24	4,620.24	3,611.42 S	1,835.16 W	723,403.03	1,044,861.14	0.00	3,710.42	Start DLS 4.00 TFO 116.37
8,200.00	88.20	119.61	-4,413.34	4,521.34	3,633.11 S	1,795.72 W	723,381.34	1,044,900.58	4.00	3,729.81	
8,261.07	87.12	121.81	-4,415.83	4,523.83	3,664.27 S	1,743.26 W	723,350.18	1,044,953.04	4.00	3,757.92	Start 531.18 hold at 8281.07 MD
8,300.00	87.12	121.81	-4,417.79	4,525.79	3,684.76 S	1,710.22 W	723,329.89	1,044,988.08	0.00	3,776.49	
8,400.00	87.12	121.81	-4,422.81	4,530.81	3,737.40 S	1,625.34 W	723,277.05	1,045,070.96	0.00	3,824.19	
8,500.00	87.12	121.81	-4,427.84	4,535.84	3,790.03 S	1,540.47 W	723,224.42	1,045,155.83	0.00	3,871.89	
8,600.00	87.12	121.81	-4,432.87	4,540.87	3,842.67 S	1,455.59 W	723,171.78	1,045,240.71	0.00	3,919.59	
8,700.00	87.12	121.81	-4,437.90	4,545.90	3,895.31 S	1,370.71 W	723,119.14	1,045,325.59	0.00	3,967.29	
8,792.23	87.12	121.81	-4,442.53	4,550.53	3,943.86 S	1,292.43 W	723,070.59	1,045,403.87	0.00	4,011.29	Start DLS 4.00 TFO 81.37
8,800.00	87.17	122.11	-4,442.92	4,550.92	3,947.97 S	1,285.85 W	723,066.48	1,045,410.45	4.00	4,015.01	
8,822.39	87.30	123.00	-4,444.00	4,552.00	3,960.00 S	1,267.00 W	723,054.45	1,045,429.30	4.00	4,025.95	Start DLS 4.00 TFO 118.85 - E-4 ST4 T2
8,853.86	86.69	124.10	-4,445.65	4,553.85	3,977.37 S	1,240.81 W	723,037.08	1,045,455.49	4.00	4,041.79	Start 264.11 hold at 8853.86 MD
8,900.00	86.69	124.10	-4,448.31	4,556.31	4,003.20 S	1,202.87 W	723,011.25	1,045,493.83	0.00	4,065.40	
9,000.00	86.69	124.10	-4,454.08	4,562.08	4,059.17 S	1,120.00 W	722,955.28	1,045,576.30	0.00	4,118.58	
9,100.00	86.69	124.10	-4,459.85	4,567.85	4,115.15 S	1,037.34 W	722,899.30	1,045,658.96	0.00	4,167.72	
9,117.96	86.69	124.10	-4,460.88	4,568.88	4,125.21 S	1,022.49 W	722,889.24	1,045,673.81	0.00	4,178.91	Start DLS 4.00 TFO -171.46
9,135.49	86.00	124.00	-4,462.00	4,570.00	4,135.00 S	1,008.00 W	722,879.45	1,045,688.30	4.00	4,185.86	Start Turn -4.01 - E-4 ST4 T3

Plan Report for (Slot 30) E-4 - Plan #2 (08-Apr-10)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
9,200.00	85.99	121.41	-4,468.51	4,574.51	4,189.77 S	953.85 W	722,844.68	1,045,742.45	4.00	4,217.48	
9,300.00	85.99	117.40	-4,473.50	4,581.50	4,218.74 S	866.97 W	722,795.71	1,045,829.33	4.00	4,281.40	
9,359.94	86.00	115.00	-4,477.69	4,585.69	4,245.14 S	813.33 W	722,769.31	1,045,882.97	4.00	4,284.69	Start 50.00 hold at 9359.94 MD
9,409.94	86.00	115.00	-4,481.18	4,589.18	4,266.22 S	788.12 W	722,748.23	1,045,928.18	0.00	4,303.15	Start DLS 3.50 TFO 86.36
9,500.00	87.17	117.93	-4,488.55	4,594.55	4,306.28 S	687.85 W	722,708.17	1,048,008.65	3.50	4,338.55	
9,600.00	88.47	121.18	-4,490.35	4,598.35	4,355.57 S	800.74 W	722,658.88	1,046,095.56	3.50	4,382.78	
9,625.14	88.80	122.00	-4,490.95	4,598.95	4,368.74 S	579.34 W	722,645.71	1,046,116.96	3.50	4,394.71	Start 374.86 hold at 9625.14 MD
9,700.00	88.80	122.00	-4,492.52	4,600.52	4,408.40 S	515.87 W	722,606.05	1,046,180.43	0.00	4,430.86	
9,800.00	88.80	122.00	-4,494.81	4,602.81	4,481.38 S	431.08 W	722,553.07	1,048,285.22	0.00	4,478.73	
9,900.00	88.80	122.00	-4,496.71	4,604.71	4,514.36 S	346.29 W	722,500.09	1,046,350.01	0.00	4,528.77	
9,999.97	88.80	122.00	-4,498.80	4,608.80	4,567.33 S	281.53 W	722,447.12	1,046,434.77	0.00	4,574.81	TD at 10000.00 - E-4 ST4 TD

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +NW-S (ft)	+E-W (ft)	Comment
4,875.00	4,096.32	-991.33	-1,257.28	Start DLS 7.00 TFO -45.00
4,735.00	4,139.00	-1,019.86	-1,288.32	Start DLS 7.00 TFO -7.53
5,313.13	4,366.64	-1,401.55	-1,839.12	Start 1078.38 hold at 5313.13 MD
6,391.51	4,433.78	-2,219.58	-2,338.59	Start DLS 7.00 TFO -91.81
7,854.98	4,515.00	-3,470.80	-2,100.00	Start 300.00 hold at 7854.98 MD
8,154.98	4,520.24	-3,811.42	-1,835.16	Start DLS 4.00 TFO 116.37
8,261.07	4,523.83	-3,864.27	-1,743.28	Start 531.16 hold at 8261.07 MD
8,792.23	4,550.53	-3,943.86	-1,292.43	Start DLS 4.00 TFO 81.37
8,822.39	4,552.00	-3,960.00	-1,287.00	Start DLS 4.00 TFO 118.85
8,853.86	4,553.85	-3,977.37	-1,240.81	Start 264.11 hold at 8853.86 MD
9,117.98	4,568.88	-4,125.21	-1,022.48	Start DLS 4.00 TFO -171.46
9,135.49	4,570.00	-4,135.00	-1,008.00	Start Turn -4.01
9,359.94	4,585.68	-4,245.14	-813.33	Start 50.00 hold at 9359.94 MD
9,409.94	4,589.18	-4,266.22	-768.12	Start DLS 3.50 TFO 86.36
9,625.14	4,598.95	-4,368.74	-579.34	Start 374.86 hold at 9625.14 MD
10,000.00	4,606.80	-4,567.34	-281.51	TD at 10000.00

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +NW-S (ft)	+E-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	183.28	Spot	0.00	0.00	0.00

Plan Report for (Slot 30) E-4 - Plan #2 (08-Apr-10)

Survey tool program

From (ft)	To (ft)
847.00	4,875.00
4,875.00	10,000.00
	E-4 OH Plan #2 (08-Apr-10)

Survey/Plan	Survey Tool
	Poor Magnetic
	MWD Magnetic

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
E-4 ST4 T1	0.00	360.00	4,515.00	-3,470.60	-2,100.00	723,543.85	1,044,596.30	34 1154437	-119 4066556
- plan hits target									
- Point									
E-4 ST4 T2	0.00	0.00	4,552.00	-3,960.00	-1,287.00	723,054.45	1,045,429.30	34 1141688	-119 4038561
- plan hits target									
- Point									
E-4 ST4 T3	0.00	360.00	4,570.00	-4,135.00	-1,008.00	722,879.45	1,045,888.30	34 1137097	-119 4029834
- plan hits target									
- Point									
E-4 ST4 TD	0.00	360.00	4,606.80	-4,567.34	-261.51	722,447.11	1,046,434.79	34 1125842	-119 4004754
- plan hits target									
- Point									

HALLIBURTON

North Reference Sheet for Block # 47N 60W - (Slot 30) E-4 - ST4

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to Well @ 108.00ft (Original Well Elev). Northing and Easting are relative to (Slot 30) E-4

Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -116 2500000", Longitude Origin 0 0000000", Latitude Origin 33 8633333"

False Easting 2,000,000.00ft, False Northing 0 00ft, Scale Reduction 1 00004934

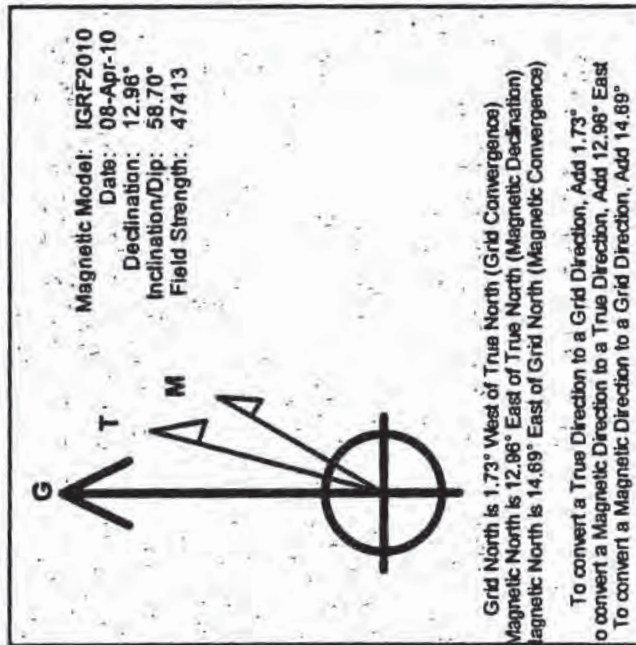
Grid Coordinates of Well 727,014.45 R N, 1,046,696.30 R E

Geographical Coordinates of Well 34° 07' 30.54" N, 119° 24' 00.24" W

Grid Convergence at Surface is -1.73°

Based upon Minimum Curvature type calculations, at a Measured Depth of 9,999.97ft the Bottom Hole Displacement is 4,574.81ft in the Direction of 163.28° (Grid).

Magnetic Convergence at surface is -14.89° (8 April 2010, IGRF2010)



Herrick, Joann

From: Knowlson, Daniel
Sent: Friday, April 09, 2010 2:56 PM
To: Jody Robins
Cc: OEMM PAC California District
Subject: FW: Sockeye E-4ST APD

Jody, this is to confirm verbal approval for the subject APD, follow-up paperwork will be processed next week.

-----Original Message-----

From: Brickey, Michael
Sent: Friday, April 09, 2010 2:34 PM
To: Knowlson, Daniel
Cc: Victor, Frank; Racicot, Obediah
Subject: Sockeye E-4ST APD

We give a verbal approval for our part of the APD. We will do a complete APD review and response by Friday, April 16. I told Jody Robins that we needed latitudes and longitudes. He said he would add those. He will remove the E-26 map.

Note that the proposed mud weight is 9.2 ppg is less than the 9.6 ppg mud weight used in one of the previous E-4 sidetracks in late 2005 and early 2006.

I told Jody to have Susan Berk work closely with us to ensure that completion and production data are properly reported.

Please remind Venoco that they need to give us enough time to review APDs and APMs.

Mike Brickey
770 Paseo Camarillo
Camarillo, CA 93010
Phone: (805) 389-7701 Fax: (805) 389-7737
E-mail: michael.brickey@mms.gov

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2. MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013
4 WELL NAME (CURRENT) E-4	5 SIDETRACK NO (CURRENT) 04	6 BYPASS NO (CURRENT) 00	
7 PROPOSED START DATE 06/07/2010	8 PLAN CONTROL NO (NEW WELL ONLY)		
9. API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112066704			

10 ☐ Revision	11 If revision, please list changes.	RECEIVED MAY 25 2010 California District MINERALS MANAGEMENT SERVICE OFFICE OF FIELD OPERATIONS	
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE
12 LEASE NO. P-0205	17 LEASE NO P-0205		
13 AREA NAME 6B	18. AREA NAME 6B		
14 BLOCK NO 4661	19 BLOCK NO. 4661		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) 34° 6' 45.434"	16. LONGITUDE (☐ NAD 83 / ☒ NAD 27) -119° 23' 51.508"	20. LATITUDE (☐ NAD 83 / ☒ NAD 27) 34° 7' 30.54"	21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) -119° 24' 0.24"

LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22. NAME	23 TOP (MD)	24 TOP (TVD)	22. NAME	23 TOP (MD)	24 TOP (TVD)
Sisqouc	3500	3250			
Monterey M1	4875	4151			
Monterey M2	6250	4424			

25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250 414 or 30 CFR 250 1617(c) and (d) as appropriate)

Well Prognosis, MMS-123S, Directional Plan

26 CONTACT NAME Jody Robins	27 CONTACT TELEPHONE NO. 805-745-2153	28 CONTACT E-MAIL ADDRESS jody.robins@venococinc.com
29. AUTHORIZING OFFICIAL (Type or print name) Gary Lower	30 TITLE Operations Manager	
31. AUTHORIZING SIGNATURE <i>Gary Lower</i>	32. DATE 05/24/2010	

THIS SPACE FOR MMS USE ONLY		
APPROVED: ☒ With Attached Conditions ☐ Without Conditions	BY ORIG. SGD. BY: Phil Schroeder	TITLE District Manager
API WELL NO ASSIGNED TO THIS WELL 043112066705	DATE 2/25/11	

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	Approved Field drilling rules.

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et. seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 5438, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240

7106

May 25, 2010

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation & Production

Subject: Geologic Hazards Analysis for Development Well P-0205 E-4 ST5

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Sockeye Oil Field
Lease: OCS-P 0205
Platform: Gail
Well/Slot: E-4ST4 in slot 30
Objective: Monterey production
API: 04-311-20666-05

Surface Location: X = 1,046,696 ft
Lambert Zone 6 Y = 727,014 ft

Estimated Top of Productive Zone X =
Y =

Estimated Bottom Hole Location X = 1,047,292 ft
Y = 722,434 ft

Elevation of KB: + 107 feet
Est. Total Depth (measured): - 10,000 feet (RKB)
Est. Total Depth (true vert.): - 4,607 feet (RKB)

Water Depth (Gail): 739 feet +/-

Overview of Proposal

Venoco, Inc., designated operator of the Sockeye Field within the Santa Clara Unit, proposes to drill well OCS-P 0205 #E-4 RD5 into the Monterey Formation. The objectives of the well are to exploit proven reservoirs in the Miocene Monterey M1 and M2. The well is planned as a twin to Side Track 3 due to collapsed casing. Well E4-ST4 was drilled into the old well bore of E4-ST-3 and has been abandon. The kickoff for the sidetrack is at 4,377 feet MD.

The proposed well will be drilled using Kenai Rig #2 on Platform Gail to a bottom hole location in Lease OCS-P 0205, south of the platform. E-3RD is a redrill of well E-3 RD#1 and within the current boundary of the field. The well kick off point will be at 4721 ft in the existing borehole.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Top Monterey M1	Miocene	4,875 feet	4,151 feet
Top Monterey M2	Miocene	5,250 feet	4,424 feet
Total Depth	Miocene	10,046 feet	4,598 feet

2. Potential Oil and Gas Reservoirs

Formation	Age	(TVD)	Thickness	HC Type
Monterey M1*	Miocene	4,151 feet	700 +/- feet	Oil/Gas

* Operator s stated objective.

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. Since this is a sidetrack well, most of all the water bearing zones are behind pipe.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of P-0205 E-4. The present operator and former operator of the Sockeye field have extensive drilling experience in this field. The proposed drilling program is similar to those utilized in drilling the production wells in

the field. In the event a new pool is discovered, unrelated to the Main zones of the field, the operator should be prepared for higher than expected formation pressure.

5. Faulting and Folding

Several important faults have been mapped by the Operator. Faulting is an important consideration for the success of the well. The well at total depth is located near a north/south trending fault on the crest of the anticline.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The P-0209-2 well did not find near surface gas, but did record gas shows in the Pliocene section.

7. Possible Over-pressured or Depleted Zones

Several ditch gas kicks are noted in the mud logs for E-4. However, as noted above, in the event of a new pool discovery the operator should be prepared for higher than expected formation pressures, similar to the original formation pressures noted at the discovery of the Sockeye field. The Operator has included a well control contingency plan with the Application.

8. Logging/Coring

The Operator plans a standard set of logs, as is the common practice with production wells in this area. A standard mud log will be taken to total depth from the drilling out of the shoe. The E-logs will include gamma ray, density, neutron, and resistivity, taken on wire line surveys. An MWD with gamma ray will be used for directional surveys and correlation while drilling. No coring is planned.

9. Other Comments/H2S

The Monterey Formations may contain hydrogen sulfide gas. Oil and associated gas shows should be present throughout the entire section to be drilled based on the original mud log in E-4. The operator assumes any gas circulated to the surface may have hydrogen sulfide potential.

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria CA 93420	
4 WELL NAME (CURRENT) E-6	5 SIDETRACK NO (CURRENT) 01	6 BYPASS NO (CURRENT)		
7 PROPOSED START DATE 04/15/08	8 PLAN CONTROL NO (NEW WELL ONLY)			
9 API WELL NO. (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04-311-20671-01				
10 ☐ Revision	11 If revision, please list changes			
WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE		
12 LEASE NO P-0205		17 LEASE NO P-0205		
13 AREA NAME 6B		18 AREA NAME 6B		
14 BLOCK NO 4661		19 BLOCK NO 4661		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27)		16 LONGITUDE (☐ NAD 83 / ☒ NAD 27)		21 LONGITUDE (☐ NAD 83 / ☒ NAD 27)
		20 LATITUDE (☐ NAD 83 / ☒ NAD 27)		
LIST OF SIGNIFICANT MARKERS ANTICIPATED				
22 NAME M2	23 TOP (MD) 5768	24 TOP (TVD) 4436	22 NAME	23 TOP (MD) 24. TOP (TVD)
M4	5922	4568		
Upper Topanga	6952	5464		
25 LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250.414(b) through (g) or 30 CFR 250.1617 (c) and (d), as appropriate) well prognosis, schematic, surface plat, structure map, mudweight curve, directional plot and plan, BOP diagram, mud program				
26 CONTACT NAME Dana Billings		27 CONTACT TELEPHONE NO. 805-745-2139	28 CONTACT E-MAIL ADDRESS dbillings@venoco-inc.com	
29 AUTHORIZING OFFICIAL (Type or print name) <i>Ed O'Donnell</i>		30 TITLE <i>SR. VICE PRESIDENT COASTAL</i>		
31 AUTHORIZING SIGNATURE <i>Ed O'Donnell</i>		32 DATE <i>4/1/08</i>		

THIS SPACE FOR MMS USE ONLY			
APPROVED ☐ With Attached Conditions ☐ Without Conditions		BY ORIG. SGD. BY: Dan Knowlson	TITLE District Manager
API WELL NO. ASSIGNED TO THIS WELL 04 311 206 7102		DATE APR 18 2008	

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings nserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is with in 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet

1. OPERATOR NAME Venoco, Inc.		5. WELL NAME (Proposed) E-8		6. TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11. WATER DEPTH 739'		12. ELEVATION AT KB 107'	
2. API WELL NO (Proposed) (12 Digits) 043112087102		3. BOTTOM LEASE NO. (Proposed) P-0205		7. SIDETRACK NO (Proposed) 02		8. BYPASS NO (Proposed) 00		13. H ₂ S DESIGNATION ☒ KNOWN ☐ UNKNOWN ☐ ABSENT	
4. TOTAL DEPTH (Proposed) MD 7232' TVD 5707'		9. RIG NAME Kenai Drilling Rig No. 2		10. RIG TYPE PF		14. H ₂ S ACTIVATION PLAN DEPTH FT (TVD) 4980' MD / 3937' TVD (Kick off Point)			

15. ENGINEERING DATA

Hole Size (in)	Casing (Indicate if Liner)	Casing Size (in)	Weight (lb/ft)	Burst Rating (psi)	Type of Connection	MAGP (psi)	Safety Factors			Top of Liner	Casing Depth (Feet)			Casing Shoe (psi)			Well-head Rating (psi)	BOP Size (in)	Rapid BOP Packing Annular Diverter (psi)	Test Pressures			Current (Feet)	Drilling Fluid Type (Oil, Water, Base, Synthetic)	
							B	C	T		MD	TVD	MD	MQ	MW	FG				Annular Diverter (psi)	Casing Test (psi)	MW Used for Test (psi)			Casing Shoe (psi)
26	Drive/ Structural	24	201								1401	existing													
22	Conductor	18 5/8	117								2419	Existing													
17.5	Surface	13 3/8	88								4890 (KOP)	Existing													
12.25	Production	9 5/8	40/47	8750	in-situ	2207	2.6	1.62	1.85	Surf	4890 (KOP)	3937	8.4	9.5	12	5000	13 5/8	5000	3000/250	2600				Existing	
8.5	Prod Liner	7	28	7240	Hydr 813	2207	3.28	1.92	2.94	4890	7232	5707	8.4	9.5	NA	5000	13 5/8"	5000	3000/250	2500				Water	
																			3000/250	8.5					

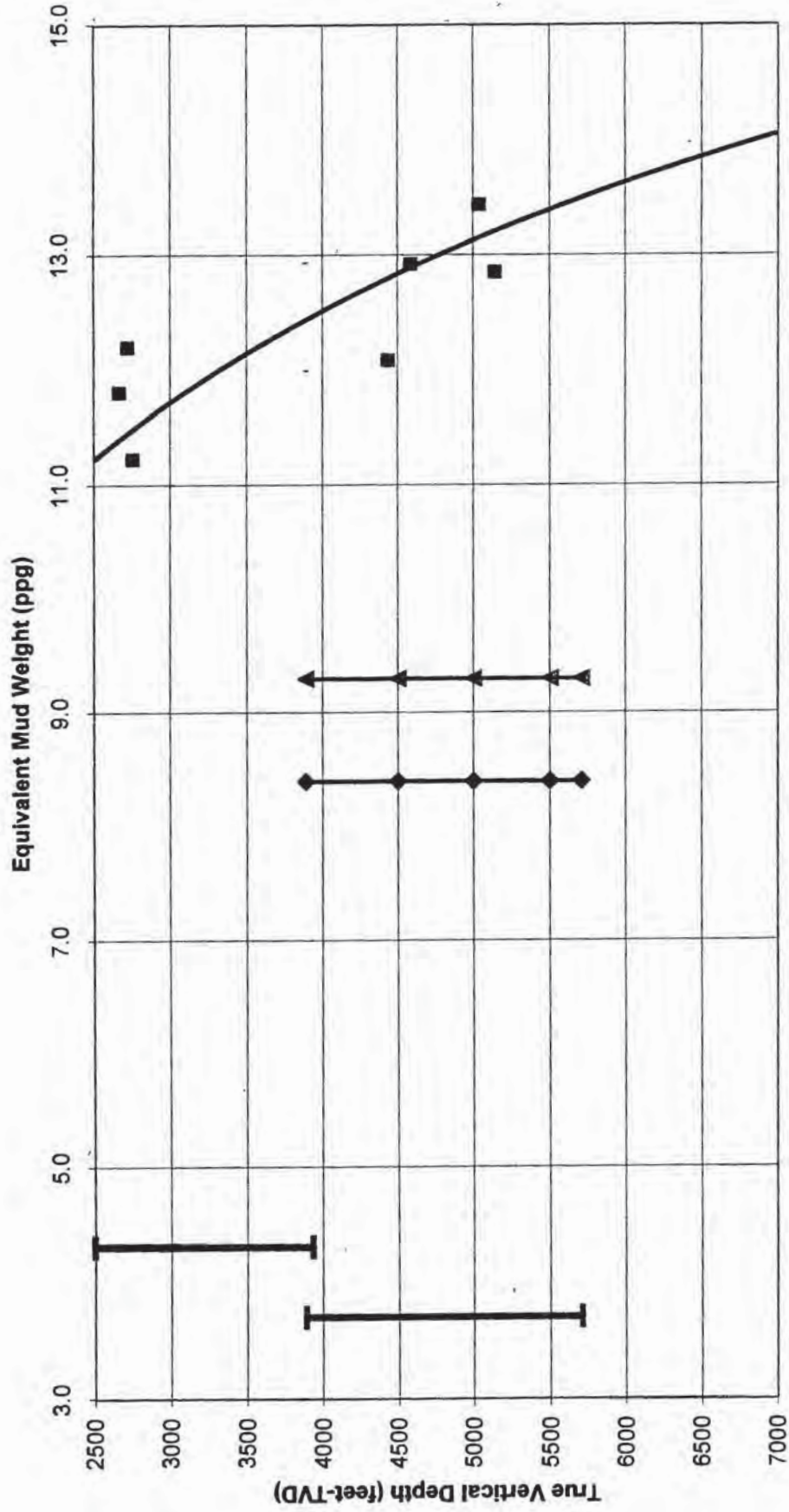
16. CONTACT NAME Dana Billings	17. CONTACT PHONE NO. (805) 745-2139	18. CONTACT E-MAIL ADDRESS dbillings@venoco.com
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19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more? ☒ YES ☐ NO

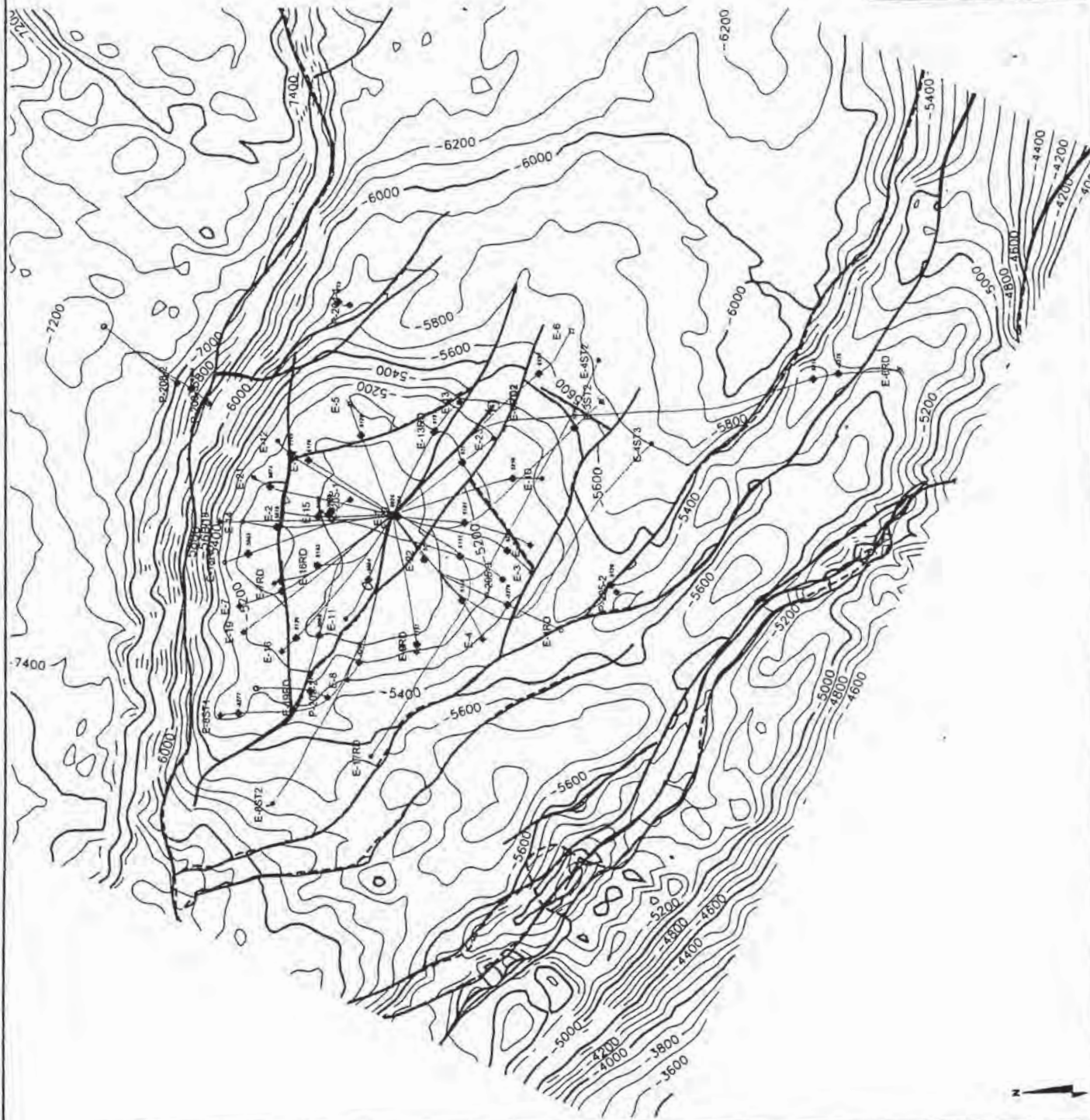
20. REMARKS: **Note: The 450 cf cement based upon 50% OHE and smaller volume based upon 10% over caliper volume is planned.

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain well status, well and casing configuration data. MMS uses this information to have accurate data and information on all wells under its jurisdiction and to ensure compliance with approved plans. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.118. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to be 1 hour per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1649 C Street, N.W., Washington, DC 20240.

Platform Gail Well E-6 ST2 Pore Pressure, Mud Weight & Fracture Pressure



LOT Data
 Planned Mud Weight
 Highest Expected PP
 9-5/8\" Casing
 7\" Liner
 Expon. (LOT Data)



Wellbore path
— Wellbore path

Formation intercept with Well

+

Formation intercept with Well



VENOCO INC
Energy-Safety-Community

**Santa Barbara Channel
Platform Gail
E6 RD2**

Date: 1 Jan 2006

Map Projection: NAD83 / Albers / Zone 6



Azimuths to Grid North
True North: 1.73°
Magnetic North: 15.05°
Magnetic Field
Strength: 47739.8nT
Dip Angle: 58.75°
Date: 5/15/2008
Model: BGGM2008

Venoco Inc.

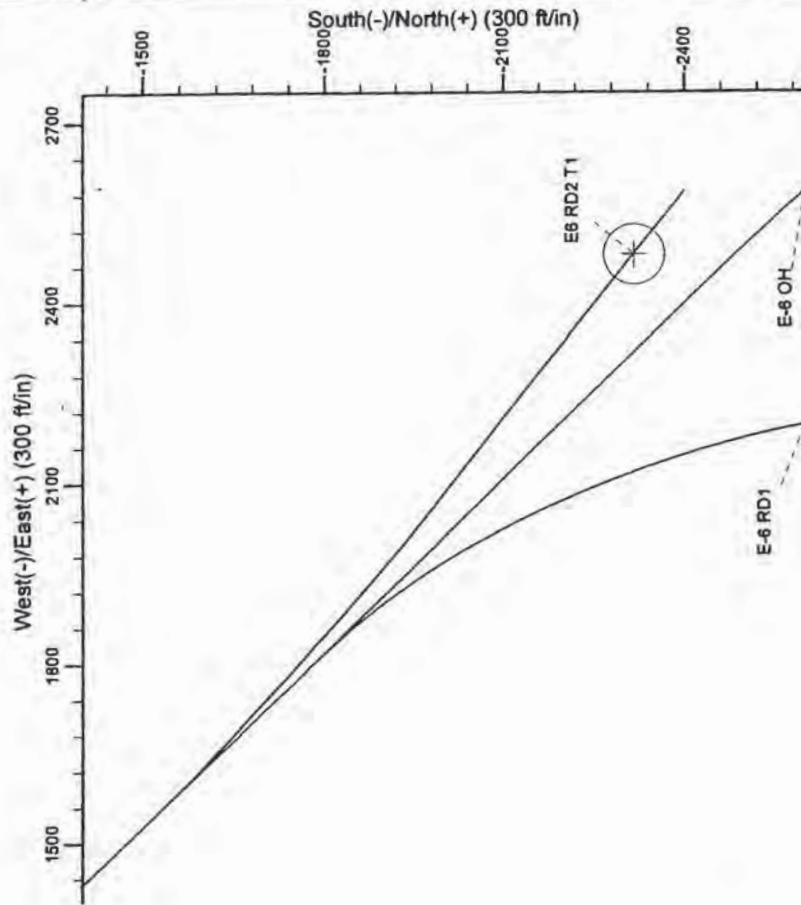
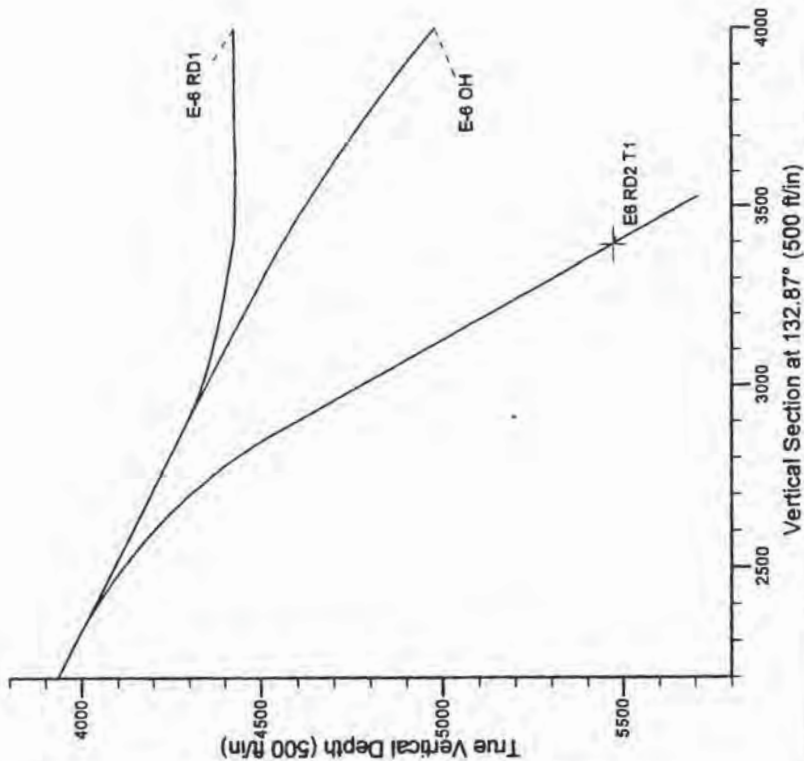
Project: Platform Gail
Site: Platform Gail
Well: (Slot 20) E-6
E-6 RD2
Plan #7 (29-Feb-08)

(Slot 20) E-6
NAD 1927 (NADCON CONUS)
California VI 405
Grid
Well @ 107 00ft (Original Well Elev)
Northing: 727032.42
Easting: 1046713.33

HALLIBURTON
Sperry Drilling Services

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/S	+E/W	DLag	TFace	VSec	Target
1	4980.00	82.05	138.03	3936.85	-1547.41	1572.81	0.00	0.00	2205.33	
2	5040.00	63.56	133.13	3984.27	-1564.86	1810.82	5.00	-80.00	2258.67	
3	5864.42	28.55	128.45	4543.31	-1989.53	2088.45	4.00	-175.98	2889.53	
4	6861.87	28.55	128.45	5472.00	-2316.84	2480.74	0.00	0.00	3394.43	E6 RD2 T1
5	7232.10	28.55	128.45	5707.00	-2389.78	2585.08	0.00	0.00	3527.28	



Venoco Inc.

Platform Gail
Platform Gail
(Slot 20) E-6

E-6 RD2

Plan: Plan #7 (29-Feb-08)

Job No E-6 OH

Sperry Drilling Services Combo Report

29 February, 2008

Well Coordinates 727,032 42 N, 1,046,713 33 E (34° 07' 30 72" N, 119° 24' 00 05" W)
Water Depth 739 00 ft

Local Coordinate Origin
Viewing Datum
TVDs to System
North Reference
Unit System

Centered on Well (Slot 20) E-6
Well @ 107 00ft (Original Well Elev)
N
Grid
API - US Survey Feet

Version 2003 14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for (Slot 20) E-6 - Plan #7 (29-Feb-08)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	107.00	0.00	0.00 N	0.00 E	727,032.42	1,046,713.33	0.00	0.00	
845.10	0.00	0.00	-738.10	845.10	0.00 N	0.00 E	727,032.42	1,046,713.33	0.00	0.00	
893.10	0.03	336.62	-786.10	893.10	0.01 N	0.00 W	727,032.43	1,046,713.33	0.06	-0.01	
943.10	0.02	307.05	-836.10	943.10	0.03 N	0.02 W	727,032.45	1,046,713.31	0.03	-0.03	
993.10	0.05	94.28	-886.10	993.10	0.03 N	0.00 W	727,032.45	1,046,713.33	0.14	-0.02	
1,043.10	0.07	101.57	-936.10	1,043.10	0.02 N	0.05 E	727,032.44	1,046,713.38	0.04	0.02	
1,093.10	0.12	122.55	-986.10	1,093.10	0.01 S	0.12 E	727,032.41	1,046,713.45	0.12	0.10	
1,143.10	0.18	86.42	-1,036.10	1,143.10	0.03 S	0.25 E	727,032.39	1,046,713.58	0.22	0.20	
1,193.10	0.20	84.83	-1,086.10	1,193.10	0.02 S	0.41 E	727,032.40	1,046,713.74	0.04	0.32	
1,243.10	0.27	101.27	-1,136.10	1,243.10	0.04 S	0.61 E	727,032.38	1,046,713.94	0.19	0.47	
1,293.10	0.10	197.78	-1,186.10	1,293.10	0.10 S	0.72 E	727,032.32	1,046,714.05	0.60	0.59	
1,343.10	0.25	240.18	-1,236.10	1,343.10	0.20 S	0.61 E	727,032.22	1,046,713.94	0.38	0.58	
1,393.10	1.63	353.98	-1,286.08	1,393.09	0.48 N	0.44 E	727,032.88	1,046,713.77	3.49	0.01	
1,443.10	2.68	10.80	-1,336.06	1,443.06	2.31 N	0.58 E	727,034.73	1,046,713.91	2.42	-1.15	
1,493.10	1.97	74.80	-1,386.02	1,493.02	3.69 N	1.62 E	727,036.11	1,046,714.95	5.09	-1.32	
1,543.10	2.93	97.53	-1,435.98	1,542.98	3.75 N	3.72 E	727,036.17	1,046,717.05	2.70	0.18	
1,593.10	3.83	109.00	-1,485.89	1,592.89	3.03 N	6.57 E	727,035.45	1,046,718.80	2.24	2.75	
1,643.10	4.65	118.63	-1,535.75	1,642.75	1.52 N	9.92 E	727,033.94	1,046,723.25	2.17	6.24	
1,693.10	5.58	128.92	-1,585.56	1,692.56	0.96 S	13.59 E	727,031.44	1,046,726.82	2.60	10.63	
1,743.10	6.92	135.40	-1,635.26	1,742.26	4.65 S	17.60 E	727,027.77	1,046,730.93	3.02	16.06	
1,793.10	8.08	136.93	-1,684.83	1,791.83	8.36 S	22.12 E	727,023.08	1,046,735.45	2.35	22.58	
1,843.10	8.73	136.92	-1,734.22	1,841.22	15.02 S	27.40 E	727,017.40	1,046,740.73	3.30	30.30	
1,893.10	11.55	136.63	-1,783.36	1,890.36	21.74 S	33.72 E	727,010.68	1,046,747.05	3.64	36.51	
1,943.10	12.85	136.13	-1,832.23	1,939.23	29.39 S	41.02 E	727,003.03	1,046,754.35	2.61	50.05	
1,993.10	14.38	134.88	-1,880.83	1,987.83	37.76 S	46.27 E	726,994.84	1,046,762.60	3.12	61.81	
2,043.10	15.97	134.17	-1,928.08	2,038.08	46.95 S	58.50 E	726,985.47	1,046,771.93	3.20	74.89	
2,093.10	17.73	135.17	-1,976.93	2,083.93	57.15 S	68.90 E	726,975.27	1,046,782.23	3.57	88.38	
2,143.10	20.93	138.88	-2,021.28	2,128.28	81.43 S	91.37 E	726,950.89	1,046,804.70	3.44	122.36	
2,193.10	24.42	137.08	-2,163.54	2,270.54	110.05 S	117.17 E	726,922.37	1,046,830.50	3.57	180.75	
2,243.10	28.93	134.37	-2,253.87	2,360.87	141.03 S	147.44 E	726,891.39	1,046,860.77	2.77	204.01	
2,293.10	28.52	133.28	-2,341.77	2,448.77	173.76 S	181.57 E	726,858.66	1,046,894.90	2.64	251.29	
2,343.10	33.23	133.73	-2,427.13	2,534.13	208.61 S	219.32 E	726,822.81	1,046,932.65	3.72	303.34	
2,393.10	35.87	131.75	-2,508.49	2,616.49	248.07 S	260.99 E	726,784.35	1,046,974.32	2.87	350.04	
2,443.10	38.97	131.42	-2,588.90	2,695.90	288.38 S	306.44 E	726,744.03	1,047,019.77	3.11	420.78	
2,493.10	41.77	133.02	-2,665.08	2,772.08	331.92 S	354.38 E	726,700.50	1,047,067.71	2.99	485.54	
2,543.10	44.13	134.32	-2,738.28	2,845.28	378.97 S	403.65 E	726,653.45	1,047,116.98	2.52	553.66	
2,593.10	46.47	134.32	-2,808.61	2,915.61	428.63 S	454.50 E	726,603.79	1,047,167.83	2.34	624.72	
2,643.10	49.03	133.87	-2,875.84	2,982.84	480.13 S	507.67 E	726,552.29	1,047,221.00	2.58	696.72	
2,693.10	51.28	133.97	-2,939.91	3,046.91	533.38 S	562.97 E	726,499.04	1,047,276.30	2.25	775.48	
2,743.10	53.30	134.02	-3,001.07	3,108.07	588.32 S	619.88 E	726,444.10	1,047,333.21	2.02	854.57	

HALLIBURTON

Plan Report for (Slot 20) E-6 - Plan #7 (29-Feb-08)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
3,493.10	55.27	134.23	-3,059.44	3,166.44	644.85 S	678.16 E	726,387.57	1,047,391.49	1.98	935.74	
3,593.10	55.70	134.37	-3,116.11	3,223.11	702.40 S	737.13 E	726,330.02	1,047,450.46	0.44	1,018.11	
3,693.10	56.27	134.57	-3,172.05	3,279.05	760.48 S	796.28 E	726,271.96	1,047,509.61	0.59	1,100.87	
3,793.10	56.75	134.75	-3,227.23	3,334.23	819.08 S	855.61 E	726,213.34	1,047,568.84	0.50	1,184.32	
3,893.10	57.27	134.97	-3,281.68	3,388.68	878.24 S	915.06 E	726,154.18	1,047,628.39	0.55	1,268.15	
3,993.10	57.83	135.03	-3,335.48	3,442.48	937.85 S	974.86 E	726,094.57	1,047,687.99	0.36	1,352.38	
4,093.10	58.27	135.17	-3,388.54	3,495.54	997.88 S	1,034.49 E	726,034.54	1,047,747.82	0.65	1,437.08	
4,193.10	58.67	135.32	-3,440.84	3,547.84	1,058.41 S	1,094.51 E	725,974.01	1,047,807.84	0.42	1,522.24	
4,293.10	59.12	135.40	-3,492.50	3,599.50	1,119.33 S	1,154.67 E	725,913.09	1,047,868.00	0.46	1,607.78	
4,393.10	59.50	135.53	-3,543.54	3,650.54	1,180.63 S	1,214.98 E	725,851.79	1,047,928.31	0.40	1,693.69	
4,493.10	60.02	135.58	-3,593.90	3,700.90	1,242.31 S	1,275.47 E	725,790.11	1,047,988.80	0.52	1,779.99	
4,593.10	60.43	135.72	-3,643.56	3,750.56	1,304.36 S	1,336.15 E	725,728.04	1,048,049.48	0.43	1,866.68	
4,693.10	60.83	135.73	-3,692.81	3,799.81	1,366.78 S	1,396.99 E	725,665.84	1,048,110.32	0.40	1,953.72	
4,793.10	61.32	135.73	-3,740.97	3,847.97	1,429.45 S	1,458.08 E	725,602.97	1,048,171.41	0.49	2,041.14	
4,893.10	61.55	135.82	-3,788.79	3,895.79	1,492.39 S	1,519.34 E	725,540.03	1,048,232.67	0.24	2,128.85	
4,980.00	62.05	136.03	-3,829.85	3,936.85	1,547.41 S	1,572.81 E	725,485.01	1,048,295.94	0.61	2,205.33	KOP / Start DLS 5.00 TFO -60.00
5,000.00	62.55	136.06	-3,839.15	3,946.15	1,580.05 S	1,585.01 E	725,472.37	1,048,298.34	5.00	2,223.01	
5,040.00	63.58	133.13	-3,857.27	3,984.27	1,584.86 S	1,610.62 E	725,447.58	1,048,323.95	5.00	2,258.66	Start DLS 4.00 TFO -175.89
5,100.00	61.18	132.94	-3,885.09	3,992.09	1,621.14 S	1,649.47 E	725,411.28	1,048,352.80	4.00	2,311.82	
5,200.00	57.19	132.59	-3,838.30	4,043.30	1,679.45 S	1,712.51 E	725,352.97	1,048,425.84	4.00	2,397.69	
5,300.00	53.21	132.21	-3,983.36	4,100.36	1,734.81 S	1,773.13 E	725,297.81	1,048,488.48	4.00	2,478.78	
5,400.00	49.22	131.78	-4,058.00	4,183.00	1,786.86 S	1,831.04 E	725,245.46	1,048,544.37	4.00	2,557.70	
5,500.00	45.23	131.31	-4,123.89	4,230.89	1,835.64 S	1,885.96 E	725,196.78	1,048,599.29	4.00	2,631.07	
5,600.00	41.25	130.76	-4,198.72	4,303.72	1,890.62 S	1,937.82 E	725,151.80	1,048,650.95	4.00	2,699.53	
5,700.00	37.27	130.12	-4,274.13	4,381.13	1,921.67 S	1,985.76 E	725,110.75	1,048,699.09	4.00	2,762.75	
5,800.00	33.30	129.35	-4,355.75	4,462.75	1,958.80 S	2,030.18 E	725,073.82	1,048,743.49	4.00	2,820.42	
5,894.42	29.55	128.45	-4,436.31	4,543.31	1,988.53 S	2,068.45 E	725,042.89	1,048,781.78	4.00	2,869.52	Start 1067.54 hold at 5894.42 MD
5,900.00	29.55	128.45	-4,441.18	4,548.18	1,991.24 S	2,070.81 E	725,041.18	1,048,783.94	0.00	2,872.26	
6,000.00	29.55	128.45	-4,528.15	4,635.15	2,021.81 S	2,109.23 E	725,010.51	1,048,822.56	0.00	2,921.43	
6,100.00	29.55	128.45	-4,615.15	4,722.15	2,052.58 S	2,147.85 E	724,979.84	1,048,861.16	0.00	2,970.60	
6,200.00	29.55	128.45	-4,702.14	4,809.14	2,083.25 S	2,188.47 E	724,949.17	1,048,899.80	0.00	3,019.77	
6,300.00	29.55	128.45	-4,789.13	4,896.13	2,113.92 S	2,225.09 E	724,918.50	1,048,938.42	0.00	3,068.94	
6,400.00	29.55	128.45	-4,876.13	4,983.13	2,144.59 S	2,263.71 E	724,887.83	1,048,977.04	0.00	3,118.11	
6,500.00	29.55	128.45	-4,963.12	5,070.12	2,175.26 S	2,302.33 E	724,857.16	1,049,015.66	0.00	3,167.28	
6,600.00	29.55	128.45	-5,050.11	5,157.11	2,205.93 S	2,340.95 E	724,826.49	1,049,054.28	0.00	3,216.45	
6,700.00	29.55	128.45	-5,137.11	5,244.11	2,236.60 S	2,379.57 E	724,795.82	1,049,092.90	0.00	3,265.62	
6,800.00	29.55	128.45	-5,224.10	5,331.10	2,267.27 S	2,418.19 E	724,765.15	1,049,131.52	0.00	3,314.79	
6,900.00	29.55	128.45	-5,311.09	5,418.09	2,297.94 S	2,458.81 E	724,734.48	1,049,170.14	0.00	3,363.96	

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Plan Report for (Slot 20) E-6 - Plan #7 (29-Feb-08)

Measured Depth (ft)	Inclination (°)	Vertical Depth (ft)	TVD below System (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
6,961.97	29.55	128.45	-5,385.00	5,472.00	2,316.94 S	2,480.74 E	724,715.48	1,049,194.07	0.00	Start 270 14 hold at 8981 97 MD - E6 RD2 T1
7,000.00	29.55	128.45	-5,398.09	5,505.09	2,328.61 S	2,495.43 E	724,703.81	1,049,208.76	0.00	
7,100.00	29.55	128.45	-5,485.08	5,592.08	2,359.28 S	2,534.05 E	724,673.14	1,049,247.38	0.00	
7,200.00	29.55	128.45	-5,572.07	5,679.07	2,389.95 S	2,572.67 E	724,642.47	1,049,286.00	0.00	
7,232.10	29.55	128.45	-5,600.00	5,707.00	2,399.79 S	2,585.08 E	724,632.83	1,049,298.39	0.00	TD at 7232 10

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
4,980.00	3,836.85	-1,547.41	1,572.61	KOP / Start DLS 5.00 TFO -80 00
5,040.00	3,864.27	-1,584.86	1,610.62	Start DLS 4.00 TFO -175 89
5,894.42	4,543.31	-1,989.53	2,068.45	Start 1067.54 hold at 5894.42 MD
6,961.97	5,472.00	-2,316.94	2,480.74	Start 270 14 hold at 6961 97 MD
7,232.10	5,707.00	-2,399.79	2,585.08	TD at 7232 10

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	132.87	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
845.10	4,980.00	E-6 OH	MWD Magnetic
4,980.00	7,232.10	Plan #7 (29-Feb-08)	MWD Magnetic

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Plan Report for (Slot 20) E-6 - Plan #7 (29-Feb-08)

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (m)	+E-W (m)	Northing (m)	Easting (m)	Latitude	Longitude
- hit/mias target									
- Shape									
ES RD2 T1	0 00	0 00	5,472 00	-2,316 94	2,480 74	724,715 48	1,049,194 07	34 119043	-119 391590
- plan hits target									
- Circle (radius 50 00)									

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North Reference Sheet for Platform Gail - (Slot 20) E-6 - E-6 RD2

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to Well @ 107.00ft (Original Well Elev) Northing and Easting are relative to (Slot 20) E-6

Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1856

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -115 250000", Longitude Origin 0 000000", Latitude Origin 33 883333"

False Easting 2,000,000.00ft, False Northing 0.00ft, Scale Reduction 1.00004935

Grid Coordinates of Well 727,032.42 ft N, 1,046,713.33 ft E

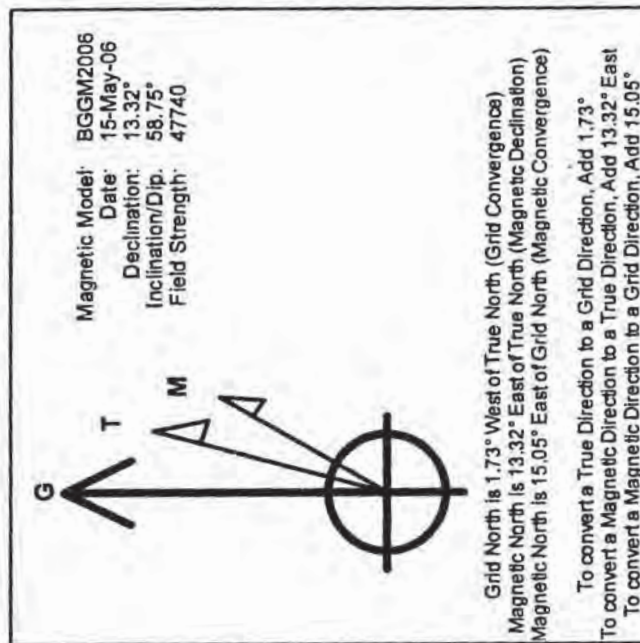
Geographical Coordinates of Well 34° 07' 30.72" N, 118° 24' 00.05" W

Grid Convergence at Surface is -1.73°

Based upon Minimum Curvature type calculations, at a Measured Depth of 7,232.10ft

the Bottom Hole Displacement is 3,527.26ft in the Direction of 132.87° (Grid)

Magnetic Convergence at surface is -15.05° (15 May 2006, BGGM2006)



VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-6 ST2
SIDETRACK PROGRAM
API# 04-311-20671-02
LEASE OCS-P-0204
February 29, 2008 (attach to MMS APD)

Objective: To sidetrack the well as E-6 ST2 to a new bottom hole location and complete as dual injection well in the Upper Topanga and Monterey intervals.

Surface Location: OCS-P-205, Slot No. 20 (X= 1,046,713.33' & Y= 727,032.42')

Elevation: 739' WD, 107' Above MLLW, 846' Ocean Floor to Rig Floor

Existing Casing: (the well to be abandoned from 4980' and below)

24", 201#, X-52	*1395'	existing
18 5/8", 117.5 K-55	*2413'	existing
13 3/8", 68# K-55	*5348'	existing (LOT=12.3 ppg 1/16/89)
9 5/8", 40, 47# L-80	5348'	existing (KOP @ 5400')
7", 26#, L-80, Hydril 513	5018' - 16365'	Liner w/ top at 5018'

There is one joint of 9 5/8" 47# casing on top with a crossover and casing below is 40#.

Proposed Casing:

24", 201#, X-52	1395'	existing
18 5/8", 117.5 K-55	2413'	existing
13 3/8", 68# K-55	4980'	existing (LOT=12.3 ppg at 5348' MD on 1/16/89)
9 5/8", 40, 47# L-80	4980'	existing (KOP)
7", 26#, L-80, Hydril 513	4880' - 7232'	Liner w/ top at 4880'

There is one joint of 9 5/8" 47# casing on top with a crossover and casing below that is 40#.

Markers:	MD	TVD	SS	Maximum Est Mud Wt
T/ Monterey	5,487'	4,222'	-4,115'	8.5 PPG
Monterey M2	5,768'	4,436'	-4,329'	8.5 PPG
Monterey M4	5,922'	4,568'	-4,461'	8.5 PPG
Upper Topanga	6952'	5,464'	-5,357'	8.5 PPG

Proposed Perforations (Tentative to be confirmed after open hole logs)

5922' - 6500' Monterey

6952' - 7100' Upper Topanga

BOPE Equipment and Testing

- BOPE will be tested every 14 days during the operations covered under this APD.
- BOP equipped with 3 ram preventers and an annular. Test the BOP to 250/3000 psi with 5" drill pipe and 3 1/2" drill pipe. The well has 3 1/2" tubing installed. The 13 5/8" BOPE will be configured for drilling operations, with 2 7/8" X 5" VBR pipe rams in the top of the double gate and blind/shear rams in the bottom of the double gate, the mud cross will be below the double gate, 5" rams will be located in the bottom of the single gate below the mud cross. All tests will be recorded on a chart for the MMS to review.
- Before commencing well work operations it will be necessary to insure that fluids can be pumped down the tubing and casing simultaneously through equipment tested to 3000 psi.
- A 2 1/16 5M casing valve will be installed below the tubing hanger with a 1502 tee and a pressure gauge, a check valve and high pressure hose. It will be tested to 250/3000 psi for 5 minutes as part of the initial and regular BOPE tests.
- This connection will allow seawater to be pumped into the annulus at 3 bpm below the tubing hanger landing profile to keep the well under control. It will also prevent visual obstruction when landing the oriented tubing hanger.
- Sufficient fluid will be pumped into the well to keep the well under control per the field rules. The minimum rate of continuous pumping shall be 3 bpm.

Hydrogen Sulfide Considerations:

The Monterey and the Upper Topanga have the potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

Drilling Fluids:

It is proposed to use seawater SP 101 system for drilling operations with mud weight of 9.2 -9.5 ppg. This should provide for adequate overbalance for both the Upper Topanga and the Monterey. There will be the potential for fluid losses.

There will be no planned discharge of cuttings while drilling. Drilling fluids may be tested for possible ocean discharge if sheen tests are negative. Completion fluids during the completion phase will be seawater or weighted seawater dependent upon reservoir pressures. It is forecast that fluid losses will occur. Completion fluids will not be ocean discharged.

Sidetrack Procedure

1. The well E-6 (Slot No. 20) will be abandoned and a bridge plug will be set at +/- 4980' (5' above the nearest 9 5/8" collar). It is forecast that drilling operations will commence immediately after completion of P&A operations. If rig was not over slot 20 and operations are not immediately subsequent then skid rig over the E-6 well rig and ensure well is dead or kill the well with seawater or weighted fluid as needed.
2. Make up a 9 5/8", 40# bottom trip whipstock (designed to pass through the 47# joint at surface) and starting mills. Proposed window mill assembly: 8" starting mill, 8.215" lower watermelon mill, 9' flex joint, and 8.6" upper watermelon mill. If the 8.6" drift will not pass utilize the following assembly: 8" starting mill, 8.215" lower watermelon mill, 9' flex joint, 8.5" upper watermelon mill. Pick up an MWD. Run the equipment in the hole on the 5" drill pipe in the derrick to 30' above the CIBP at +/-4980'. Orient the whipstock 45 degrees right of high side using the measurements from the MWD. Set the whipstock on the CIBP and shear the tools off the whipstock face. Condition the mud to 9.3 ppg for drilling, plan to use high viscosity sweeps to clean and carry the metal cuttings out of the hole. Mill and dress the window as required to obtain good exit point for sidetrack. Window will be milled through both 9 5/8" and 13 3/8" casing. Drill enough rathole to pass all mills through the window. Mills must smoothly pass through the window before finalizing milling operations. Perform a Formation Integrity Test to 10.5 ppg EMW (13 3/8" casing shoe at 5355' reported a 12.3 ppg EMW leak off test). Reduce the viscosity of the mud to desired drilling parameters. Pull out hole and lay down the milling tools. Have mud logger rigged for milling and drilling of 8 1/2" hole.
3. Pick up an 8 1/2" bit on a steerable directional drilling assembly including MWD/GR. Run in the hole and sidetrack the well. Continue directionally drilling an 8 1/2" hole from +/- 5000' to the total depth of 7232' MD / 5707' TVD. The 8 1/2" hole will be drilled with a SP 101 drilling fluid system. The well will be drilled through the Monterey and Upper Topanga formations that are both pressure depleted. There could be problems with lost circulation and/or differential sticking. Make bit and wiper trips as necessary.

Notes:

1. See the attached drilling fluids program.
 2. Review the attached directional program, use E-6 Plan 7 (29-Feb-08).
 3. Target at 5472' TVD, X=1,049,194.07, Y=724,715.48
 4. Mud loggers to start upon milling out of the 9 5/8" casing window.
4. Circulate and condition the mud for open hole logs. Wipe the hole to the 9 5/8" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
 5. Rig up wire line and prepare to run open hole logs (see attached logging program). Condition the hole if necessary between runs.
 - Run #1 PEX, HLRA, HNGS (high resolution density & neutron)
 - Run #2 FMI, GR
 6. Run back to bottom with an 8 1/2" bit and circulate and condition the hole for the 7" liner. Wipe the hole to the 9 5/8" casing shoe. Pull out of the hole and stand the 5" drill pipe back.

7. Rig up casing crew and run the 7", 26#, L-80, Hydril 513 liner from +/- 4880' to +/- 7232' as follows:
1. 7", 26#, L-80 Float Shoe
 2. 1 Joints of 7", 26#, L-80 Casing
 3. 7", 26#, L-80 Float Collar
 4. 1 Joint of 7", 26#, L-80 Casing
 5. 7", 26#, L-80 Landing Collar
 6. +/- 2300' of 7", 26#, L-80 Casing
 7. 7", 26#, Baker Flex Lock Hydraulic Set Liner Hanger
 8. RS Nipple with 6.188" Profile
 9. ZXP Liner Top Packer, 7" x 9 5/8", HR Profile w/ 10' tie-back extension

Notes:

- Centralize the 7" liner inside the 8 1/2" open hole using one positive stand-off centralizer per joint with stop rings from Gemaco/Weatherford in Bakersfield.
 - Drift DP to ensure cementing dart will pass.
 - Run in the hole slowly to avoid surging the formation.
 - A circulating swage with a safety valve will be on the rig floor.
8. Run the liner in the hole, tag bottom and pick up 5' and circulate the well until the returns are clean. Reciprocate the liner while circulating. Drop the setting ball and set the liner hanger. Release running tool from liner hanger.
9. Mobilize and rig up cementing unit. Pressure test lines to 4000 psi. Mix and pump the cement job as per the program. Bump the plug with 500 psi above the final circulating pressure. Bleed the pressure back and check the floats. Pick up and set the liner packer at the top of the liner hanger. While waiting on cement, pull out of the hole and rack the 5" drill pipe back and lay down any drilling tools that will not be needed.
- Notes:
- See attached cementing program for slurry specifications.
 - Cement volume estimates are based on 50% excess in the open hole.
 - Use the 4 arm caliper volume plus 10% if caliper log is available.
 - Do not circulate at the top of the liner prior to pulling out of the hole.
 - Set the liner 5' off bottom.
 - The 3 1/2" drill pipe needed to clean out the 7" liner.
 - Do not demobilize cement equipment until bond log results are obtained and evaluated.
10. Pick up an 8 1/2" bit and run in the hole. Clean out to the top of the liner at 4880'. Pressure test the 9 5/8" casing and liner top to 2500 psi. Pull out of the hole.
11. Pick up a 6 1/8" bit and 3 1/2" drill pipe and run in the hole. Clean out the 7" liner to the landing collar at +/- 7147'. The bottom proposed perforation in the Upper Topanga is at +/- 7100'. Pressure test the 7" liner to 2500 psi. Displace the drilling fluid out of the hole with clean filtered sea water. Circulate the well until return fluids are clean. Pull out of the hole with the 3 1/2" drill pipe.
12. Pick up and run in the hole with a 7", 26# casing scraper. Circulate the well with clean filtered sea water. Pull out of the hole with the drill pipe.

13. Rig up wireline and run a cement bond log (USIT/GR) across the 7" liner. Squeeze the liner if necessary. Have bridge plugs, retainers and 2' perforation guns available.
14. Make up 4 ½" TCP perforation guns and run in hole and perforate Monterey and Upper Topanga formations. Be prepared to fill the well. If hole is taking fluid Keep filtered seawater going continuously into the well at a minimum of 3 bpm at all times.
15. Make bit and scraper run to TD circulate hole clean if well will circulate. Pull out of hole and rig up to run completion equipment.
16. Production tubing to be yellow band or better 2 7/8" 6.5# L-80 EUE 8rd with special clearance bevel couplings. All equipment above the packer to be special clearance and bevel.
17. Pick up the long string completion equipment in following order:
 - 2-7/8" Baker 'BXN' seating nipple with ball seat made up on pin of nipple
 - 1 joint of 2-7/8" EUE 8rd Tubing
 - 2-7/8" Baker 'BX' seating nipple
 - 1 joints of 2-7/8" EUE 8rd Tubing
 - Baker 7" HS Packer w/ 6' pup joints made up to the top and bottom of the packer
 - XX joints of 2-7/8" EUE 8rd Tubing
 - Baker 9-5/8" GT dual packer assembly w/ short string tailpipe made up on bottom of packer.
 - Short string detail from packer down:
 - Baker 9-5/8" GT Dual Hydraulic Packer
 - Crossover sub: 3-1/2" NU 10rd Box X 2-7/8" EUE 8rd Pin
 - 6' 2-7/8" EUE 8rd Pup Joint
 - 2-7/8" Baker 'BX' Seating Nipple
 - 1 joint of 2-7/8" EUE 8rd
 - 2-7/8" Baker 'BXN' Seating Nipple
 - Ceramic Disc
 - 2-7/8" Wireline Entry Guide
 - XX joints of 2-7/8" EUE 8rd Tubing
 - 2-7/8" Baker 'BX' Seating Nipple for injection valve
 - XX joints of 2-7/8" EUE 8rd Tubing
 - 2-7/8" EUE 8rd Pup Joints for Space-out
 - Long String tubing hanger half
 - Landing joint
18. Get up and down weight prior to landing. Follow revised FMC procedure for landing dual hanger half. At no time will hanger hold down pin be removed. Orient the hanger half at surface and lower into position in the wellhead.
19. After hanger half is landed and confirmed to be in correct position, drop 1.75" OD, Kirksite setting ball down long string landing joint. Pressure long string to 3000psi in 500 psi increments to set the lower HS packer and GT packer. Hold 3000 psi on tubing for 15 minutes, slowly bleed pressure off of tubing. Pressure test the packer and annulus to 500 psi against the ceramic disc. Continue to pressure up to 3500 psi and blow the packer setting ball.

20. Pick up Short String completion equipment in following order:
 - 3.25" OD Locator Seal Assembly w/ 6' 2-7/8" EUE 8rd handling pup
 - XX joints of 2-7/8" EUE 8rd tubing
 - 2-7/8" Baker 'BX' Seating Nipple for injection valve
 - XX joints of 2-7/8" EUE 8rd tubing
21. Run in hole with short string until seal assembly is 1 stand above PBR on short string side of GT packer.
22. Pick up last stand and slowly lower tubing until the seals enter the PBR. Watch weight indicator to determine when seals first enter the PBR and when the locator lands on the locating shoulder of the PBR. Mark pipe at both points. Space out short string 1' above no-go. Fill hole and pressure test the annulus to 2500 psi to ensure properly landed and to test the dual packer is set.
23. Pick up to up weight, then lower tubing back down to verify that locator is landed correctly on locating shoulder of PBR.
24. Pick up tubing, space-out as needed with pups and make up short string hanger half on short string and make up landing joint to the top of the hanger half. displace the tubing X casing annulus with packer fluid (filtered sea water w/ Baker Chemicals / Petrolite CRW 9070 corrosion inhibitor, biocide and oxygen scavenger: 5 gals per 100 barrels). Ceramic disc should be intact to allow circulation.
25. Lower tubing and watch weight indicator to verify that seals enter PBR. Lower tubing until tubing hanger is landed. Follow revised FMC procedure for landing dual hanger. At no time will hanger hold down pin be removed. With both tubing strings landed on the hanger, secure the hanger with lock down pins. Pressure test the annulus to test the packer and tubing hanger to 2500 psi for 15 minutes. Pressure up short string to shear out the ceramic disc.
26. Rig up slickline and lubricator on the short string. Pressure test lubricator to 3000 psi. Run and install the injection valve in the short string BX profile. The injection valve will be the 2nd barrier when nipple down BOPE. Install BPV in short string.
27. Install long string land joint. Rig up slickline and lubricator on the long string. Pressure test lubricator to 3000 psi. Run and install the injection valve in the long string BX profile. The injection valve will be the 2nd barrier when nipple down BOPE. Rig down slickline.
28. Install BPV in short string. BPV and injection valve installed on long string. Nipple down BOPE and nipple up FMC dual tree with adapter. Install blanking plugs and pressure test bonnet void and tree to 3000 psi. Remove blanking plugs.
29. Release rig and turn well over to production. If indicated and dependent upon injection rate, remove injection valve(s) and acid stimulate injection tubing string(s) and rerun injection valve(s).

EVALUATION PROGRAM

Mudlogging Program.

Begin Mudlogging upon exiting 9 5/8" casing window, dry cuttings only.

Testing Program:

None expected.

Open Hole Logging program

LWD: None (**MWD/GR only**)

Wireline Logs:

- PEX (high res mode) w/ Spectral GR (LateroLog)
- FMI/GR

Logging Geologist: Dale Kunitomi 805-987-3026

Operations Geologist: Adrian Almanza Office 805-745-2156
Cell 805-453-6732

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8	7
2	Setting Depth (feet - TVD)	3937	5707
3	Expected Leak Off Test EMW at shoe (ppg)	12	13
4	Depth of next Casing (feet - TVD)	5707	5707
5	Maximum Expected Formation Pressure (psi)	2493	2493
6	Expected Mud Weight (ppg)	9.3	9.5
7	Formation Equivalent Mud Weight (ppg)	8.4	8.4
8	Expected Hydrostatic Pressure at TD (psi)	2760	2819
9	Amount of Overbalance at TD (psi)	267	326
10	Fracture Gradient at shoe (psi/ft)	0.62	0.68
11	Fracture Pressure at shoe (psi)	2457	3858
12	Hydrostatic Pressure at shoe (psi)	1904	2819
13	Margin between Mud Weight and LOT (psi)	553	1039

Maximum Anticipated Surface Pressures

1	Casing Size (in)	9-5/8	7"
2	Setting Depth (feet - TVD)	3937	5707
3	Expected Leak Off Test EMW at shoe (ppg)	12	13
4	Expected Mud Weight (ppg)	9.3	9.5
5	Depth of next Casing (feet - TVD)	5707	5707
6	Maximum Expected Formation Pressure (psi)	2493	2493
7	Expected gas gradient (psi/ft)	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.4	8.4
Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	2207	2207
10	Fracture Gradient at shoe (psi/ft)	0.62	0.68
11	Fracture Pressure at shoe (psi)	2457	3858
12	Surface pressure to break down shoe (psi)	2260	3573
13	Maximum Anticipated Surface Pressure (psi)	2207	2207
Max Pressures using 70% Gas & 30% Mud			
14	Maximum Anticipated Surface Pressure (psi)	1465	1447
15	Top of fluid (feet-TVD)	3995	3995
16	Pressure at shoe (psi)	1662	2493
17	Margin between pressure and breakdown(psi)	795	1365

CASING PROGRAM

Hole Section	12.25	8.5
Mud Weight	9.3	9.5
Buoyancy Factor	0.858	0.855
MASP (psi)	2207	2207
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9-5/8*	7
Setting Depth, MD (ft)	4980	7232
Setting Depth, TVD (ft)	3937	5707
Top of Casing, MD (ft)	0	4880
Weight (lb/ft)	40	26
Grade	L-80	L-80
Threads	47#STL /40#NK3SB	513
ID (in)	8.681	6.199
Drift diameter (in)	8.599	6.151
Collapse (psi)	3090	5410
Burst (psi)	5750	7240
Joint Strength (kips)	500	448
Body Strength (kips)	916	604
Collapse Safety Factor	1.62	1.92
Burst Safety Factor	2.60	3.28
Tensile Safety Factor	1.85	2.94

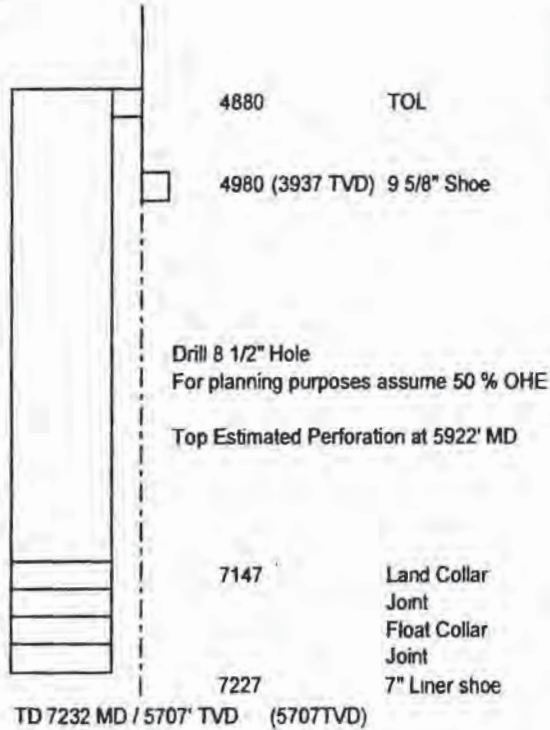
1. The 9 5/8" is existing casing. There is one joint of 47# at top of the string. The ID/drift is for the 47#, the performance properties are for the 40#.
2. Hydril 513 casing has a smaller ID than API casing and is reflected in ID specifications above.
3. Burst is calculated on the greater of MASP or gas lift pressure.
4. Collapse is based on mud outside of an evacuated casing string.
5. Tension is based on buoyed weight of casing string + 100 kips over pull.

CEMENTING PROGRAM

7" Production Liner

Objective: Cement 7" liner set across the 8 1/2" open hole interval. Liner will extend 100' back into the 9 5/8" casing. Cement will be programmed to be brought back to top of liner. A liner top packer will be installed at the liner top and will isolate the liner lap and provide for casing/liner pressure integrity. Use 10% excess over the 4 arm caliper if it is available.

E-6 ST2
7" Liner



Volume Factors

	cf/ft	bbf/ft
7" 26#	0.2148	0.0383
7" csg X 8 1/2" hole	0.1268	0.0226
7" csg X 8 1/2" hole w/ OHE 50%	0.1902	0.0339

7" Liner Cement Volumes

	CF	BBLS
4880 - 4980' Liner Lap	12.7	2.3
4980' - 7227' OH X Liner w/ 50% OHE	427.4	76.2
Shoe	17.2	3.1
Total	457.2	81.5

MUD PROGRAM

INTERVAL MUD PROPERTIES for WBM System

Depth MD (ft)	Mud Weight (ppg)	Fluid Loss (ml/30 min)	Plastic Viscosity (cp)	Yield Point (lb/100ft ²)	YS	Chlorides (kmg/l)	PH
+/- 4,980' Milling	9.2 - 9.4	<20	12 - 20	20 - 30	>20	18 - 20	8.5-9.5
4,980' - 7,232'	9.2 - 9.5	< 6 cc	12 - 20	18 - 30	>10	+23 - 25 K	+/- 9.0

Whipstock:

The fluid system used for the milling operations will be Durogel and Duovis. This will provide adequate viscosity and carrying capacity for the milling operations. These products mix easily with seawater, which will be in the well after abandoning the Upper Topanga formation in the Original Hole.

4,980' - 7232':

Convert over to SP 101 by adding 1.5 to 2.5 ppb of Sp 101 to the system. Continue with the additions of SP 101 for fluid loss reductions (<6.0 cc). Add dry NaCl to maintain the chloride content between 23,000 and 25,000. Stop additions of Durogel and build up the surface system with MI Gel pre-hydrated in fresh water at a concentration of 12 to 15 ppb. Maintain the mud weight as low as possible with the solids control equipment. Condition the mud with water to keep the MBT below 30 ppb and treat out calcium with Soda Ash to below 200 ppm. Reduce the mud weight or add calcium carbonate if mud losses are excessive while drilling this section.

Notes:

1. Operate solids control equipment to maintain drill solids as low as possible.
2. Maintain supply of ZnCO₃ onboard to treat out H₂S.
3. A minimum of 350 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised 0.5 ppg using 1200 bbl total circulating volume (600 open hole volume & 600 bbl active system).
4. Do not add Calcium Carbonate to the mud system after drilling into the Monterey interval, unless mud losses are excessive. Any LCM material must be acid soluble since this will be the only practical method available to restore formation productivity to its undamaged state.

Hydrogen Sulfide Considerations:

The Monterey and Upper Topanga have the potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan"

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Vertical to 1393'
 Max Angle _____
 D F Elevation 107'
 D F to Tubing Head 51 34'
 Water Depth 739'
 Tree FMC 5000 PSI WP

Lease: OCS-P-0205
SOCKEYE FIELD
WELL E-6 ST2

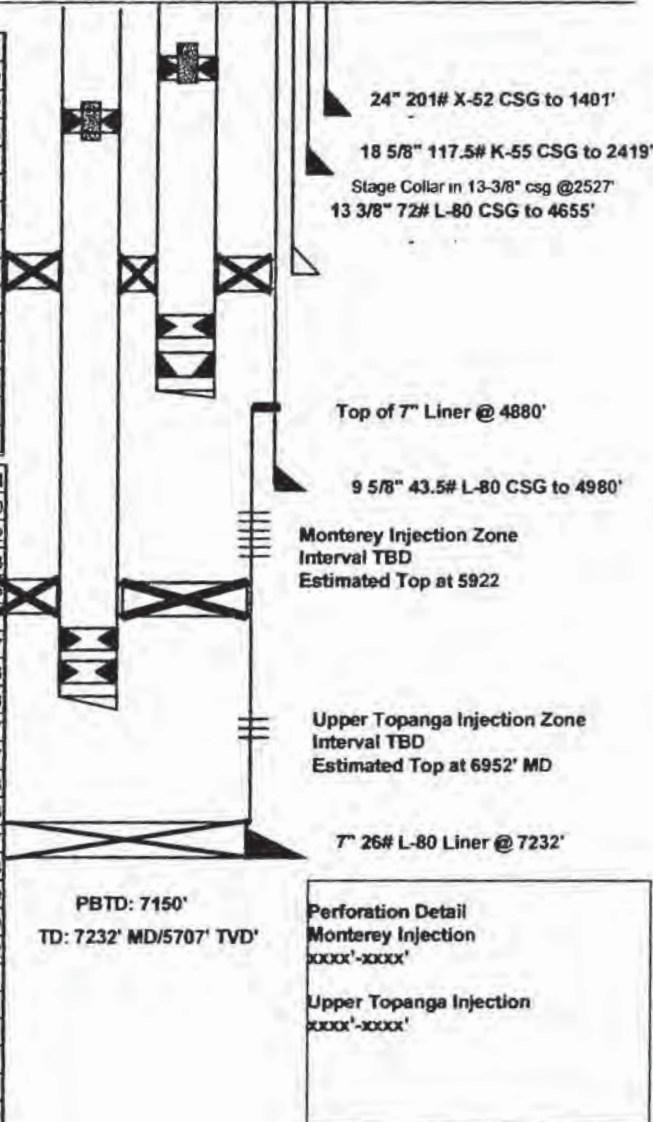
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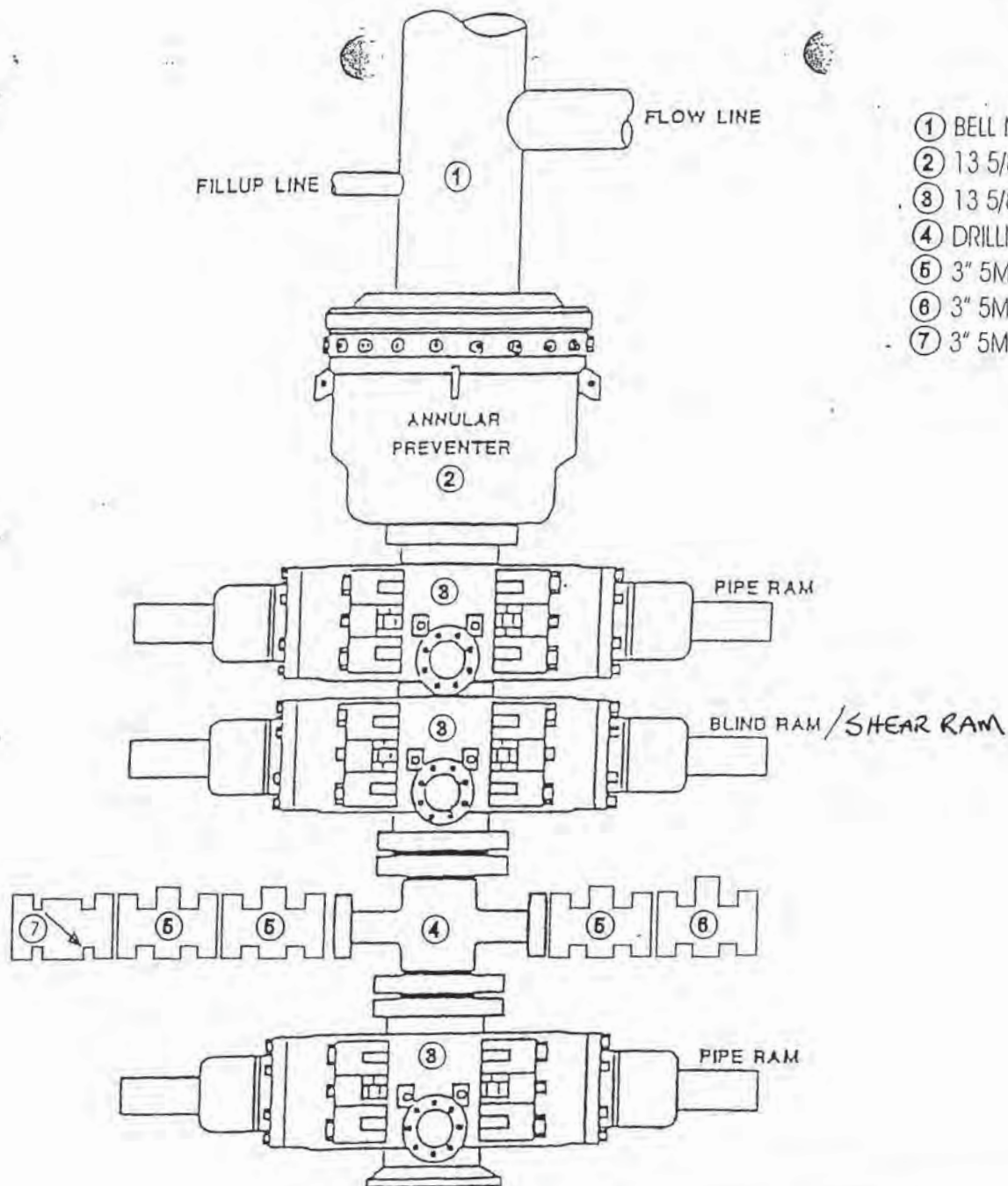
Completion Date _____

PROPOSED COMPLETION
UT/Monterey Dual Injection Well

Short String Description	ID	LENGTH	DEPTH
KB		52.00	0
Tubing Hanger w/ pup jt	2.441"	1.00	52
30 jts 2-7/8" L-80 6 5# 8rd EUE tbg	2.441"	930.00	53
"X" Nipple with Injection Valve	2.313"	1.00	983
XXX jts 2-7/8" 6 5# L-80 EUE 8rd	2.441"	3760.00	984
Seal assembly thru 9 5/8" GT Dual Pac	2.441"	10.00	4744
1 jt 2-7/8" tbg as above	2.441"	31.00	4754
"X" Nipple	2.313"	1.00	4785
1 jt 2-7/8" tbg as above	2.441"	31.00	4786
"BXN" Nipple		1.00	4817
Mule Shoe	2.441"	1.00	4818
Tail			4819

Long String Description	ID	LENGTH	DEPTH
KB		52.00	0.00
Tubing Hanger w/ pup jt	2.441"	1.00	52
32 jts 2-7/8" L-80 6 5# 8rd EUE tbg	2.441"	992.00	53
2 7/8" BX with Injection Valve	2.313"	1.50	1045
XX jts 2-7/8" tbg as above	2.441"	3700.00	1047
1 - 2 7/8" pup	2.441"	6.00	4747
Baker 9 5/8" GT Dual Packer w/ pup jts		10.00	4753
1 - 2 7/8" pup		4.00	4763
XX jts 2-7/8" tbg as above	2.441"	2070.00	4767
1 - 2 7/8" pup		6.00	6837
Baker "FH" Packer w/ pup jts		10.00	6843
1 - 2 7/8" pup		4.00	6853
1 jt 2-7/8" tbg as above	2.441"	31.00	6857
"X" Nipple		1.50	6888
1 jt 2-7/8" tbg as above	2.441"	31.00	6889
BXN Nipple		1.50	6920
RE-entry		1.50	6922

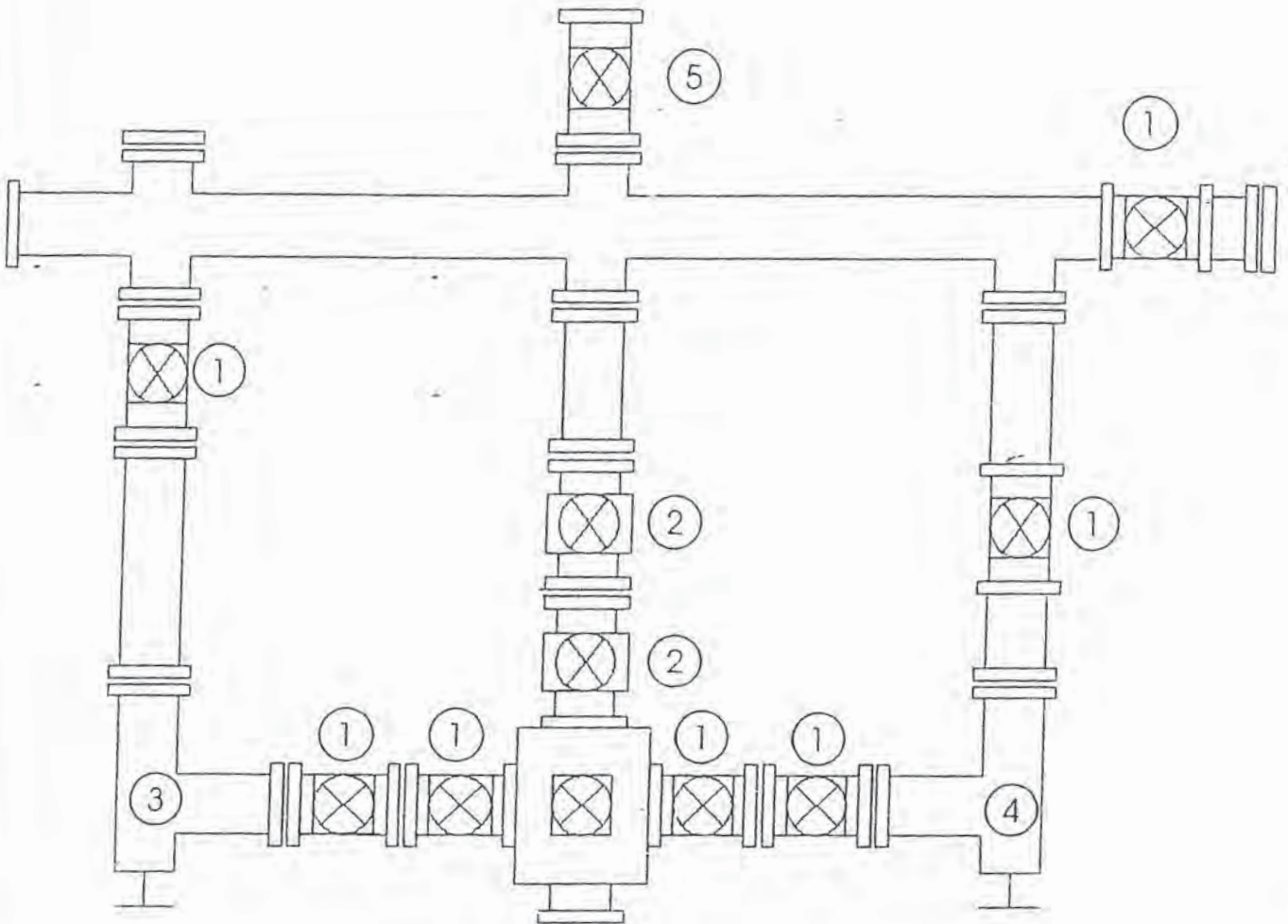




- ① BELL NIPPLE
- ② 13 5/8" 5M GK HYDRILL
- ③ 13 5/8" 5M DOUBLE GATE
- ④ DRILLING SPOOL
- ⑤ 3" 5M MANUAL VALVE
- ⑥ 3" 5M HCR VALVE
- ⑦ 3" 5M CHECK VALVE



BLOWOUT PREVENTION SYSTEM PLATFORM GAIL

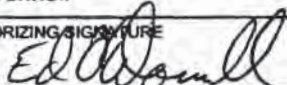


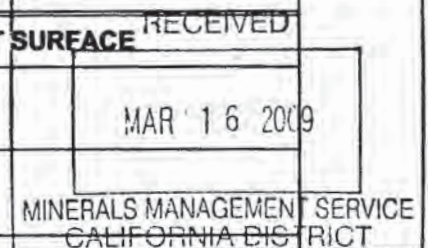
- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD
PLATFORM GAIL

Application for Permit to Drill (APD)

1. PROPOSAL TO DRILL ☒ NEW WELL ☐ SIDETRACK ☐ BYPASS ☐ DEEPEN		2. MMS OPERATOR NO 02309	3. OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013	
4. WELL NAME (CURRENT) E-25	5. SIDETRACK NO (CURRENT)	6. BYPASS NO. (CURRENT)		
7. PROPOSED START DATE March 23, 2009	8. PLAN CONTROL NO. (NEW WELL ONLY)			
9. API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04311XXXXXX				
10. ☐ Revision	11. If revision, please list changes:			
WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE		
12. LEASE NO. P-208		17. LEASE NO. P-205		
13. AREA NAME 6B		18. AREA NAME B		
14. BLOCK NO. 47 N 60 W		19. BLOCK NO. 4761		
15. LATITUDE (☐ NAD 83 / ☒ NAD 27)	16. LONGITUDE (☐ NAD 83 / ☒ NAD 27)	20. LATITUDE (☐ NAD 83 / ☒ NAD 27)	21. LONGITUDE (☐ NAD 83 / ☒ NAD 27)	
LIST OF SIGNIFICANT MARKERS ANTICIPATED				
22. NAME T/Pico	23. TOP (MD) 2930	24. TOP (TVD) 2869	22. NAME T/ Upper Topanga	23. TOP (MD) 6920
T/Monterey M1	4210	4001		24. TOP (TVD) 5336
T/Monterey M4	4957	4454		
25. LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate) Drill Program includes design criteria for well, BOPE, casing program, drilling prognosis, cement program, mud program, directional plan, surface and subsurface well location map, Supplemental APD Information				
26. CONTACT NAME Dana Billings		27. CONTACT TELEPHONE NO 805-745-2139	28. CONTACT E-MAIL ADDRESS dbillings@venocoinc.com	
29. AUTHORIZING OFFICIAL (Type or print name) Ed O'Donnell		30. TITLE V.P. Southern Assets		
31. AUTHORIZING SIGNATURE 		32. DATE March 12, 2009		



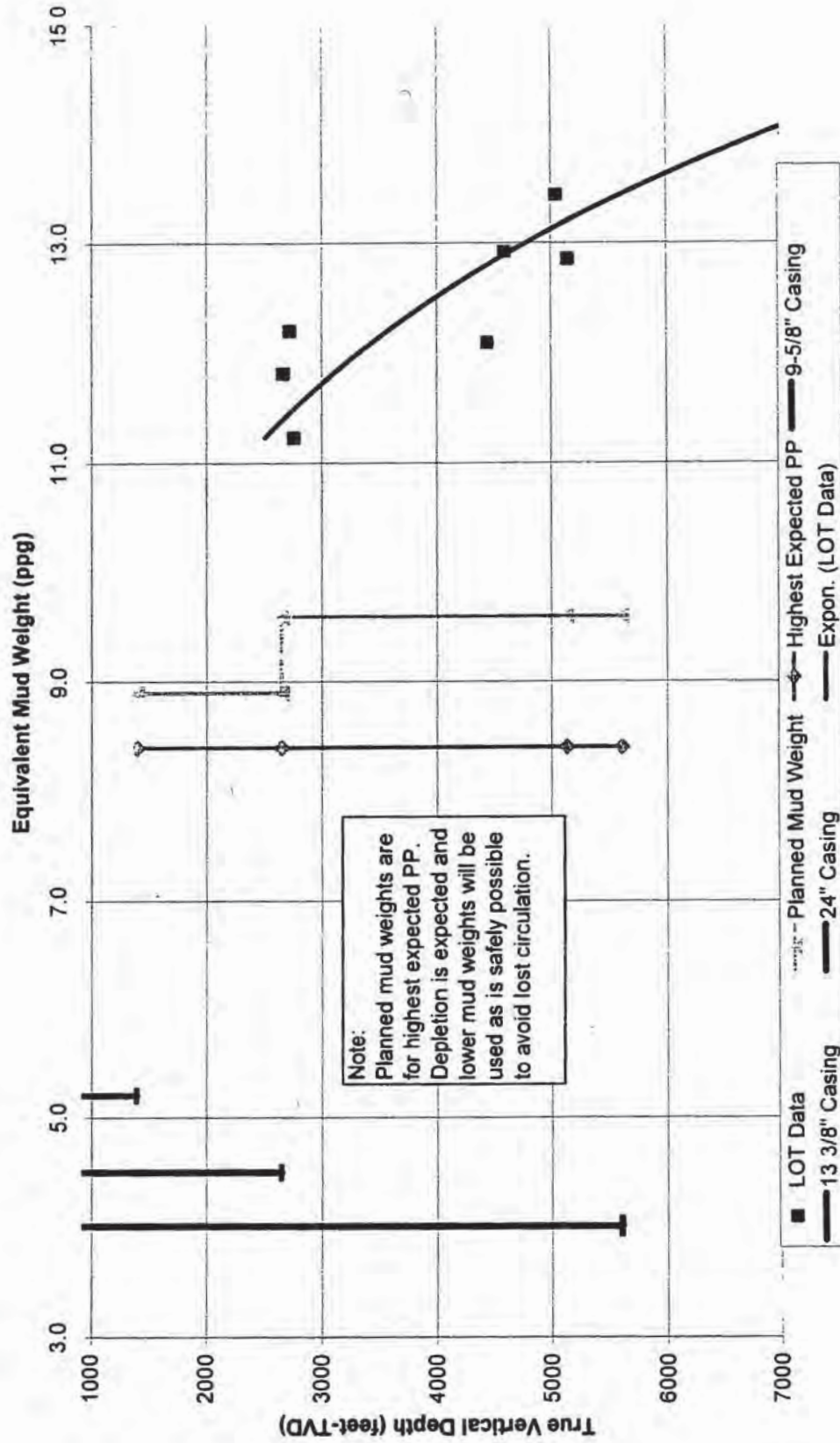
THIS SPACE FOR MMS USE ONLY		
APPROVED: ☐ With Attached Conditions ☐ Without Conditions	BY ORIG. SGD. BY: Dan Knowlson	TITLE District Manager
API WELL NO ASSIGNED TO THIS WELL 04 311-2079900	DATE MAR 23 2009	

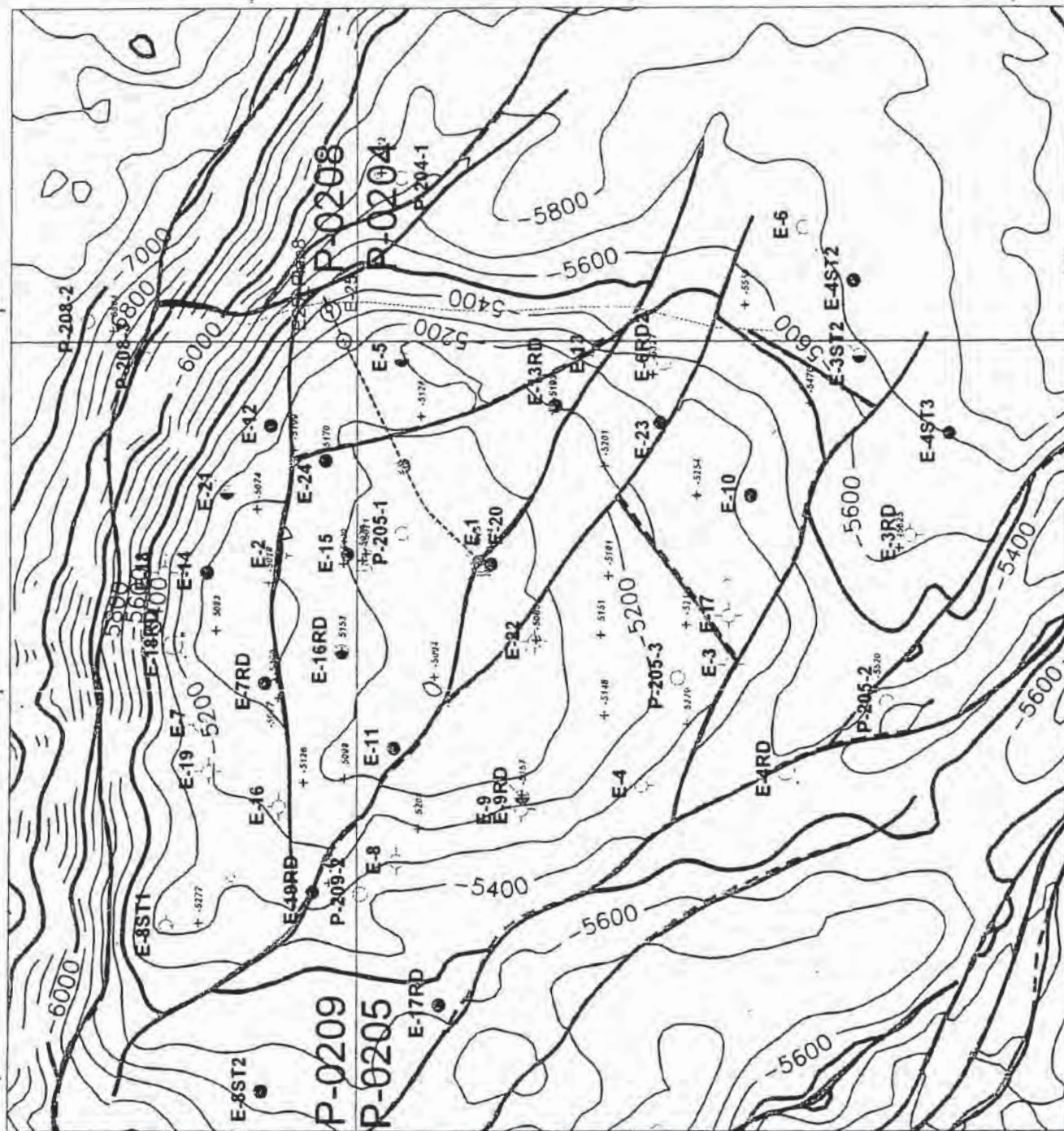
Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☒ NO ☐ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☒ NO ☐ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et. seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 5438, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Platform Gail Well E-25 Pore Pressure, Mud Weight & Fracture Pressure





ALL_WELLS_UT_TOPS<Sockeye>

Formation Intercept with Well

+ Formation Intercept with Well

Monterey M4 projected

U. Topanga projected

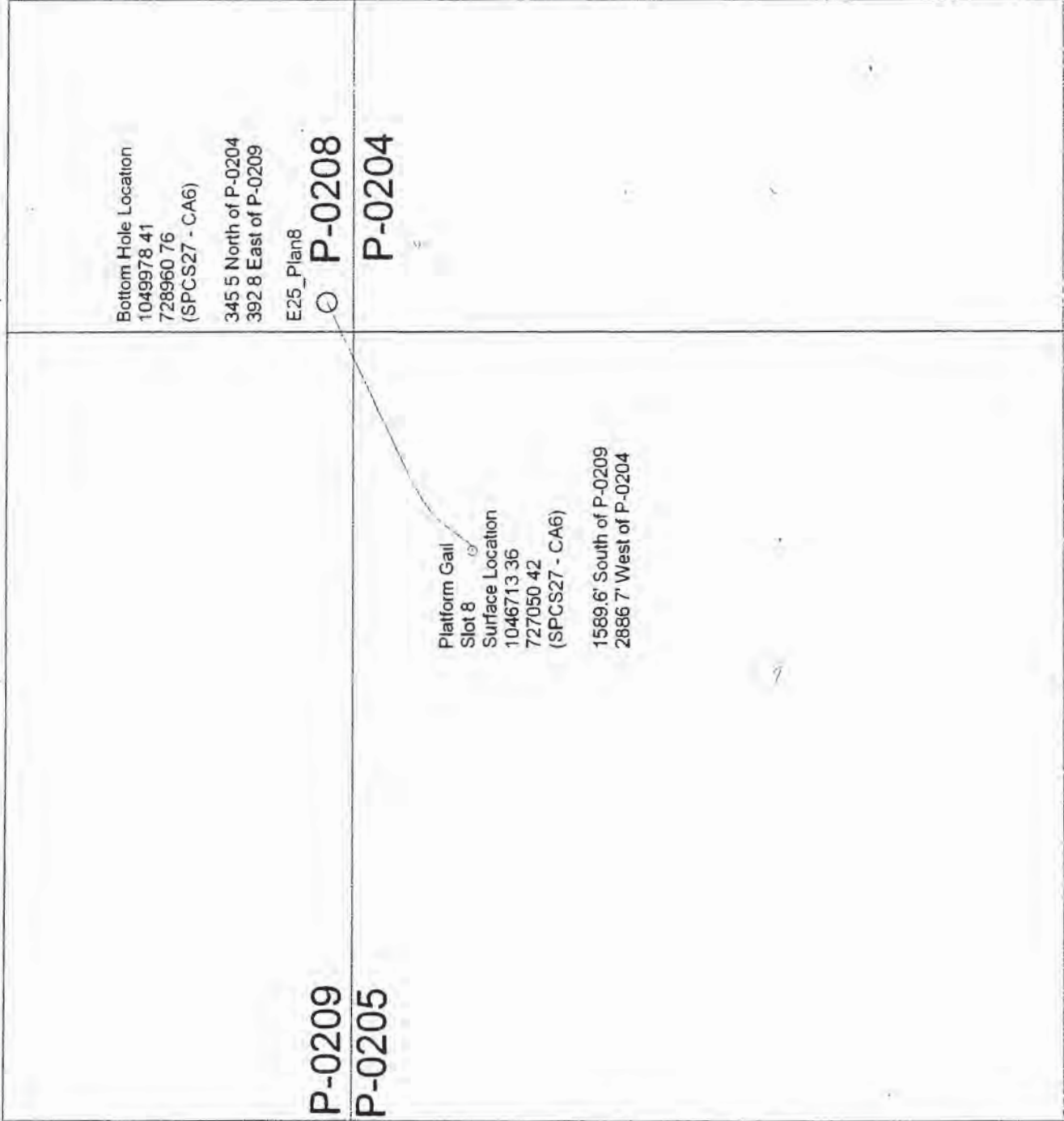


SOCKEYE FIELD

1 of 12 Pages 2 of 12 Pages 1 of 12 Pages 1 of 12 Pages

1 inch = 2200 feet

Date: 11/14/2017 File: Sockeye Field



	<u>SOCKEYE FIELD</u>
Title: E25_Plan8 (see title block)	
1 inch = 2200 feet	
Date: 11 March 2010	Geodetic: NAD83

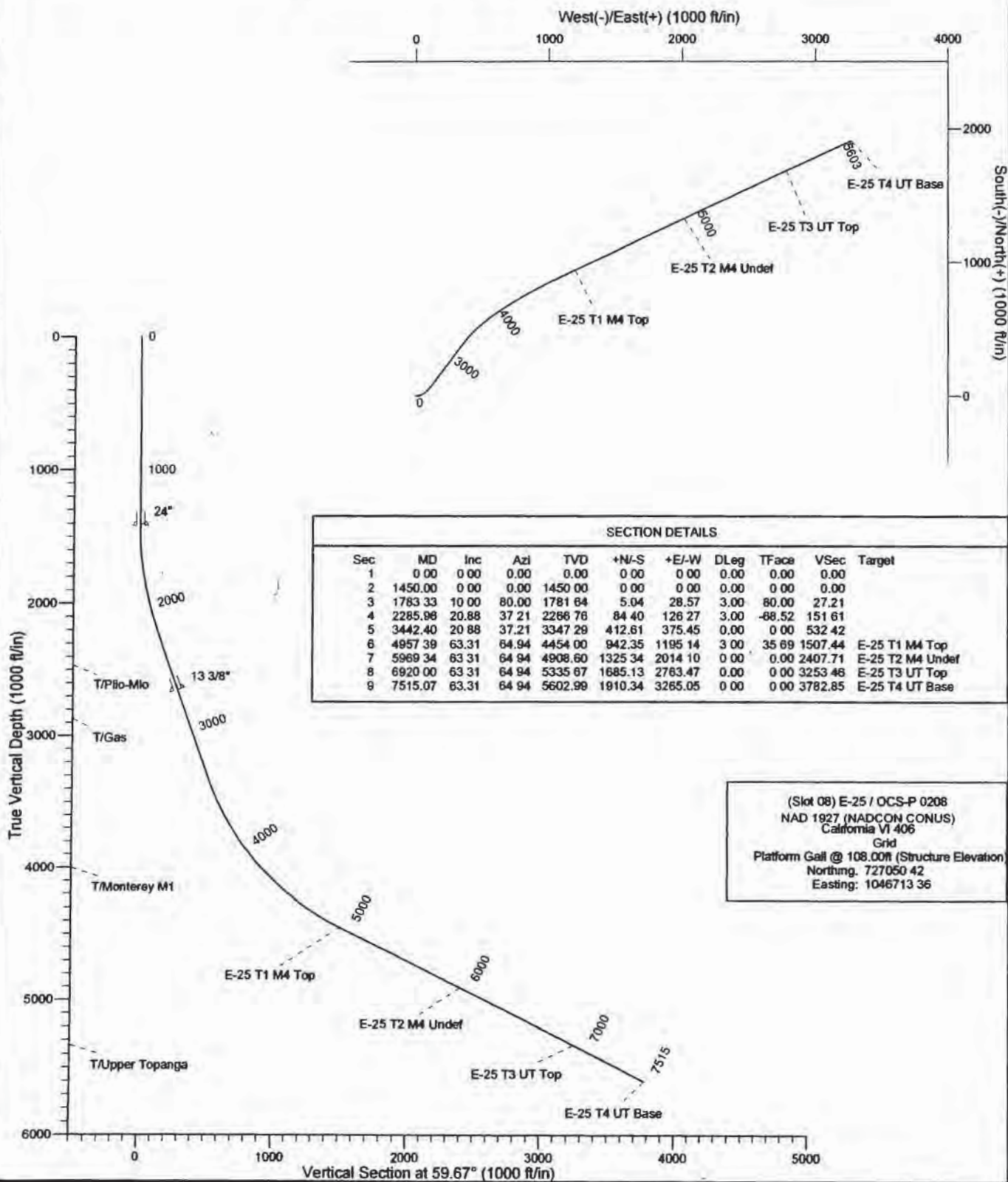


Azimuths to Gnd North
True North 1 73°
Magnetic North 14 82°
Magnetic Field
Strength: 47536 7nT
Dip Angle: 58 72°
Date 3/12/2009
Model IGRF200510

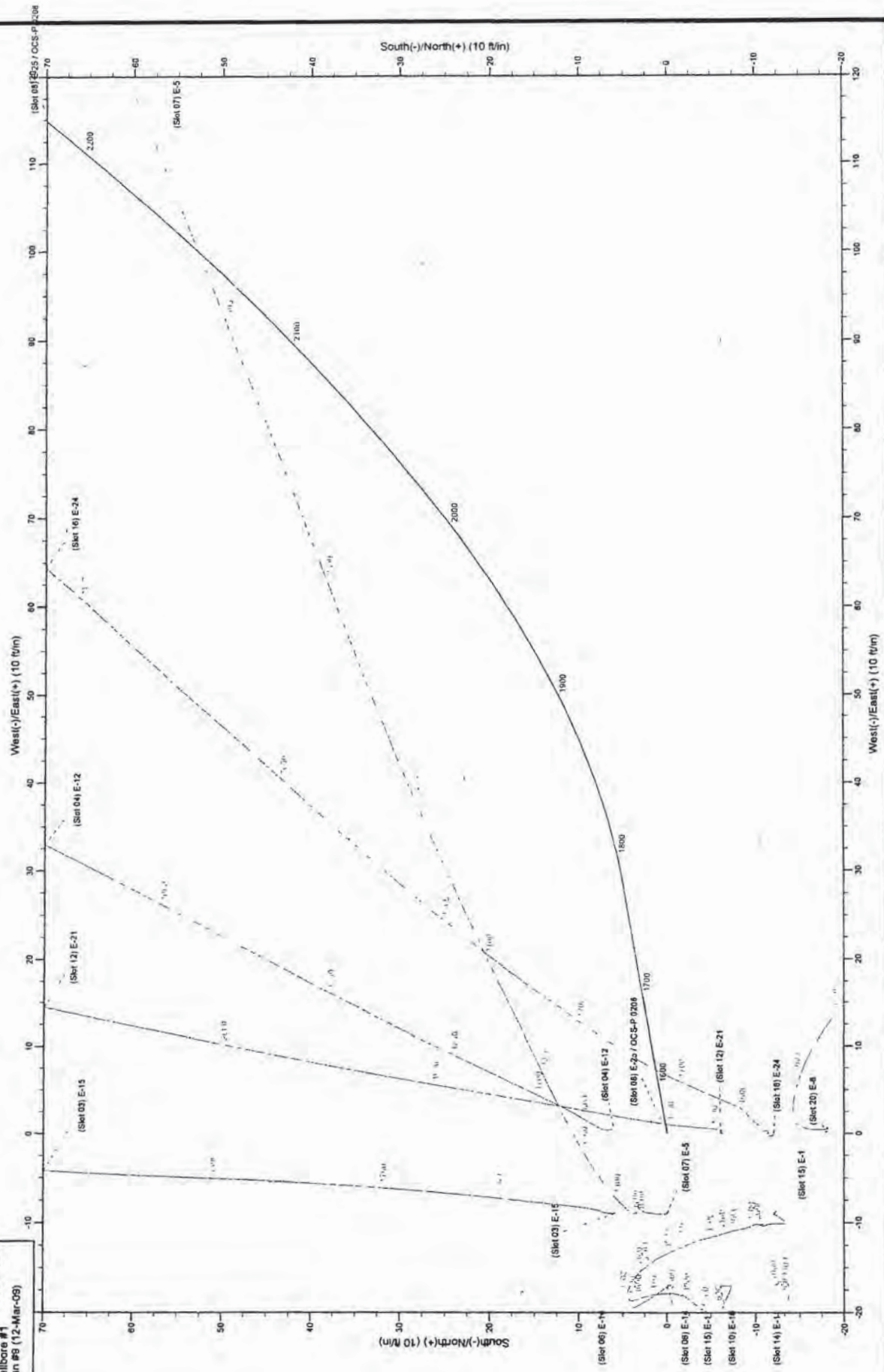
Venoco Inc.

Project: Platform Gail
Site: Block # 47N 60W
Well: (Slot 08) E-25 / OCS-P 0208
Wellbore: Wellbore #1
Design: Plan #9 (12-Mar-09)

HALLIBURTON
Sperry Drilling Services



Project Platform Gail
 Site Block # 47N 60W
 Well (Slot 08) E-25 / OCS-P 0208
 Wellbore Wellbore #1
 Design Plan #5 (12-Mar-09)



Venoco Inc.

Platform Gail

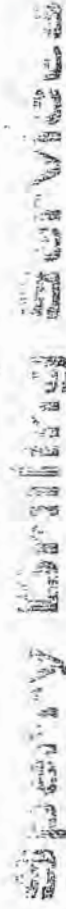
Block # 47N 60W

(Slot 08) E-25 / OCS-P 0208

Wellbore #1

Plan: Plan #9 (12-Mar-09)

Job No. Plan #9 (12-Mar-08)



Combo Report

12 March, 2009

Well Coordinates 727,050.42 N, 1,046,713.36 E (34° 07' 30.90" N, 119° 24' 00.05" W)
Water Depth 739.00 ft

Local Coordinate Origin
Viewing Datum
TVDs to System
North Reference
Unit System

Centered on Well (Slot 08) E-25 / OCS-P 0208
Platform Gail @ 108.00ft (Structure Elevation)
N
Grid
API - US Survey Feet

Version 2003.14 Build 82

HALBITSON

Plan Report for (Slot 08) E-25 / OCS-P 0208 - Plan #9 (12-Mar-09)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	108.00	0.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
100.00	0.00	0.00	8.00	100.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
200.00	0.00	0.00	-92.00	200.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
300.00	0.00	0.00	-192.00	300.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
400.00	0.00	0.00	-292.00	400.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
500.00	0.00	0.00	-392.00	500.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
600.00	0.00	0.00	-492.00	600.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
700.00	0.00	0.00	-592.00	700.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
800.00	0.00	0.00	-692.00	800.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
900.00	0.00	0.00	-792.00	900.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
1,000.00	0.00	0.00	-892.00	1,000.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
1,100.00	0.00	0.00	-992.00	1,100.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
1,200.00	0.00	0.00	-1,092.00	1,200.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
1,300.00	0.00	0.00	-1,192.00	1,300.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
1,400.00	0.00	0.00	-1,292.00	1,400.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	
1,415.00	0.00	0.00	-1,307.00	1,415.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	24"
1,450.00	0.00	0.00	-1,342.00	1,450.00	0.00 N	0.00 E	727,050.42	1,046,713.36	0.00	0.00	Start Build 3 00
1,500.00	1.50	80.00	-1,381.89	1,499.99	0.11 N	0.54 E	727,050.53	1,046,714.00	3.00	0.61	
1,600.00	4.50	80.00	-1,491.85	1,599.95	1.02 N	5.80 E	727,051.44	1,046,719.16	3.00	5.52	
1,700.00	7.50	80.00	-1,581.29	1,699.29	2.84 N	16.09 E	727,053.26	1,046,729.45	3.00	15.32	
1,783.33	10.00	80.00	-1,673.64	1,781.64	5.04 N	28.57 E	727,055.46	1,046,741.93	3.00	27.21	Start DLS 3 00 TFO -68 52
1,800.00	10.19	77.37	-1,690.05	1,798.05	5.61 N	31.44 E	727,056.03	1,046,744.80	3.00	29.97	
1,900.00	11.74	63.78	-1,788.24	1,896.24	12.04 N	49.20 E	727,062.46	1,046,762.56	3.00	49.55	
2,000.00	13.77	53.72	-1,885.78	1,993.78	23.58 N	67.92 E	727,074.00	1,046,781.28	3.00	70.53	
2,100.00	16.09	46.36	-1,962.41	2,090.41	40.19 N	87.55 E	727,090.61	1,046,800.81	3.00	95.86	
2,200.00	18.61	40.87	-2,077.85	2,185.85	61.82 N	108.03 E	727,112.24	1,046,821.39	3.00	124.46	
2,285.96	20.88	37.21	-2,156.78	2,266.78	84.40 N	126.27 E	727,134.82	1,046,839.63	3.00	151.61	Start 1156 43 hold at 2285 96 MD
2,300.00	20.88	37.21	-2,171.88	2,279.88	88.38 N	129.29 E	727,138.80	1,046,842.65	0.00	155.23	
2,400.00	20.88	37.21	-2,265.31	2,373.31	116.77 N	150.84 E	727,167.19	1,046,864.20	0.00	189.16	
2,500.00	20.88	37.21	-2,358.75	2,466.75	145.15 N	172.39 E	727,195.57	1,046,885.75	0.00	222.09	T/Pio-Mio
2,600.00	20.88	37.21	-2,452.18	2,560.18	173.53 N	193.93 E	727,223.95	1,046,907.29	0.00	255.02	
2,700.00	20.88	37.21	-2,545.62	2,653.62	201.91 N	215.48 E	727,252.33	1,046,928.84	0.00	287.95	13 3/8"
2,800.00	20.88	37.21	-2,639.06	2,747.06	230.29 N	237.03 E	727,280.71	1,046,950.39	0.00	320.88	
2,900.00	20.88	37.21	-2,732.49	2,840.49	258.67 N	258.57 E	727,309.09	1,046,971.83	0.00	353.81	
2,930.00	20.88	37.21	-2,760.52	2,868.52	267.18 N	265.04 E	727,317.60	1,046,978.40	0.00	363.69	T/Gas
3,000.00	20.88	37.21	-2,825.93	2,933.93	287.05 N	280.12 E	727,337.47	1,046,993.48	0.00	386.74	
3,100.00	20.88	37.21	-2,919.36	3,027.36	315.43 N	301.67 E	727,365.85	1,047,015.03	0.00	419.67	
3,200.00	20.88	37.21	-3,012.80	3,120.80	343.81 N	323.22 E	727,394.23	1,047,036.58	0.00	452.60	
3,300.00	20.88	37.21	-3,106.24	3,214.24	372.19 N	344.76 E	727,422.61	1,047,058.12	0.00	485.53	
3,400.00	20.88	37.21	-3,199.67	3,307.67	400.57 N	366.31 E	727,450.99	1,047,079.67	0.00	518.46	

PLAN REPORT

Plan Report for (Slot 08) E-25 / OCS-P 0208 - Plan #9 (12-Mar-09)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
3,442.40	20.88	37.21	-3,239.29	3,347.29	412.61 N	375.45 E	727,463.03	1,047,088.81	0.00	532.42	Start DLS 3.00 TFO 35.68
3,500.00	22.30	39.86	-3,292.85	3,400.15	429.17 N	388.66 E	727,479.59	1,047,102.02	3.00	552.19	
3,600.00	24.86	43.77	-3,384.49	3,492.49	458.92 N	415.37 E	727,509.34	1,047,128.73	3.00	590.27	
3,700.00	27.51	46.99	-3,474.23	3,582.23	489.86 N	446.80 E	727,540.28	1,047,160.16	3.00	633.02	
3,800.00	30.21	49.67	-3,561.80	3,669.80	521.91 N	482.88 E	727,572.33	1,047,186.24	3.00	680.34	
3,900.00	32.97	51.94	-3,646.86	3,754.98	554.97 N	523.49 E	727,605.39	1,047,236.85	3.00	732.10	
4,000.00	35.76	53.91	-3,729.52	3,837.52	588.96 N	568.53 E	727,639.38	1,047,281.89	3.00	788.14	
4,100.00	38.57	55.62	-3,809.21	3,917.21	623.79 N	617.88 E	727,674.21	1,047,331.24	3.00	848.32	
4,200.00	41.41	57.13	-3,885.82	3,993.82	659.35 N	671.40 E	727,709.77	1,047,384.76	3.00	812.47	
4,210.00	41.70	57.27	-3,893.30	4,001.30	662.95 N	676.88 E	727,713.37	1,047,380.34	3.00	819.10	T/Monterey M1
4,300.00	44.27	58.48	-3,959.14	4,067.14	695.56 N	728.94 E	727,745.98	1,047,442.30	3.00	980.42	
4,400.00	47.14	59.70	-4,028.97	4,136.97	732.31 N	790.35 E	727,782.73	1,047,503.71	3.00	1,051.98	
4,500.00	50.02	50.81	-4,095.12	4,203.12	769.49 N	855.45 E	727,819.91	1,047,568.81	3.00	1,126.95	
4,600.00	52.91	61.83	-4,157.41	4,265.41	807.02 N	924.07 E	727,857.44	1,047,637.43	3.00	1,205.13	
4,700.00	55.81	62.77	-4,215.67	4,323.67	844.79 N	996.03 E	727,895.21	1,047,709.39	3.00	1,286.31	
4,800.00	58.72	63.65	-4,269.74	4,377.74	882.88 N	1,071.11 E	727,933.10	1,047,784.47	3.00	1,370.25	
4,900.00	61.63	64.48	-4,319.47	4,427.47	920.81 N	1,148.13 E	727,971.03	1,047,862.49	3.00	1,456.74	Start 1011.95 hold at 4957.39 MD - E-25
4,957.39	63.31	64.84	-4,346.00	4,454.00	942.35 N	1,185.14 E	727,992.77	1,047,808.50	3.00	1,507.44	T1 M4 Top
5,000.00	63.31	64.94	-4,365.14	4,473.14	958.48 N	1,228.62 E	728,008.80	1,047,942.88	0.00	1,545.34	
5,100.00	63.31	64.94	-4,410.07	4,518.07	996.32 N	1,310.55 E	728,046.74	1,048,023.91	0.00	1,634.31	
5,200.00	63.31	64.94	-4,454.99	4,562.99	1,034.17 N	1,391.48 E	728,084.59	1,048,104.84	0.00	1,723.27	
5,300.00	63.31	64.94	-4,499.91	4,607.91	1,072.02 N	1,472.41 E	728,122.44	1,048,185.77	0.00	1,812.24	
5,400.00	63.31	64.94	-4,544.83	4,652.83	1,109.86 N	1,553.34 E	728,160.28	1,048,266.70	0.00	1,901.20	
5,500.00	63.31	64.94	-4,589.76	4,697.76	1,147.71 N	1,634.27 E	728,198.13	1,048,347.63	0.00	1,980.16	
5,600.00	63.31	64.84	-4,634.68	4,742.68	1,185.56 N	1,715.20 E	728,235.98	1,048,428.56	0.00	2,079.13	
5,700.00	63.31	64.94	-4,679.60	4,787.60	1,223.40 N	1,796.13 E	728,273.82	1,048,509.49	0.00	2,168.09	
5,800.00	63.31	64.94	-4,724.53	4,832.53	1,261.25 N	1,877.06 E	728,311.67	1,048,590.42	0.00	2,257.06	
5,900.00	63.31	64.84	-4,769.45	4,877.45	1,299.09 N	1,957.98 E	728,349.51	1,048,671.35	0.00	2,346.02	
5,988.34	63.31	64.94	-4,800.60	4,908.60	1,325.34 N	2,014.10 E	728,375.76	1,048,727.46	0.00	2,407.71	Start 950.67 hold at 5969.34 MD - E-25
6,000.00	63.31	64.84	-4,814.37	4,922.37	1,336.84 N	2,038.91 E	728,387.36	1,048,752.27	0.00	2,434.98	T2 M4 Under
6,100.00	63.31	64.94	-4,859.30	4,967.30	1,374.79 N	2,119.84 E	728,425.21	1,048,833.20	0.00	2,523.95	
6,200.00	63.31	64.94	-4,904.22	5,012.22	1,412.64 N	2,200.77 E	728,463.06	1,048,914.13	0.00	2,612.91	
6,300.00	63.31	64.94	-4,949.14	5,057.14	1,450.48 N	2,281.70 E	728,500.90	1,048,995.06	0.00	2,701.88	
6,400.00	63.31	64.94	-4,994.07	5,102.07	1,488.33 N	2,362.63 E	728,538.75	1,049,075.99	0.00	2,790.84	
6,500.00	63.31	64.94	-5,038.98	5,146.98	1,526.18 N	2,443.56 E	728,576.60	1,049,156.92	0.00	2,879.80	
6,600.00	63.31	64.94	-5,083.91	5,191.91	1,564.02 N	2,524.49 E	728,614.44	1,049,237.85	0.00	2,968.77	
6,700.00	63.31	64.94	-5,128.84	5,236.84	1,601.87 N	2,605.42 E	728,652.29	1,049,318.78	0.00	3,057.73	

WALLISBURTON

Plan Report for (Slot 08) E-25 / OCS-P 0208 - Plan #9 (12-Mar-09)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
6,800.00	63.31	64.94	-5,173.76	5,281.76	1,639.72 N	2,686.35 E	728,690.14	1,049,388.71	0.00	3,146.70	
6,900.00	63.31	64.94	-5,216.68	5,326.68	1,677.56 N	2,767.28 E	728,727.98	1,049,480.64	0.00	3,235.66	
6,920.00	63.31	64.94	-5,227.67	5,335.67	1,685.13 N	2,783.47 E	728,735.55	1,049,486.83	0.00	3,253.46	Start 595.06 hold at 6920.00 MD - T/Upper Topanga - E-25 T3 UT Top
7,000.00	63.31	64.94	-5,263.61	5,371.61	1,715.41 N	2,848.21 E	728,765.83	1,049,561.57	0.00	3,324.62	
7,100.00	63.31	64.94	-5,308.53	5,416.53	1,753.25 N	2,929.14 E	728,803.67	1,049,642.50	0.00	3,413.59	
7,200.00	63.31	64.94	-5,353.45	5,461.45	1,791.10 N	3,010.07 E	728,841.52	1,048,723.43	0.00	3,502.55	
7,300.00	63.31	64.94	-5,398.38	5,506.38	1,828.94 N	3,091.00 E	728,878.36	1,049,804.36	0.00	3,581.52	
7,400.00	63.31	64.94	-5,443.30	5,551.30	1,866.79 N	3,171.93 E	728,917.21	1,049,885.29	0.00	3,680.48	
7,500.00	63.31	64.94	-5,488.22	5,596.22	1,904.64 N	3,252.86 E	728,955.06	1,049,966.22	0.00	3,769.45	
7,515.07	63.31	64.94	-5,494.99	5,602.99	1,910.34 N	3,265.05 E	728,960.76	1,049,978.41	0.00	3,782.85	TD at 7515.07 - E-25 T4 UT Base

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
1,450.00	1,450.00	0.00	0.00	Start Build 3.00
1,783.33	1,781.64	5.04	28.57	Start DLS 3.00 TFO -88.52
2,285.96	2,266.76	84.40	126.27	Start 1156.43 hold at 2285.86 MD
3,442.40	3,347.29	412.61	375.45	Start DLS 3.00 TFO 35.69
4,957.39	4,454.00	942.35	1,195.14	Start 1011.95 hold at 4957.39 MD
5,969.34	4,808.60	1,325.34	2,014.10	Start 950.67 hold at 5969.34 MD
6,920.00	5,335.67	1,685.13	2,783.47	Start 595.06 hold at 6920.00 MD
7,515.07	5,602.99	1,910.34	3,265.05	TD at 7515.07

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	59.67	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Plan #9 (12-Mar-09)	Survey/Plan	Survey Tool
0.00	7,515.07	Plan #9 (12-Mar-09)		MWD Magnetic

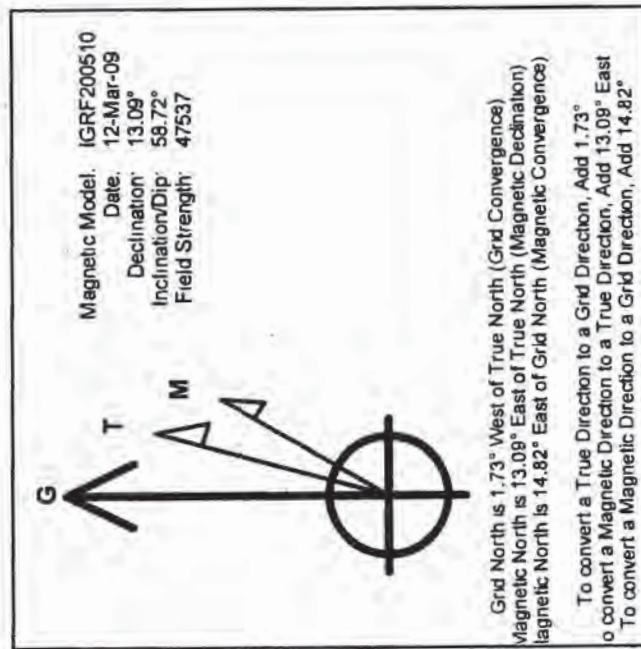
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WALLBURY

North Reference Sheet for Block # 47N 60W - (Slot 08) E-25 / OCS-P 0208 - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.
Vertical Depths are relative to Platform Gail @ 108 00ft (Structure Elevation). Northing and Easting are relative to (Slot 08) E-25 / OCS-P 0208.
Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866.
Projection method is Lambert Conformal Conic (2 parallel).
Central Meridian is -116 2500000", Longitude Origin 0 0000000", Latitude Origin 33 8833333".
False Easting 2,000,000 00ft, False Northing 0 00ft, Scale Reduction 1 00004937.
Grid Coordinates of Well 727,050 42 ft N, 1,046,713.36 ft E.
Geographical Coordinates of Well 34° 07' 30 90" N, 119° 24' 00 05" W.
Grid Convergence at Surface is -1 73°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 7,515 07ft the Bottom Hole Displacement is 3,782.85ft in the Direction of 59.67° (Grid).
Magnetic Convergence at surface is -14.82° (12 March 2009, IGRF200510).



VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-25 NEW INFILL WELL DRILLING PROGRAM
API# 04-311- 20xxx00
LEASE OCS-P-0208

March 9, 2009

Attachment to MMS Permit - Drilling Program

Objective: Objective: Development Well: E-25 will be drilled to the northeast flank of the structure. It will be a dual completion well with production from the short string in the Monterey Formation and injection into the long-string in the Upper Topanga Formation.

Surface Location: OCS-P-205 - Slot No. 8 (X= 1,046,713.36' & Y= 727,050.42')

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Proposed TD: OCS-P-208 7515' MD/ 5603' TVD/ -5495' SS

TD Location: 1910.34' N and 3265.05' E or (X = 1,049,978.41' and Y = 728,960.76')

Markers:	MD	TVD	VSS	Press	EMW	Comments
13 3/8" Casing	2700	2654	-2546			
T/ Pico (1 st Gas)	2930	2869	-2761	1250	8.4	Estimated BHP
T/ Monterey M1	4210	4001	-3893	1747	8.4	Estimated BHP
Monterey M4	4957	4454	-4346	1800	7.8	+/- 200 psi
T/ Upper Topanga	6920	5336	-5228	1300	4.7	+/- 200 psi
TD	7515	5603	-5495			

<u>Proposed Casing:</u>	<u>MD</u>	<u>TVD</u>
24", 186/156#, X-56, Dril-Quip S-60	1400'	1400'
13 3/8", 61/68#, K-55, Buttress	2700'	2654'
9 5/8", 43.5#, L-80, LT&C/Hydriil 563	7515'	5603'

RIG-UP AND PRE-SPUD

- Position a Baker tank on the Drill Deck to be used for pre-hydrated gel storage. Refer to Thomas & Beers layout drawing before setting tank. **Confirm location and mark area clearly on deck due to lower strength inner beams.**
- The FMC Sliplock starting wellhead will be installed after cementing. Ensure that the FMC provide cutting tools can be located for use in cutting the 24" before the 24" casing is run.
- The cuttings pile should be inspected and arrangements made with Production Operations to ensure pile is clean and ready for high volume discharge.
- MI-Swaco to install rental solids control components and install the additional augers, as required for carrying the cuttings to the end of the pits for haul –off.
- An inventory of the rig's 5" drill pipe pup joints should be made. Additional pups should be ordered to use for space out during the stab-in cement job.
- Rig up a casing fill-up line on the rig floor.
- Have sufficient 5" heavy weight and 1000' of 5" drill pipe picked up for stab in job..
- Following is a guide in confirming adequate water deliverability: The 2nd Fire Water pump should be available and the delivery rate of seawater measured. Production will review and allow use of diesel firewater pump that can put out 2500 gpm (60 bpm). The electric pumps can put out 1500 gpm (~ 36 bpm) but have had poor run time. Need to test delivery rate to confirm flow rate for 26" hole.
- Use Baker Tank for gel as well as suction pit, keeping shaker pit for sea water reservoir and pill pit for Durogel sweeps while drilling. This will provide adequate gel to spot in the open hole before pulling out for casing.
- Top off water legs on the Platform.
- 24" circulating sub for 24" casing to be cleaned and inspected by Pacific Inspection and on board.
- Rudy's Oilfield Welding Service to make centralizer lugs for 24" casing at 15' level & wellhead level and pollution cap for wellhead deck. – these will be installed after the conductor is installed – this was done on both E-23 and E-24.
- Confirm Station Bills reflect Safe Briefing Areas and the areas are ready for use. Hold safety meetings to document drills.
- Skid the drilling rig over slot # 8.
- Make up 26" bit stand of 8" DC's and 5" heavyweight drill pipe and make a run through the guide rings to the mud line to check for obstructions and/or junk. Record the mudline depth.
Note: If problems with the guide rings arise, have Divecon (805-488-6428) or HDI (805-339-9259) on hook, located in Oxnard, and available to dispatch a boat equipped with an ROV.
- 21 1/4" annular and the 13 5/8" BOPE should have been serviced and stump tested prior to start up. Service control panels and accumulator.
- Offload all conductor equipment and prep the deck for the equipment necessary for the 26" hole section.
- Bring the 24" structural pipe onboard. The 40' shoe joint and 60' .625" wall pipe should be in position to be run first.
- Confirm racking layout with 60'/40' joints. Inspect and remove tubing racking board or any other obstructions. Pick-up 60' joint prior to spudding for practice.

- The 24" structural pipe should be measured and the protectors should be removed from the box end. The pin protectors should be loosened, but not removed. Both the box and pin ends have been cleaned and coated with API modified thread compound and new O ring installed while at Pacific Inspection's yard.
- Confirm all measurements to decks from rig floor. Confirm height for starting head, well head stack-up height and riser spools for each hole section.
- Pump the required cement into the Dowell silos and spot liquid additives.
- Refer to Thomas & Beers layout drawing before setting cement storage silo/pods.
- The MMS permit requires 550 sacks of barite on board at all times. Order in sacks. Cover and use for emergency only. If barite unused return to MI for credit.
- Plumb the Baker tank to receive pre-hydrated gel from the active pits via a gun line, and return fluid to the pill pit via a 5X6 centrifugal pump provided by the rig.
- The following is recommended rig up - if not already in place - change the 4" suction line from tanks 3, 4, and 5 to 6" (or larger), and combine the two original charge pump suctions into a common header. This will allow both charge pumps to function on all the pits. Centrifugal to be tied into gun line in shaker pit to keep solids from settling.
- Mix and fill the Baker tank with pre-hydrated gel. Pre-hydrate with fresh water in pits and ship the shaker tank to Baker Tank, leaving suction pit with gel.
- Fill the shaker pit with seawater. Mix Durogel sweep material in pill pit for sweeps (need total of 600 bbls of Durogel sweeps for drilling riserless section). Notify the Production Control desk that this hole section will require a large volume of both seawater and fresh water
- Rudy's Oilfield Welding Service will install the floor braces for the diverter line, and cut the necessary holes in the end of the main rig support beams. Rig up diverter lines and confirm that lines extend far enough to keep them liquid from hitting lower deck.
- Dril-Quip man should be lined up for 24" casing job in advance (travel from Houston).
- Confirm additional spare O-rings and anti-rotation keys are available -have Dril Quip man bring extras if needed..
- Obtain Halliburton 4.44" rubber cement wiper balls for stab-in job.
- Calculate approximate cut-off point of the wellhead joint and grind seam weld off of 24" casing to allow cutter and slip-lok starting wellhead to function – this should be done on the deck prior to spud.
- Post a copy of the MMS permit in the rig floor doghouse.
- Ensure that the board in the rig floor dog house and the IADC report correctly denote the well, API number, etc.
- Review NPDES requirements and MMS Regulations. Cuttings and Mud for Riserless hole section need to be recorded/reported.

26" HOLE SECTION

1. Before spud of the well:

- A) Confirm that drill pipe is already picked up in the derrick for 24" cement job and the stab-in equipment is ready;
- B) The 24" casing should all be on the deck, strapped, numbered and ready to run;
- C) The casing equipment should be verified and organized so that it can be rigged up efficiently;
- D) The 24" circulating head should be on location and fit tested to spare joint of 24"
- E) The equipment and handling tools to run the inner string should be verified and ready, and
- F) Cement and liquid additives are on board for cement job.
- G) Equipment for maximum flow of water into the suction pit required during this hole section.
- H) That wells in the table below are properly secured and/or bled down.

Prior to drilling the 26" hole the following wells will be prepared as follows:

E-5	No Flow ESP	Shut down power and bleed down if needed
E-21	Dual Injector	Shut-in short string injection and allow pressure to fall off, bleed annulus off, long string currently shut-in from injection and should be bled off
E-12	Dual Producer	Short string is currently shut-in, bleed short string and annulus off, shut-in and bleed down long string tubing and gas lift side string. Well is not capable of flowing without gas-lift gas.
E-15	No Flow ESP	Shut down power and bleed down if needed
E-1	Gas Injector	No Action this hole section
E-24	Dual Producer	No Action this hole section

NOTE: Wells to be brought back on when bit reaches +/- 1420' – 24" casing point.

M/U 26" bit and BHA #1 with MWD as per Sperry Halliburton (confirm 30" UR on location). Bit should be jetted to provide good hydraulics at expected flow rate. All equipment run through guide rings should be tapered top and bottom. **Use caution while tripping the bit through the 11 guide rings from the water line to the mud line. Note: See Guide Bucket depths on schematic. Last guide bucket 2' below original mud line. Mud line at 847' from Kenai #2 rig floor with 108' KB. Be cautious if mud line is tagged high as this will increase the distance between mud line and last guide bucket.**

2. Drill a riserless 26" hole from the ocean floor to +/- 1410' (573' penetration) utilizing both pumps at 900-950 gpm and minimum weight on bit. Hole should be drilled at 75 to 100 fph rate unless WOB indicates rock is firm. Pump Durogel sweeps prior to each connection out of the pill pit timed to be in open hole when connection is made. Drill the hole to fit the pipe plus 20' of rat hole (this was done on both E-23 and E-24). A vertical hole within 3' radius is to be maintained. Run a drift shot with MWD after passing through the last guide funnel before commencing to drill the surface hole to ensure the drill pipe did not get outside the guide buckets. Make drift checks every connection with MWD to ensure straight hole. Calculate worst case cumulative drift.
- Review NPDES and perform all required sampling, testing and monitoring. Fill out discharge sheet daily. Mud volumes and cuttings must be accounted for and reported while drilling the riserless hole section. Report any spills immediately.

3. Circulate hole clean to mud line with seawater/50 bbl sweep at as high a rate as possible. Spot a 100+ viscosity pre-hydrated gel pill across the open hole. Assume 32" hole with washout (600 bbls). Note: Wells that successfully got pipe to bottom (no washing down casing) did so by minimizing the time from reaching TD to getting casing on bottom (no wiper trip), as well as minimizing the amount of time to drill the hole.
 - NOTE: Baker has an 18-1/2" body X 30" under reamer prepped as a contingency. This decision will be made based on hole conditions, drilling time, etc.
 - If the under reamer is run, make sure the under reamer is below the bottom guide ring (+/- 850') before starting the pumps and opening the arms. Use the same practices as when drilling the 26" hole. After the hole has been opened to 30" and the gel pill spotted across the open hole, pull out of the hole. Ensure that the arms have closed before attempting to pull through the guide rings.
4. POH. Do not lay down equipment to minimize time spent out of hole – 30' pendulum assembly should allow this.. Rack the BHA on the opposite side from the drill pipe. After drilling, there should be +/- 1450' of drill pipe total in the derrick to use for the cement job plus pup joints to allow space out. LD stabs and bit after running 24" casing.
5. Run 24" casing with Dril-Quip Representative on location:
 - a. Casing below mudline can be .625 wall thickness, all pipe above 950' and through and above the mudline to be .75" wall thickness – see conductor detail schematic in program.
 - b. Rig up Weatherford Baash-Ross spider bowl and hand slips, 250 ton side door elevator, power tong, and bull back-up tong. Consider having back up 500 ton elevators on location.
 - c. R/U casing fill-up line. Be ready to wash down casing if necessary – 24" circulating swage is required. Test fit head prior to spud well.
 - d. P/U 41' joint with float shoe installed.
 - e. P/U joint #2. No centralizers will be run.
 - Install anti-rotation keys two per joint.
 - If required use Threadlock but only per Dril-Quip instructions. Pump through these joints to check the floats in the shoe. Floor is 50 psi (107') above sea level.
 - This is Range 3+ (~60' each) .625" wall X-56 casing with Dril-Quip S-60 connections. These connections require 30,000 ft/lb. torque and only make up 5/8 of a turn. It is suggested that a chalk line be made across each connection to monitor the 5/8 turn.
 - Use the crane to tail each joint to the rig floor. Do not let the pin protector hit the catwalk, or the rig floor.
 - f. Continue running 60 ft x .625 wall pipe to space out below the mud line. Fill joints with calculated amount of seawater.
 - g. Run range 3 (~40' each) 75" wall X-56 casing with Dril-Quip S-60 connections. Do not fill joints #xx & #xx. The 24" casing will be landed below the rig floor and need volume to dump cement and clean drill pipe during stab in cement job.
 - h. P/U splash zone joint #xx that is coated with thick application of Carboline 1207. This joint is designed to be run in the tide / wave area. There is not a back up splash zone joint. The slips and tong areas above the pin and below the box are coated with primer only. Do not fill this joint.
 - i. P/U wellhead joint # xx. This joint is coated with white System IV to prevent corrosion. Do not fill this joint. There is a back-up coated wellhead joint in the event it is needed.
 - j. Calculate approximate cut-off point of the wellhead joint and grind seam weld off of 24"

casing to allow cutter and slip-lok starting wellhead to function – this should be done on the deck prior to spud.

- k. Land the casing with splash zone joint positioned +/- midway at MLLW. Do not fill these joints.
6. P/U Weatherford slotted base plate designed to function on top of the 24" with 5" bowl and slips.
7. M/U Gemoco stab-in cement stinger on 5" drill pipe. Check the O-ring seals on the stinger. A set of spare rings to be sent with the stinger.
8. TIH with the stinger on 5" drill pipe. Place centralizers on the bottom joint and the third joint across a stop collar. Space out the drill pipe with pup joints to get as close to the rig floor as possible. Strap pipe to ensure accuracy.
9. Stab into the shoe and slack off DP weight (keep elevators on DP). Note: This shoe is beveled inside to guide the stinger into the seal area. Rig up Dowell cement line with enough slack to unsting from the shoe to dump cement on top of float shoe at end of job.
10. Pump 200+ bbl of seawater at a high rate to clean the annulus and verify the stinger is in place. The fracture gradient is very low (65 psi surface pressure over seawater) and ensure there is enough DP weight to prevent hydraulic lifting of the cement string.
11. Cement the 24" structural pipe as per the attached cementing program (use 32" hole for volume calculation and no OHE), bringing the cement back to the ocean floor. Displace cement from unit with enough seawater to leave 20 bbls in drill string (total drill string volume +/- 25 bbls - need good cement line volume). Pick up quickly to unsting from stab-in shoe and dump cement inside 24" casing on top of shoe. Top of cement +/- 40' above the shoe. Break off cement line.
12. Pull out of the hole with one stand. Pump a 4.44" wiper ball (from Halliburton) through the drill pipe with 26 bbls of seawater to clear any residual cement from the string. POH and lay down excess drill pipe (last +/- 1000').
13. Wait on cement until the cement develops 500 psi compressive strength, based on the Schlumberger cement lab test. P/U pipe to check cement bond. If the pipe is supported by the cement, continue with the following operations. If the pipe slips in the rathole, wait on cement an additional 4 hours, repeat tests before releasing casing.
14. Once 24" conductor is fully supported by cement, rig up casing cutter. Cut casing at +/- 63" above the wellhead deck. NOTE: FMC to confirm measurements to provide for tubing head flange to be at the mezzanine grating with hold downs accessible but directly below the mezzanine. Lay down cut-off and landing joint. Lay down the 26" stabilizers and pick up the 17-1/2" stabilizers. Check measurements – valve and bull plug may need to be removed from starting head before lowering into place.
15. Nipple up and pressure test the diverter riser assembly as follows (confirm measurements):
 - a. 20-3/4" 3M X 21-1/4" 2M DSA.
 - b. 6' X 21-1/4" 2M X 21-1/4" 2M spool.

- c. 20' X 21-1/4" 2M X 21-1/4" 2M spool.
- d. 2' X 21-1/4" 2M X 21-1/4" 2M diverter spool.
- e. 4.375' X 21-1/4" 2M Hydril.
- f. Bell nipple.
- Install the diverter lines as per the attached schematic. The final adjustments on the diverter line stands will be made at this time.
- Rudy Welding to fabricate the drill deck pollution cap to fit around the 24" conductor. After it has been installed, the remaining gaps should be filled with foam to form a water-tight barrier. Rudy Welding will fabricate and install split rings to stabilize the 24" in the guide ring at the wellhead deck and the +15 deck.
- **DEPARTURE FROM PREVIOUS DIVERTER INSTALLATIONS:** In lieu of 8" hydraulically controlled ball valves on the outboard valve locations Venoco propose to use 9" hydraulically controlled single gate shear rams installed with straight through flowpath. The main valve located at the Tee under the annular will be an 8" ball valve as in previous installations.
- **DIVERTER TESTING:** Follow specific MMS regulations for pressure testing, flow testing of vent lines and actuation of the diverter system. Diverter to be flow tested at initial installation. Pressure test to 200 psi and within 7 days of previous test if still in use. Actuate once every 24 hrs and alternate stations for actuation and tests. Plan initial pressure test against the casing and cement in the shoe. If casing does not test or if follow up tests are required plan to use FMC supplied test plug.
- All pressure test, flow test, and actuation results shall be recorded in the IADC drillers report.
- Perform diverter drill with each crew on tour while drilling section.

17-1/2" HOLE SECTION

1. Install wear bushing. M/U 17-1/2" bit and Sperry Halliburton recommended directional drilling BHA #2 (steerable assembly with MWD and set-up for gyro survey). Run in the hole and tag top of cement. Note depth. Pressure test, function test and flow test the diverter system per MMS regulations (see below). Pressure test the diverter and casing to 200 psi. Flow test the diverter with seawater. Subsequent flow tests are not required, but actuation test is required daily at alternating stations and pressure test every 7 days at alternating station.
- Run Multi-shot gyro to confirm exact bottom hole location and reduce uncertainty. Keep wireline Gyro Equipment on stand-by during 17 1/2" hole section.
- Carefully review anti-collision plots and contingency plans. 1 spider wall map scaled to 1" = 5 ft and 1" = 25' should be provided
- Directional drill as per the attached directional drilling plan. Gyro surveys will be used to kick off and drill until magnetic interference is not present, follow progress by plot on spider map.

Prior to drilling the 17 1/2" hole the following wells will be prepared as follows:

E-5	No Flow ESP	Shut down power and bleed down if needed
E-21	Dual Injector	Shut-in Injection and allow pressure to fall off, bleed annulus off, long string currently shut-in from injection
E-12	Dual Producer	Short string is currently shut-in, bleed short string and annulus off, shut-in and bleed down long string tubing and gas lift side string. Well is not capable of flowing without gas-lift gas.
E-15	No Flow ESP	Shut down power and bleed down if needed
E-1	Gas Injector	No Action this hole section

E-24	Dual Producer/Injector	Short string is producing Monterey – bleed down short string tubing and gas lift side string. Well is not capable of flowing without gas-lift gas. Long string is injecting into the Lower Topanga – recently started injection - bleed long string and annulus off – well to have 0 psi pressure.
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Directional Proximity Data and Depth for Bring Wells Back On

Minimum Distance for shut in of existing wells

10'	0-1420' (Vertical Section)
20'	1420'-1920' (first 500' below KOP)
30'	1920'-2420'
40'	2420'-2920'
50'	2920'-3420'

Existing Well	Slot	Proximity to E-25 Distance, Feet Center to Center	@ E-25 MD	Shut-in until E-25 reaches
E-5	7	9 16.5 27.7 41.3	1400' 1620' 1720' 1820'	1800'
E-21	12	6.2 9.1 17.7 32.3 49.2	1400' 1620' 1720' 1820' 1920'	1800'
E-12	4	6.9 10.5 18.8 31.8	1400' 1620' 1720' 1820'	1800'
E-15	3	11.7 24.5 38.9	1400' 1620' 1720'	1700'
E-1	15	15 21 32 48	1400' 1620' 1720' 1820'	No Action
E-24	16	10.7 9.6 12.3 21.2 29.6 34.9 37.5 40	1400' 1620' 1720' 1820' 1920' 2020' 2120' 2220'	2200'

- Use spider plot and Sperry anti-collision software program to monitor proximity. Continue to gyro survey until MWD surveys confirm free of interference.

- If casing or diverter does not pressure test, set FMC test plug in wellhead and test diverter system.
 - EPOCH should be on location to calibrate Rig Watch monitoring system.
 - Safety company should be on location to install and calibrate their gas monitors (No H2S in this interval).
 - **DIVERTER TESTING:** Follow specific MMS regulations for pressure testing, flow testing of vent lines and actuation of the diverter system. Diverter to be flow tested at initial installation. Pressure test to 200 psi and within 7 days of previous test if still in use. Actuate once every 24 hrs and alternate stations for actuation and tests. Plan initial pressure test against the casing and cement in the shoe. If casing does not test or if follow up tests are required plan to use FMC supplied test plug.
2. Drill out cement with seawater. Circulate out cement and change the well over to mud (see attached mud program). Shut off pumps. Monitor the well to confirm the fluid level is static. Notify engineer if losses occur.
 3. Directional drill a 17 1/2" hole to the 13 3/8" casing point at 2700' MD / 2653' TVD. Control drill with low mud weight to keep from losing returns at the conductor shoe. Historically mud weights over 9.1 ppg have led to losses. Run all solids control equipment to reduce low gravity solids in the mud. Notify engineer if losses occur. LCM pill should be ready in pill pit. Circulate and condition the drilling mud to reduce the viscosity and prepare for running the casing. Open hole logs will not be run at this casing point.
 - Overboard dump and dilution of mud and cuttings will be required in this hole section to maintain low mud weight. Prior to drilling sample the mud mixed for drilling this section and send to lab for base line test. Follow all NPDES requirements for measurement, monitoring and reporting prior to dumping. Sample and send mud in for testing at 80% depth.
 - Perform and log Diverter tests on tour sheet per MMS regulations.
 - Control drill to keep from loading up hole. CBU as necessary.
 - Have Back up motor, MWD and gyro tools on location.
 4. Rig up casing running equipment. Rig up and run the 13-3/8" casing string to +/- 2700'. Circulate and reciprocate pipe until hole cleans up. **Ensure casing coupling is not in wellhead landing area while reciprocating.** Notify engineer if losses are encountered. If full circulation is established, consider shipping excess mud (cement volume) to Baker tank for reserve, keeping enough for displacement in pits. Cement the 13-3/8" casing through the shoe to the mud line, per the attached cement program. Reciprocate the casing while circulating, cementing and displacing the cement job. **Ensure casing coupling is not in wellhead landing area while reciprocating.** Displace cement with the cement unit using mud. The last 20 bbls should be seawater for pending casing cut.
 - a) Float shoe
 - b) 2 joints of 13-3/8" 61# K-55 Buttress casing
 - c) Float collar
 - d) 13-3/8" 68# and 61# K-55 Buttress casing to surface
 - e) Run 68# casing through build section and highest dogleg intervals.
- Notes:

- Fill pipe while running. Swage with safety valve on rig floor (function for MMS).
 - Baker-Lock the first four joints. Pump through float equipment to check.
 - Centralize the casing with centralizers in the middle of the two shoe joints then every third joint over the collar back to the mud line (+/- 850') and every 5th joint inside the 24" casing. Do not run centralizer on top three joints below wellhead.
 - Use top and bottom plugs. Schlumberger to supply plugs and cement head.
 - Bump plug with 1000 psi over final circulating pressure.
 - Bleed off pressure and check floats.
 - Note all cement volumes, weights and additives on morning report. Include comments on circulation, up/down weights, how long reciprocation was performed, displacement volume, bump pressure, float check and CIP.
5. Wait on cement until cement passes transition time per cement tests. Monitor annulus and casing for losses. Keep track of fill up volumes. Notify engineer if losses are occurring. Ensure well is static and it is safe to remove the diverter.
- Pressure test the 13 3/8" casing to 2150 psi (70% of burst of 13 3/8" 61# K-55) for 30 minutes and record on pressure chart.
 - Rig down Schlumberger cement head and lines.
 - Drain the diverter and flush with seawater (starting head valve).
 - Nipple down DSA with ELCO hydraulic wrenches and pick up the diverter system.
 - Install the 13-3/8" by 20-3/4" FMC casing slips. Set the 13 3/8" casing in the slips with FMC recommended slack-off and activate the slips per FMC procedures. Cut the 13 3/8" casing with pneumatic saw. Refer to FMC drawing for proper cut off dimensions and bevel. Be prepared for seawater coming out of the cut off. Lay down extra joint and cut off.
 - Nipple down diverter system and offload.
 - Install casing head, 20-3/4", 3k x 13-5/8", 5k, per FMC procedure.
 - Test the void/seals to 1078 psi (70% collapse of 13-3/8" 61# K-55 casing).
 - Install +/- X' 13-5/8" 5k x 13-5/8" 5k riser spacer spool (to match height of 13-5/8" 5k x 11" 5k tubing spool, and 11" 5k x 13-5/8" DSA). Nipple up the 13 5/8", 5M BOPE with annular preventer, 2 7/8" X 5" VBR in top ram, blind shear rams, and 5" pipe rams in lower set of rams.
 - Set test plug and test BOP per MMS regulations to 250/2500 psi and chart. Pull test plug. Install the wear bushing.

12-1/4" HOLE SECTION

1. M/U 12-1/4" bit and clean out BHA. Drill out to within 30' of the 13 3/8" casing shoe. Test the casing to 2150 psi for 30 minutes and chart. Drill out the casing shoe and 10' of new formation. Rig up Schlumberger cement unit and perform a leak off test or formation integrity test to 11 ppg on the 13 3/8" casing shoe. If an 11 ppg FIT is not obtained, graph the LOT data to determine leak-off pressure and discuss with drilling engineer. Squeeze the shoe if necessary. Pull out of hole.
2. Make up a 12-1/4" bit on BHA #3 (steerable assembly with MWD and O-sub). Drill a 12-1/4" hole to the 9-5/8" casing point at +/- 7515' MD / 5603' TVD as per the attached directional drilling plan.

Notes:

- Overboard discharge will not be allowed in this hole section. Follow all NPDES requirements for measurement, monitoring and reporting
 - Perform and log BOP tests (2 weeks) on tour sheet per MMS regulations. Perform and document all weekly BOP/H2S drills and all items on MMS checklist. Fill out NPDES monitoring information daily.
 - H2S is present in the 12 1/4" hole section intervals. Rig up H2S equipment per MMS approved H2S and SO2 Contingency Plan. Safety company should calibrate monitors every 12 hours and document on tour sheets. H2S drills should continue throughout operations.
 - The mud loggers must be operational when drilling out the 13-3/8" casing shoe. MWD/GR will be run through this section of the hole to assist in correlation.
 - The casing shoe will be set at TD
 - There has been a history of lost circulation in the Upper Topanga but since water injection commenced in this zone instances and severity have been reduced.
 - Historically mud weights to drill this section and manage background and trip gas have ranged up to 9.6 ppg.
 - The first gas should be seen in Pico Sands and start around 2930' MD and contain hydrocarbons in non-commercial quantities.
 - There may be high gas units while drilling but the sands but they are forecast to be normally pressured (water gradient).
 - Perform flow checks and circulate bottoms up as necessary.
 - Keep fluid loss low in mud to reduce swelling/swabbing in the clay formation.
 - Make wiper trips as necessary to keep hole in good shape. As a guide plan to wipe new hole at least every 12 hrs and pull back to the shoe every 24 hours until hole conditions are understood.
 - Notify engineer if losses occur. A sized CaCO3 LCM pill should be ready in pill pit.
3. Pull out of the hole and lay down drilling assembly. Make up clean out assembly (bull nosed 12-1/4" fixed hole opener). Run in the hole and ream and circulate as necessary. Note: In E-23 well the HO was run before logs and logs got to bottom, E-24 the HO run was skipped, logs did not get to bottom, HO was run and subsequent logging run got to bottom.
 4. Circulate and condition the hole in preparation of the open hole logs. Plan to add lubricants to improve probability to reach TD by wireline logs. Pull out of the hole and rig up the logging unit.
 5. Run open hole logs per attached logging program. Have drillpipe convey logging equipment on platform. Utilize electronic disconnect to allow for increase weak point.
 6. Run in the hole after logging and condition the hole for the 9 5/8" casing. Have pipe tally ready and confirm pipe connection will be near rig floor for cementing and connection will not be across wellhead landing area. Pull out of the hole and rig up the casing crew. Pull the wear bushing.

7. Run the 9 5/8", 43.5#, L-80, LT&C and Hydril 563 casing to +/- 7515'.
NOTE: Review and confirm correct crossovers and back-ups available. Do not circulate casing at higher pressure than recommended by Davis-Lynch after stage collar is picked up and in the string. Stage collar opens with hydraulic pressure.
- a) Davis Lynch Float shoe
 - b) 2 joints 9-5/8" 43.5# L80 LTC
 - c) Davis Lynch Float collar
 - d) 6 jts 240'+/- 9-5/8" 43.5# L80 LTC
 - e) 1 Crossover Joint
 - f) 2040' +/- 9-5/8" 43.5# HCL80 Hydril 563
 - g) XO Pup
 - h) LT&C API Modified Hydraulic Stage collar at +/- 2400'
 - i) XO Pup
 - j) 2400' of 9-5/8" 43.5# HCL80 Hydril 563 to surface

Notes:

- Swage with safety valve on rig floor. Function and note for MMS on tour sheets.
 - XO to fit the safety valve and all casing threads
 - Schlumberger to supply cement head but not the plugs. Davis Lynch plugs to be used.
 - Confirm cement head is designed for the Davis Lynch multi plug system.
 - Baker-Lock the first four joints, the stage collar and the two joints above the stage collar. Pump through float equipment to check. Fill pipe while running.
 - Centralize the casing with centralizers in the middle of the two shoe joints then every joint to 4800' and then every other joint into the 13-3/8" shoe. Run one centralizer below and above the stage collar, then every 5th joint to the mud line (+/- 850').
8. Circulate and reciprocate pipe until hole cleans up. Cement the 9 5/8" casing in two stages per the attached cementing program. Cement the first stage of the 9 5/8" casing through the shoe to the 13 3/8" casing shoe.
- If possible reciprocate the casing while circulating, cementing and displacing the cement job. Ensure casing coupling is not in well head landing area while reciprocating.
 - The hydraulic stager collar and all plugs for cement job will be supplied by Davis Lynch. The stage collar opens with hydraulic pressure applied after the top plug is bumped on the primary job. There is a back-up "bomb" that can be dropped and fall which can be used in the event the lower plug does not bump. A detailed procedure for the stage collar will be provided by Davis Lynch.
 - Displace cement with the cement unit using mud. Pump calculated volume at 5-6 BPM – Schlumberger will provide recommended displacement rate - slowing down the last few barrels. Bump plug with 500 psi over final circulating pressure. Bleed off pressure and check floats. When reciprocation is finished, pull 9-5/8" in tension to last observed up weight if possible to minimize casing wear. Set pipe in floor slips. Keep head low to floor and connection out of the well head landing area.
 - Note all cement volumes, weights and additives on morning report. Include comments on circulation, up/down weights, how long reciprocation was performed, displacement volume, bump pressure, float check and CIP.
 - After the primary job is in place, the top plug is bumped, pressure up the casing to 2400 psi to open the stage collar.

- Circulate through stage collar and allow the primary cement job to set up. Note if any spacer or cement is circulated out of the hole from the primary cement job.
 - Cement the second stage from the stage collar to the mudline per the attached cementing program.
 - There will not be a bottom plug for the stage job. The top plug (closing plug) is a special plug that closes the stage collar. Do not load top plug (closing plug) in plug dropping head until after cement is pumped.
 - Displace cement with the cement unit using mud. The last 20 bbls should be seawater for pending casing cut. Pump calculated volume at 5-6BPM – Schlumberger will provide recommended displacement rate - slowing down the last few barrels. Bump plug with 1500 psi over final circulating pressure to close stage collar. Bleed off pressure and check that stage collar has closed. If bleed back is occurring, repeat the process. If stage collar fails to close, bleed cement back into the casing (10 bbls) and shut-in the casing while cement sets up.
 - Note all cement volumes, weights and additives on morning report. Include comments on circulation, displacement volume, closing pressure, stage collar holding (or not) and CIP.
9. Wait on cement until cement passes transition time per cement tests. Monitor annulus and casing for losses. Keep track of fill up volumes. Notify engineer if losses are occurring.
- After WOC is completed, pressure test annulus to 800 psi and ensure annulus is static prior to picking up BOPE.
 - Drain the BOP stack and flush with seawater (casing head valve).
 - Nipple down the 13-5/8" riser spool (4') with ELCO hydraulic wrenches and pick up the BOP system as needed for cutter.
 - Install the 9 5/8" by 13 3/8" FMC casing slips. Set the 9 5/8" casing in the slips and activate the slips per FMC procedures.
 - Cut the 9 5/8" casing with pneumatic saw. Refer to FMC drawing for proper cut off dimensions and bevel. **Be prepared for seawater coming out of the cut off.** Lay down extra joint and cut off. Remove 13-5/8" riser spacer spool.
 - Install FMC tubing spool (13-5/8", 5k x 11", 5k) per FMC procedure.
 - Pressure test the void/seals to 2667 psi (70% collapse of 9-5/8" 43.5# L-80).
 - Install FMC tubing landing spool tubing head adaptor and dual tree per FMC procedure.
 - Have Facilities ready to confirm field measurements for all required well tie-ins. Remove tree and tree adaptor.
 - Install DSA (11" 5k x 13-5/8" 5k) on top of tubing landing spool. Nipple up the 13 5/8", 5M BOPE
 - Set test plug and test BOP to 250/2500 psi per MMS regulations and chart. Pressure test against 5" and 2 7/8" tubing. Pull test plug. Install the FMC wear bushing.
10. Pick up an 8 1/2" bit and clean out BHA. Run in hole and tag cement. Pressure test the 9 5/8" casing to 2500 PSI for 30 minutes and chart test. Clean out to the float collar or deeper if indicated by log results and need to perforate deeper. Pressure test the 9 5/8" casing to 2500 PSI for 30 minutes and chart test. Pull out of the hole.
11. Pick up and run in the hole with bit and 9 5/8", 43.5# casing scraper to effective clean out depth. Dump and clean mud pits to prepare for changeover. Displace the drilling mud and circulate the well with clean filtered seawater using sweeps as recommended by MIDF. Pull out of the hole with the drillpipe.

12. Rig up wireline and run Cement bond / correlation logs over the 9 5/8" casing. Have USIT available as contingency. Be prepared to run log under pressure if recommended. Evaluate logs and determine if block squeezing of completion interval will be required. Squeeze well as required.
13. After squeezing and cleaning out as necessary, run in the hole with 9 5/8" casing scraper while picking up 2-7/8" tubing, if indicated. Filter seawater until < 30 NTU's obtained. Pull out of the hole. Stand back tubing for subsequent completion. BOP test on 2 7/8" tubing will be required if this tubing is picked up at this step. NOTE: In addition install a 2 1/16" 5M casing valve below the tubing hanger with a 1502 tee and pressure gauge, a check valve and high pressure hose connection to it will be installed and tested to 3000/250 psi for 5 minutes. It will be used continuously pumping seawater into the well, at 3 bpm or as needed to control the well, below the hanger landing profile to keep the well under control and to prevent visual obstruction when landing the tubing hanger.

NOTE: BOPE testing to continue on 14 day frequency through the completion that is approved as part of the APD.

Completion Procedure

1. The well will be a dual completion with the long string for injecting into the Upper Topanga and the short string producing the Monterey (see attached Proposed Completion Diagram).
 - Dual Production packer will be set at +/- XXXX' MD which is above the lowest GLM depth (XXXX' MD) in the current completion. Dual packer is short string set.
 - Tubing to be yellow band or better with special clearance double bevel couplings. All equipment above the dual packer to be special clearance and bevel.
2. Make up 4 1/2" TCP Perforation guns, run in hole, rig up wireline, correlate and put guns on depth. Pressure up to fire guns and perforate the Monterey from 4957'-5257' (estimated depths – subject to revision after open hole log evaluation) and the Upper Topanga from 6975'-7100' (estimated depths – subject to revision after open hole log evaluation).

NOTE: Be prepared to fill hole after perforations. Use the previously installed and tested 2 1/16" 5M casing valve below the tubing hanger with a 1502 tee and pressure gauge, a check valve and high pressure hose connection. It will be used continuously pumping seawater into the well, at 3 bpm or as needed to control the well, below the hanger landing profile to keep the well under control and to prevent visual obstruction when landing the tubing hanger.

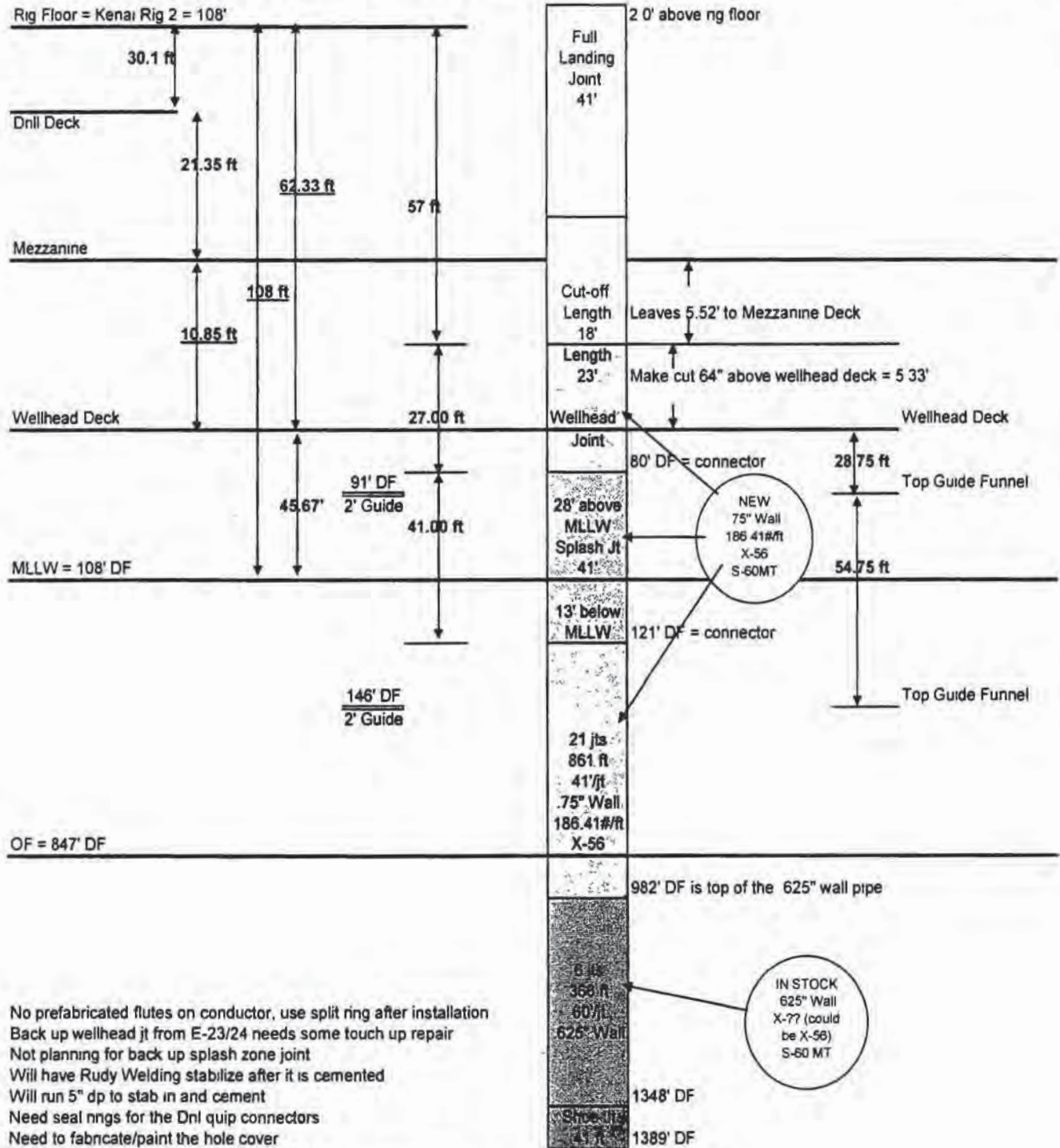
3. Make up, run and set 9 5/8" Model D packer with, Mill out extension, 10' seal bore extension 2 7/8" tail, hydro-trip sub and completion equipment at XXXX' MD. Take over pull on Model D during setting process to confirm packer is set.
4. Pick up the long string completion equipment as per attached schematic and equipment listing. The dual packer will be configured for short string set to allow the long string seal assembly to be tested. The snap latch will be run above the seal assembly to confirm seal location when spacing out. Run in hole to above the Model D sump packer at +/- XXXX'. Stab into sump packer, locate and snap in. Get space out measurement, pick up and space out to land, make up hanger half and lower completion and land same. Get up

and down weight prior to landing. Follow revised FMC procedure for landing dual hanger half. At no time will hanger hold down pin be removed. Orient the hanger half at surface and lower into position in the wellhead. Do not put high compression load onto Model D packer during space-out.

5. Drop ball and pump ball down onto seat at a low pump rate. After ball lands pressure up tubing to 2000 psi to pressure test seal assembly to 2000 psi for 15 minutes. Continue to pressure up to 3000 psi to expel ball. Rig up slickline on the long string and pressure test lubricator to 2000 psi and pressure test before each run when the lubricator connection is broken. Run and set injection valve in the X nipple at +/- 1000', rig down slickline. Set short string hanger half, install BPV in long string. Pull short string hanger half.
6. Rig up and run in hole with short string with completion equipment. Do not make up make up TRSSV, run in and stab into seal bore of 9 5/8" Model GT dual packer. Drop X.XXX" OD, Kirksite setting ball down short string landing joint. Pressure short string to 3000 psi in 500 psi increments to set the Model GT packer. Hold 3000 psi on tubing for 15 minutes, slowly bleed pressure off of tubing. Pressure test the packer and annulus to 2000 psi. Do not pressure up the short string and blow the packer setting ball at this point.
7. Pick up short string, pull out of hole and make up TRSSV and pressure test the control line. Run in with short string, get space out measurements, Pick up and install hanger half, reconnect and pressure test the control line to top of hanger. Get up and down weight prior to landing.
8. Prior to seals entering the seal assembly spot 50 bbls of packer fluid with NALCO product - EC1120A. This chemical is to be added at 21 gals/100 bbls. Contact for this chemical is Michael Whittington - Nalco Energy Services -Mobile: 805.479.5006.
9. Follow revised FMC procedure for landing dual hanger half. At no time will hanger hold down pin be removed. Orient the hanger half at surface and lower into position in the wellhead. Pressure test the packer, tubing hanger and annulus to 2500 psi for 30 minutes and record on chart. With pressure on control line to keep TRSSSV open pressure up tubing to 3500 psi against ball and seat and shear out ball.
10. Bleed off control line pressure to close the short string TRSSV. Install BPV in short string. Injection valve and BPV previously set in the long string.
11. Nipple down BOPE and nipple up FMC dual tree with adapter. Remove BPVs and install blanking plugs and pressure test bonnet void and tree to 3000 psi. Remove blanking plugs.
12. Release rig.

PLATFORM GAIL NEW WELL STARTING HEAD AND CONDUCTOR

3/10/2009



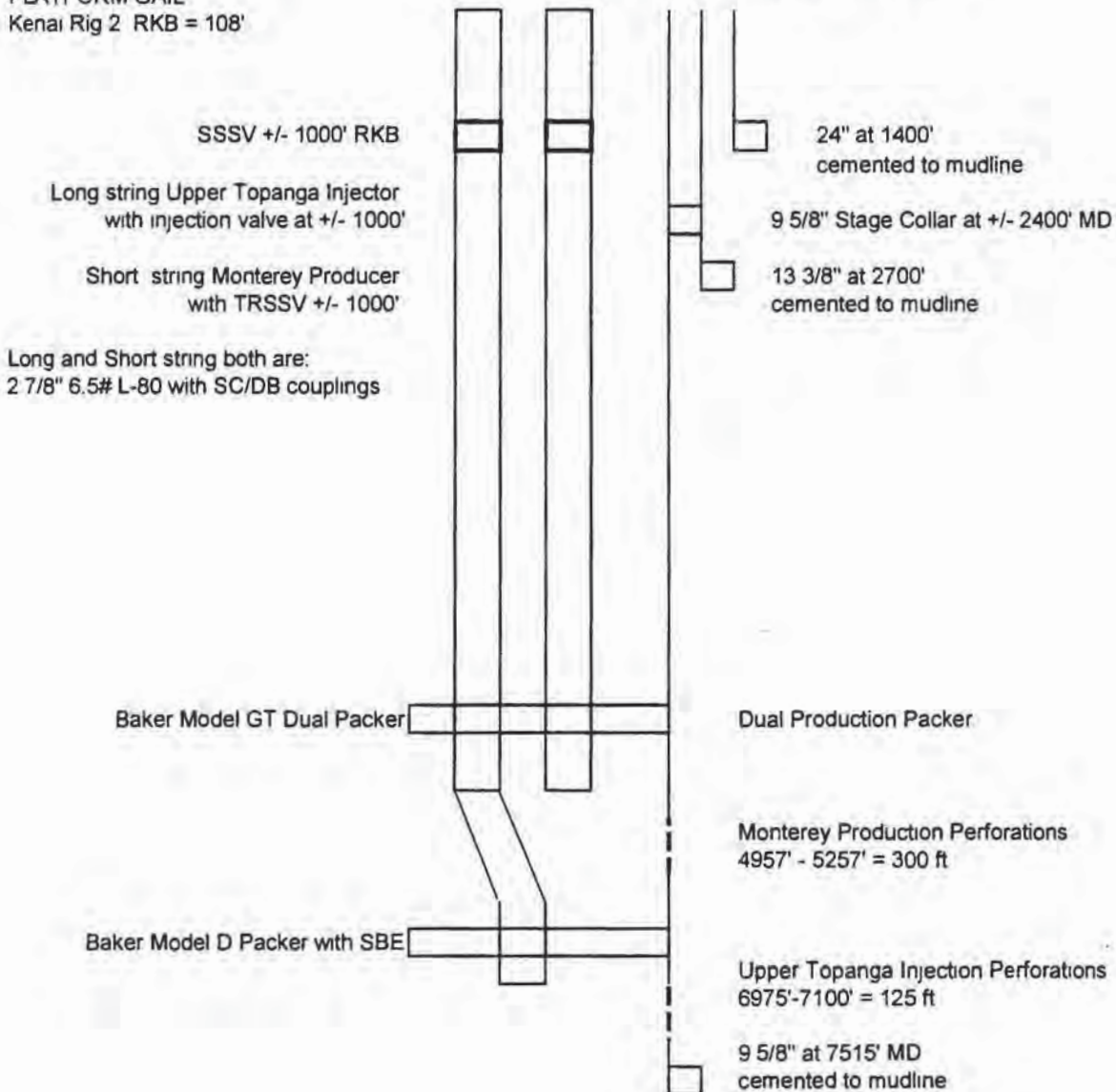
No prefabricated flutes on conductor, use split ring after installation
 Back up wellhead jt from E-23/24 needs some touch up repair
 Not planning for back up splash zone joint
 Will have Rudy Welding stabilize after it is cemented
 Will run 5" dp to stab in and cement
 Need seal ngs for the Dni quip connectors
 Need to fabncate/paint the hole cover
 Splash Zone Joint to have Carboline 1207
 Wellhead Joint to have System 4 as defined by the SP-80-2 "Protective Coatings and Painting Specification"

OCS-P-0208 E-25

PLATFORM GAIL

Kenai Rig 2 RKB = 108'

PROPOSED COMPLETION (ATTACH TO MMS APD)



EVALUATION PROGRAM

1) MUD LOGGING

12 1/4" Hole Section – Continuous mud logging shall be performed from drilling out the shoe of the 13 3/8" casing at 2700' to the total depth. Collect dry samples at 30' intervals.

2) LOGGING WHILE DRILLING - NONE

12 1/4" Hole Section – An MWD/GR will be used for directional surveys, Gyro will be used for kick-off

3) ELECTRIC LOGGING

12 1/4" Hole Section

Log Run #1

Platform Express – HALS-HGNS

Logging interval: Total Depth to 13 3/8" shoe

Log Run #2

FMI-GR

Logging Interval: Top M2 to Base Monterey

Notify Geologist to witness all logs.

Primary Geologist: Chris Peltonen

805-745-2266 office

805-732-8846 cell

Back-up Geologist: Monica Carlsen

805-745-2115 office

805-448-5622 cell

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	24"	13 3/8"	9 5/8"
2	Setting Depth (feet - TVD)	1400	2654	5603
3	Expected Leak Off Test EMW at shoe (ppg)	9.4	11	12
4	Depth of next Casing (feet - TVD)	2654	5603	5603
5	Maximum Expected Formation Pressure (psi)	1159	2447	2447
6	Expected Mud Weight (ppg)	9.1	9.6	9.6
7	Formation Equivalent Mud Weight (ppg)	8.4	8.4	8.4
8	Expected Hydrostatic Pressure at TD (psi)	1256	2797	2797
9	Amount of Overbalance at TD (psi)	97	350	350
10	Fracture Gradient at shoe (psi/ft)	Diverter	0.57	0.62
11	Fracture Pressure at shoe (psi)	Diverter	1518	3496
12	Hydrostatic Pressure at shoe (psi)	Diverter	1325	2797
13	Margin between Mud Weight and LOT (psi)	Diverter	193	699

Maximum Anticipated Surface Pressures

1	Casing Size (in)	24"	13 3/8"	9 5/8"
2	Setting Depth (feet - TVD)	1400	2654	5603
3	Expected Leak Off Test EMW at shoe (ppg)	9.4	11	12
4	Expected Mud Weight (ppg)	9.1	9.6	9.6
5	Depth of next Casing (feet - TVD)	2654	5603	5603
6	Maximum Expected Formation Pressure (psi)	1159	2447	2447
7	Expected gas gradient (psi/ft)	0.05	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.4	8.4	8.4
Max Pressures using 100% Gas to Surface				
9	Max Surface Pressure neglecting shoe (psi)	1027	2167	2167
10	Fracture Gradient at shoe (psi/ft)	Diverter	0.57	0.62
11	Fracture Pressure at shoe (psi)	Diverter	1518	3496
12	Surface pressure to break down shoe (psi)	Diverter	1385	3216
13	Maximum Anticipated Surface Pressure (psi)	Diverter	1385	2167

CASING PROGRAM

m

Hole Section	26"	17 1/2"	12 1/4"
Mud Weight	8.6	9.5	9.5
Buoyancy Factor	0.869	0.855	0.855
MASP (psi)	Diverter	2167	2167
Gas Lift Pressure (psi)	NA	0	1800
Casing Size (in)	24"	13.375"	9.625"
Setting Depth, MD (ft)	1400	2700	7515
Setting Depth, TVD (ft)	1400	2654	5603
Top of Casing, MD (ft)	0	0	0
Weight (lb/ft)	156/186	61/68	43.5
Grade	X-56	K-55	L-80
Threads	DQ S-60 MT	BTC	LTC/Hyd 563
ID (in)	22.75	12.515	8.755
Drift diameter (in)		12.359	8.599
Collapse (psi)	870	1540	3810
Burst (psi)	2550	3090	6330
Joint Strength (kips)	1706	633	825
Body Strength (kips)	2387	962	1005
Collapse Safety Factor	1.39	1.17	1.38
Burst Safety Factor	#VALUE!	1.43	2.92
Tensile Safety Factor	5.89	2.63	2.17

Notes:

- 1) Burst is calculated on the greater of MASP or gas lift pressure.
- 2) Collapse is based on mud outside of an evacuated casing string.
- 3) Tension is based on buoyed weight of casing string + 100 kips overpull.

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Seafloor-1,400' (26" hole)	SW/Gel/Durogel Sweeps	8.6-8.8	<20	8.5-9.5	20-35	
1,400'-2,700' (17-1/2" hole)	SW/Gel/Gelite/Polypac	8.9 - 9.1	<8	8.5-9.0	18-30	23k-29k
2,700'-7,515' (12-1/4" hole)	SW/Gelite/Gel/SP-101	8.9 - 9.6	<6	8.0-9.5	18-25	23k-29k

Sea Floor –1,400' This interval will be drilled with a seawater / Durogel high viscosity sweeps with returns to the sea floor. Build seawater/Durogel sweeps with PV:YP ratio of 1:4+ using high rate of dispersion. Add Soda Ash after Durogel is dispersed to extend viscosity. It is imperative to make sure the hole is clean and stable to get the casing to bottom.

1,400'-2,700' The objective in this interval is to drill a 17 ½ inch hole from the 24 inch casing shoe to 2,700 ft and run 13 3/8 inch 61# casing from 2,700 ft. to surface. The fluid system recommended is a Seawater/MI Gel/Gelite/Polypac system. Maintain the 3 RPM reading higher than 10, with additions of Duovis. It is planned to ocean discharge the 17 ½" hole section per the approved NPDES Permit.

2,700'-6,000' The objective in this interval is to drill an 12 ¼ inch hole from the 13 3/8 inch casing shoe to 7,515 ft and run 9 5/8 inch 43.5# casing from TD to surface. The fluid system recommended is a Seawater/MI Gel/Gelite/SP101 system. Maintain the 3 RPM reading higher than 10, with additions of Duovis.

Notes:

- 1) Operate solids control equipment to maintain drill solids as low as possible.
- 2) Maintain supply of ZnO₂ onboard to treat out H₂S.
- 3) A minimum amount of barite shall be kept on the platform at all times to raise the mud weight 1 ppg., per MMS regulations.

Hydrogen Sulfide Considerations:

Both the Monterey, Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. **Assume any gas circulated to surface to have hydrogen sulfide potential.** Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

CEMENTING PROGRAM

24" Structural Casing

Objective: Cement 24" casing as an anchor for the diverter system and provide drilling fluid returns to surface. The 24" will be cemented back to the mud line. 40 feet of cement will be left inside the 24" casing on top of the stab-in guide shoe.

General information:

24", 156#, X-56 Casing +/- 950' - 1400' (22.750" ID) (below OF)
24", 186#, X-56 Casing 0' - 950' (22.50" ID)
5", 19.5#, S-135 DP 0' - 1400' (4.276" ID)
Open Hole Size: 26" drilled, 32" assumed for volume calculations
Open Hole Volume Factor is 2.444 CF/FT (for 32" hole)
Shoe Joint Volume Factor is 2.823 CF/FT
Open Hole Excess 0% over estimated 32" hole

24" Conductor Pipe 3/2/2009

Well Data

Casing Size: 24"
Open Hole: 32"
Depth: 1400'/MD/ 1400' TVD
Mud Line: 847'
TOC 847'
BHST: 80 deg. F BHCT: 80 deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Tail Volume			
24" Conductor Pipe in 32" O.H.	553	2.44	= 1349.32 cft
Shoe Joint	40	2.76	= 110.40 cft
			= 1459.72 cft

Cement System & Volumes

Preflush: 50 bbls Sea water
Class C with 0.05 gps D47 Defoamer + 0.06 gps D185 Dispersant + 0.06 gps D81 Retarder
Tail Cement Volume: 1065 sks
Mix Weight: 14.8 ppg
Yield: 1.37 cft/sk
Total Liquid: 6.67 gal/sk
Mix Water: Seawater
Thickening Time: 4 hrs 3 mins to 70 BC
24 hrs C. S. 2842 psi
48 hrs C. S. 3125 psi

Note: Lab and field blend tests will be performed to verify slurry properties

13 3/8" Surface Casing

Objective: Set and cement 13 3/8" casing prior to drilling oil or gas bearing zones. The shoe of the 13 3/8" casing will provide a fracture gradient sufficient to drill through the zones of interest safely. A formation integrity or leak off test will be conducted after drilling out this shoe. The 13-3/8" will be cemented back to the mud line.

General Information:

13 3/8", 61#, K-55 Casing @ 2700' MD / 2654' VD (12.415" ID)

24", 156#, X-56 Casing (22.750" ID) Shoe at 1400'

Lap Volume Factor is 1.847 CF/FT

Open Hole Size: 17 1/2"

Open Hole Volume Factor is 0.6946 CF/FT

Shoe Joint Volume Factor is 0.8407 CF/FT (68# shoe)

Open Hole Excess 50% over theoretical

13 3/8" Surface Pipe 3/2/2009

Well Data

Casing Size: 13 3/8" 61#

Open Hole: 17 1/2"

Depth: 2700'

Mud Line: 847'

TOC 847'

BHST:116 deg. F BHCT: 90 deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Lead Volume			
13 3/8" Csg in 24" Casing	553	1.754	= 969.96 cft
13 3/8" Csg in 17 1/2 Open Hole	797	0.6946	= 553.60 cft
Excess 50%			= 276.80 cft
			= 1800.36 cft
Tail Volume			
13 3/8" Csg in 17 1/2 Open Hole	500	0.6946	= 347.30 cft
Excess 50%			= 173.65 cft
Shoe Joint 80 0.8542			= 68.34 cft
			= 520.95 cft

Cement System & Volumes

Preflush: 40 bbls Seawater

Lead: 610 sks Class G cement with 0.6 gps D75 Sodium Silicate + 0.15 gps D81 Retarder + 0.05 gps D47 Defoamer

Cement Volume 610 sks

Mix Weight 11.6 ppg

Yield: 2.95 cuft/sk

Total Liquid 18.51 gal/sk

Thickening Time: 8 hrs 32 mins hrs/min

Mix Water SEAWATER

24 hrs C.S. 450 psi

Free Water Zero

Tail: 438 sks Class G cement with 0.05 gps D47 Defoamer+ 0.05 gps D80 Dispersant
+0.15 gps D81 Retarder

Cement Volume 438 sks
Mix Weight 15.8 ppg
Yield: 1.19 cuft/sk
Total Liquid 5.41 gal/sk
Thickening Time: 4 hrs/min
Mix Water SEAWATER
24 hrs C.S. 2204 psi
Free Water Zero

9 5/8" Production Casing

Objective: Cement 9 5/8" casing at Total Depth of the well. This casing string will be cemented back to the mud line in two stages and will be exposed to gas lift pressure.

General Information:

9-5/8" 43.5# L-80 Casing @ 7515' MD / 5603' VD (8.755" ID)
13 3/8", 61#, L-80 Casing (12.515" ID) Shoe at 2700' MD
9 5/8" x 13 3/8" stage collar at 2400' MD
Lap Volume Factor is 0.349 CF/FT
Open Hole Size: 12 1/4"
Open Hole Volume Factor is 0.3132 CF/FT
Shoe Joint Volume Factor is 0.4181 CF/FT
Open Hole Excess 35% over theoretical

9 5/8" Production Pipe 3/2/2009

Well Data First Stage

Casing Size: 9 5/8" 43.5 #
Open Hole: 12 1/4"
Depth: 7,532' MD/5,744' TVD
Mud Line: 847'
Stage Collar 2400"
Temperatures BHST:170 deg. F BHCT: 135 deg. F

Volume Calculations	Depth	Volume Factor	Total Volume
	ft.	cu.ft./ft.	cu. ft.
9 5/8" Casing in 13 3/8" Casing	500	0.349	= 174.50 cft
9 5/8" Casing in 12 1/4" Open Hole	1763	0.3132	= 552.17 cft
Excess 35%			= 193.26 cft
			= 919.93 cft
 Tail Volume			
9 5/8" Casing in 12 1/4" Open Hole	3069	0.3132	= 961.21 cft
Excess 35%			= 336.42 cft
Shoe Joint 80 0.42			= 33.60 cuft
			1331.23 cft

9 5/8" Production Casing (contd)

Cement System & Volumes

Preflush: 40 bbls Seawater

10 bbls Chemical Wash 7

20 bbls Mudpush Spacer @ 8.32 ppg

Lead: 312 sks Class G cement with 0.6 gps D75 Sodium Silicate + 0.24 gps D81 Retarder + 0.05 gps D47 Defoamer

Cement Volume 312 sks

Mix Weight 11.6 ppg

Yield: 2.95 cuft/sk

Total Liquid 18.51 gal/sk

Thickening Time: 8 hrs 32 mins hrs/min

Mix Water SEAWATER

24 hrs C.S. 450 psi

Free Water Zero

Tail: 1119 sks Class G cement with 0.05 gps D47 Defoamer+ 0.05 gps D80 Dispersant +0.05 gps D81 Retarder+ 0.5 gps D168 Fluid Loss Additive

Cement Volume 1119 sks

Mix Weight 15.8 ppg

Yield: 1.19 cuft/sk

Total Liquid 5.41 gal/sk

Thickening Time: 4 hrs/min

Mix Water SEAWATER

24 hrs C.S. 2204 psi

Free Water Zero

Well Data Second Stage

Casing Size: 9 5/8" 43.5# Casing Size: 13 3/8" 61#

Depth: 2400'

Mud Line: 847'

Stage Collar 2400'

Temperatures BHST: 112 deg. F BHCT: 90 deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Lead Volume			
9 5/8" Csg in 13 3/8" Csg	777	0.349	= 271.17 cft
Excess 5%			= 13.56 cft
			= 284.73 cft
Tail Volume			
9 5/8" Casing in 13 3/8" Csg	777	0.349	= 271.17 cft
Excess 5%			= 13.56 cft
			= 284.73 cft

Preflush: 40 bbls Seawater**Cement System & Volumes****Lead:** 100 sks Class G cement with 0.6 gps D75 Sodium Silicate + 0.15 gps D81 Retarder + 0.05 gps D47 Defoamer

Cement Volume **97 sks**
 Mix Weight 11.6 ppg
 Yield: 2.95 cuft/sk
 Total Liquid 18.51 gal/sk
 Thickening Time: 5 hrs 32 hrs/min
 Mix Water **SEAWATER**
 24 hrs C.S. 450 psi
 Free Water Zero

Tail: 240 sks Class G with 0.05 gps D47 Defoamer + 0.05 gps D80 Dispersant + 0.05 gps D81 Retarder

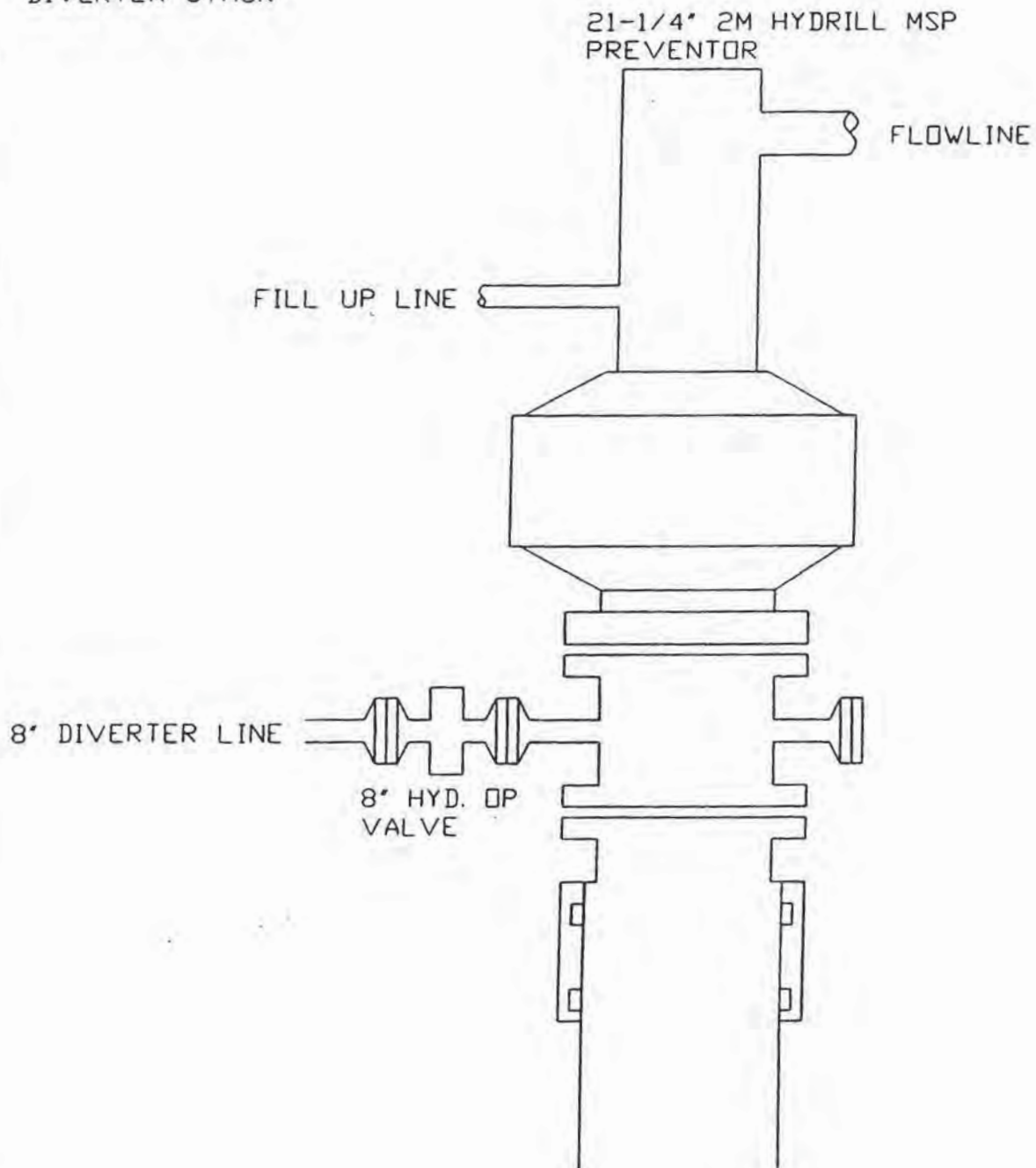
Cement Volume **239 sks**
 Mix Weight 15.8 ppg
 Yield: 1.19 cuft/sk
 Total Liquid 5.41 gal/sk
 Thickening Time: 4 hrs/min
 Mix Water **SEAWATER**
 24 hrs C.S. 2204 psi
 Free Water Zero

Platform Gail Diverter System Description

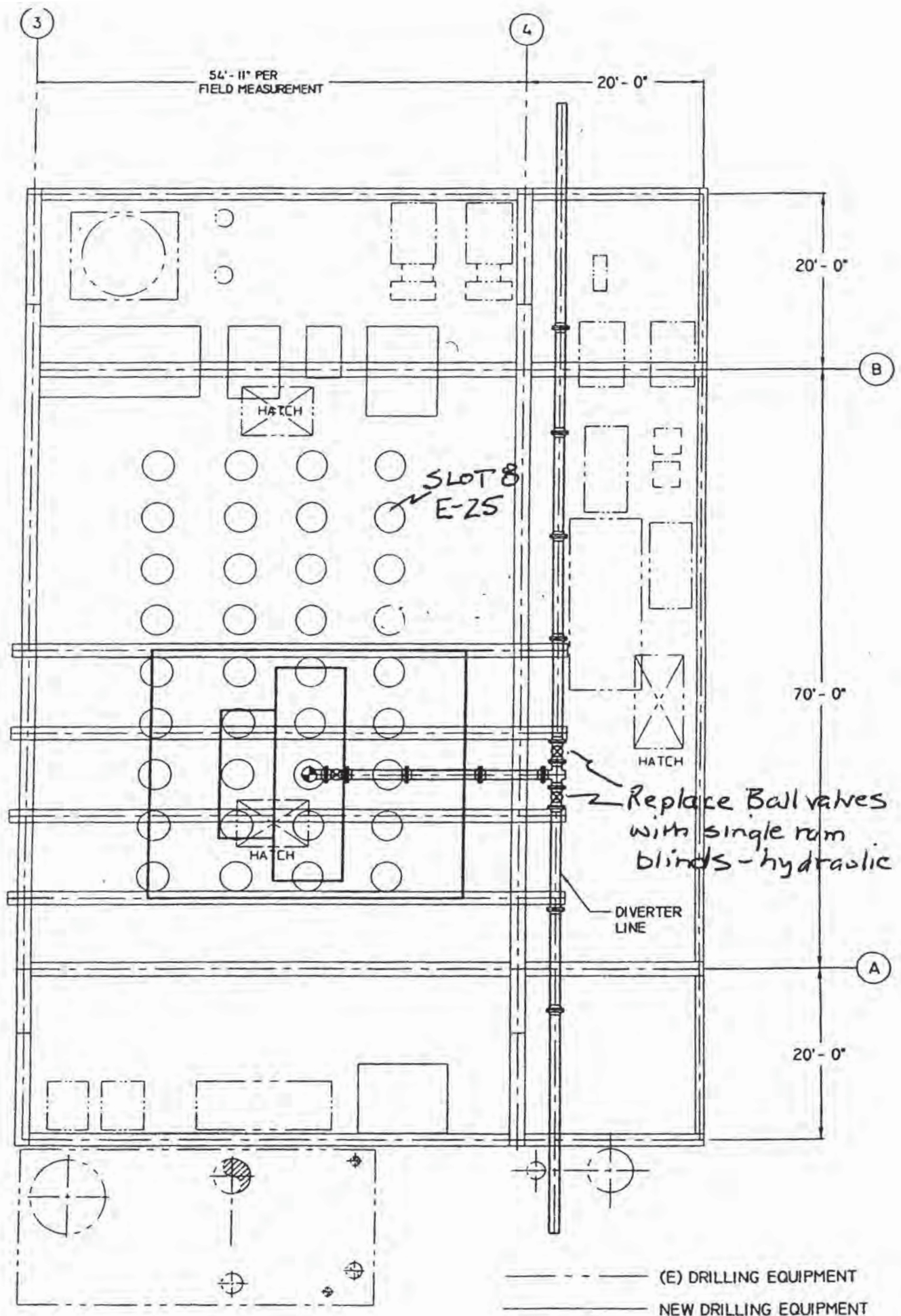
The diverter line system for Platform Gail will include 8" North and South overboard lines located along the East end of the Main Deck (see Diverter Line Layout drawing). An 8" East and West line will join the diverter spool to the overboard lines at a targeted cross.

Three 8" hydraulically controlled ball valves will be used, one main valve and two overboard valves. The main valve will be adjacent to the diverter spool (see attached Diverter Stack drawing) and will open automatically when the 21-1/4" 2M diverter element is closed. Both overboard valves, located on either side of the targeted cross, will normally remain open. The prevailing winds should allow the simultaneous venting through both lines, however, the overboard line valves will be hydraulically controlled so that either North or South can be selected.

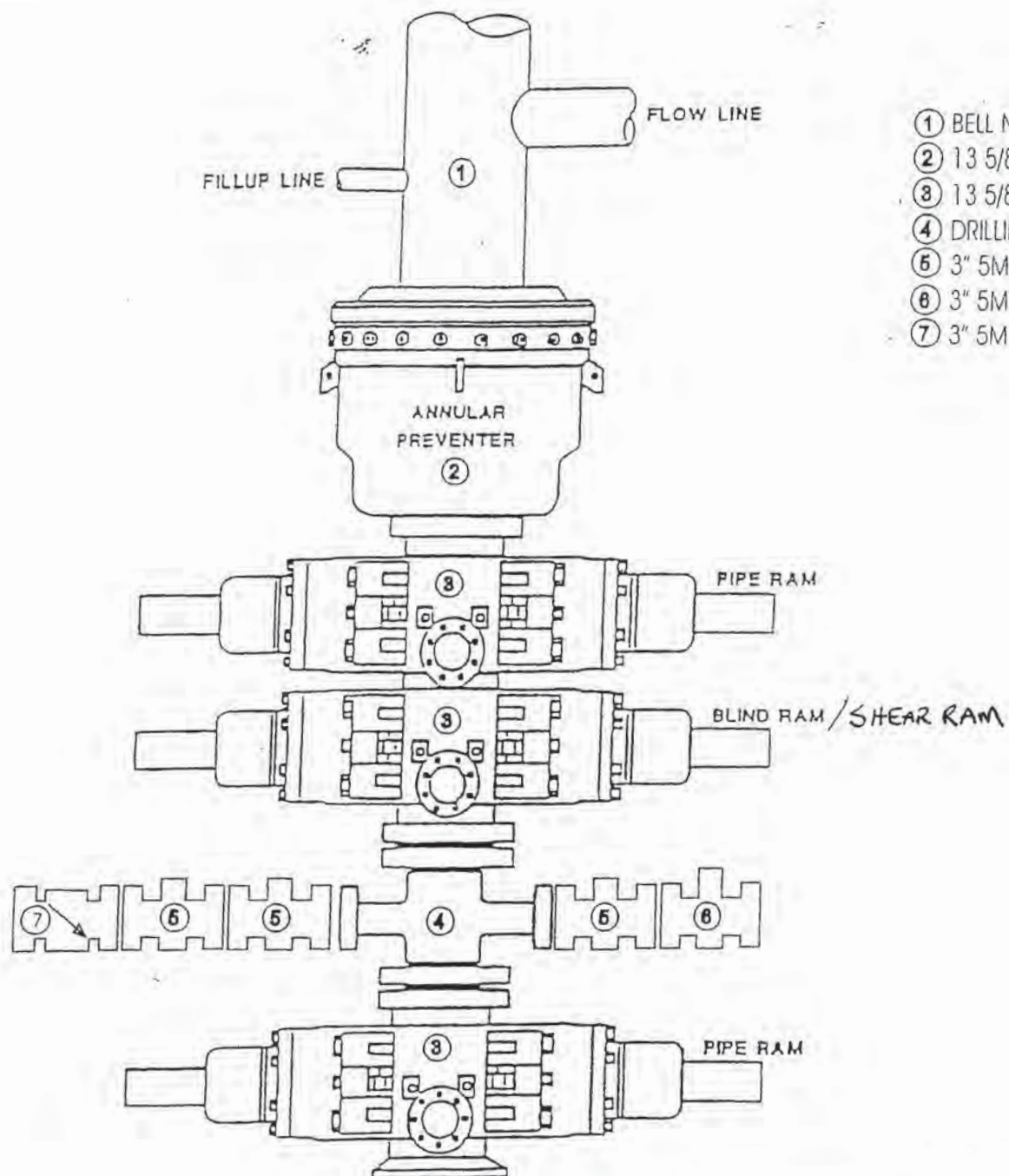
PLATFORM GAIL
DIVERter STACK



REV	1	ISSUED FOR PERMIT	7-11-02					
 VENOCO INC. 5464 Carpinteria Ave., Suite J Carpinteria, CA. 93013-1423								DR ACS CH
								DR APP.
								ENGR. JH
								OPR' G. DEPT. APPR
DIVERter STACK								SCALE NTS DATE 7-11-02
PLATFORM GAIL								A C C _____ S O _____
								11365



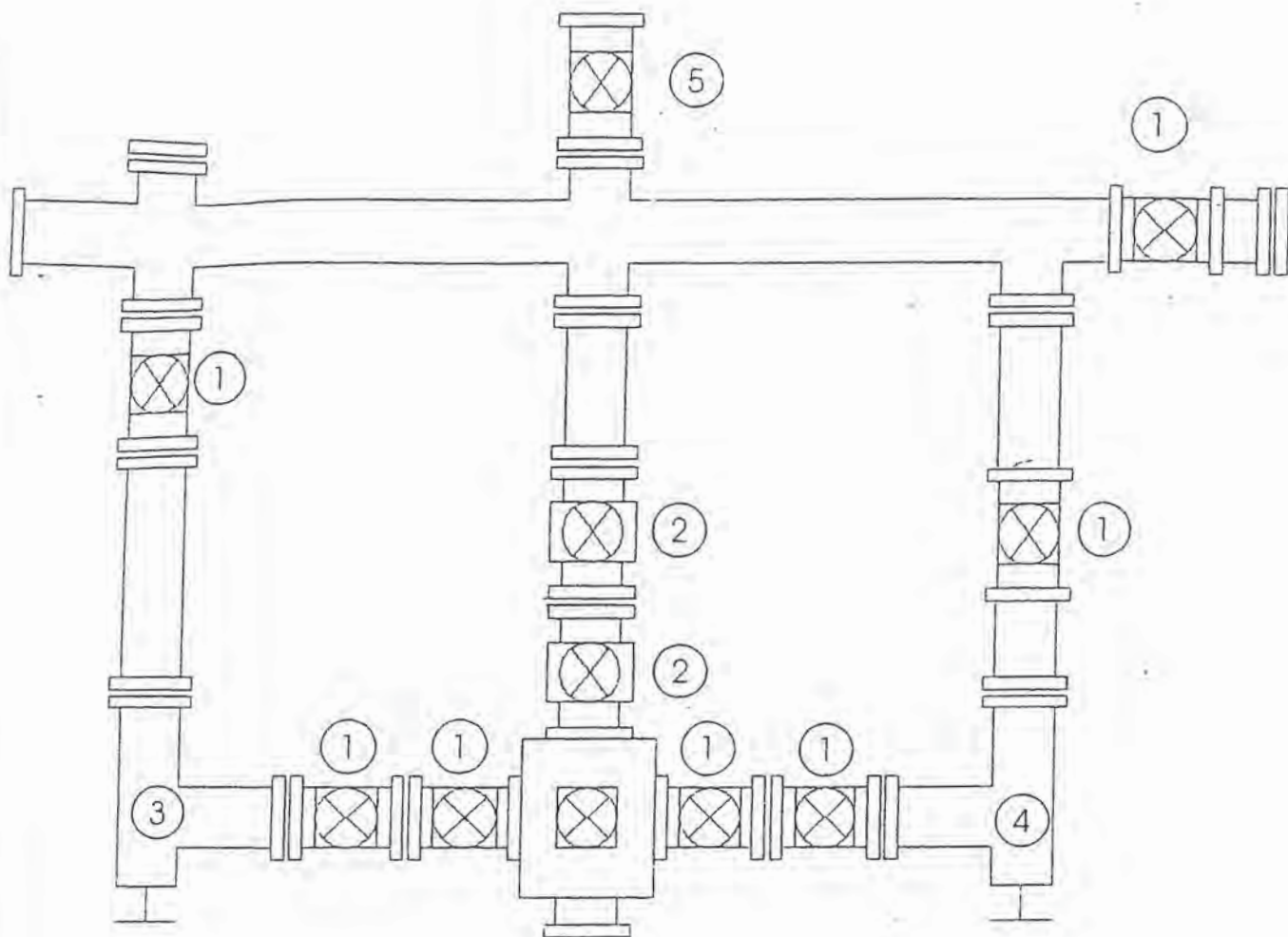
NOTE: LAY-OUT WILL BE SHIFTED TO DIVERTER LINE LAYOUT PLATFORM GAIL MAIN DECK PLAN
 SLOT #8 - SAME COMPARTMENT



- ① BELL NIPPLE
- ② 13 5/8" 5M GK HYDRILL
- ③ 13 5/8" 5M DOUBLE GATE
- ④ DRILLING SPOOL
- ⑤ 3" 5M MANUAL VALVE
- ⑥ 3" 5M HCR VALVE
- ⑦ 3" 5M CHECK VALVE



BLOWOUT PREVENTION SYSTEM PLATFORM GAIL



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD PLATFORM GAIL

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting Office) Venoco, Inc. 5464 Carpinteria Ave. Suite J Carpinteria, CA 93013-1423
4 WELL NAME (Current) E-16	5. SIDETRACK NO (Current) 00	6 BYPASS NO (Current) 00	
7 PROPOSED START DATE 20041120	8 PLAN CONTROL NO (New Well Only)		
9 API WELL NO (Current Sidetrack / Bypass) (12 Digits) 043112069800			

WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE	
10 LEASE NO. P-0209	15 LEASE NO P-0205	RECEIVED NOV 9 2004 MINERALS MANAGEMENT SERVICE CONSTITUTION DISTRICT	
11 AREA NAME 6B	16 AREA NAME 6B		
12. BLOCK NO 4761	17 BLOCK NO 4661		
13 LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 728822.06 N	14 LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 1045509.69 E		
18. LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 727044.45 N	19 CONSTITUTION DISTRICT ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 1046696.35 E		

LIST OF SIGNIFICANT MARKERS ANTICIPATED			
20 NAME Monterey (Top)	21 TOP (MD) 4815'	20 NAME Monterey M4	21 TOP (MD) 5322'
Upper Topanga	6005'	Lower Topanga	6266'
Sespe C1	6675'		

22. LIST ALL ATTACHMENTS (Attach Complete Well Prognosis and Attachments Required by 30 CFR 250 414(B) through (G) or 30 CFR 250 1617(C) and (D). As Appropriate)

Redrill Program (includes: design criteria for well, BOPE, casing program, drilling prognosis), cementing program, drilling mud program, direction program and surface/subsurface well location plat map, Supplemental APD Information Sheet

23 AUTHORIZING OFFICIAL (Type or Print Name) Roger Hanson	24 TITLE V. P. Southern Assets
25 AUTHORIZING SIGNATURE <i>[Signature]</i>	26 DATE 20041108

THIS SPACE FOR MMS USE ONLY		
APPROVED: ☒ With Attached Conditions ☐ Without Conditions	BY <i>[Signature]</i>	TITLE District Manager
API WELL NO. ASSIGNED TO THIS WELL 043112069801		DATE 11/21/05

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT. The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 2 1/4 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, N.W., Washington, DC 20240.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-16 REDRILL PROGRAM
API# 04-311-20698-00
LEASE OCS-P-0205
November 7, 2004

Objective: Redrill E-16 to a water injection location in the Upper Topanga and a producing location in the Lower Topanga / Upper Sespe. The well will be a dual completion with the long string producing the Lower Topanga / Upper Sespe. The short string will inject water into the Upper Topanga.

Surface Location: OCS-P-205, Slot No. 10 (X= 1,046,696.35' & Y= 727,044.45')

Elevation: 739' WD, 113' Above MLLW, 852' Ocean Floor to Rig Floor

Proposed TD: OCS-P-209; 6952' MD / 6113' TVD / 6000' SS

TD Location: 1777.61' N and 1186.66' W or (X = 1,045,509.69' and Y = 728,822.06')

<u>Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. Press.(psi)</u>
Top Monterey	4815'	4077'	-3964'	
M2	5076'	4285'	-4172'	1600
M4	5322'	4510'	-4388'	1600
Upper Topanga	6005'	5166'	-5053'	1500
Lower Topanga	6266'	5426'	-5313'	1200-1800
Sespe C1 Sand	6675'	5935'	-5822'	1500-1800

Existing Casing:

24", 201#, X-52	1402'	
13 3/8", 68#, K-55, Butt.	2663'	
9 5/8", 43.5#, L-80, Hydril 563	5174': 53.5#/47#, SS-95	5174'-6851'
7", 26#, L-80, Hydril 521	6638'-7737'	

Proposed Casing:

24", 201#, X-52	1402' (Existing)
13 3/8", 68#, L-80, Butt.	2663' (Existing)
9 5/8", 43.5#, L-80, Hydril 563	3400' (Existing)
7", 26#, L-80, Hydril 513	3200'-6952' (KOP @ +/- 3400')

The well will be abandoned as per the attached drawing. The work is being performed under a previously submitted APM.

Drilling Procedure

Note: The 13-5/8" 5M BOPE will be configured for drilling with 5" drill pipe rams in the top of the double gate and blind rams in the bottom. The 2 7/8" to 5" VBR rams will be located in the single gate below the mud cross. Prior to initiating redrill operations below, the BOP will be tested with 5" & 3-1/2" drill pipe to 250/3000 psi, the blind rams to 250/3000 psi and the casing to 250/3000 psi. All tests will be recorded.

1. Make up a 9 5/8", 43.5# bottom trip whipstock and starting mills. Pick up an MWD. Run in the hole on 5" drill pipe to 30' above the CIBP at +/-3400'. Orient the whipstock 45 degrees right of high side using the measurements from the MWD. Set the whipstock on the CIBP and shear the tools off the whipstock face. Start milling with high viscosity Drilplex milling fluid. Mill and dress the window as required to obtain good exit point for sidetrack. Drill enough rathole to pass all mills through the window. Mills must smoothly pass through the window before finalizing milling operations. Perform a Formation Integrity Test to 11.0 ppg EMW. Reduce the viscosity of the mud to desired drilling parameters. Pull out of the hole and lay down the milling tools.
2. Pick up an 8 1/2" bit on a steerable directional drilling assembly including MWD. Run in the hole and sidetrack the well. Continue directionally drilling an 8 1/2" hole from 3400' to the total depth of 6952' MD / 6113' TVD. The 8 1/2" hole will be drilled with a SP 101 drilling fluid system. The well will be drilled through the Monterey, Upper and Lower Topanga and Upper Sespe formations that are pressure depleted. There could be problems with lost circulation and differential sticking. Make bit and wiper trips as necessary.

Notes:

- See the attached drilling fluids program.
 - Review the attached directional program.
 1. Target No 1: Upper Topanga; X=1,045,509.69, Y=728,822.06 or 1777' N and 1186' W at 6005' MD / 5166' TVD / -5053' SS
 2. Target No.2: Depth; X=1,045,509.68, Y=1045509.69 or 1777' N and 1186' W at 6952' MD / 6113' TVD / -6000' SS
 - Mud loggers to start upon drilling out of the 9 5/8" casing window.
3. Circulate and condition the mud for logging. Wipe the hole to the 9 5/8" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
 4. Rig up wire line and prepare to run open hole logs (see attached logging program). Condition the hole if necessary between runs.
 5. Run back to bottom with an 8 1/2" bit and circulate and condition the hole for casing. Wipe the hole to the 9 5/8" casing shoe. Pull out of the hole and stand the 5" drill pipe back.

6. Rig up casing crew and run the 7", 26#, L-80, Hydril 513 liner from +/- 3200' to 6952' as follows:

1. 7", 26#, L-80 Float Shoe
2. 1 Joints of 7", 26#, L-80 Casing
3. 7", 26#, L-80 Float Collar
4. 1 Joint of 7", 26#, L-80 Casing
5. 7", 26#, L-80 Landing Collar
6. +/- 3672' of 7", 26#, L-80 Casing
7. 7", 26#, Hyflo II Hydraulic Liner Hanger
8. RS Nipple with 6.188" Profile
9. ZXP Liner Top Packer, 7" x 9 5/8", HR Profile w/ 10' tie-back extension

Notes:

- Centralize the 7" liner inside the 8 1/2" open hole using positive stand-off centralizers with stop rings. Centralizer spacing will be determined after the directional work is completed. Consider running a centralizer in the middle of every joint through the zones of interest (30 total).
- Drift DP to ensure cementing dart will pass.
- Run in the hole slowly to avoid surging the formation.
- A circulating swage with a safety valve will be on the rig floor.

7. Run the liner in the hole, tag bottom and pick up 5' and circulate the well until the returns are clean. Reciprocate the liner while circulating. Drop the setting ball and set the liner hanger.
8. Mix and pump the cement job as per the attached program. Bump the plug with 500 psi above the final circulating pressure. Bleed the pressure back and check the floats. Pick up and set the liner packer at the top of the liner hanger. While waiting on cement, pull out of the hole and rack the 5" drill pipe back and lay down any drilling tools that will not be needed.

Notes:

- See attached cementing program for slurry specifications.
- Cement volumes are based on 50% excess in the open hole.
- Do not circulate at the top of the liner prior to pulling out of the hole.
- Set the liner 5' off bottom.
- The 3 1/2" drill pipe needed to clean out the liner 7" liner should still be in the derrick. The 3 1/2" drill pipe will be used to recover the production equipment.

9. Pick up an 8 1/2" bit and run in the hole. Clean out to the top of the liner at 3200'. Pressure test the liner top to 3000 psi. Pull out of the hole.

10. Pick up a 6 1/8" bit and 3 1/2" drill pipe and run in the hole. Clean out the 7" liner to the landing collar at +/- 6872'. Pressure test the 7" liner to 3000 psi. Displace the drilling fluid out of the hole with clean filtered sea water. Circulate the well until return fluids are clean. Pull out of the hole with the 3 1/2" drill pipe. Remove the wear bushing.
11. A detailed completion procedure will be provided after the open hole logs have been evaluated.

GENERAL COMPLETION PROCEDURE

Note: For the completion mode, the 13-5/8" 5M BOPE will be configured with 2-3/8" pipe rams in the top of the double gate and blind rams in the bottom. The 2 7/8" to 5" VBR rams will be located in the single gate below the mud cross. Prior to initiating completion operations below, the BOP will be tested with 2-3/8", 2-7/8" & 3-1/2" pipe to 250/3000 psi (the blind rams to 250/3000 psi). All tests will be recorded.

1. Run in the hole with 7, 26# casing scraper. Circulate the well with clean filtered sea water. Pull out of the hole with the drill pipe.
2. Rig up wireline and run a cement bond log (USIT/GR) across the 7" liner.
3. Perforate the Upper Topanga interval with TCP guns.
4. Run the dual completion equipment with the long string producing the Lower Topanga/Upper Sespe. The short string will inject water into the Upper Topanga.
5. Rig down and move the rig to the next well.
6. Perforate the long string Lower Topanga/Upper Sespe through the 2 3/8" tubing on wire line with 1 11/16" strip perforating guns.

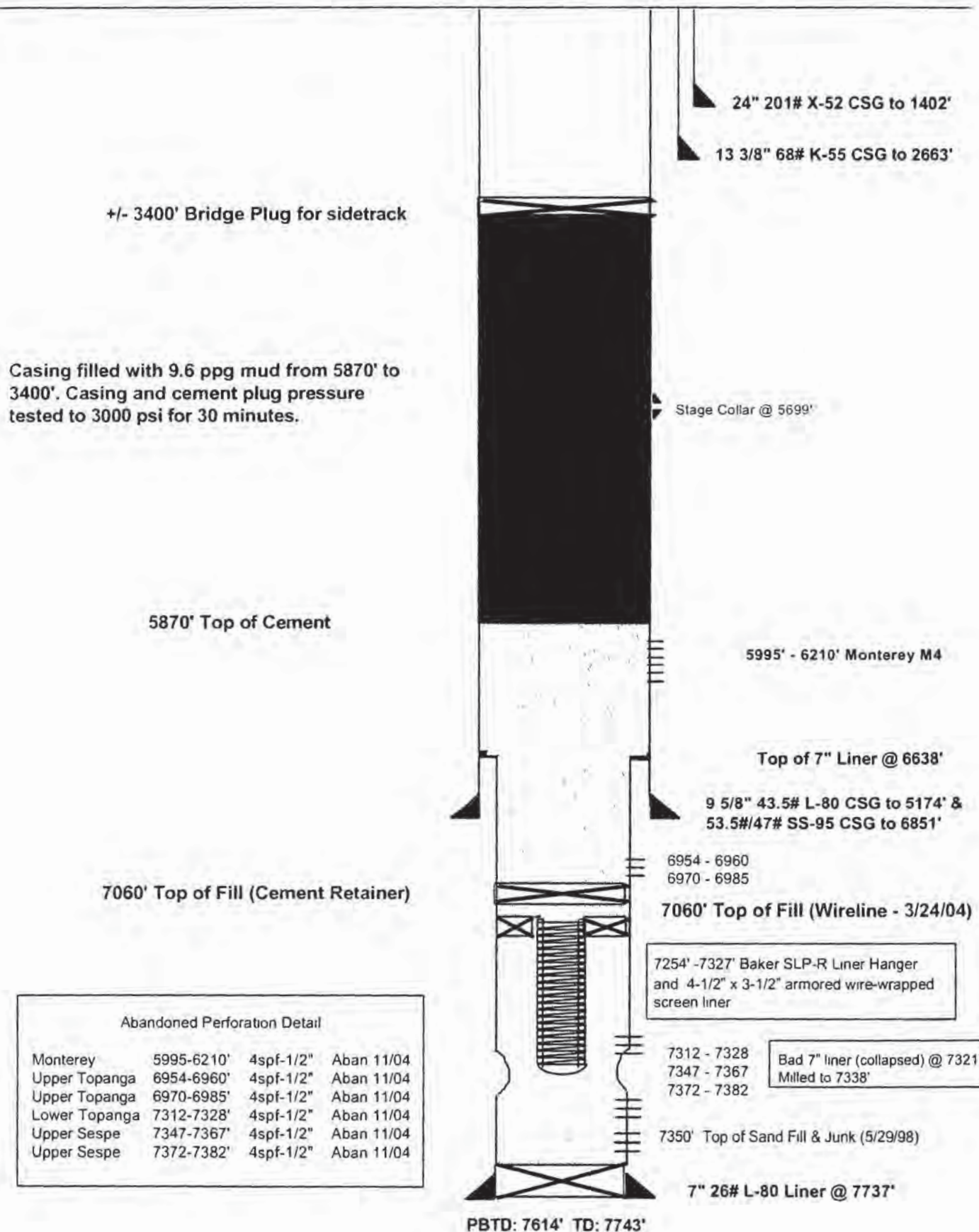
Vertical to 1600'
 Max Angle: 58 deg @ 4000, 33 deg @ TD
 D F Elevation: 113'
 D F to Tubing Head: 60.4'
 Water Depth: 739'
 Tree: FMC 5000 PSI WP

Lease: OCS-P-0209
SOCKEYE FIELD
WELL E-16

Drawing Revision 11/03/04 JLH

Completion Date: 3/9/93
 Abandonment: 11/20/04

PROPOSED ABANDONMENT



Vertical to 1600'
 Max Angle: 53 deg @ 3400', 0 deg @ TD
 D.F. Elevation: 108'
 D F. to Tubing Head: 60.4'
 Water Depth: 739'
 Tree: FMC 5000 PSI WP

Lease: OCS-P-020

Drawing Revision 11/07/04 JLH

SOCKEYE FIELD

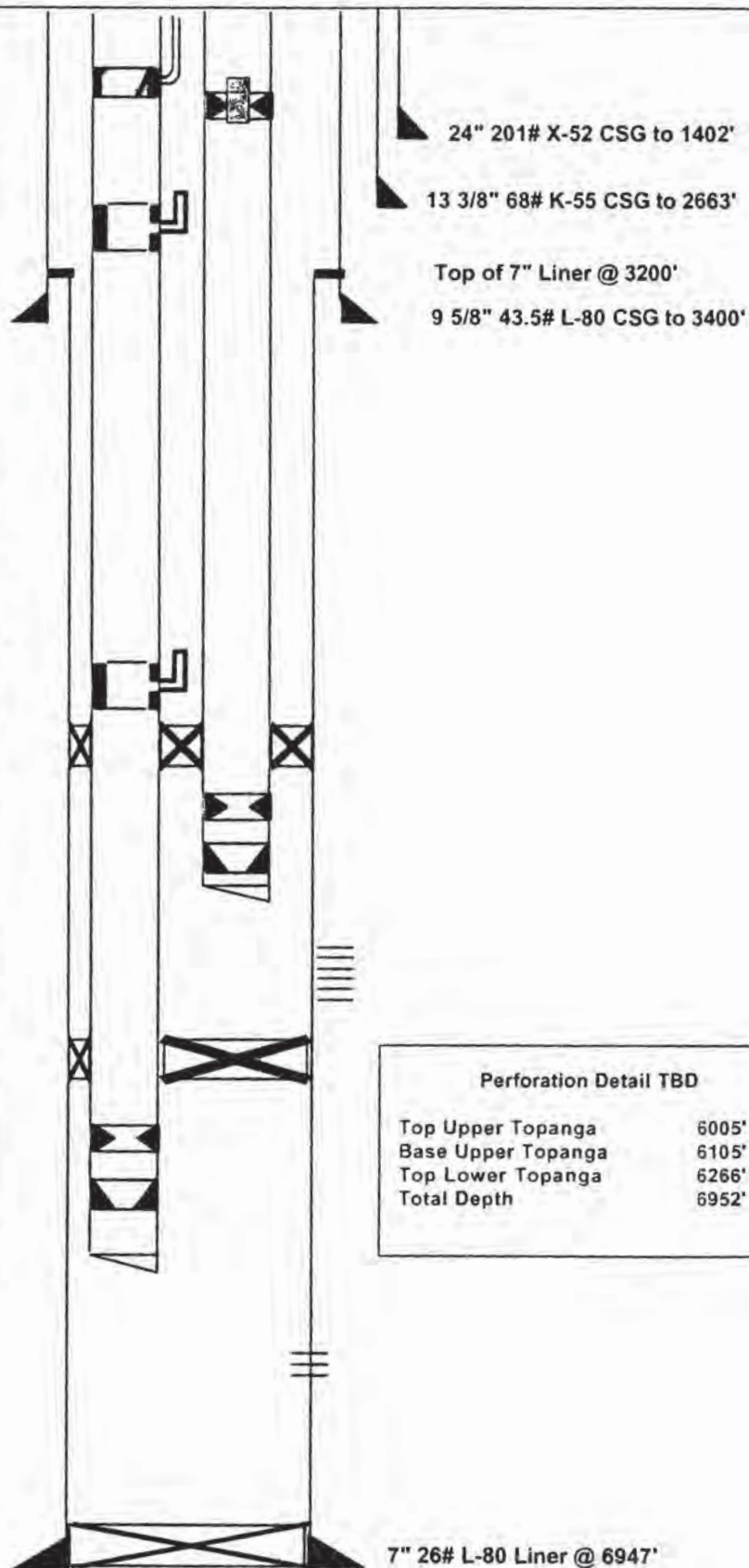
WELL E-16

Completion Date: 12/15/04
 Abandonment: 11/20/04

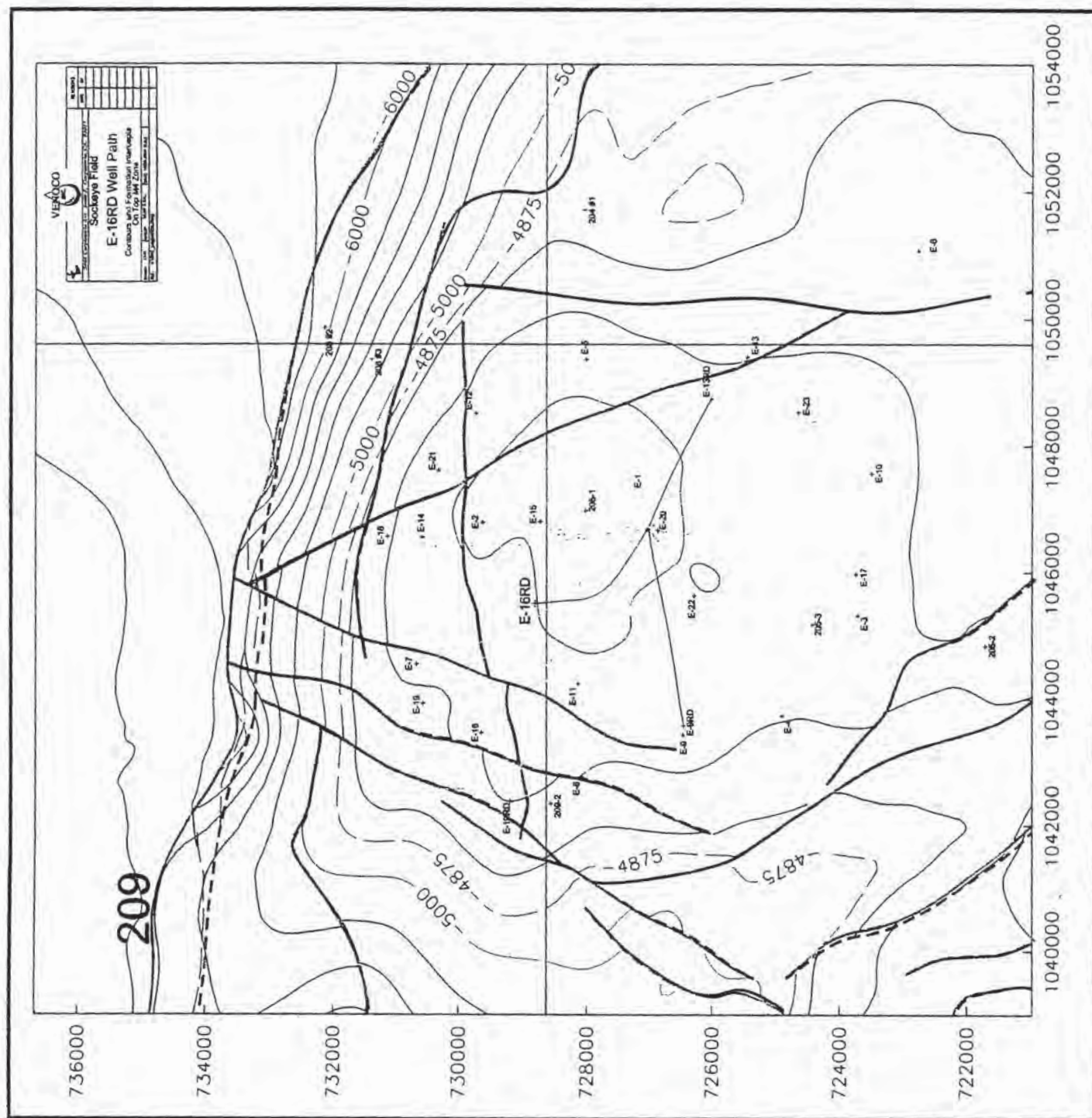
PROPOSED COMPLETION

Short String Description	ID	LENGTH	DEPTH
KB		59.00	0
Tubing Hanger w/ pup jt	2.441"	4.73	59
31 jts 2-7/8" L-80 6 5# 8rd EUE tbg	2.441"	945.00	64
"X" Nipple (Injection Valve)	2.313"	2.00	1009
69 jts 2-7/8" tbg as above	2.441"	2135.00	1011
Crossover from 2-7/8" tbg to 2-3/8"	1.995"	1.00	3146
87 jts 2-3/8" 4 7# L-80 EUE 8rd	1.995"	2684.00	3147
Baker 7" GT Dual Packer w/ pup jts	1.995"	21.95	5831
1 jt 2-3/8" tbg as above	1.995"	31.47	5853
"X" Nipple	1.875"	1.12	5884
1 jt 2-3/8" tbg as above	1.995"	31.36	5885
Hydro-Trip Sub	1.791"	1.11	5917
Mule Shoe	1.995"	0.60	5918
Tail			5918

Long String Description	ID	LENGTH	DEPTH
KB		59.00	0
Tubing Hanger w/ pup jt	2.441"	6.00	59
29 jts 2-7/8" L-80 6 5# 8rd EUE tbg	2.441"	899.00	65
Baker "T-5" SSSV w/ pup jts	2.313"	14.85	964
69 jts 2-7/8" tbg as above	2.441"	2151.00	979
Gas Lift Mandrel (GLV-1.0R, 1800 psi)	2.441"	11.85	3130
Crossover from 2-7/8" to 2-3/8" tbg	1.995"	0.75	3142
85 jts 2-3/8" 4.7# L-80 EUE 8rd tbg	1.995"	2643.00	3142
Gas Lift Mandrel (9/64" Orifice)	1.995"	14.73	5785
1 jt 2-3/8" tbg as above	1.995"	31.00	5800
Baker 7" GT Dual Packer w/ pup jts	1.995"	21.95	5831
10 jts 2-3/8" tbg as above	1.995"	300.00	5853
Baker "HB" Packer w/ pup jts	1.995"	16.50	6153
1 jt 2-3/8" tbg as above	1.995"	30.00	6170
"X" Nipple	1.875"	1.12	6200
1 jt 2-3/8" tbg as above	1.995"	30.00	6201
Hydro-Trip Sub	1.791"	1.11	6231
Mule Shoe	1.995"	0.60	6232
Tail			6232



Perforation Detail TBD	
Top Upper Topanga	6005'
Base Upper Topanga	6105'
Top Lower Topanga	6266'
Total Depth	6952'

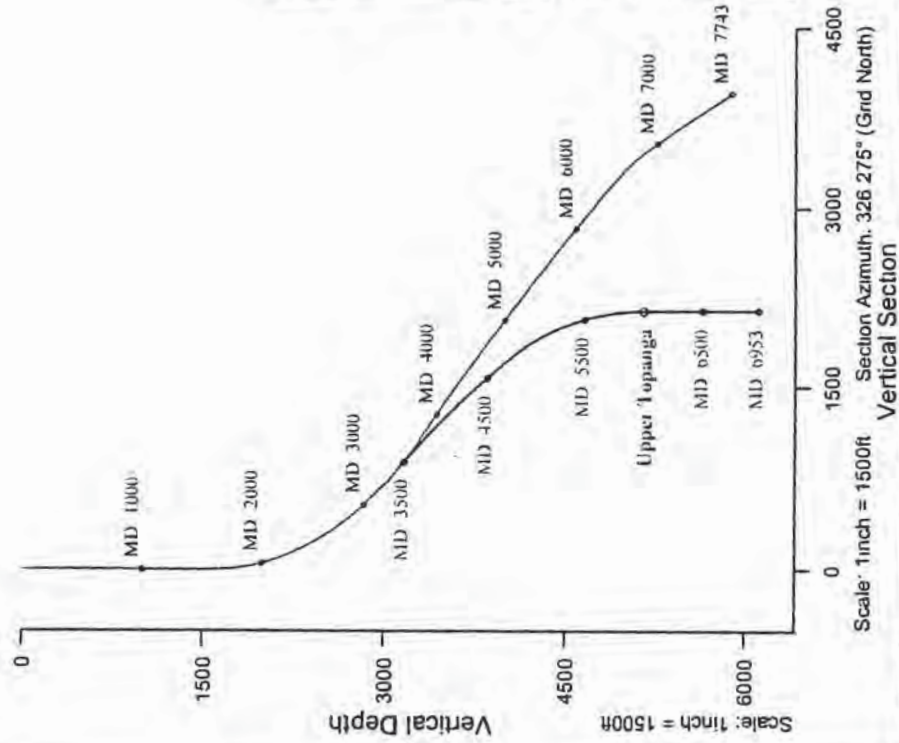


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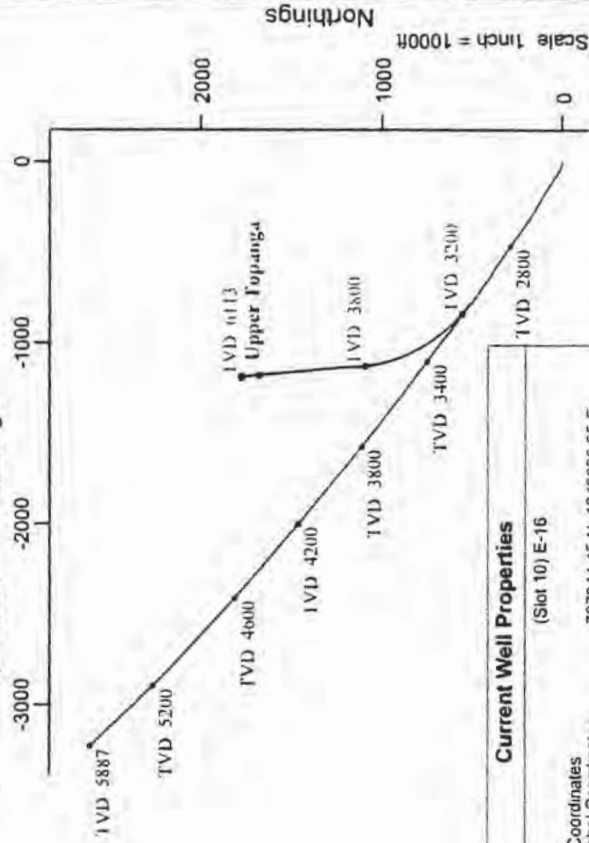
Venoco Inc.

DrillQuest
Sperry-Sun

**Sockeye Field
Platform Gail
(Slot 10) E-16**



Scale: 1 inch = 1000 ft



Current Well Properties

Well	(Slot 10) E-16
Horizontal Coordinates	
Ref Global Coordinates	727044 45 N, 1046696 35 E
Ref Global Coordinates	
Ref Geographical Coordinates	34 12523261° N, 119 40007055° W
RKB Elevation	113 00ft above Mean Sea Level
Grid North Convergence	-1 731°
North Reference	Grid North
Units	Feet (US)

RD1 Plan 5 (19-Oct-04) (E18UT) Proposal Data

Coordinate System	MAD27 California State Planes, Zone VI	Measured Depth	Incl	Azin.	Vertical Depth	Northings	Eastings	Vertical Section	Dogleg Rate
Start Drop/Turn	3400.00	53.780	3165.926	3103.17	474.61 N	742.13 W	806.78		
Start High	4543.35	45.100	359.000	3853.52	1175.14 N	1133.89 W	1607.04		3.500
Start Drop/Turn	4571.35	45.100	359.000	3862.70	1166.56 N	1137.26 W	1629.04		0.000
Start High	4662.15	45.065	354.611	3862.40	1269.31 N	1141.59 W	1714.13		1.500
Drop to Vertical	4718.39	45.065	354.611	4007.14	1298.95 N	1186.66 W	2137.30		0.000
Start High	6005.96	0.000	0.000	5166.00	1777.61 N	1186.66 W	2137.30		1.500
Total Depth	6952.96	0.000	0.000	6113.00	1777.61 N	1186.66 W	2137.30		0.000



**Venoco Inc.
Sockeye Field
Platform Gail
(Slot 10) E-16 - RD1 Plan 5 (19-Oct-04) (E18UT)**

Sperry-Sun

Proposal Report

19 October, 2004

Surface Coordinates 727044 45 N, 1046696 35 E (34 12523261° N, 119 40007055° W)
Grid Coordinate System NAD27 California State Planes, Zone VI

RKB Elevation 113.00ft above Mean Sea Level
Water Depth 739.00ft

Proposal Ref pro132256

HALLIBURTON

Proposal Report for Platform Gail - (Slot 10) E-16

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
0 00	0 000	0 000	113 00	0 00	0 00 N	0 00 E	727044 45 N	1046696 35 E		0 00	
852 00	0 000	0 000	-739 00	852 00	0 00 N	0 00 E	727044 45 N	1046696 35 E	0 000	0 00	
880 00	0 170	181 140	-767 00	880 00	0 04 S	0 00 E	727044 41 N	1046696 35 E	0 607	-0 03	
910 00	0 150	180 600	-797 00	910 00	0 13 S	0 00 E	727044 32 N	1046696 35 E	0 067	-0 10	
940 00	0 170	190 810	-827 00	940 00	0 21 S	0 01 W	727044 24 N	1046696 34 E	0 116	-0 17	
970 00	0 130	172 420	-857 00	970 00	0 29 S	0 01 W	727044 16 N	1046696 34 E	0 207	-0 23	
1000 00	0 150	188 820	-887 00	1000 00	0 36 S	0 02 W	727044 09 N	1046696 33 E	0 149	-0 29	
1030 00	0 180	179 730	-917 00	1030 00	0 44 S	0 02 W	727044 01 N	1046696 33 E	0 132	-0 36	
1060 00	0 150	187 660	-947 00	1060 00	0 53 S	0 03 W	727043 92 N	1046696 32 E	0 125	-0 43	
1090 00	0 130	174 450	-977 00	1090 00	0 60 S	0 03 W	727043 85 N	1046696 32 E	0 126	-0 49	
1120 00	0 130	208 010	-1007 00	1120 00	0 67 S	0 04 W	727043 78 N	1046696 31 E	0 250	-0 53	
1150 00	0 120	163 590	-1037 00	1150 00	0 73 S	0 05 W	727043 72 N	1046696 30 E	0 317	-0 58	
1180 00	0 090	159 130	-1067 00	1180 00	0 78 S	0 03 W	727043 67 N	1046696 32 E	0 104	-0 63	
1210 00	0 090	207 040	-1097 00	1210 00	0 82 S	0 03 W	727043 63 N	1046696 32 E	0 244	-0 67	
1240 00	0 090	183 820	-1127 00	1240 00	0 87 S	0 05 W	727043 58 N	1046696 30 E	0 121	-0 70	
1270 00	0 100	153 980	-1157 00	1270 00	0 91 S	0 04 W	727043 54 N	1046696 31 E	0 166	-0 74	
1300 00	0 120	188 300	-1187 00	1300 00	0 97 S	0 03 W	727043 48 N	1046696 32 E	0 226	-0 79	
1330 00	0 110	136 630	-1217 00	1330 00	1 02 S	0 01 W	727043 43 N	1046696 34 E	0 335	-0 84	
1360 00	0 080	233 860	-1247 00	1360 00	1 05 S	0 01 W	727043 40 N	1046696 34 E	0 480	-0 87	
1390 00	0 080	159 590	-1277 00	1390 00	1 09 S	0 02 W	727043 36 N	1046696 33 E	0 322	-0 89	
1420 00	0 090	177 720	-1307 00	1420 00	1 13 S	0 01 W	727043 32 N	1046696 34 E	0 095	-0 93	
1450 00	0 140	184 100	-1337 00	1450 00	1 19 S	0 01 W	727043 26 N	1046696 34 E	0 172	-0 98	
1480 00	0 090	231 920	-1367 00	1480 00	1 24 S	0 04 W	727043 21 N	1046696 31 E	0 346	-1 01	
1510 00	0 310	264 470	-1397 00	1510 00	1 26 S	0 13 W	727043 19 N	1046696 22 E	0 797	-0 98	
1540 00	0 830	293 110	-1427 00	1540 00	1 18 S	0 42 W	727043 27 N	1046695 93 E	1 925	-0 75	
1570 00	1 830	296 420	-1456 99	1569 99	0 89 S	1 04 W	727043 56 N	1046695 31 E	3 342	-0 16	
1600 00	2 720	291 710	-1486 96	1599 96	0 41 S	2 13 W	727044 04 N	1046594 22 E	3 029	0 84	
1630 00	3 530	288 570	-1516 92	1629 92	0 15 N	3 67 W	727044 60 N	1046692 68 E	2 759	2 16	
1660 00	4 470	287 770	-1546 85	1659 85	0 80 N	5 66 W	727045 25 N	1046690 69 E	3 139	3 81	
1690 00	5 420	283 630	-1576 73	1689 73	1 49 N	8 15 W	727045 94 N	1046688 20 E	3 381	5 76	

E-16 Original Hole

Proposal Report for Platform Gail - (Slot 10) E-16

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
1720.00	6.060	282.440	-1605.58	1719.58	2.16 N	11.07 W	727046.61 N	1046685.28 E	2.170	7.95	
1750.00	6.950	286.550	-1636.39	1749.39	3.02 N	14.36 W	727047.47 N	1046681.99 E	3.346	10.49	
1780.00	8.200	292.820	-1666.13	1779.13	4.37 N	18.07 W	727048.82 N	1046678.28 E	4.989	13.67	
1810.00	9.190	294.260	-1695.78	1808.78	6.18 N	22.23 W	727050.63 N	1046674.12 E	3.379	17.48	
1840.00	10.270	295.220	-1725.35	1838.35	8.31 N	26.83 W	727052.76 N	1046669.52 E	3.640	21.81	
1870.00	11.620	295.430	-1754.81	1867.81	10.74 N	31.98 W	727055.19 N	1046664.37 E	4.502	26.69	
1900.00	12.720	295.210	-1784.13	1897.13	13.45 N	37.70 W	727057.90 N	1046658.65 E	3.670	32.11	
1930.00	13.650	295.370	-1813.34	1926.34	16.37 N	43.88 W	727060.82 N	1046652.47 E	3.102	37.98	
1960.00	14.780	296.810	-1842.42	1955.42	19.61 N	50.50 W	727064.06 N	1046645.85 E	3.947	44.35	
1990.00	15.700	297.800	-1871.37	1984.37	23.23 N	57.50 W	727067.68 N	1046638.85 E	3.187	51.25	
2020.00	16.880	298.860	-1900.16	2013.16	27.23 N	64.91 W	727071.68 N	1046631.44 E	4.056	58.69	
2050.00	17.870	300.350	-1928.79	2041.79	31.66 N	72.70 W	727076.11 N	1046623.65 E	3.618	66.69	
2080.00	18.900	302.540	-1957.26	2070.26	36.60 N	80.76 W	727081.05 N	1046615.59 E	4.133	75.28	
2110.00	19.930	302.440	-1985.55	2098.55	41.95 N	89.18 W	727086.40 N	1046607.17 E	3.435	84.40	
2140.00	20.980	303.460	-2013.66	2126.66	47.66 N	97.97 W	727092.11 N	1046598.38 E	3.696	94.03	
2170.00	21.970	303.080	-2041.58	2154.58	53.68 N	107.15 W	727098.13 N	1046589.20 E	3.332	104.14	
2200.00	22.920	302.140	-2069.31	2182.31	59.85 N	116.80 W	727104.30 N	1046579.55 E	3.385	114.63	
2230.00	23.990	303.720	-2096.83	2209.83	66.35 N	126.82 W	727110.80 N	1046569.53 E	4.137	125.59	
2260.00	24.930	301.650	-2124.13	2237.13	73.05 N	137.28 W	727117.50 N	1046559.07 E	4.240	136.97	
2290.00	26.260	301.280	-2151.19	2264.19	79.81 N	148.33 W	727124.26 N	1046548.02 E	4.465	148.74	
2320.00	27.390	300.000	-2177.96	2290.96	86.71 N	159.98 W	727131.16 N	1046536.37 E	4.230	160.94	
2350.00	28.110	302.120	-2204.51	2317.51	93.92 N	171.94 W	727138.37 N	1046524.41 E	4.072	173.58	
2380.00	28.900	300.600	-2230.88	2343.88	101.37 N	184.17 W	727145.82 N	1046512.18 E	3.575	186.56	
2410.00	30.070	301.940	-2256.99	2369.99	109.03 N	196.79 W	727153.48 N	1046499.56 E	4.477	199.94	
2440.00	30.830	299.430	-2282.85	2395.85	116.79 N	209.86 W	727161.24 N	1046486.49 E	4.939	213.65	
2470.00	31.650	301.150	-2308.50	2421.50	124.64 N	223.29 W	727169.09 N	1046473.06 E	4.039	227.64	
2500.00	32.530	300.060	-2333.92	2446.92	132.75 N	237.01 W	727177.20 N	1046459.34 E	3.511	242.00	
2530.00	33.120	301.110	-2359.13	2472.13	141.02 N	251.01 W	727185.47 N	1046445.34 E	2.733	256.65	
2560.00	33.790	299.940	-2384.16	2497.16	149.42 N	265.26 W	727193.87 N	1046431.09 E	3.100	271.55	
2615.00	35.700	301.800	-2429.35	2542.35	165.51 N	292.15 W	727209.96 N	1046404.20 E	3.971	299.87	

HALLIBURTON

Venoco Inc.
Sockeye Field
Platform Gail

Proposal Report for Platform Gail - (Slot 10) E-16

Measured Depth (ft)	Incl. Azim.	Grid	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
2714.00	36.500	304.600	-2509.35	2622.35	197.46 N	340.94 W	727241.91 N	1046355.41 E	1.852	353.52	
2808.00	39.600	306.300	-2583.36	2696.36	231.08 N	388.11 W	727275.53 N	1046308.24 E	3.481	407.67	
2899.00	43.400	305.300	-2651.51	2764.51	266.33 N	437.02 W	727310.78 N	1046259.33 E	4.239	464.14	
2991.00	46.100	305.300	-2716.84	2829.84	303.75 N	489.87 W	727348.20 N	1046206.48 E	2.935	524.62	
3084.00	46.000	305.000	-2781.38	2894.38	342.30 N	544.62 W	727386.75 N	1046151.73 E	0.256	587.07	
3176.00	47.400	300.800	-2844.49	2957.49	378.62 N	600.83 W	727423.07 N	1046095.52 E	3.654	648.49	
3268.00	48.700	304.600	-2906.00	3019.00	415.59 N	658.37 W	727460.04 N	1046037.98 E	3.381	711.19	
3359.00	51.900	305.300	-2964.12	3077.12	455.71 N	715.75 W	727500.16 N	1045980.60 E	3.566	776.41	
3400.00	52.780	305.926	-2989.17	3102.17	474.61 N	742.13 W	727519.06 N	1045954.22 E	2.463	806.78	Tied on at 3400.00ft
RD1 Plan 5 (19-Oct-04) (E18UT)											
3500.00	51.186	309.883	-3050.78	3163.78	522.97 N	804.29 W	727567.42 N	1045892.06 E	3.500	881.51	
3600.00	49.733	314.012	-3114.45	3227.45	574.47 N	861.64 W	727618.92 N	1045834.71 E	3.500	956.19	
3700.00	48.432	318.312	-3179.97	3292.97	628.93 N	913.98 W	727673.38 N	1045782.37 E	3.500	1030.54	
3800.00	47.297	322.778	-3247.07	3360.07	686.14 N	961.10 W	727730.59 N	1045735.25 E	3.500	1104.29	
3900.00	46.342	327.397	-3315.52	3428.52	745.90 N	1002.83 W	727790.35 N	1045693.52 E	3.500	1177.15	
4000.00	45.579	332.149	-3385.06	3498.06	807.96 N	1039.01 W	727852.41 N	1045657.34 E	3.500	1248.86	
4100.00	45.018	337.010	-3455.42	3568.42	872.11 N	1069.52 W	727916.56 N	1045626.83 E	3.500	1319.16	
4200.00	44.666	341.949	-3526.35	3639.35	938.11 N	1094.23 W	727982.56 N	1045602.12 E	3.500	1387.77	
4300.00	44.529	346.931	-3597.57	3710.57	1005.71 N	1113.05 W	728050.16 N	1045583.30 E	3.500	1454.44	
4400.00	44.609	351.918	-3668.84	3781.84	1074.65 N	1125.92 W	728119.10 N	1045570.43 E	3.500	1518.92	
4500.00	44.906	356.872	-3739.87	3852.87	1144.68 N	1132.79 W	728189.13 N	1045563.56 E	3.500	1580.98	
4543.35	45.100	359.000	-3770.52	3883.52	1175.31 N	1133.89 W	728219.76 N	1045562.46 E	3.500	1607.07	End of Drop/Turn at 4543.35ft
4573.35	45.100	359.000	-3791.70	3904.70	1196.56 N	1134.26 W	728241.01 N	1045562.09 E	0.000	1624.94	Start Drop/Turn at 4573.35ft
4600.00	45.072	357.684	-3810.51	3923.51	1215.42 N	1134.81 W	728259.87 N	1045561.54 E	3.500	1640.94	
4662.15	45.065	354.611	-3854.41	3967.41	1259.31 N	1137.76 W	728303.76 N	1045558.59 E	3.500	1679.08	End of Drop/Turn at 4662.15ft
4700.00	45.065	354.611	-3881.15	3994.15	1285.99 N	1140.28 W	728330.44 N	1045556.07 E	0.000	1702.66	
4718.39	45.065	354.611	-3894.14	4007.14	1298.95 N	1141.50 W	728343.40 N	1045554.85 E	0.000	1714.13	Drop to Vertical at 4718.39ft
4800.00	42.209	354.611	-3953.19	4066.19	1355.01 N	1146.79 W	728399.46 N	1045549.56 E	3.500	1763.69	
4900.00	38.709	354.611	-4029.27	4142.27	1419.60 N	1152.89 W	728464.05 N	1045543.46 E	3.500	1820.79	
5000.00	35.209	354.611	-4109.16	4222.16	1479.45 N	1158.53 W	728523.90 N	1045537.82 E	3.500	1873.70	

Proposal Report for Platform Gail - (Slot 10) E-16

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft) Eastings (ft)	Global Coordinates Northings (ft) Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
5100.00	31.709	354.611	-4192.58	4305.58	1534.33 N 1163.71 W	728578.78 N 1045532.64 E	3.500	1922.22	
5200.00	28.209	354.611	-4279.20	4392.20	1584.04 N 1168.40 W	728628.49 N 1045527.95 E	3.500	1966.17	
5300.00	24.709	354.611	-4368.72	4481.72	1628.39 N 1172.58 W	728672.84 N 1045523.77 E	3.500	2005.38	
5400.00	21.209	354.611	-4460.78	4573.78	1667.22 N 1176.25 W	728711.67 N 1045520.10 E	3.500	2039.71	
5500.00	17.709	354.611	-4555.05	4668.05	1700.38 N 1179.37 W	728744.83 N 1045516.98 E	3.500	2069.03	
5600.00	14.209	354.611	-4651.18	4764.18	1727.75 N 1181.96 W	728772.20 N 1045514.39 E	3.500	2093.22	
5700.00	10.709	354.611	-4748.81	4861.81	1749.23 N 1183.98 W	728793.68 N 1045512.37 E	3.500	2112.21	
5800.00	7.209	354.611	-4847.58	4960.58	1764.73 N 1185.44 W	728809.18 N 1045510.91 E	3.500	2125.91	
5900.00	3.709	354.611	-4947.11	5060.11	1774.20 N 1186.34 W	728818.65 N 1045510.01 E	3.500	2134.28	
6000.00	0.209	354.611	-5047.04	5160.04	1777.60 N 1186.66 W	728822.05 N 1045509.69 E	3.500	2137.29	
6005.96	0.000	0.000	-5053.00	5166.00	1777.61 N 1186.66 W	728822.06 N 1045509.69 E	3.500	2137.30	End of Drop at 6005.96ft Target - e18 Upper Topanga, Current Target
6100.00	0.000	0.000	-5147.04	5260.04	1777.61 N 1186.66 W	728822.06 N 1045509.69 E	0.000	2137.30	
6200.00	0.000	0.000	-5247.04	5360.04	1777.61 N 1186.66 W	728822.06 N 1045509.69 E	0.000	2137.30	
6300.00	0.000	0.000	-5347.04	5460.04	1777.61 N 1186.66 W	728822.06 N 1045509.69 E	0.000	2137.30	
6400.00	0.000	0.000	-5447.04	5560.04	1777.61 N 1186.66 W	728822.06 N 1045509.69 E	0.000	2137.30	
6500.00	0.000	0.000	-5547.04	5660.04	1777.61 N 1186.66 W	728822.06 N 1045509.69 E	0.000	2137.30	
6600.00	0.000	0.000	-5647.04	5760.04	1777.61 N 1186.66 W	728822.06 N 1045509.69 E	0.000	2137.30	
6700.00	0.000	0.000	-5747.04	5860.04	1777.61 N 1186.66 W	728822.06 N 1045509.69 E	0.000	2137.30	
6800.00	0.000	0.000	-5847.04	5960.04	1777.61 N 1186.66 W	728822.06 N 1045509.69 E	0.000	2137.30	
6900.00	0.000	0.000	-5947.04	6060.04	1777.61 N 1186.66 W	728822.06 N 1045509.69 E	0.000	2137.30	
6952.96	0.000	0.000	-6000.00	6113.00	1777.61 N 1186.66 W	728822.06 N 1045509.69 E	0.000	2137.30	Total Depth at 6952.96ft

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.
Global Northings and Eastings are relative to NAD27 California State Planes, Zone VI.

The Dogleg Severity is in Degrees per 100 feet (US).

Vertical Section is from Well and calculated along an Azimuth of 326.275° (Grid).

Based upon Minimum Curvature type calculations, at a Measured Depth of 6952.96ft.
The Bottom Hole Displacement is 2137.30ft. in the Direction of 326.275° (Grid).

HALLIBURTON

Venoco Inc.
Sockeye Field
Platform Gail

Proposal Report for Platform Gail - (Slot 10) E-16

Comments

Measured Depth (ft)	TVD (ft)	Station Coordinates Northings (ft)	Eastings (ft)	Comment
3400.00	3102.17	474.61 N	742.13 W	Tied on at 3400.00ft
4543.35	3883.52	1175.31 N	1133.89 W	End of Drop/Turn at 4543.35ft
4573.35	3904.70	1196.56 N	1134.26 W	Start Drop/Turn at 4573.35ft
4662.15	3967.41	1259.31 N	1137.76 W	End of Drop/Turn at 4662.15ft
4718.39	4007.14	1298.95 N	1141.50 W	Drop to Vertical at 4718.39ft
6005.96	5166.00	1777.61 N	1186.66 W	End of Drop at 6005.96ft
6952.96	6113.00	1777.61 N	1186.66 W	Total Depth at 6952.96ft

Targets associated with this wellpath

Target Name	TVD (ft)	Target Entry Northings (ft)	Eastings (ft)	Distance (ft)	Direction ("Grid)
e18 Upper Topanga (Point)	5166.00	1777.61 N	1186.66 W	2137.30	326.275
	-5053.00	728822.06 N	1045509.69 E		
		34 13001626° N	119 40416697° W		
		Mean Sea Level/Global Coordinates			
		Geographical Coordinates			

HALLIBURTON

Venoco Inc.
Sockeye Field
Platform Gail

North Reference Sheet for Platform Gail - (Slot 10) E-16

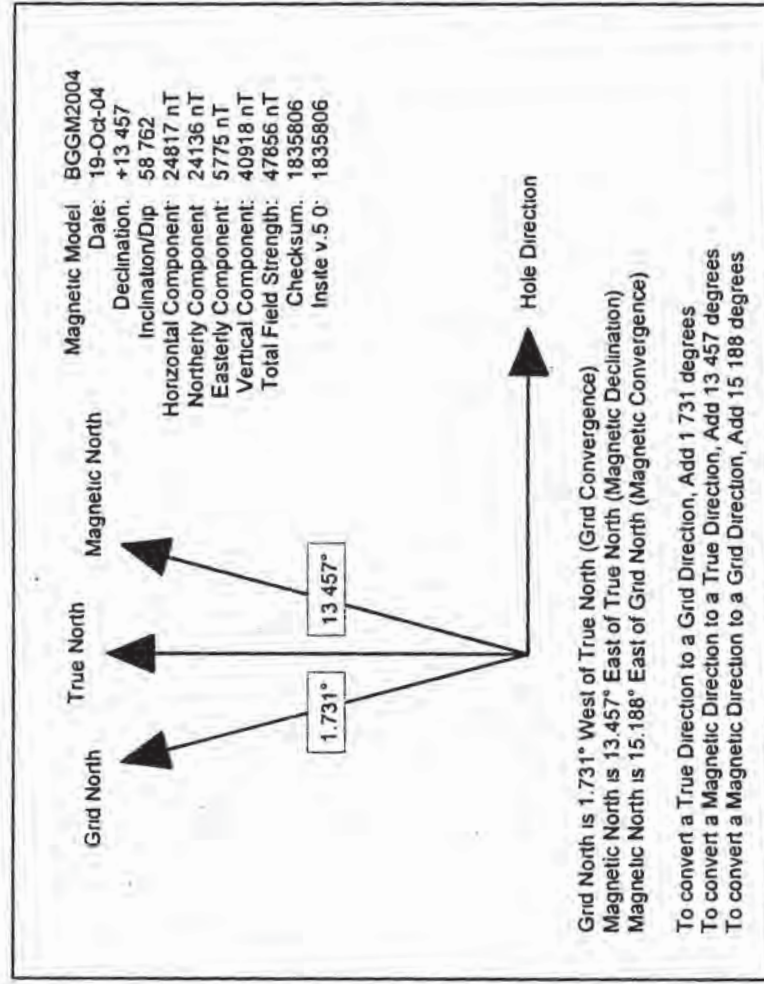
Coordinate System is NAD27 California State Planes, Zone VI, US Foot
Source Snyder, J.P., 1987, Map Projections - A Working Manual

Datum is North American Datum of 1927 (US48, AK, HI, and Canada)

Spheroid is Clarke - 1866
Equatorial Radius 6378206.400m
Polar Radius 6356583.800m
Inverse Flattening 294 978698213901

Projection method is Lambert Conformal Conic Projection
Central Meridian is -116 250°
Longitude Origin -116 250°
Latitude Origin 32 167°
False Easting 609600.00m
False Northing 0.00m
Scale Reduction 1 000000000

Grid Coordinates of Well 727044 45 N, 1046696 35 E
Geographical Coordinates of Well 34 12523261° N, 119 40007055° W
Surface Elevation of Well 113 00ft
Grid Convergence at Surface is -1 731°
Magnetic Convergence at Surface is -15 188° (19 October, 2004)



EVALUATION PROGRAM

1) MUD LOGGING

8 1/2" Hole Section - Mud logging will be used from the kick off point at 3400' through to the total depth of 6952'.

2) ELECTRIC LOGGING

8 1/2" Hole Section

The following logs will be run using wire line:

Run #1: PEX-HALS-NGT

Run #2: FMI-GR (across Monterey)

Run #3: MRX-GR

Actual logging runs will depend on hole conditions. There is a possibility of running the MRX-GR tool in combination with the FMI-GR. Schlumberger is presently reviewing this option. There may also be some SWC's shot.

Notify Geologist to witness all logs.

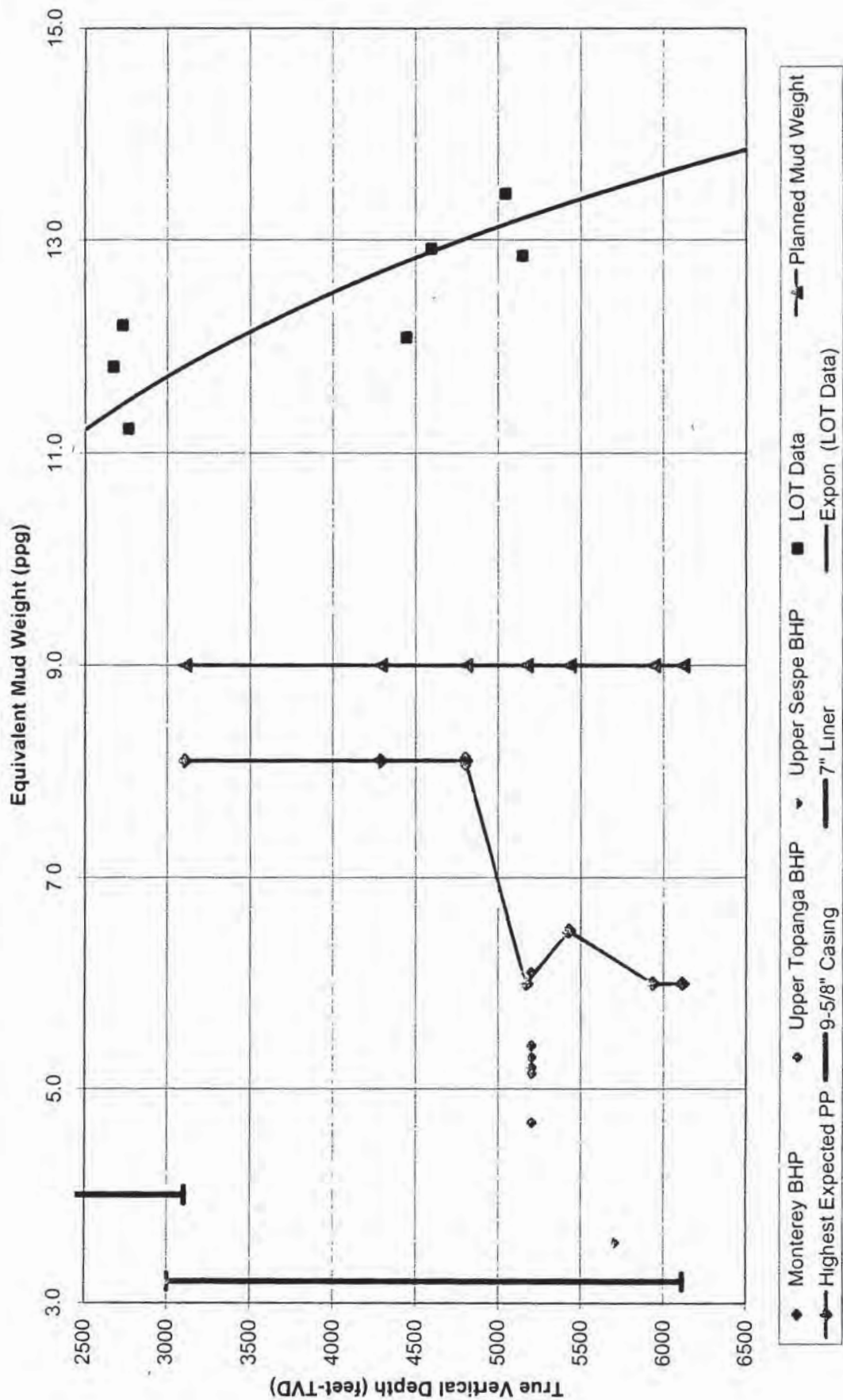
Primary Geologist: Mike Wratcher

Work: 805-745-2272
Home: 805-682-4780
Cell: 805-689-8666

Back-up Geologist: Mark Kamerling

Work: 805-745-2177
Home: 805-898-7975
Cell: 805-450-0612

Platform Gail Well E-16 ST Pore Pressure, Mud Weight & Fracture Pressure



PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9 5/8
2	Setting Depth (feet – TVD)	3102
3	Expected Leak Off Test EMW at shoe (ppg)	12
4	Depth of next Casing (feet - TVD)	6113
5	Maximum Expected Formation Pressure (psi)	1800
6	Expected Mud Weight (ppg)	9.0
7	Formation Equivalent Mud Weight (ppg)	5.7
8	Expected Hydrostatic Pressure at TD (psi)	2860
9	Amount of Overbalance at TD (psi)	1060
10	Fracture Gradient at shoe (psi/ft)	0.62
11	Fracture Pressure at shoe (psi)	1923
12	Hydrostatic Pressure at shoe (psi)	1451
13	Margin between Mud Weight and LOT (psi)	471

Maximum Anticipated Surface Pressures

1	Casing Size (in)	9 5/8
2	Setting Depth (feet – TVD)	3102
3	Expected Leak Off Test EMW at shoe (ppg)	12
4	Expected Mud Weight (ppg)	9.0
5	Depth of next Casing (feet - TVD)	6113
6	Maximum Expected Formation Pressure (psi)	1800
7	Expected gas gradient (psi/ft)	0.05
8	Formation Equivalent Mud Weight (ppg)	5.7
	Max Pressures using 100% Gas to Surface	
9	Max Surface Pressure neglecting shoe (psi)	1494
10	Fracture Gradient at shoe (psi/ft)	0.62
11	Fracture Pressure at shoe (psi)	1923
12	Surface pressure to break down shoe (psi)	1768
13	Maximum Anticipated Surface Pressure (psi)	1494
	Max Pressures using 70% Gas & 30% Mud	
14	Maximum Anticipated Surface Pressure (psi)	727
15	Top of fluid (feet-TVD)	4279
16	Pressure at shoe (psi)	882
17	Margin between pressure and breakdown(psi)	1041

CASING PROGRAM

Hole Section	12.25*	8.5
Mud Weight	9.6	9.0
Buoyancy Factor	0.8533	0.8625
MASP (psi)	1494	1494
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9 5/8*	7
Setting Depth, MD (ft)	3400	6952
Setting Depth, TVD (ft)	3102	6113
Top of Casing, MD (ft)	0	3200
Weight (lb/ft)	43.5	26
Grade	L-80	L-80
Threads	Hydril 563	Hydril 513
ID (in)	8.755	6.276
Drift diameter (in)	8.599	6.151
Collapse (psi)	3810	5410
Burst (psi)	6330	7240
Joint Strength (kips)	800	448
Body Strength (kips)	1005	604
Collapse Safety Factor	2.62	1.89
Burst Safety Factor	3.52	4.02
Tensile Safety Factor	3.53	2.43

* Existing Casing

Notes:

Burst is calculated on the greater of MASP or gas lift pressure.

Collapse is based on mud outside of an evacuated casing string.

Tension is based on buoyed weight of casing string + 100 kips over pull.

CEMENTING PROGRAM

7" Production Liner

Objective: Cement 7" liner set across entire open hole interval. Liner will extend 200' back into the 9 5/8" casing. A liner top packer will be used to ensure pressure integrity.

General Information:

9 5/8", 43.5#, L-80 Casing Window 3400' (8.755" ID)
7", 26#, L-80 Liner (6.276" ID) Shoe at 6952' & TOL at 3200'
Lap Volume Factor is 0.1508 CF/FT
Open Hole Volume Factor is 0.1268 CF/FT
Shoe Joint Volume Factor is 0.2148 CF/FT
Open Hole Excess 50% over theoretical
Static Temperature is 170 F (@ 6113' TVD)

Slurry Volume:

785 CF of cement total required to bring cement to 200' above the top of the 7" liner including the open hole volume with 50% excess. Actual volumes will be determined from the caliper log volumes.

Cement Slurry Details:

Pre-flush: 20 bbls of Ultra Flush II

Lead Cement: 529 CF (222 sx) of Class "G" + 8 gals/100 sx R-8L + 2 gals/100 sx FP-6L + 50 gals/100 sx Liquid Sodium Silicate

Yield: 2.38 CF/sx
Water: 13.61 gal/sx
Weight: 12.2 ppg
Mix Water: Seawater
Height: 2500 linear feet

Tail Slurry: 256 CF (222 sx) of Class "G" + 6 gals/100 sx R21L + 10 gals/100 sx FL-67L + 2 gals/100 sx CD-31-L + 2 gals/100 sx ASA-301L

Yield: 1.15 CF/sx
Water: 4.80 gal/sx
Weight: 15.8 ppg
Mix Water: Fresh Water
Height: 1252 linear feet

Note: Lab tests will be performed prior to cementing to verify slurry properties. Actual materials that will be used on location will be used to perform tests.

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Whipstock	Drilplex	8.6-8.8	NC	+/-10.5	40-50	+9-10 K
3400'-6952'	SP 101	8.6-9.6	< 6.0	+/- 8.5	15-25	+9-10 K

Whipstock: The fluid system used for the milling operations will be Drilplex. The products used for this interval are approved for offshore Region 9. The mud system and cuttings can be dumped overboard if all the environmental tests are negative. The low shear rate viscosity will be raised as necessary to transport metal cuttings out of the well with the use of Drilplex and Gelplex. Add soda ash to control total hardness and caustic soda to control the pH.

3400'-6952': Convert over to SP 101 by adding 1.5 to 2.5 ppb of Sp 101 to the system. Continue with the additions of SP 101 for fluid loss reductions (<6.0 cc). Add dry NaCl to maintain the chloride content between 19,000 and 25,000. Stop additions of Durogel and build up the surface system with MI Gel pre-hydrated in fresh water at a concentration of 12 to 15 ppb. Maintain the mud weight as low as possible with the solids control equipment. Condition the mud with water to keep the MBT below 30 ppb and treat out calcium with Soda Ash to below 200 ppm. Reduced the mud weight and add calcium carbonate if mud losses are encountered while drilling this section of hole.

Notes:

1. Operate solids control equipment to maintain drill solids as low as possible.
2. Maintain supply of $ZnCO_3$ onboard to treat out H_2S .
3. A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised 0.5 ppg using 1000 bbl total circulating volume (566 hole volume & 390 bbl active system).
4. Add Calcium Carbonate to the mud system after drilling through the Monterey interval. This will help prevent lost circulation in the Upper Topanga.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.
Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.
Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).
Read drill pipe pressure.
Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.
Shut down pump and close choke at the same time. SEE NOTE.
Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

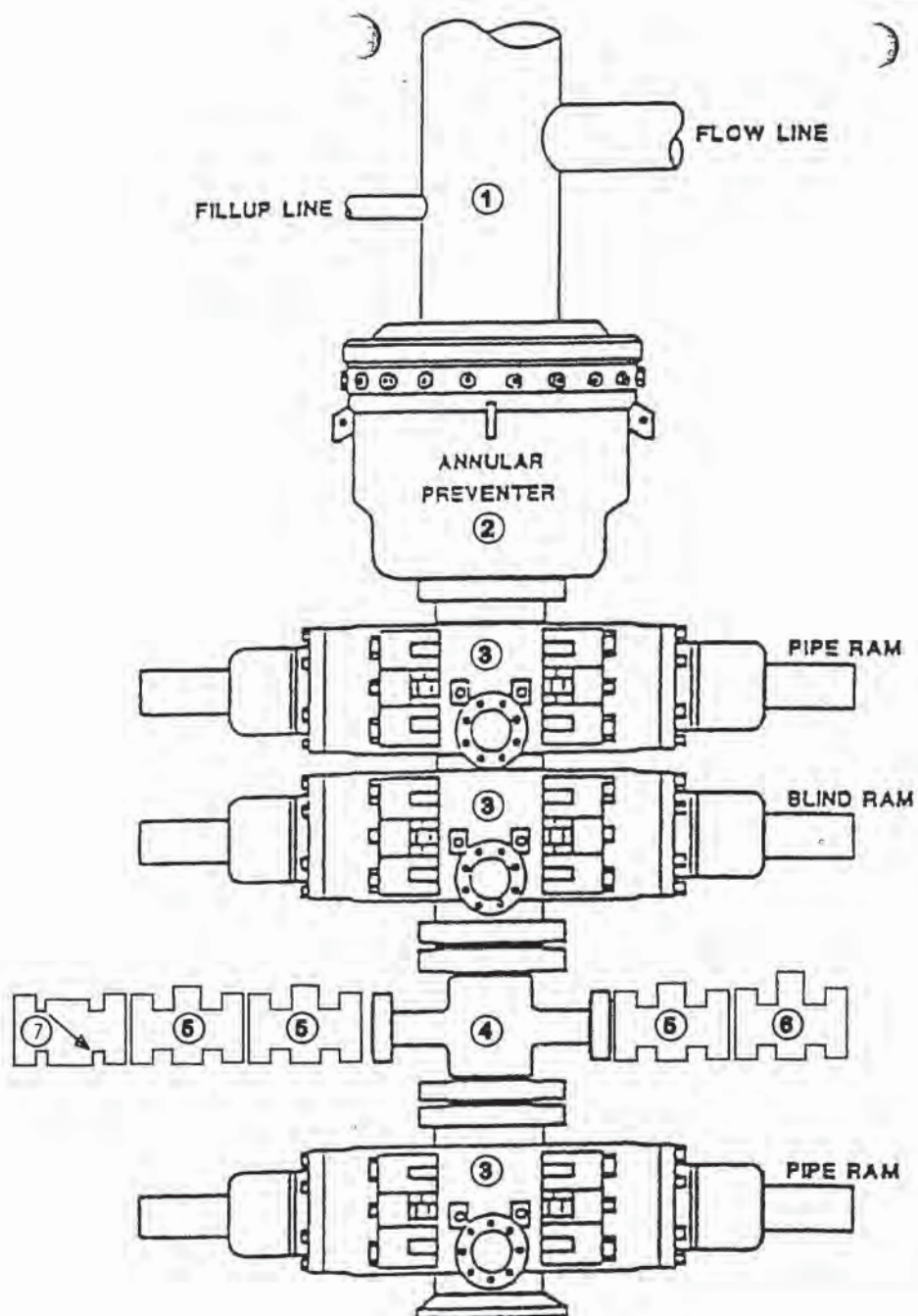
Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas.

Assume any gas circulated to surface to have hydrogen sulfide potential.

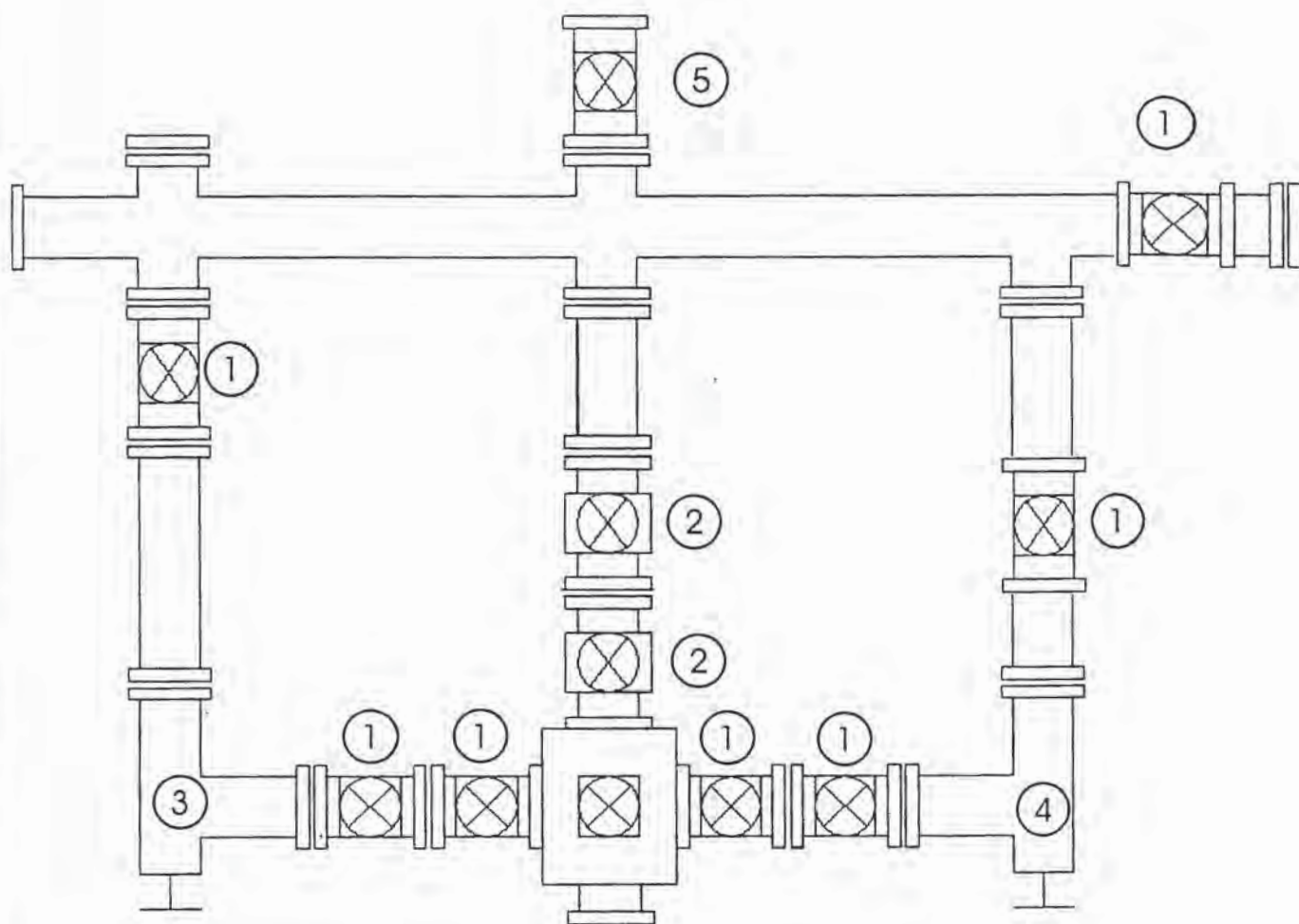
Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.



- ① BELL NIPPLE
- ② 13 5/8" 5M GK HYDRILL
- ③ 13 5/8" 5M DOUBLE GATE
- ④ DRILLING SPOOL
- ⑤ 3" 5M MANUAL VALVE
- ⑥ 3" 5M HCR VALVE
- ⑦ 3" 5M CHECK VALVE



BLOWOUT PREVENTION SYSTEM PLATFORM GAIL



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD PLATFORM GAIL

Supplemental APD Information Sheet

1. OPERATOR NAME Venoco, Inc.		5. WELL NAME (Proposed) E-16		6. TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11. WATER DEPTH 739'		12. ELEVATION AT KB 108'	
2. API WELL NO. (Proposed) (12 Digits) 043112069801		3. BOTTOM LEASE NO. (Proposed) P-0209		7. SIDETRACK NO. (Proposed) 01		8. BYPASS NO. (Proposed) 00		13. H ₂ S DESIGNATION ☒ KNOWN ☐ UNKNOWN ☐ ABSENT	
4. TOTAL DEPTH (Proposed) MD 6952'		TVN 6113'		9. RIG NAME Kenai Drilling Rig No. 2		10. RIG TYPE PF		14. H ₂ S ACTIVATION PLAN DEPTH FT (TVD) 3800' MD / 3360' TVD	

15. ENGINEERING DATA

Hole Size (IN)	Casing (Indicate if Liner)	Casing Size (IN)	Weight (#/Feet)	Burst Rating (psi)	Collapse Rating (psi)	Type of Connection	MASP (psi)	Safety Factors			Top of Liner		Casing Depth (Feet)			Casing Shoe (ppg)			Well-head Rating (psi)	BOP Size (in)	Rated BOP Working Pressure				Test Pressures			Cement (Feet ³)	Drilling Fluid Type (Oil Base, Water Base, Synthetic)		
								B	C	T	MD	MD	MD	MD	PP	MW	FG	Annular/ Diverter (psi)			Ram (psi)	Annular/ Diverter (psi)	Casing Test (psi)	MW Used for Test (ppg)	Casing Shoe (ppg)						
				Grade																											
26"	Drill/ Structural	Conductor	24"	201#									1402'	Existing																	
				X-52																											
17 1/2"	Surface	13 3/8"	68#										2663'	Existing																	
				K-55																											
12 1/4"	Production	9 5/8"	43.5#	6330			1800	3.52	2.62	3.53			3400'		1800	9.0	.62		5000	13 5/8"	5000	5000	5000	3000	3000	3000	11.0	Existing			
				L-80	3810											3102'															
8 1/2"	Liner	7"	26#	7240			1800	4.02	1.89	2.43	3200'		6952'		1800	9.0	.62		5000	13 5/8"	5000	5000	5000	3000	3000	3000	NA	785	Water		
				L-80	5410											6113'															

16. CONTACT NAME John Hood		17. CONTACT PHONE NO (805) 745-2164		18. CONTACT E-MAIL ADDRESS jhood@venoco.com	
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19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more? ☒ YES ☐ NO

20. REMARKS:

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501) requires us to allow you to review this information to obtain well status, well and casing test, and well casing configuration data. MMS uses this information to have accurate data and information on all wells under its jurisdiction and to ensure to average 1 1/2 hour per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing this form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Office, Mail Stop 0202, Minerals Management Service, 1848 C Street, N.W., Washington, DC 20240.

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Supervisor.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, etc., shall be verbally reported immediately to the District Supervisor.
6. The District Supervisor shall be notified in advance in the event of production tests.
7. Two copies of all logs, including the mud log to date, shall be furnished to this office immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Supervisor shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.

VENOCO INC

5464 Carpinteria Ave., Suite 1
Carpinteria, CA 93013-1423
805 745 2100
Fax 805 745.1846

November 8, 2004

Minerals Management Service
Pacific OCS Region
770 Paseo Camarillo
Camarillo, CA 93010-6064

Attn: Mr. Tom Dunaway

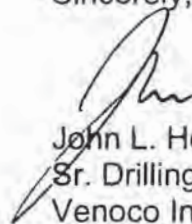
Re: Platform Gail, OCS-P-205, E-16

Dear Sir:

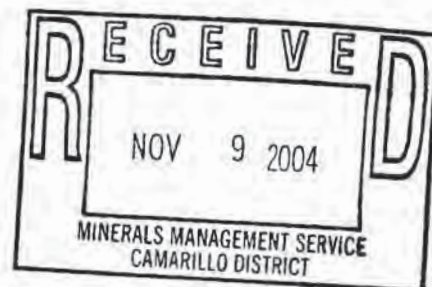
Enclosed please find the Application for Permit to Drill (MMS-123) for the proposed redrill of Platform Gail well E-16. One original and three copies have been submitted, with one copy marked "Public Information". Thank you for your assistance in this matter.

Please contact me at (805) 745-2164 if I can clarify any of the enclosed information.

Sincerely,


John L. Hood
Sr. Drilling Engineer
Venoco Inc.

JLH:jh
Enclosures



Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting Office) Venoco, Inc. 5464 Carpinteria Ave. Suite J Carpinteria, CA 93013-1423
4 WELL NAME (Current) E-18	5 SIDETRACK NO (Current) 00	6 BYPASS NO (Current) 00	
7 PROPOSED START DATE 20041215	8 PLAN CONTROL NO (New Well Only)		
9 API WELL NO (Current Sidetrack / Bypass) (12 Digits) 043112071000			

WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE	
10. LEASE NO P-0209	15 LEASE NO P-0205 *	RECEIVED NOV 15 2004 MINERALS MANAGEMENT SERVICE CAMPBELL DISTRICT	
11 AREA NAME 6B	16 AREA NAME 6B		
12 BLOCK NO 4761	17 BLOCK NO 4661 *		
13 LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 730938.12 N	14 LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 1045606.54 E		
18 LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 727050.46 N	19 LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 1046687.36 E		

LIST OF SIGNIFICANT MARKERS ANTICIPATED			
20. NAME Monterey (Top)	21 TOP (MD) 5214'	20 NAME Monterey M4	21 TOP (MD) 5780'
Upper Topanga	6942'	Lower Topanga	7236'
Sespe C1	7837'		

22. LIST ALL ATTACHMENTS (Attach Complete Well Prognosis and Attachments Required by 30 CFR 250 414(B) through (G) or 30 CFR 250 1617(C) and (D), As Appropriate) Redrill Program (includes: design criteria for well, BOPE, casing program, drilling prognosis), cementing program, drilling mud program, direction program and surface/subsurface well location plat map, Supplemental APD Information Sheet	
23 AUTHORIZING OFFICIAL (Type or Print Name) Roger Hamson	24 TITLE V. P. Southern Assets
25 AUTHORIZING SIGNATURE <i>[Signature]</i>	26 DATE 20041110

THIS SPACE FOR MMS USE ONLY		
APPROVED: ☒ With Attached Conditions ☐ Without Conditions	BY <i>[Signature]</i>	TITLE District Manager
API WELL NO. ASSIGNED TO THIS WELL 043112071001		DATE JAN 28 2005

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 2 1/2 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, N.W., Washington, DC 20240.

Supplemental APD Informa

1. OPERATOR NAME Venoco, Inc.		5 WELL NAME (Proposed) E-18		6 TYPE OF WELL ☐ EXPLORATO	
2 API WELL NO (Proposed) (12 Digits) 043112071001		3 BOTTOM LEASE NO (Proposed) P-0209		7 SIDETRACK NO (Proposed) 01	
4 TOTAL DEPTH (Proposed) MD 7722' TVD 6023'		9 RIG NAME Kenai Drilling Rig No. 2		8 B 00	

15. ENGINEERING DATA															
Hole Size (in)	Casing (Indicate if Liner)	Casing Size (in)	Weight (lb/ft)	Burst Rating (psi)	Type of Connection	MAASP (psi)	Safety Factors			Top of Liner	Casing Depth (Feet)		Casing Shoe (ppg)		
							B	C	T		MD	TVD	PP	MW	FG
26"	Conductor	24"	201# U-80								1398' Existing				
17 1/2"	Surface	13 3/8"	72# L-80								2880' Existing				
12 1/4"	Production	9 5/8"	43.5# L-80	6330 3810	ST/L	1800	3 52	2 66	3 53		3250' 2873'	1800	9.0		.62
8 1/2"	Liner	7"	26# L-80	7240 5410	Hydral 513	1800	4 02	1 92	2 18	3050'	7722' 6023'	1800	9.0		.62

16 CONTACT NAME John Hood		17 CONTACT PHONE NO (805) 745-2164	
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19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to

20. REMARKS:

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-18 REDRILL PROGRAM
API# 04-311-20710-00
LEASE OCS-P-0205
November 9, 2004

Objective: Redrill E-18 to a down-dip location in the Upper and Lower Topanga and Upper Sespe intervals. The well will be a dual completion with the long string injecting water into the Lower Topanga and Upper Sespe. The short string will inject water into the Upper Topanga.

Surface Location: OCS-P-205, Slot No. 5 (X= 1,046,687.4' & Y= 727,050.5')

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Proposed TD: OCS-P-209; 7721' MD / 6023' TVD / 5910' SS

TD Location: 3887.66' N and 1080.82' W or (X = 1,045,606.54' and Y = 730,938.12')

<u>Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. Press.(psi)</u>
M1	5214'	4144'	-4031'	
M2	5540'	4360'	-4247'	1600 psi
M4	5780'	4519'	-4409'	1600 psi
Upper Topanga	6942'	5347'	-5234'	1400-1600 psi
Lower Topanga/Sespe	7236'	5602'	-5489'	1200-1800 psi

Existing Casing:

24", 201#, U-80	1398'
13 3/8", 72#, L-80, Butt.	2880'
9 5/8", 43.5#, L-80,	6458'
7", 26#, L-80, LT&C	6382'-6965'

Proposed Casing:

24", 201#, U-80	1398' (Existing)
13 3/8", 72#, L-80, Butt.	2880' (Existing)
9 5/8", 43.5#, L-80, ST/L	3250' (Existing)
7", 26#, L-80, Hydril 513	3050'-7721' (New-KOP @ +/- 3250')

The well will be abandoned as per the attached drawing. The work is being performed under a previously submitted APM.

Drilling Procedure

Note: The 13-5/8" 5M BOPE will be configured for drilling with 5" drill pipe rams in the top of the double gate and blind rams in the bottom. The 2 7/8" to 5" VBR rams will be located in the single gate below the mud cross. Prior to initiating redrill operations below, the BOP will be tested with 5" & 3-1/2" drill pipe to 250/3000 psi, the blind rams to 250/3000 psi and the casing to 250/3000 psi. All tests will be recorded.

1. Make up a 9 5/8", 43.5# bottom trip whipstock and starting mills. Pick up an MWD. Run in the hole with the 5" drill pipe from the derrick to 30' above the CIBP at +/-3250'. Orient the whipstock 45 degrees left of high side using the measurements from the MWD. Set the whipstock on the CIBP and shear the tools off the whipstock face. Start milling with high viscosity Drilplex milling fluid. Mill and dress the window as required to obtain a good exit point for sidetrack. Drill enough rathole to pass all mills through the window. Mills must smoothly pass through the window before finalizing milling operations. Perform a Formation Integrity Test to 11.0 ppg EMW. Reduce the viscosity of the mud to desired drilling parameters. Pull out of the hole and lay down the milling tools.
2. Pick up an 8 1/2" bit on a steerable directional drilling assembly including MWD/GR. Run in the hole and sidetrack the well. Continue directionally drilling an 8 1/2" hole from 3250' to the total depth of 7722' MD / 6023' TVD. The 8 1/2" hole will be drilled with a SP 101 drilling fluid system. The well will be drilled through the Monterey, Upper and Lower Topanga and Upper Sespe formations that are pressure depleted. There could be problems with lost circulation and differential sticking. Make bit and wiper trips as necessary.

Notes:

- See the attached drilling fluids program.
- Review the attached directional program.
 1. Target No. 1: Upper Topanga; X=1,045,731.38, Y=730,568.75 or 3518' N and 956' W at 6941' MD / 5347' TVD / -5234' SS
 2. Target No. 2: Total Depth; X=1,045,606.54, Y=730,938.12 or 3887' N and 1080' W at 7721' MD / 6023' TVD / -5910' SS
- Mud loggers to start upon drilling out of the 9 5/8" casing window.
- If the formation tops are coming in deeper than expected the tool may need to be run for correlation. Due to the steeply dipping beds on the north flank of the field the well may need to be drilled +/- 250' deeper to penetrate all of the zones of interest.
- A fault will be crossed at the M4 Monterey interval at approximately 5780' MD.

3. Circulate and condition the mud for logging. Wipe the hole to the 9 5/8" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
4. Rig up wire line and prepare to run open hole logs (see attached logging program). Condition the hole if necessary between runs.
5. Run back to bottom with an 8 1/2" bit and circulate and condition the hole for casing. Wipe the hole to the 9 5/8" casing shoe. Pull out of the hole and stand the 5" drill pipe back.
6. Rig up casing crew and run the 7", 26#, L-80, Hydril 513 liner from +/- 3050' to 7721' as follows:

1. 7", 26#, L-80 Float Shoe
2. 1 Joints of 7", 26#, L-80 Casing
3. 7", 26#, L-80 Float Collar
4. 1 Joint of 7", 26#, L-80 Casing
5. 7", 26#, L-80 Landing Collar
6. +/- 4591' of 7", 26#, L-80 Casing
7. 7", 26#, Hyflo II Hydraulic Liner Hanger
8. RS Nipple with 6.188" Profile
9. ZXP Liner Top Packer, 7" x 9 5/8", HR Profile w/ 10' tie-back extension

Notes:

- Centralize the 7" liner inside the 8 1/2" open hole using positive stand-off centralizers with stop rings. Centralizer spacing will be determined after the directional work is completed. Consider running one centralizer in the middle of each joint through any zones of interest (35 centralizers needed).
 - Drift DP to ensure cementing dart will pass.
 - Run in the hole slowly to avoid surging the formation.
 - A circulating swage with a safety valve will be on the rig floor.
7. Run the liner in the hole, tag bottom and pick up 5' and circulate the well until the returns are clean. Reciprocate the liner while circulating. Drop the setting ball and set the liner hanger.
 8. Mix and pump the cement job as per the attached program. Bump the plug with 500 psi above the final circulating pressure. Bleed the pressure back and check the floats. Pick up and set the liner packer at the top of the liner hanger. While waiting on cement, pull out of the hole and lay down any excess 5" drill pipe and drilling tools.

Notes:

- See attached cementing program for slurry specifications.
 - Cement volumes are based on 50% excess in the open hole.
 - Do not circulate at the top of the liner prior to pulling out of the hole.
 - Set the liner 5' off bottom.
 - Liner may be reciprocated or rotated while cementing if the hole conditions allow.
9. Pick up an 8 1/2" bit and run in the hole. Clean out to the top of the liner at 3050'. Pressure test the liner top to 3000 psi. Pull out of the hole.
 10. Pick up a 6 1/8" bit and 3 1/2" drill pipe and run in the hole. Clean out the 7" liner to the landing collar at +/- 7641'. Pressure test the 7" liner to 3000 psi. Displace the drilling fluid out of the hole with clean filtered sea water. Circulate the well until return fluids are clean. Pull out of the hole with the 3 1/2" drill pipe. Remove the wear bushing.
 11. A detailed completion procedure will be provided after the open hole logs have been evaluated.

GENERAL COMPLETION PROCEDURE

Note: For the completion mode, the 13-5/8" 5M BOPE will be configured with 2-3/8" pipe rams in the top of the double gate and blind rams in the bottom. The 2 7/8" to 5" VBR rams will be located in the single gate below the mud cross. Prior to initiating completion operations below, the BOP will be tested with 2-3/8", 2-7/8" & 3-1/2" pipe to 250/3000 psi (the blind rams to 250/3000 psi). All tests will be recorded.

1. Run in the hole with 7, 26# casing scraper. Circulate the well with clean filtered sea water. Pull out of the hole with the drill pipe.
2. Rig up wireline and run a cement bond log (USIT/GR) across the 7" liner.
3. Perforate the Upper Topanga interval with TCP guns.
4. Run the dual completion equipment with the long string injecting into the Lower Topanga/Upper Sespe. The short string will inject water into the Upper Topanga.
5. Rig down and move the rig to the next well.
6. Perforate the long string Lower Topanga / Upper Sespe interval through 2 3/8" tubing on wireline with 1 11/16" strip perforating guns.

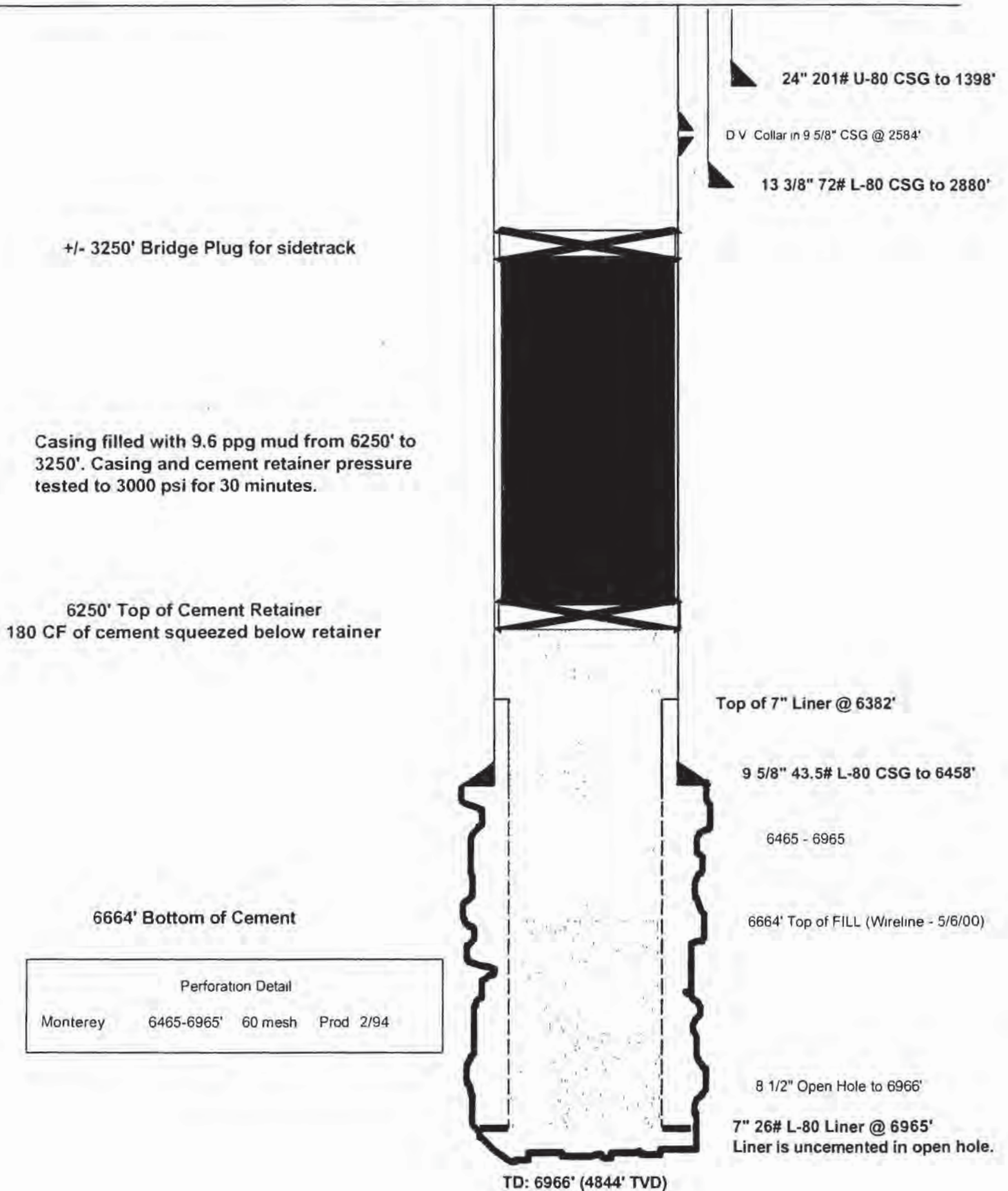
Vertical to 1500'
 Max Angle .64 deg @ 5400, 47 deg @ TD
 D.F. Elevation: 113'
 D.F. to Tubing Head: 60.2'
 Water Depth: 739'
 Tree: FMC 5000 PSI WP

SOCKEYE FIELD WELL E-18

Lease: OCS-P-0209

Completion Date: 2/6/94
 Abandonment: 12/15/04

PROPOSED ABANDONMENT

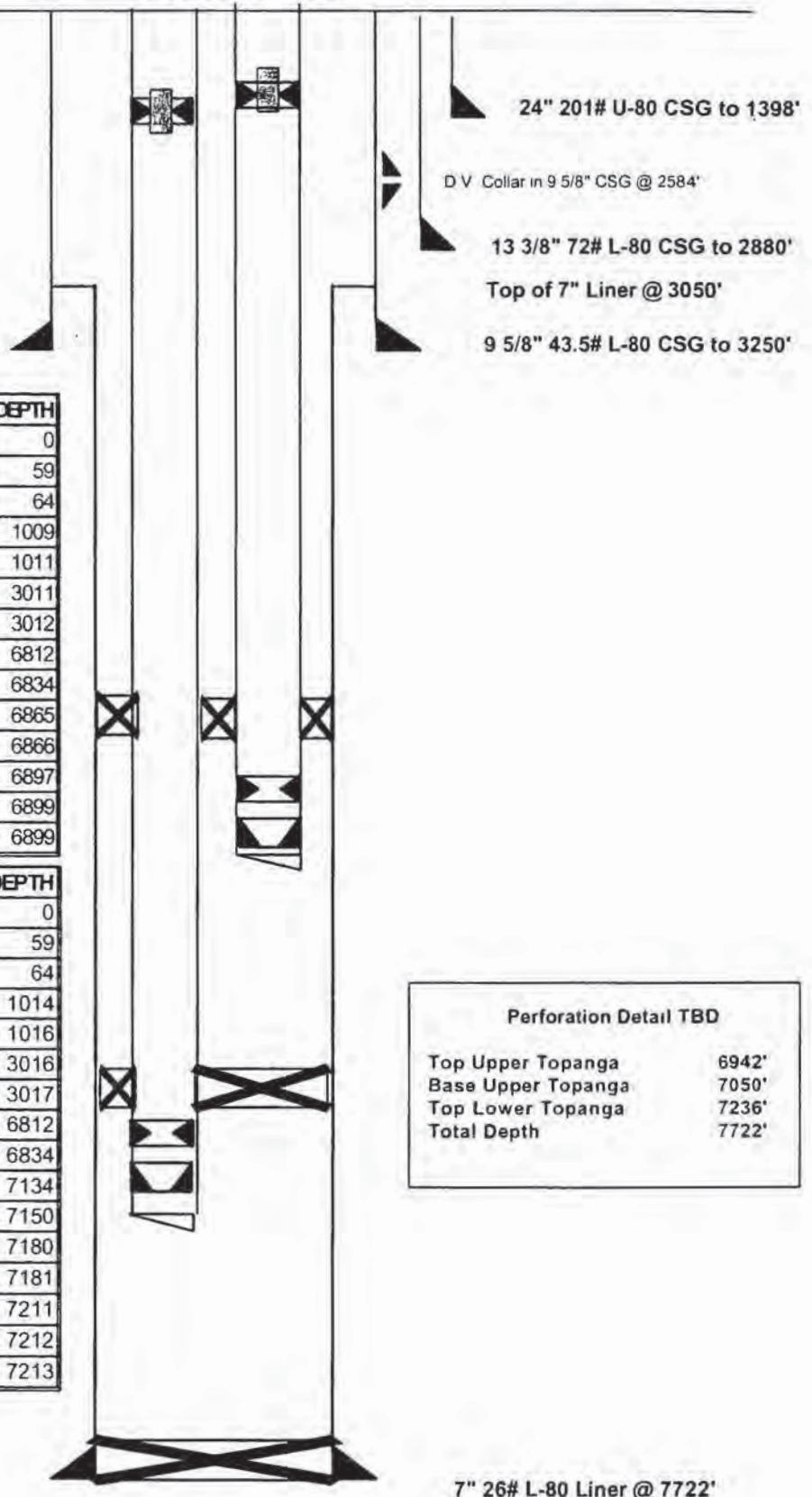


Vertical to 1400'
 Max Angle: 58° at 3250', 30° at TD
 D F Elevation: 108' Kenai Rig #2
 D.F. to Tubing Head: 54'
 Water Depth: 739'
 Tree: Dual FMC 5000 PSI WP

SOCKEYE FIELD WELL E-18

Lease: OCS-P-0209
PROPOSED

Completion Date: 1/15/05
 Recompletion



Short String Description	ID	LENGTH	DEPTH
KB		59.00	0
Tubing Hanger w/ pup jt	2.441"	4.73	59
31 jts 2-7/8" L-80 6.5# 8rd EUE tbg	2.441"	944.83	64
"X" Nipple (Injection Valve)	2.313"	2.00	1009
65 jts 2-7/8" tbg as above	2.441"	2000.00	1011
Crossover from 2-7/8" tbg to 2-3/8"	1.995"	1.00	3011
122 jts 2-3/8" 4 7# L-80 EUE 8rd	1.995"	3800.00	3012
Baker 7" GT Dual Packer w/ pup jts	1.995"	21.95	6812
1 jt 2-3/8" tbg as above	1.995"	31.47	6834
"X" Nipple	1.875"	1.12	6865
1 jt 2-3/8" tbg as above	1.995"	31.36	6866
Hydro_Trip Sub	1.791"	1.11	6897
Mule Shoe	1.995"	0.60	6899
Tail			6899

Long String Description	ID	LENGTH	DEPTH
KB		59.00	0
Tubing Hanger w/ pup jt	2.441"	4.73	59
31 jts 2-7/8" L-80 6.5# 8rd EUE tbg	2.441"	950.00	64
"X" Nipple (Injection Valve)	2.313"	2.00	1014
65 jts 2-7/8" tbg as above	2.441"	2000.00	1016
Crossover from 2-7/8" tbg to 2-3/8"	1.995"	1.00	3016
122 jts 2-3/8" 4.7# L-80 EUE 8rd	1.995"	3795.00	3017
Baker 7" GT Dual Packer w/ pup jts	1.995"	21.95	6812
10 jts 2-3/8" tbg as above	1.995"	300.00	6834
Baker "HB" Packer w/ pup jts	1.995"	16.50	7134
1 jt 2-3/8" tbg as above	1.995"	30.00	7150
"X" Nipple	1.875"	1.12	7180
1 jt 2-3/8" tbg as above	1.995"	30.00	7181
Hydro-Trip Sub	1.791"	1.11	7211
Mule Shoe	1.995"	0.60	7212
Tail			7213

TD: 7722' (6023' TVD)

VENOCO

Well Path

E-18RD Well Path

Continuity and Formation Descriptions

Well No. E-18RD

Well Type: Production

Well Status: Active

Well Depth: 10,000 ft

Well Completion: 10,000 ft

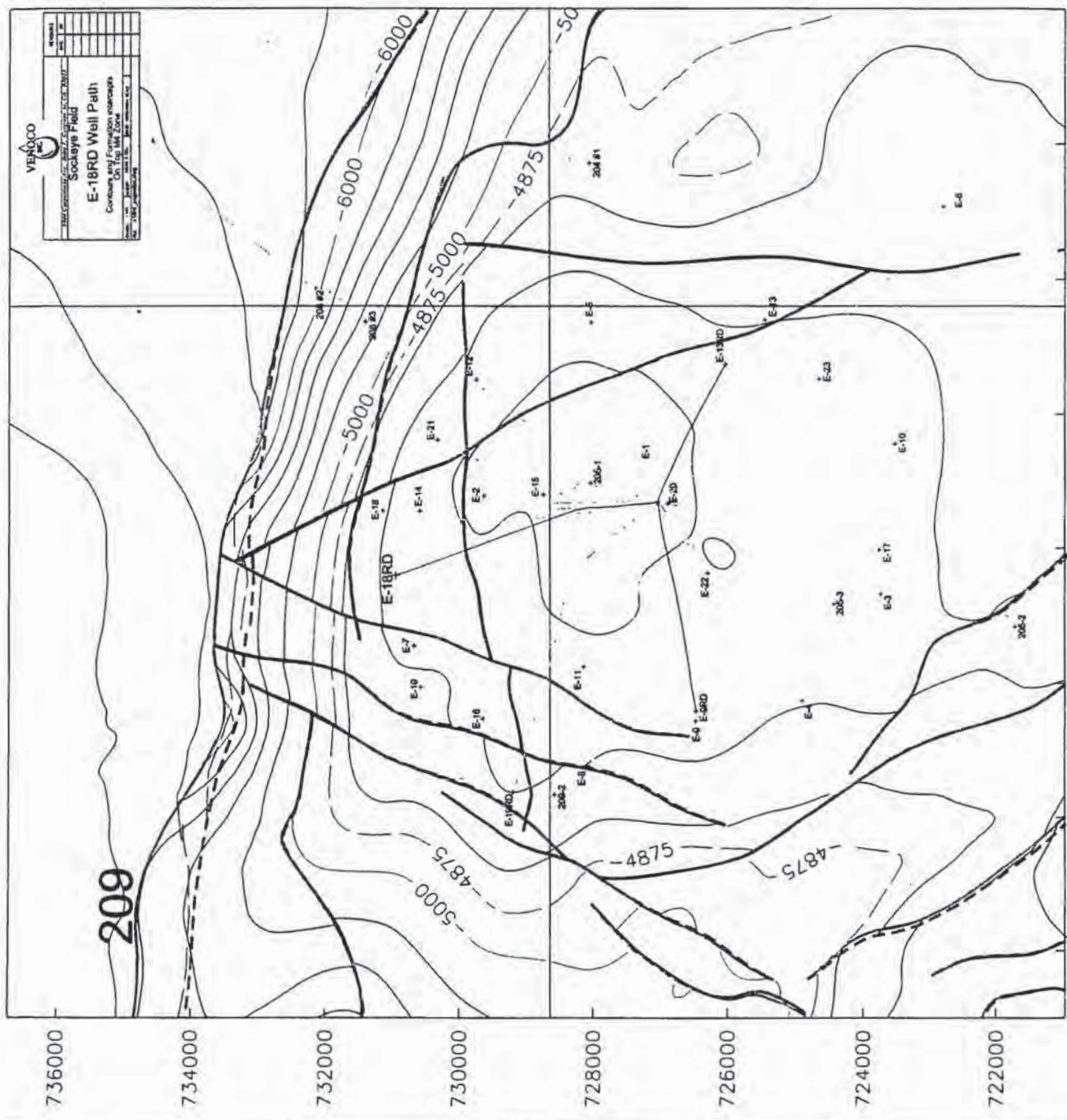
Well Location: 10,000 ft

Well Orientation: 10,000 ft

Well Completion: 10,000 ft

Well Orientation: 10,000 ft

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HALLIBURTON

Venoco Inc.

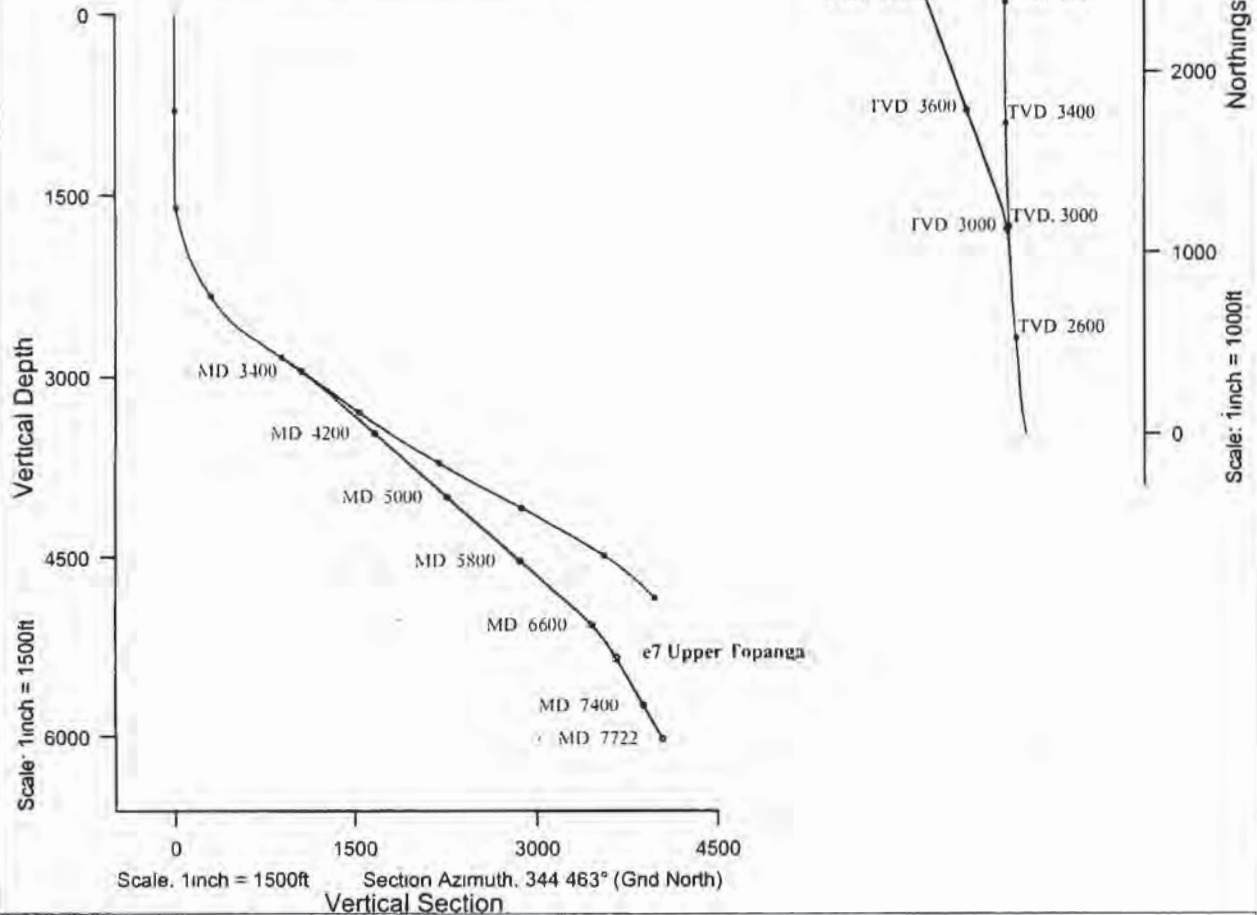
DrillQuest

Sperry-Sun

Sockeye Field Platform Gail (Slot 05) E-18

Current Well Properties

Well	(Slot 05) E-18
Horizontal Coordinates	
Ref Global Coordinates	727050 46 N, 1046687 36 E
Ref Global Coordinates	18 46 N, 44 36 E
Ref Geographical Coordinates	34 12524837° N, 119 40010084° W
RKB Elevation	113 00ft above Mean Sea Level
Gnd North Convergence	-0 90ft above Structure
North Reference Units	Grd North Feet (US)



ST1 Plan 6 (14-Oct-04) (E7UT) Proposal Data

Coordinate System	NAD27 California State Planes, Zone VI							
	Measured Depth	Incl.	Azlm.	Vertical Depth	Northings	Eastings	Vertical Section	Dogleg Rate
Start Drop/Turn	3250 00	58.105	357 521	2873 00	942 71 N	85 48 W	931 15	
Hold Angle	3736 64	48 454	339 932	3165 09	1322 95 N	157 43 W	1316 78	3.500
Start Drop/Turn	6413 94	48.454	339 932	4940 74	3205 04 N	844 99 W	3314 26	0 000
Hold Angle	6941.76	30 000	341 326	5347 86	3518 29 N	955 98 W	3645 79	3 500
Total Depth	7721 55	30.000	341 326	6023 18	3887 66 N	1080 82 W	4035 10	0 000



**Venoco Inc.
Sockeye Field
Platform Gail
(Slot 05) E-18 - ST1 Plan 6 (14-Oct-04) (E7UT)**

Sperry-Sun

Proposal Report

14 October, 2004

Surface Coordinates 727050 46 N, 1046687 36 E (34 12524837" N, 119 40010084" W)
Grid Coordinate System NAD27 California State Planes, Zone VI

RKB Elevation 113 00ft above Mean Sea Level
Water Depth 739 00ft

Proposal Ref prot131155

HALLIBURTON

Proposal Report for Platform Gail - (Slot 05) E-18

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
0.00	0.000	0.000	113.00	0.00	0.00 N	0.00 E	727050.46 N	1046687.36 E		0.00	
852.00	0.000	0.000	-739.00	852.00	0.00 N	0.00 E	727050.46 N	1046687.36 E	0.000	0.00	
870.10	1.000	195.390	-757.10	870.10	0.15 S	0.04 W	727050.31 N	1046687.32 E	5.525	-0.14	
900.10	0.740	180.840	-787.10	900.10	0.60 S	0.11 W	727049.86 N	1046687.25 E	1.131	-0.55	
930.00	0.730	192.600	-816.99	929.99	0.98 S	0.16 W	727049.48 N	1046687.20 E	0.505	-0.90	
960.00	0.380	208.140	-846.99	959.99	1.25 S	0.25 W	727049.21 N	1046687.11 E	1.260	-1.14	
990.00	0.170	267.470	-876.99	989.99	1.34 S	0.34 W	727049.12 N	1046687.02 E	1.092	-1.20	
1020.00	0.140	270.850	-906.99	1019.99	1.34 S	0.42 W	727049.12 N	1046686.94 E	0.104	-1.18	
1050.00	0.120	282.450	-936.99	1049.99	1.34 S	0.49 W	727049.12 N	1046686.87 E	0.110	-1.16	
1080.10	0.130	286.500	-967.09	1080.09	1.32 S	0.55 W	727049.14 N	1046686.81 E	0.044	-1.12	
1110.10	0.160	0.930	-997.09	1110.09	1.27 S	0.58 W	727049.19 N	1046686.78 E	0.590	-1.06	
1139.00	0.220	251.590	-1025.99	1138.99	1.24 S	0.63 W	727049.22 N	1046686.73 E	1.079	-1.03	
1170.00	0.180	194.830	-1056.99	1169.99	1.31 S	0.70 W	727049.15 N	1046686.66 E	0.624	-1.07	
1200.00	0.170	205.530	-1086.99	1199.99	1.40 S	0.73 W	727049.06 N	1046686.63 E	0.114	-1.15	
1230.00	0.210	253.140	-1116.99	1229.99	1.45 S	0.81 W	727049.01 N	1046686.55 E	0.526	-1.18	
1260.00	0.180	227.450	-1146.99	1259.99	1.50 S	0.89 W	727048.96 N	1046686.47 E	0.305	-1.21	
1290.00	0.180	214.610	-1176.99	1289.99	1.57 S	0.96 W	727048.89 N	1046686.40 E	0.134	-1.26	
1319.90	0.120	340.770	-1206.89	1319.89	1.58 S	0.99 W	727048.88 N	1046686.37 E	0.899	-1.26	
1350.00	0.210	221.510	-1236.99	1349.99	1.59 S	1.04 W	727048.87 N	1046686.32 E	0.958	-1.25	
1379.90	0.170	335.780	-1266.89	1379.89	1.59 S	1.09 W	727048.87 N	1046686.27 E	1.070	-1.24	
1410.00	0.150	143.030	-1296.99	1409.99	1.58 S	1.09 W	727048.88 N	1046686.27 E	1.057	-1.23	
1440.10	0.240	354.870	-1327.09	1440.09	1.55 S	1.07 W	727048.91 N	1046686.29 E	1.249	-1.21	
1470.20	0.500	335.060	-1357.19	1470.19	1.37 S	1.13 W	727049.09 N	1046686.23 E	0.950	-1.02	
1500.00	1.500	350.860	-1386.98	1499.98	0.87 S	1.25 W	727049.59 N	1046686.11 E	3.449	-0.50	
1529.90	3.650	358.620	-1416.85	1529.85	0.47 N	1.33 W	727050.93 N	1046686.03 E	7.268	0.81	
1560.10	5.490	358.360	-1446.96	1559.96	2.88 N	1.40 W	727053.34 N	1046685.96 E	6.093	3.15	
1590.10	7.280	356.330	-1476.77	1589.77	6.21 N	1.56 W	727056.67 N	1046685.80 E	6.013	6.40	
1620.00	9.110	352.930	-1506.36	1619.36	10.45 N	1.97 W	727060.91 N	1046685.39 E	6.329	10.60	
1650.00	10.560	351.700	-1535.92	1648.92	15.53 N	2.66 W	727065.99 N	1046684.70 E	4.884	15.67	
1679.90	12.050	349.180	-1565.24	1678.24	21.30 N	3.64 W	727071.76 N	1046683.72 E	5.249	21.50	

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Proposal Report for Platform Gail - (Slot 05) E-18

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft) Eastings (ft)	Global Coordinates Northings (ft) Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
1710.00	13.060	347.440	-1594.62	1707.62	27.71 N 4.97 W	727078.17 N 1046682.39 E	3.583	28.03	
1739.90	14.180	347.220	-1623.68	1736.68	34.58 N 6.52 W	727085.04 N 1046680.84 E	3.750	35.06	
1769.90	15.130	347.920	-1652.70	1765.70	41.99 N 8.15 W	727092.45 N 1046679.21 E	3.221	42.64	
1800.00	16.200	349.180	-1681.68	1794.68	49.96 N 9.76 W	727100.42 N 1046677.60 E	3.730	50.74	
1829.90	16.780	349.630	-1710.35	1823.35	58.30 N 11.33 W	727108.76 N 1046676.03 E	1.968	59.20	
1859.90	17.200	349.300	-1739.04	1852.04	66.91 N 12.94 W	727117.37 N 1046674.42 E	1.418	67.93	
1889.90	17.350	348.940	-1767.69	1880.69	75.66 N 14.82 W	727126.12 N 1046672.74 E	0.614	76.81	
1919.80	17.670	348.940	-1796.21	1909.21	84.49 N 16.35 W	727134.95 N 1046671.01 E	1.070	85.78	
1950.00	18.330	349.080	-1824.93	1937.93	93.65 N 18.12 W	727144.11 N 1046669.24 E	2.190	95.08	
1980.00	19.390	350.030	-1853.32	1966.32	103.19 N 19.88 W	727153.65 N 1046667.48 E	3.679	104.74	
2009.70	21.090	352.260	-1881.18	1994.18	113.34 N 21.45 W	727163.80 N 1046665.91 E	6.285	114.95	
2040.00	22.400	353.220	-1909.32	2022.32	124.48 N 22.87 W	727174.94 N 1046664.49 E	4.480	126.05	
2069.80	23.630	353.360	-1936.75	2049.75	136.05 N 24.23 W	727186.51 N 1046663.13 E	4.132	137.57	
2099.80	24.860	353.810	-1964.11	2077.11	148.29 N 25.61 W	727198.75 N 1046661.75 E	4.146	149.73	
2129.90	25.910	354.370	-1991.30	2104.30	161.12 N 26.93 W	727211.58 N 1046660.43 E	3.578	162.45	
2159.90	26.890	354.790	-2018.17	2131.17	174.40 N 28.19 W	727224.86 N 1046659.17 E	3.325	175.58	
2189.90	27.100	354.760	-2044.90	2157.90	187.96 N 29.43 W	727238.42 N 1046657.93 E	0.701	188.98	
2219.80	27.810	354.810	-2071.43	2184.43	201.69 N 30.69 W	727252.15 N 1046656.67 E	2.376	202.54	
2249.80	29.260	354.890	-2097.79	2210.79	215.96 N 31.97 W	727266.42 N 1046655.39 E	4.835	216.64	
2279.90	30.760	355.020	-2123.85	2236.85	230.96 N 33.30 W	727281.42 N 1046654.06 E	4.988	231.44	
2309.80	31.760	355.340	-2149.41	2262.41	246.42 N 34.60 W	727296.88 N 1046652.76 E	3.390	246.68	
2339.90	32.450	355.850	-2174.91	2287.91	262.37 N 35.83 W	727312.83 N 1046651.53 E	2.463	262.38	
2369.90	33.140	356.590	-2200.13	2313.13	278.58 N 36.90 W	727329.04 N 1046650.46 E	2.660	278.29	
2399.90	33.980	357.180	-2225.13	2338.13	295.14 N 37.80 W	727345.60 N 1046649.56 E	3.004	294.48	
2429.90	34.660	357.240	-2249.90	2362.90	312.04 N 38.62 W	727362.50 N 1046648.74 E	2.269	310.98	
2459.90	35.600	356.830	-2274.44	2387.44	329.28 N 39.51 W	727379.74 N 1046647.85 E	3.231	327.83	
2490.00	36.960	356.270	-2298.70	2411.70	347.06 N 40.59 W	727397.52 N 1046646.77 E	4.650	345.25	
2519.80	38.520	355.570	-2322.27	2435.27	365.25 N 41.99 W	727415.71 N 1046645.47 E	5.429	363.12	
2549.90	40.020	355.080	-2345.57	2458.57	384.24 N 43.44 W	727434.70 N 1046643.92 E	5.089	381.83	
2580.00	41.540	354.850	-2368.36	2481.36	403.82 N 45.17 W	727454.28 N 1046642.19 E	5.074	401.16	

Proposal Report for Platform Gail - (Slot 05) E-18

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
2609.90	43.440	354.790	-2390.41	2503.41	423.93 N	46.99 W	727474.39 N	1046640.37 E	6.356	421.03	
2640.00	44.910	354.450	-2412.00	2525.00	444.82 N	48.96 W	727495.28 N	1046638.40 E	4.947	441.68	
2669.90	46.640	354.470	-2432.85	2545.85	466.14 N	51.03 W	727516.60 N	1046636.33 E	5.786	462.78	
2700.00	48.410	354.130	-2453.17	2566.17	488.23 N	53.23 W	727538.69 N	1046634.13 E	5.939	484.65	
2729.90	49.580	354.110	-2472.79	2585.79	510.68 N	55.54 W	727561.14 N	1046631.82 E	3.913	506.89	
2759.80	51.630	354.230	-2491.77	2604.77	533.66 N	57.89 W	727584.12 N	1046629.47 E	6.863	529.67	
2790.00	53.130	354.460	-2510.20	2623.20	557.47 N	60.25 W	727607.93 N	1046627.11 E	5.003	553.23	
2819.00	54.150	354.380	-2527.39	2640.39	580.71 N	62.52 W	727631.17 N	1046624.84 E	3.524	576.23	
2895.00	57.300	355.410	-2570.19	2683.19	643.25 N	68.09 W	727693.71 N	1046619.27 E	4.293	637.99	
2908.00	57.060	354.580	-2577.24	2690.24	654.14 N	69.05 W	727704.60 N	1046618.31 E	5.674	648.73	
3000.00	57.470	356.720	-2626.99	2739.99	731.30 N	74.91 W	727781.76 N	1046612.45 E	2.007	724.64	
3092.00	57.630	357.090	-2676.35	2789.35	808.82 N	79.10 W	727859.28 N	1046608.26 E	0.381	800.45	
3184.00	58.240	357.280	-2725.19	2838.19	886.69 N	82.93 W	727937.15 N	1046604.43 E	0.686	876.50	
3250.00	58.105	357.521	-2760.00	2873.00	942.71 N	85.48 W	727993.17 N	1046601.88 E	0.372	931.15	Tied on at 3250.00ft
ST1 Plan 6 (14-Oct-04) (E7UT)											
3300.00	57.003	355.910	-2786.83	2899.83	984.83 N	87.89 W	728035.29 N	1046599.47 E	3.500	972.38	
3400.00	54.864	352.565	-2842.85	2955.85	1057.23 N	96.17 W	728117.69 N	1046591.19 E	3.500	1053.99	
3500.00	52.822	349.044	-2901.86	3014.86	1146.91 N	109.04 W	728197.37 N	1046578.32 E	3.500	1134.21	
3600.00	50.890	345.332	-2963.63	3076.63	1223.58 N	126.44 W	728274.04 N	1046560.92 E	3.500	1212.74	
3700.00	49.082	341.419	-3027.94	3140.94	1295.95 N	148.31 W	728347.41 N	1046539.05 E	3.500	1289.28	
3736.64	48.454	339.932	-3052.09	3165.09	1322.95 N	157.43 W	728373.41 N	1046529.93 E	3.500	1316.78	End of Drop/Turn at 3736.64ft
3800.00	48.454	339.932	-3094.11	3207.11	1367.49 N	173.70 W	728417.95 N	1046513.66 E	0.000	1364.05	
3900.00	48.454	339.932	-3150.44	3273.44	1437.79 N	199.38 W	728488.25 N	1046487.98 E	0.000	1438.66	
4000.00	48.454	339.932	-3226.76	3339.76	1508.09 N	225.06 W	728558.55 N	1046462.30 E	0.000	1513.26	
4100.00	48.454	339.932	-3292.30	3405.30	1577.55 N	250.34 W	728629.71 N	1046437.62 E	0.000	1588.81	

Proposal Report for Platform Gail - (Slot 05) E-18

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates		Global Coordinates		Dogleg Rate (°/100ft)	Vertical Section	Comment
					Northings (ft)	Eastings (ft)	Northings (ft)	Eastings (ft)			
1710.00	13.060	347.440	-1594.62	1707.62	27.71 N	4.97 W	727078.17 N	1046682.39 E	3.583	28.03	
1739.90	14.180	347.220	-1623.68	1736.68	34.58 N	6.52 W	727085.04 N	1046680.84 E	3.750	35.06	
1769.90	15.130	347.920	-1652.70	1765.70	41.99 N	8.15 W	727092.45 N	1046679.21 E	3.221	42.64	
1800.00	16.200	349.180	-1681.68	1794.68	49.96 N	9.76 W	727100.42 N	1046677.60 E	3.730	50.74	
1829.90	16.780	349.530	-1710.35	1823.35	58.30 N	11.33 W	727108.76 N	1046676.03 E	1.968	59.20	
1859.90	17.200	349.300	-1739.04	1852.04	66.91 N	12.94 W	727117.37 N	1046674.42 E	1.418	67.93	
1889.90	17.350	348.940	-1767.69	1880.69	75.66 N	14.62 W	727126.12 N	1046672.74 E	0.614	76.81	
1919.80	17.670	348.940	-1796.21	1909.21	84.49 N	16.35 W	727134.95 N	1046671.01 E	1.070	85.78	
1950.00	18.330	349.080	-1824.93	1937.93	93.65 N	18.12 W	727144.11 N	1046669.24 E	2.190	95.08	
1980.00	19.390	350.030	-1853.32	1966.32	103.19 N	19.88 W	727153.65 N	1046667.48 E	3.679	104.74	
2009.70	21.090	352.260	-1881.18	1994.18	113.34 N	21.45 W	727163.80 N	1046665.91 E	6.285	114.95	
2040.00	22.400	353.220	-1909.32	2022.32	124.48 N	22.87 W	727174.94 N	1046664.49 E	4.480	126.05	
2069.80	23.630	353.360	-1936.75	2049.75	136.05 N	24.23 W	727186.51 N	1046663.13 E	4.132	137.57	
2099.80	24.860	353.810	-1964.11	2077.11	148.29 N	25.61 W	727198.75 N	1046661.75 E	4.146	149.73	
2129.90	25.910	354.370	-1991.30	2104.30	161.12 N	26.93 W	727211.58 N	1046660.43 E	3.578	162.45	
2159.90	26.890	354.790	-2018.17	2131.17	174.40 N	28.19 W	727224.86 N	1046659.17 E	3.325	175.58	
2189.90	27.100	354.760	-2044.90	2157.90	187.96 N	29.43 W	727238.42 N	1046657.93 E	0.701	188.98	
2219.80	27.810	354.810	-2071.43	2184.43	201.69 N	30.69 W	727252.15 N	1046656.67 E	2.376	202.54	
2249.80	29.260	354.890	-2097.79	2210.79	215.96 N	31.97 W	727266.42 N	1046655.39 E	4.835	216.64	
2279.90	30.760	355.020	-2123.85	2236.85	230.96 N	33.30 W	727281.42 N	1046654.06 E	4.988	231.44	
2309.80	31.760	355.340	-2149.41	2262.41	246.42 N	34.60 W	727296.88 N	1046652.76 E	3.390	246.68	
2339.90	32.450	355.850	-2174.91	2287.91	262.37 N	35.83 W	727312.83 N	1046651.53 E	2.463	262.38	
2369.90	33.140	356.590	-2200.13	2313.13	278.58 N	36.90 W	727329.04 N	1046650.46 E	2.660	278.29	
2399.90	33.980	357.180	-2225.13	2338.13	295.14 N	37.80 W	727345.60 N	1046649.56 E	3.004	294.48	
2429.90	34.660	357.240	-2249.90	2362.90	312.04 N	38.62 W	727362.50 N	1046648.74 E	2.269	310.98	
2459.90	35.600	356.830	-2274.44	2387.44	329.28 N	39.51 W	727379.74 N	1046647.85 E	3.231	327.83	
2490.00	36.960	356.270	-2298.70	2411.70	347.06 N	40.59 W	727397.52 N	1046646.77 E	4.650	345.25	
2519.80	38.520	355.570	-2322.27	2435.27	365.25 N	41.89 W	727415.71 N	1046645.47 E	5.429	363.12	
2549.90	40.020	355.080	-2345.57	2458.57	384.24 N	43.44 W	727434.70 N	1046643.92 E	5.089	381.83	
2580.00	41.540	354.850	-2368.36	2481.36	403.82 N	45.17 W	727454.28 N	1046642.19 E	5.074	401.16	

Proposal Report for Platform Gail - (Slot 05) E-18

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft) Eastings (ft)	Global Coordinates Northings (ft) Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
2609.90	43.440	354.790	-2390.41	2503.41	423.93 N 46.99 W	727474.39 N 1046640.37 E	6.356	421.03	
2640.00	44.910	354.450	-2412.00	2525.00	444.82 N 48.95 W	727495.28 N 1046638.40 E	4.947	441.68	
2669.90	46.640	354.470	-2432.85	2545.85	466.14 N 51.03 W	727516.60 N 1046636.33 E	5.786	462.78	
2700.00	48.410	354.130	-2453.17	2566.17	488.23 N 53.23 W	727538.69 N 1046634.13 E	5.939	484.65	
2729.90	49.580	354.110	-2472.79	2585.79	510.68 N 55.54 W	727561.14 N 1046631.82 E	3.913	506.89	
2759.80	51.630	354.230	-2491.77	2604.77	533.66 N 57.89 W	727584.12 N 1046629.47 E	6.863	529.67	
2790.00	53.130	354.460	-2510.20	2623.20	557.47 N 60.25 W	727607.93 N 1046627.11 E	5.003	553.23	
2819.00	54.150	354.380	-2527.39	2640.39	580.71 N 62.52 W	727631.17 N 1046624.84 E	3.524	576.23	
2895.00	57.300	355.410	-2570.19	2683.19	643.25 N 68.09 W	727693.71 N 1046619.27 E	4.293	637.99	
2908.00	57.060	354.580	-2577.24	2690.24	654.14 N 69.05 W	727704.60 N 1046618.31 E	5.674	648.73	
3000.00	57.470	356.720	-2626.99	2739.99	731.30 N 74.91 W	727781.76 N 1046612.45 E	2.007	724.64	
3092.00	57.630	357.090	-2676.35	2789.35	808.82 N 79.10 W	727859.28 N 1046608.26 E	0.381	800.45	
3184.00	58.240	357.280	-2725.19	2838.19	886.59 N 82.93 W	727937.15 N 1046604.43 E	0.686	876.50	
3250.00	58.105	357.521	-2760.00	2873.00	942.71 N 85.48 W	727993.17 N 1046601.88 E	0.372	931.15	Tied on at 3250.00ft
ST1 Plan 6 (14-Oct-04) (E7UT)									
3300.00	57.003	355.910	-2786.83	2899.83	984.83 N 87.89 W	728035.29 N 1046599.47 E	3.500	972.38	
3400.00	54.864	352.565	-2842.85	2955.85	1067.23 N 96.17 W	728117.69 N 1046591.19 E	3.500	1053.99	
3500.00	52.822	349.044	-2901.86	3014.86	1146.91 N 109.04 W	728197.37 N 1046578.32 E	3.500	1134.21	
3600.00	50.890	345.332	-2963.63	3076.63	1223.58 N 126.44 W	728274.04 N 1046560.92 E	3.500	1212.74	
3700.00	49.082	341.419	-3027.94	3140.94	1286.95 N 148.31 W	728347.41 N 1046539.05 E	3.500	1289.28	
3736.64	48.454	339.932	-3052.09	3165.09	1322.95 N 157.43 W	728373.41 N 1046529.93 E	3.500	1316.78	End of Drop/Turn at 3736.64ft
3800.00	48.454	339.932	-3094.11	3207.11	1367.49 N 173.70 W	728417.95 N 1046513.66 E	0.000	1364.05	
3900.00	48.454	339.932	-3160.44	3273.44	1437.79 N 199.38 W	728488.25 N 1046487.98 E	0.000	1438.66	
4000.00	48.454	339.932	-3226.76	3339.76	1508.09 N 225.06 W	728558.55 N 1046462.30 E	0.000	1513.26	
4100.00	48.454	339.932	-3293.08	3406.08	1578.38 N 250.74 W	728628.84 N 1046436.62 E	0.000	1587.87	
4200.00	48.454	339.932	-3359.40	3472.40	1648.68 N 276.42 W	728699.14 N 1046410.94 E	0.000	1662.48	
4300.00	48.454	339.932	-3425.73	3538.73	1718.98 N 302.11 W	728769.44 N 1046385.25 E	0.000	1737.09	
4400.00	48.454	339.932	-3492.05	3605.05	1789.28 N 327.79 W	728839.74 N 1046359.57 E	0.000	1811.70	
4500.00	48.454	339.932	-3558.37	3671.37	1859.58 N 353.47 W	728910.04 N 1046333.89 E	0.000	1886.30	
4600.00	48.454	339.932	-3624.69	3737.69	1929.87 N 379.15 W	728980.33 N 1046308.21 E	0.000	1960.91	

Proposal Report for Platform Gail - (Slot 05) E-18

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
4700 00	48 454	339 932	-3691 02	3804 02	2000 17 N	404 83 W	729050 63 N	1046282 53 E	0 000	2035 52	
4800 00	48 454	339 932	-3757 34	3870 34	2070 47 N	430 51 W	729120 93 N	1046256 85 E	0 000	2110 13	
4900 00	48 454	339 932	-3823 66	3936 66	2140 77 N	456 19 W	729191 23 N	1046231 17 E	0 000	2184 74	
5000 00	48 454	339 932	-3889 98	4002 98	2211 07 N	481 87 W	729261 53 N	1046205 49 E	0 000	2259 35	
5100 00	48 454	339 932	-3956 30	4069 30	2281 37 N	507 56 W	729331 83 N	1046179 80 E	0 000	2333 95	
5200 00	48 454	339 932	-4022 63	4135 63	2351 66 N	533 24 W	729402 12 N	1046154 12 E	0 000	2408 56	
5300 00	48 454	339 932	-4088 95	4201 95	2421 96 N	558 92 W	729472 42 N	1046128 44 E	0 000	2483 17	
5400 00	48 454	339 932	-4155 27	4268 27	2492 26 N	584 60 W	729542 72 N	1046102 76 E	0 000	2557 78	
5500 00	48 454	339 932	-4221 59	4334 59	2562 56 N	610 28 W	729613 02 N	1046077 08 E	0 000	2632 39	
5600 00	48 454	339 932	-4287 92	4400 92	2632 86 N	635 96 W	729683 32 N	1046051 40 E	0 000	2706 99	
5700 00	48 454	339 932	-4354 24	4467 24	2703 15 N	661 64 W	729753 61 N	1046025 72 E	0 000	2781 60	
5800 00	48 454	339 932	-4420 56	4533 56	2773 45 N	687 32 W	729823 91 N	1046000 04 E	0 000	2856 21	
5900 00	48 454	339 932	-4486 88	4599 88	2843 75 N	713 00 W	729894 21 N	1045974 36 E	0 000	2930 82	
6000 00	48 454	339 932	-4553 21	4666 21	2914 05 N	738 69 W	729964 51 N	1045948 67 E	0 000	3005 43	
6100 00	48 454	339 932	-4619 53	4732 53	2984 35 N	764 37 W	730034 81 N	1045922 99 E	0 000	3080 04	
6200 00	48 454	339 932	-4685 85	4798 85	3054 64 N	790 05 W	730105 10 N	1045897 31 E	0 000	3154 64	
6300 00	48 454	339 932	-4752 17	4865 17	3124 94 N	815 73 W	730175 40 N	1045871 63 E	0 000	3229 25	
6400 00	48 454	339 932	-4818 50	4931 50	3195 24 N	841 41 W	730245 70 N	1045845 95 E	0 000	3303 86	
6413 94	48 454	339 932	-4827 74	4940 74	3205 04 N	844 99 W	730255 50 N	1045842 37 E	0 000	3314 26	Start Drop/Turn at 6413 94ft
6500 00	45 444	340 094	-4886 48	4999 48	3264 13 N	866 49 W	730314 59 N	1045820 87 E	3 500	3376 95	
6600 00	41 947	340 305	-4958 77	5071 77	3329 12 N	889 89 W	730379 58 N	1045797 47 E	3 500	3445 83	
6700 00	38 450	340 547	-5035 14	5148 14	3389 92 N	911 51 W	730440 38 N	1045775 85 E	3 500	3510 20	
6800 00	34 955	340 829	-5115 31	5228 31	3446 31 N	931 28 W	730496 77 N	1045756 08 E	3 500	3569 83	
6900 00	31 459	341 165	-5198 96	5311 96	3498 08 N	949 12 W	730548 54 N	1045738 24 E	3 500	3624 49	
6941 76	30 000	341 326	-5234 86	5347 86	3518 29 N	955 98 W	730568 75 N	1045731 38 E	3 500	3645 79	End of Drop/Turn at 6941 76ft Target - e7 Upper Topanga, Current Target
7000 00	30 000	341 326	-5285 30	5398 30	3545 88 N	965 30 W	730596 34 N	1045722 06 E	0 000	3674 87	
7100 00	30 000	341 326	-5371 90	5484 90	3593 24 N	981 31 W	730643 70 N	1045706 05 E	0 000	3724 79	
7200 00	30 000	341 326	-5458 50	5571 50	3640 61 N	997 32 W	730691 07 N	1045690 04 E	0 000	3774 72	
7300 00	30 000	341 326	-5545 10	5658 10	3687 98 N	1013 33 W	730738 44 N	1045674 03 E	0 000	3824 64	
7400 00	30 000	341 326	-5631 71	5744 71	3735 35 N	1029 34 W	730785 81 N	1045658 02 E	0 000	3874 57	

HALLIBURTON

Venoco Inc.
Sockeye Field
Platform Gail

Proposal Report for Platform Gail - (Slot 05) E-18

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft) Eastings (ft)	Global Coordinates Northings (ft) Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
7500.00	30.000	341.326	-5718.31	5831.31	3782.71 N 1045.35 W	730833.17 N 1045642.01 E	0.000	3924.49	
7600.00	30.000	341.326	-5804.91	5917.91	3830.08 N 1061.36 W	730880.54 N 1045626.00 E	0.000	3974.42	
7700.00	30.000	341.326	-5891.51	6004.51	3877.45 N 1077.37 W	730927.91 N 1045609.99 E	0.000	4024.34	
7721.55	30.000	341.326	-5910.18	6023.18	3887.66 N 1080.82 W	730938.12 N 1045606.54 E	0.000	4035.10	Total Depth at 7721 55ft

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grid North. Vertical depths are relative to Well. Northings and Eastings are relative to Well. Global Northings and Eastings are relative to NAD27 California State Planes, Zone VI.

The Dogleg Severity is in Degrees per 100 feet (US).

Vertical Section is from Well and calculated along an Azimuth of 344.463° (Grid).

Based upon Minimum Curvature type calculations, at a Measured Depth of 7721 55ft. The Bottom Hole Displacement is 4035 10ft., in the Direction of 344.463° (Grid).

Comments

Measured Depth (ft)	TVD (ft)	Station Coordinates Northings (ft) Eastings (ft)	Comment
3250.00	2873.00	942.71 N 85.48 W	Tied on at 3250 00ft
3736.64	3165.09	1322.95 N 157.43 W	End of Drop/Turn at 3736 64ft
6413.94	4940.74	3205.04 N 844.99 W	Start Drop/Turn at 6413 94ft
6941.76	5347.86	3518.29 N 955.98 W	End of Drop/Turn at 6941 76ft
7721.55	6023.18	3887.66 N 1080.82 W	Total Depth at 7721 55ft

HALLIBURTON

Venoco Inc.
Sockeye Field
Platform Gail

Proposal Report for Platform Gail - (Slot 05) E-18

Targets associated with this wellpath

Target Name	TVD (ft)	Target Entry Northings (ft)	Coordinates			Direction ("Grid)
			Eastings (ft)	Distance (ft)		
e7 Upper Topanga (Point)	5347 86	3518 29 N	955 98 W	3645 86		344 799
	-5234 86	730568 75 N	1045731 38 E			
		34 13483196° N	119 40360935° W			

Mean Sea Level/Global Coordinates
Geographical Coordinates

HALLIBURTON

Venoco Inc.
Sockeye Field
Platform Gail

North Reference Sheet for Platform Gail - (Slot 05) E-18

Coordinate System is NAD27 California State Planes, Zone VI, US Foot
Source Snyder, J P, 1987, Map Projections - A Working Manual

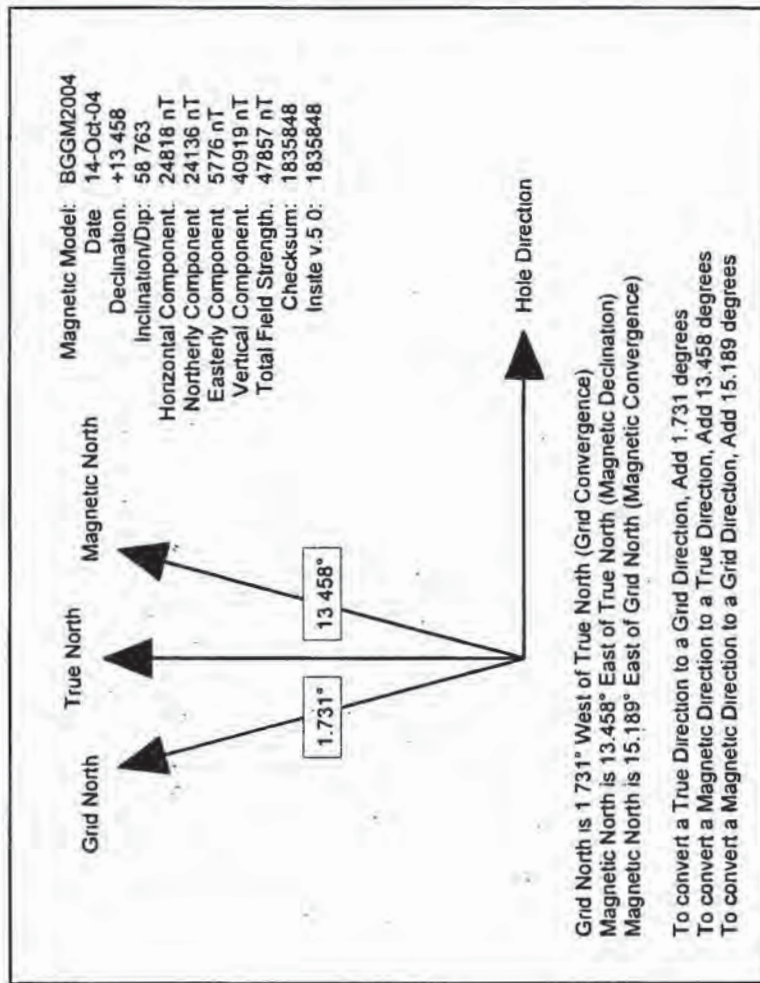
Datum is North American Datum of 1927 (US48, AK, HI, and Canada)

Spheroid is Clarke - 1866
Equatorial Radius 6378206 400m
Polar Radius 6356583 800m
Inverse Flattening 294 978698213901

Projection method is Lambert Conformal Conic Projection

Central Meridian is -116 250°
Longitude Origin -116 250°
Latitude Origin 32 167°
False Easting 609600 00m
False Northing 0 00m
Scale Reduction 1 000000000

Grid Coordinates of Well: 727050 46 N, 1046687 36 E
Geographical Coordinates of Well 34 12524837° N, 119 40010084° W
Surface Elevation of Well 113 00ft
Grid Convergence at Surface is -1 731°
Magnetic Convergence at Surface is -15 189° (14 October, 2004)



EVALUATION PROGRAM

1) MUD LOGGING

8 1/2" Hole Section - Mud logging will be used from the kick off point at 3250' through to the total depth of 7721'.

2) ELECTRIC LOGGING

8 1/2" Hole Section

The following logs will be run using wire line:

Run #1: PEX-HALS-NGT

Run #2: FMI – GR (across Monterey)

Actual logging runs will depend on hole conditions. There is a possibility of running a CMR log across the Sespe and Topanga Interval and also shooting some SWC's.

Note: Run an MWD with Gamma Ray tool to establish if the formations are coming in deeper than expected. The formations on the north side of the field dip very steeply and the Gamma Ray tool will be needed for correlation.

Notify Geologist to witness all logs.

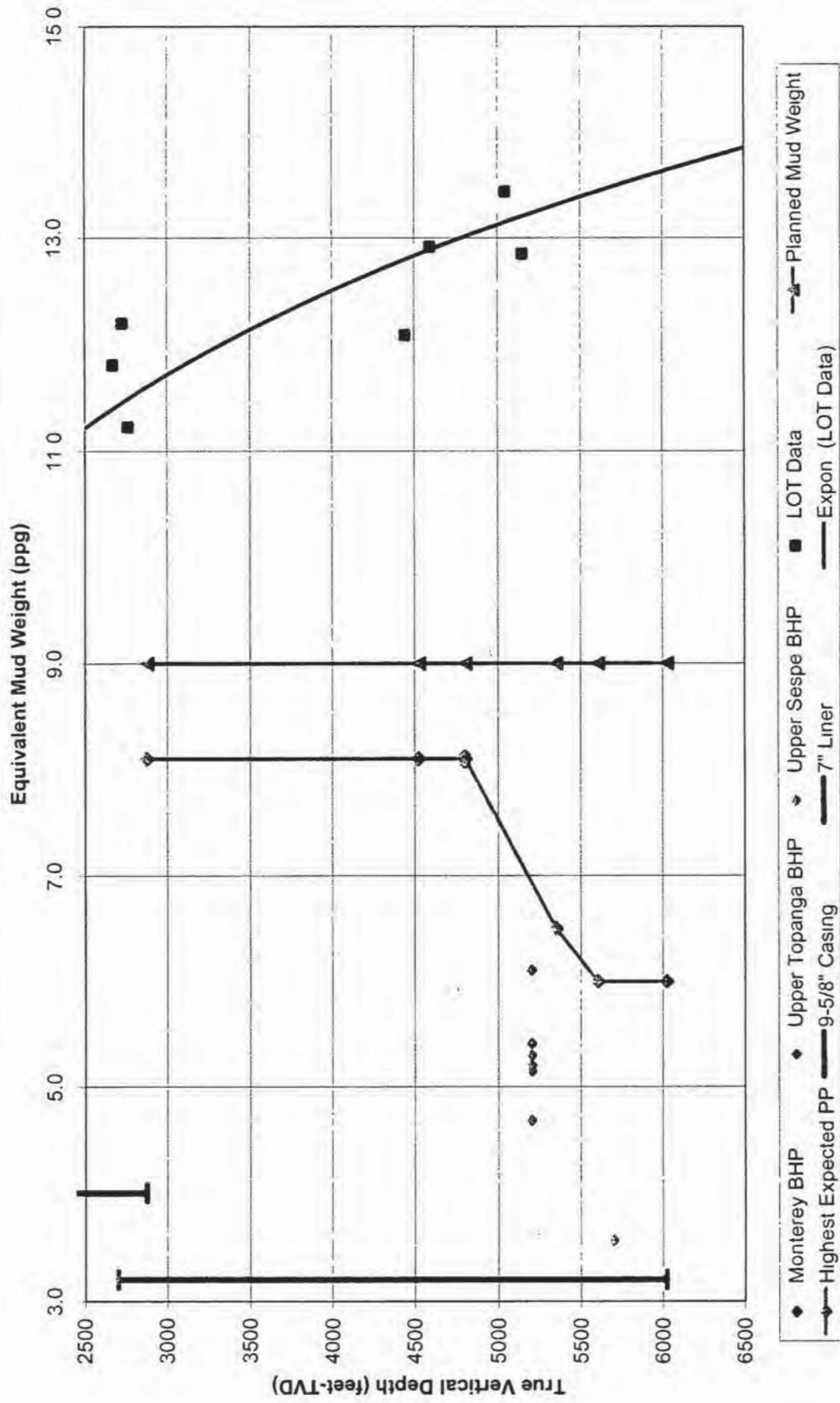
Primary Geologist: Mike Wratcher

Work: 805-745-2272
Home: 805-682-4780
Cell: 805-689-8666

Back-up Geologist: Marc Kamerling

Work: 805-745-2177
Home: 805-898-7975
Cell: 805-450-0612

Platform Gail Well E-18 ST Pore Pressure, Mud Weight & Fracture Pressure



PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9 5/8
2	Setting Depth (feet – TVD)	2873
3	Expected Leak Off Test EMW at shoe (ppg)	12
4	Depth of next Casing (feet - TVD)	6023
5	Maximum Expected Formation Pressure (psi)	1800
6	Expected Mud Weight (ppg)	9.0
7	Formation Equivalent Mud Weight (ppg)	5.8
8	Expected Hydrostatic Pressure at TD (psi)	2818
9	Amount of Overbalance at TD (psi)	1018
10	Fracture Gradient at shoe (psi/ft)	0.62
11	Fracture Pressure at shoe (psi)	1781
12	Hydrostatic Pressure at shoe (psi)	1344
13	Margin between Mud Weight and LOT (psi)	437

Maximum Anticipated Surface Pressures

1	Casing Size (in)	9 5/8
2	Setting Depth (feet – TVD)	2873
3	Expected Leak Off Test EMW at shoe (ppg)	12
4	Expected Mud Weight (ppg)	9.0
5	Depth of next Casing (feet - TVD)	6023
6	Maximum Expected Formation Pressure (psi)	1800
7	Expected gas gradient (psi/ft)	0.05
8	Formation Equivalent Mud Weight (ppg)	5.8
	Max Pressures using 100% Gas to Surface	
9	Max Surface Pressure neglecting shoe (psi)	1499
10	Fracture Gradient at shoe (psi/ft)	0.62
11	Fracture Pressure at shoe (psi)	1781
12	Surface pressure to break down shoe (psi)	1637
13	Maximum Anticipated Surface Pressure (psi)	1499
	Max Pressures using 70% Gas & 30% Mud	
14	Maximum Anticipated Surface Pressure (psi)	744
15	Top of fluid (feet-TVD)	4216
16	Pressure at shoe (psi)	888
17	Margin between pressure and breakdown(psi)	893

CASING PROGRAM

Hole Section	12.25*	8.5
Mud Weight	9.6	9.0
Buoyancy Factor	0.853	0.8625
MASP (psi)	1499	1499
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9 5/8*	7
Setting Depth, MD (ft)	3250	7721
Setting Depth, TVD (ft)	2873	6023
Top of Casing, MD (ft)	0	3050
Weight (lb/ft)	43.5	26
Grade	L-80	L-80
Threads	ST/L	Hydril 513
ID (in)	8.755	6.276
Drift diameter (in)	8.599	6.151
Collapse (psi)	3810	5410
Burst (psi)	6330	7240
Joint Strength (kips)	800	448
Body Strength (kips)	1005	604
Collapse Safety Factor	2.66	1.92
Burst Safety Factor	3.52	4.02
Tensile Safety Factor	3.62	2.18

* Existing Casing

Notes:

Burst is calculated on the greater of MASP or gas lift pressure.

Collapse is based on mud outside of an evacuated casing string.

Tension is based on buoyed weight of casing string + 100 kips over pull.

CEMENTING PROGRAM

7" Production Liner

Objective: Cement 7" liner set across entire open hole interval. Liner will extend 200' back into the 9 5/8" casing. A liner top packer will be used to ensure pressure integrity.

General Information:

9 5/8", 43.5#, L-80 Casing Window 3250' (8.755" ID)
7", 26#, L-80 Liner (6.276" ID) Shoe at 7721' & TOL at 3050'
Lap Volume Factor is 0.1508 CF/FT
Open Hole Volume Factor is 0.1268 CF/FT
Shoe Joint Volume Factor is 0.2148 CF/FT
Open Hole Excess 50% over theoretical
Static Temperature is 170 F (@ 6023' TVD)

Slurry Volume:

959 CF of cement total required to bring cement to 200' above the top of the 7" liner including 50% excess in the open hole. Actual volumes will be determined from the caliper log volumes.

Cement Slurry Details:

Pre-flush: 20 bbls of Ultra Flush

Lead Cement: 708 CF (298 sx) of Class "G" + 8 gals/100 sx R-8L + 2 gals/100 sx FP-6L + 2 gals/100 sx CD-31-L + 50 gals/100 sx Liquid Sodium Silicate

Yield: 2.38 CF/sx
Water: 13.61 gal/sx
Weight: 12.2 ppg
Mix Water: Seawater
Height: 3250 Linear Feet

Tail Slurry: 249 CF (217 sx) of Class "G" + 6 gals/100 sx R21L + 6 gals/100 sx R-21L + 5 gals/100 sx CD-31-L + 2 gals/100 sx ASA-301L

Yield: 1.15 CF/sx
Water: 4.80 gal/sx
Weight: 15.8 ppg
Mix Water: Fresh Water
Height: 1221 Linear Feet

Note: Lab tests will be performed prior to cementing to verify slurry properties. Actual materials that will be used on location will be used to perform tests.

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Whipstock	Drilplex	8.6-8.8	NC	+/-10.5	40-50	+9-10 K
3250'-7721'	SP 101	8.6-9.6	< 6.0	+/-8.5	15-20	+19-20 K

Whipstock: The fluid system used for the milling operations will be Drilplex. The products used for this interval are approved for offshore Region 9. The mud system and cuttings can be dumped overboard if all the environmental tests are negative. The low shear rate viscosity will be raised as necessary to transport metal cuttings out of the well with the use of Drilplex and Gelpex. Add soda ash to control total hardness and caustic soda to control the pH.

3250'-7721': Convert over to SP 101 by adding 1.5 to 2.5 ppb of Sp 101 to the system. Continue with the additions of SP 101 for fluid loss reductions (<6.0 cc). Add dry NaCl to maintain the chloride content between 19,000 and 25,000. Stop additions of Durogel and build up the surface system with MI Gel pre-hydrated in fresh water at a concentration of 12 to 15 ppb. Maintain the mud weight as low as possible with the solids control equipment. Condition the mud with water to keep the MBT below 30 ppb and treat out calcium with Soda Ash to below 200 ppm. Reduced the mud weight and add calcium carbonate if mud losses are encountered while drilling this section.

Notes:

1. Operate solids control equipment to maintain drill solids as low as possible.
2. Maintain supply of $ZnCO_3$ onboard to treat out H_2S .
3. A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised 0.5 ppg using 1000 bbl total circulating volume (562 open hole volume & 390 bbl active system).
4. Add Calcium Carbonate to the mud system after drilling through the Monterey interval. This will help prevent lost circulation in the Upper Topanga.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.
Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.
Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).
Read drill pipe pressure.
Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.
Shut down pump and close choke at the same time. SEE NOTE.
Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

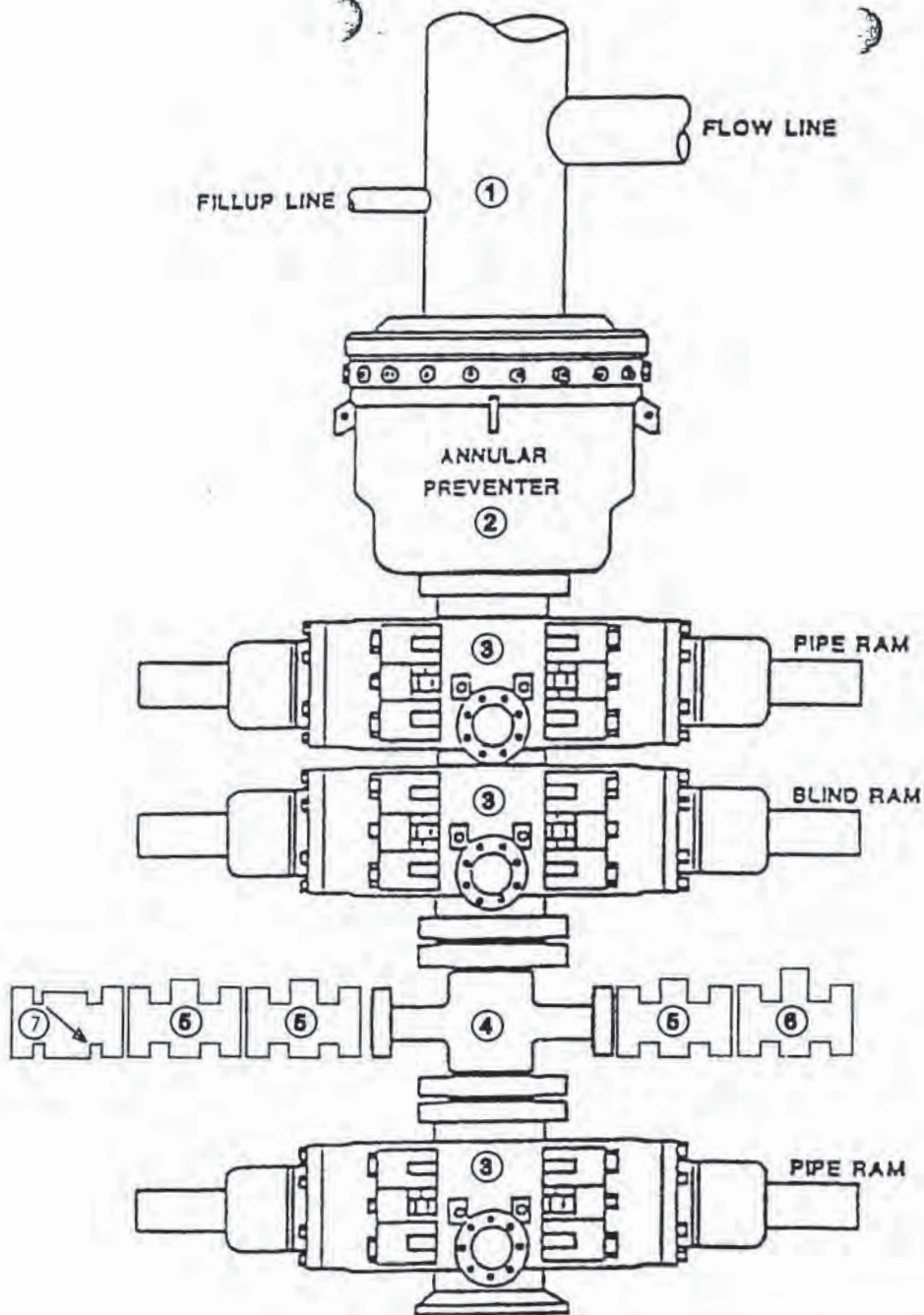
Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

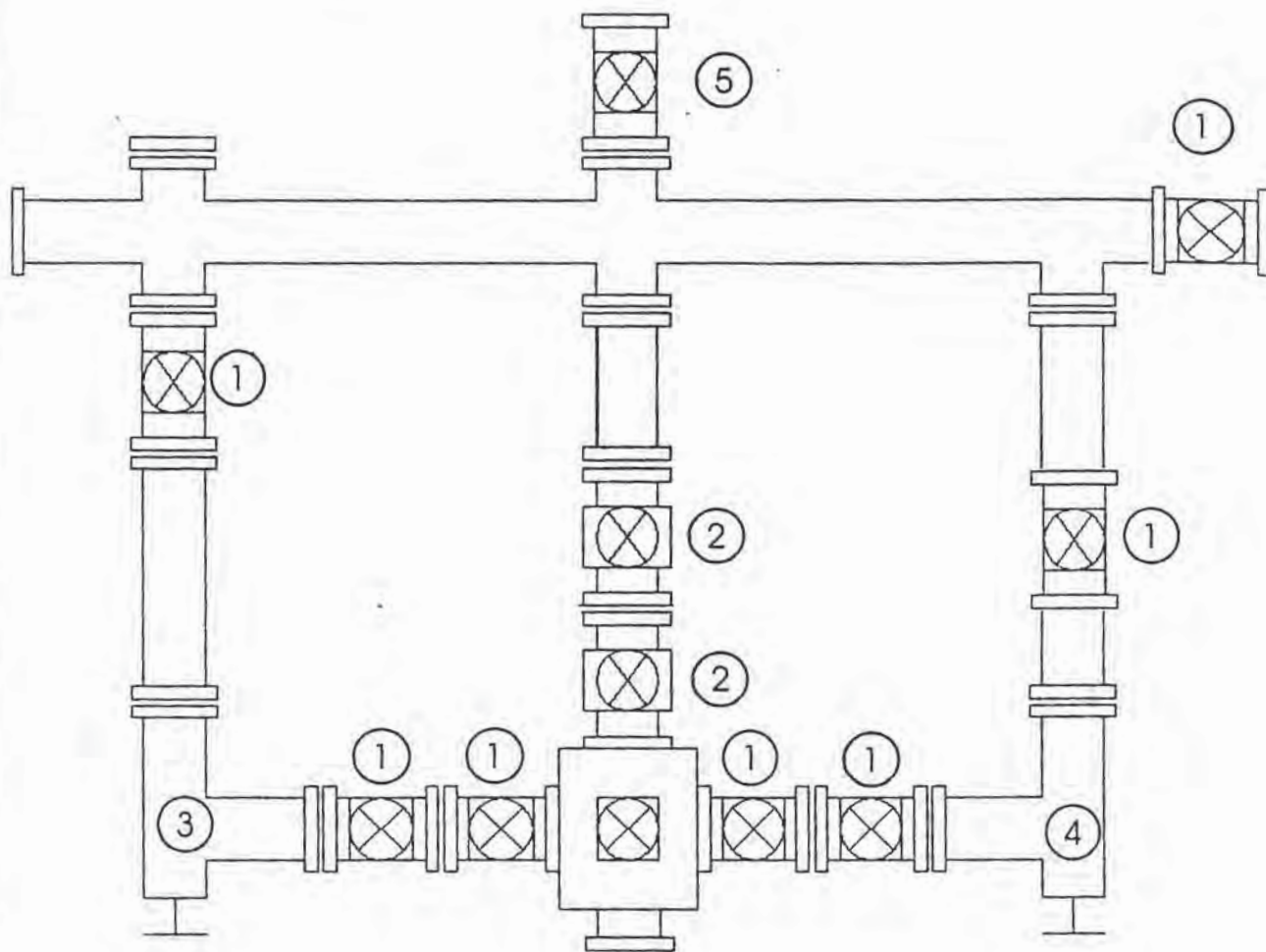
Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas.

Assume any gas circulated to surface to have hydrogen sulfide potential.

Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.



BLOWOUT PREVENTION SYSTEM PLATFORM GAIL



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD PLATFORM GAIL

7106

December 6, 2004

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation and Production

Subject: Geologic Hazards Analysis for Development Well P-0205 E-18RD

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Sockeye Oil Field
Lease: OCS-P 0205 (well TD's in OCS-P 0209)
Platform: Gail
Well/Slot: E-16 in slot 10
Objective: Water Injection U. Topanga and Lower Topanga/ Upper Sespe Fm.
API: 04-311-20710-00

Surface Location: X = 1,046,687 ft
Lambert Zone 6 Y = 727,050 ft

Estimated Top of X =
Productive Zone Y =

Estimated Bottom X = 1,045,606 ft
Hole Location Y = 730,938 ft

Elevation of KB: + 113 feet
Est. Total Depth (measured): - 6,952 feet (RKB)
Est. Total Depth (true vert.): - 6,113 feet (RKB)

Water Depth (Gail): 739 feet +/-

Overview of Proposal

Venoco, Inc., designated operator of the Sockeye Field within the Santa Clara Unit, proposes to redrill well OCS-P 0205 #E-18 into the Upper and lower Topanga and Upper Sespe. The objective of the well is for water disposal. The well will be a dual completion, with water injection in the Upper Topanga through a short string and the long string injecting into the Lower Topanga and Upper Sespe.

The proposed well will be drilled on Platform Gail to a bottom hole location in Lease OCS-P 0209, north of the platform. The original E-18 will have cement from 6250' to 3250' and a bridge plug for sidetrack set at +/- 3250 feet. This redrill of OCS-P 205 #E-18 will permanently abandon previously producing perforated zones in the Monterey.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Top Monterey	Miocene	5,214 feet	4,144 feet
Top Monterey M2	Miocene	5,540 feet	4,360 feet
Top Monterey M4	Miocene	5,780 feet	4,519 feet
Top Upper Topanga	L. Miocene	6,942 feet	5,347 feet
Top Lower Topanga/Sespe	L. Miocene	7,236 feet	5,602 feet
Total Depth	Oligocene	7,721 feet	6,023 feet

2. Potential Oil and Gas Reservoirs Targets

Formation	Age	(TVD)	Thickness	HC Type
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NONE: Water Disposal.

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. The top 3,250 feet of this well is the existing casing from the original E-18 well so any potential shallow aquifers are already behind casing.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of the original P-0209 E-18. The present operator and former operator of the Sockeye field have extensive drilling

experience in this field. The proposed drilling program is similar to those utilized in drilling the production wells in the field.

5. Faulting and Folding

Several important faults have been mapped by the Operator. Faulting is an important consideration for the success of the well. The well at total depth is should cross one east-west trending fault.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The P-0209-2 Well did not find near surface gas, but did record gas shows in the Pliocene section.

7. Possible Over-pressured or Depleted Zones

Several ditch gas kicks are noted in the mud logs for E-10 and E-17. However, as noted above, in the event of a new pool discovery the operator should be prepared for higher than expected formation pressures, similar to the original formation pressures noted at the discovery of the Sockeye field.

8. Logging/Coring

The Operator plans a standard set of logs, as is the common practice with production wells in this area. A standard mud log will be taken to total depth from the kick off point. Electric logs are planned in both the 12¼ inch and 8½ inch sections of the well. The E-logs will include gamma ray, density, neutron, and resistivity, taken on wireline.

9. Other Comments

The Monterey and Topanga Formations may contain hydrogen sulfide gas. The directional path of E-18 RD (map view) crosses existing well path for E-14 and is closely parallel to E-2. Care should be taken to make sure the E-16 RD does not intersect these existing boreholes.

BOP TEST PRESSURES REQUIRED + BOPE test pressures are below full WP (5Kpsi) of equipment, but we are at least 500 psi above the ASB of 1400 psi and are thus in compliance with 30 CFR 250.448(b) OK

CASING SIZE 9 5/8" 7" (liner)

RAM-TYPE & RELATED _____

EQUIPMENT 250/3000 psi 250/3000 psi

ANNULAR 250/3000 psi 250/3000 psi

DIAGRAMS

BOP SCHEMATIC OK DIVERTER SYSTEM N/A CHOKE MANIFOLD OK

CASING PROGRAM

CASING SIZE 9 5/8" 7" (liner)

TEST PRESSURE 3000 psi 3000 psi

MWD FOR TEST: (9.0 ppg) (9.0 ppg)

SAFETY FACTORS (EACH STRING):

(EXISTING)

TENSION 3.53 2.18

COLLAPSE 2.66 1.92

BURST 3.52 4.02

GEOLOGIC FORMATIONS Targets Identified CORINGS SWCS possible

LOGGING PROGRAM MWD; GR

Run 1: PEX-HALS-NGT

Run 2: FRI-GR (in Monterey mudloggers @ KUP)

CEMENTING PROGRAM

8 1/2" x 7" = 7.8859 ft/cu

CASING SIZE: 9 5/8"

7" (liner)

AMOUNT EXISTING

960 ft³

(% EXCESS)

2100% of OH volume
[CIRC. LINER]

MUD REQUIREMENTS

ACTIVE VOLUME

(562 Bbl OH VOLUME)

RESERVE VOLUME

390' Bbl

CASING SIZE/HOLE SIZE

VOLUME CHECKED:

(3250' x .0744) + (4472' x .0702) = 242 + 314 = 556 Bbls

MINIMUM QUANTITIES OF MUD MATERIALS AT SITE

BARITE 500sx minimum (Allows MW of 0.5 ppg using 1000 Bbl total (562+390))

GEL or CaCO₃ as needed for viscosity & thixotropic properties

ADDITIVES (MAJOR) As needed to control lost circulation / fluid loss

MUD TRANSPORT. FROM SHORE ADDRESSED:

YES

NO

X

DIRECTIONAL PROGRAM PROVIDED:

YES

X

NO

CHECKED

yes

PLOT OF PORE PRESS., FRAC. GRADS, & MUD WEIGHT:

YES

X

NO

H₂S PLAN APPROVED PREVIOUSLY

yes - 7/13/2000

H₂S PLAN INCLUDED FOR APPROVAL

No

WELDING & BURNING PLAN APPROVED?

Yes - previously

* Operator proposes maintaining pH @ ~8.5 through Monterey & V. Topanga (H₂S possible) to reduce caustic effects on tubulars.

OK This departure from 30 CFR 250.490 (p. 331 in 7/1/04 Ed.) is approved. Supply of ZnCO₃ will be onboard to treat H₂S in mud.

CONDITIONS OF APPROVAL TO DRILL OCS WELL

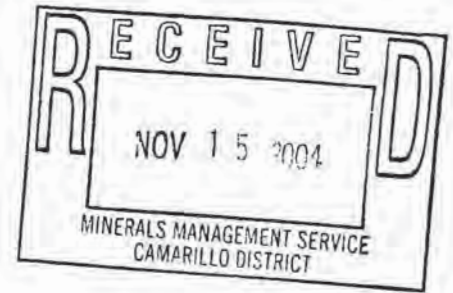
Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Supervisor.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment-overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, etc., shall be verbally reported immediately to the District Supervisor.
6. The District Supervisor shall be notified in advance in the event of production tests.
7. Two copies of all logs, including the mud log to date, shall be furnished to this office immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Supervisor shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.

VENOCO

INC

5464 Carpinteria Ave., Suite 1
Carpinteria, CA 93013-1423
805 745 2100
Fax 805 745 1846



November 9, 2004

Minerals Management Service
Pacific OCS Region
770 Paseo Camarillo
Camarillo, CA 93010-6064

Attn: Mr. Tom Dunaway

Re: Platform Gail, OCS-P-205, E-18

Dear Sir:

Enclosed please find the Application for Permit to Drill (MMS-123) for the proposed redrill of Platform Gail well E-18. One original and three copies have been submitted, with one copy marked "Public Information". Thank you for your assistance in this matter.

Please contact me at (805) 745-2164 if I can clarify any of the enclosed information.

Sincerely,

John L. Hood
Sr. Drilling Engineer
Venoco Inc.

JLH:jh
Enclosures

Application for Permit to Drill (APD)

1. PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2. MMS OPERATOR NO. 02309	3. OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013	
4. WELL NAME (CURRENT) E-24	5. SIDETRACK NO. (CURRENT) 00	6. BYPASS NO. (CURRENT) 00	RECEIVED MAY 11 2011	
7. PROPOSED START DATE 06/01/2011	8. PLAN CONTROL NO. (NEW WELL ONLY)			
9. API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04-311-20797-00				
10. ☐ Revision	11. If revision, please list changes:			
WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE		
12. LEASE NO. P-0209		17. LEASE NO. P-0205		
13. AREA NAME 6B		18. AREA NAME 6B E OF FIELD OPERATIONS		
14. BLOCK NO 4761		19. BLOCK NO. 4661		
15. LATITUDE (☐ NAD 83 / ☒ NAD 27) 34.130717	16. LONGITUDE (☐ NAD 83 / ☒ NAD 27) -119.395778	20. LATITUDE (☐ NAD 83 / ☒ NAD 27) 34.125217	21. LONGITUDE (☐ NAD 83 / ☒ NAD 27) -119.400014	
LIST OF SIGNIFICANT MARKERS ANTICIPATED				
22. NAME Monterey M2	23. TOP (MD) 5060	24. TOP (TVD) 4243	22. NAME	23. TOP (MD) 24. TOP (TVD)
Monterey M4	5100	4476		
25. LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate.) Well Prognosis, MMS-123S, Directional Plan				
26. CONTACT NAME Jody Robins		27. CONTACT TELEPHONE NO. 805-745-2153	28. CONTACT E-MAIL ADDRESS jody.robins@venococinc.com	
29. AUTHORIZING OFFICIAL (Type or print name) Dan Taimuty		30. TITLE Development Manager		
31. AUTHORIZING SIGNATURE <i>Dan Taimuty</i>		32. DATE 5/24/11		
THIS SPACE FOR MMS USE ONLY				
APPROVED. ☒ With Attached Conditions ☐ Without Conditions		BY <i>Phillip R. Schuch</i>		TITLE DISTRICT MGR.
API WELL NO ASSIGNED TO THIS WELL 04-311-20797-01		DATE 6-15-11		

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is with in 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et. seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 5438, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Manager.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, lost circulation during cementing, etc., shall be verbally reported immediately to the District Manager.
6. The District Manager shall be notified in advance in the event of production tests.
7. Two copies of all logs, including the mud log to date, shall be furnished to this office immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Manager shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.
10. The pertinent and applicable reports required under 30 CFR 250.100 through 250.400 of the Consolidated Offshore Operating Rules for Oil and Gas Operations will be properly and timely submitted. Electric logs and other logging surveys, core description and conventional analysis, stratigraphic determination, formation

Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco Inc				2) Well Name (Proposed): E-24 ST: 01 BP:			
3) Bottom Hole Lease: P-0208				4) Surface Lease: P-0205			
5) API Number: 04-311-20797-01				6) Type of Well: ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): 4000			
9) Rig Name: Kernal 2				10) SubSea BOP: ☐ Yes ☒ No			
11) Water Depth (ft): 730'		12) RKB Height (ft): 105'		13) Mineral Code:			
14) Drive Pipe Size (in): 24"		15) Drive Pipe Depth (ft): 1412'		16) Anchors ☐ Yes ☒ No			
17) Well Design Information							
Interval Number:		Type: Existing		Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
	24	188/158	X-62			1412	
GENERAL INFORMATION							
Hole Size (in) 30				Type Conductor		Annular Test (psi)	
Mud Weight (ppg)				Size (in)		BOP/Diverter Test (psi)	
Mud Type Code				Wellhead Rating (psi)		Mud Test Weight (ppg)	
Frac Gradient (ppg)				Annular Rating (psi)		Casing/Liner Test (psi)	
Liner Top Depth (ft)				BOP/Diverter Rating (psi)		Formation Test (ppg)	
Cement Volume (ft ³) 1560							
PREVENTER INFORMATION							
TEST INFORMATION							
Interval Number:							
Type: Existing		Name:					
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
	13 3/8	68	K-55	3450	1950	2700	
GENERAL INFORMATION							
Hole Size (in) 17 1/2				Type		Annular Test (psi)	
Mud Weight (ppg)				Size (in)		BOP/Diverter Test (psi)	
Mud Type Code				Wellhead Rating (psi)		Mud Test Weight (ppg)	
Frac Gradient (ppg)				Annular Rating (psi)		Casing/Liner Test (psi)	
Liner Top Depth (ft)				BOP/Diverter Rating (psi)		Formation Test (ppg)	
Cement Volume (ft ³) 2284							
PREVENTER INFORMATION							
TEST INFORMATION							
Interval Number:							
Type: Existing		Name:					
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
	9 5/8	43.5	L-80	8330	3810	4850	
GENERAL INFORMATION							
Hole Size (in) 12 1/4				Type Production		Annular Test (psi)	
Mud Weight (ppg)				Size (in)		BOP/Diverter Test (psi)	
Mud Type Code				Wellhead Rating (psi)		Mud Test Weight (ppg)	
Frac Gradient (ppg)				Annular Rating (psi)		Casing/Liner Test (psi)	
Liner Top Depth (ft)				BOP/Diverter Rating (psi)		Formation Test (ppg)	
Cement Volume (ft ³) 2395							
PREVENTER INFORMATION							
TEST INFORMATION							

* NOTE For additional casing/liner intervals, please submit an additional Form MMS-123S.

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Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco Inc				2) Well Name (Proposed): E-24 ST: 01 BP:			
3) Bottom Hole Lease: P-0208				4) Surface Lease: P-0208			
5) API Number: 04-311-20797-01				6) Type of Well: ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): 4000			
9) Rig Name: Kestrel 2				10) SubSea BOP: ☐ Yes ☒ No			
11) Water Depth (ft): 73'		12) RKB Height (ft): 10'		13) Mineral Code:			
14) Drive Pipe Size (in): 24"		15) Drive Pipe Depth (ft): 1412'		16) Anchors ☐ Yes ☒ No			

17) Well Design Information								
Interval Number:			Type: Linear			Name:		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
7	28		L-80	7240		5410	5837	9.0
							5080	
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 8 1/2			Type Surface			Annular Test (psi) 2300		
Mud Weight (ppg) 9.0			Size (in) 13 3/8			BOP/Diverter Test (psi) 2500		
Mud Type Code			Wellhead Rating (psi) 5000			Mud Test Weight (ppg) 9.0		
Frac Gradient (ppg) 12.5			Annular Rating (psi) 2500			Casing/Liner Test (psi) 2300		
Liner Top Depth (ft) 4700			BOP/Diverter Rating (psi) 5000			Formation Test (ppg) 11.0		
Cement Volume (ft ³) 272								

Interval Number:			Type: Existing			Name:		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in)			Type			Annular Test (psi)		
Mud Weight (ppg)			Size (in)			BOP/Diverter Test (psi)		
Mud Type Code			Wellhead Rating (psi)			Mud Test Weight (ppg)		
Frac Gradient (ppg)			Annular Rating (psi)			Casing/Liner Test (psi)		
Liner Top Depth (ft)			BOP/Diverter Rating (psi)			Formation Test (ppg)		
Cement Volume (ft ³) 2847								

Interval Number:			Type: Existing			Name:		
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)		Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
GENERAL INFORMATION			PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in)			Type			Annular Test (psi)		
Mud Weight (ppg)			Size (in)			BOP/Diverter Test (psi)		
Mud Type Code			Wellhead Rating (psi)			Mud Test Weight (ppg)		
Frac Gradient (ppg)			Annular Rating (psi)			Casing/Liner Test (psi)		
Liner Top Depth (ft)			BOP/Diverter Rating (psi)			Formation Test (ppg)		
Cement Volume (ft ³)								

* NOTE* For additional casing/liner intervals, please submit an additional Form MMS-123S.

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et. seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123S, is estimated to average between 1-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 5438, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-24 ST1 Drilling Program
API# 04-311-20797-01
LEASE OCS-P-0209
May 25, 2011

Objective: To drill an 8 1/2" sidetrack to 5937' MD/5050' TVD twinning the E-24 original hole. It will be completed in the Monterey with a cemented 7" liner.

Surface Location: OCS-P-205, Slot No. 16 (X= 1,046,713.34' & Y= 727,038.42')

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Proposed TD: OCS-P-209 E-24 ST1 5937' MD/5050' TVD

TD Location: Long = -119.395778" & Lat = 343130717" / X = 1,048,055.3' & Y = 729,000.4'

Existing Casing:

24", 186#/156#, X-52	1412'	1550 CF
13 3/8", 68#, K55/J55	2700'	2264 CF
9 5/8", 43.5#, L-80	6817'	2395 CF (Cmt to Surface)

Markers:

Monterey M2 – 5060' MD/4243' TVD

Monterey M4 – 5100' MD/4476' TVD

Proposed Liner

7" 26# L-80 LTC 4700' – 5937' 272 CF (20% excess + 200' above liner top)

BOPE Equipment and Testing

- BOPE will be tested every 14 days during proposed operations.
- BOP equipped with 4 ram preventers and an annular. Test the BOP to 250/2500 psi with 5" and 3 1/2" drill pipe. The 13 5/8" BOPE will be configured for drilling or re-completion operations, with 2 7/8" X 5" VBR pipe rams in the top gate and blind/shear rams in the second gate from top, the mud cross will be below the blind/shear rams, and double gate with 5" rams at top and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. The 2 3/8" rams will not be tested as we are not working with 2 3/8" tubing in this well. All tests will be recorded on a chart for the MMS to review.

Hydrogen Sulfide Considerations:

The Monterey has the potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

NOTE: Have a minimum of 2 bbls H2S scavenger ZnO or Safe-Scav HS (triazine) on board for use in mud in the event they are required during drilling. 2 bbls can treat 1040 bbls of mud.

Drilling Fluids:

- It is proposed to use MI's 9.0 ppg UltraDril Water Based Mud system
- There will be no discharge of drilling fluids during the well operations

Sidetrack Procedure

1. Set CIBP at 4950' MD/4156' TVD per plug back APM. Test casing and CIBP to 2300 psi
2. RIH with whipstock assembly and MWD tools to CIBP. Orient whipstock and set whipstock.
3. Mill window in 9 5/8" casing. Trip for new mills as necessary. Periodically pump rope fiber sweeps to clean up metal shavings. Mill 10' of rathole into formation and pull above window. Get 11.0 ppg FIT (~570 psi). POOH.
4. RIH with 8 1/2" PDC bit on directional BHA with Gamma/Resistivity LWD. Drill per attached directional to TD of 5937' MD/5050 TVD.
5. Make short trip to window and run to TD. Circulate and condition mud for logging. POOH.
6. Log well per Geologist (currently, no open hole logs planned)
7. Run in hole to TD with clean-out BHA and circulate and condition hole to run liner. POOH.
8. Rig up casing crew and run 7", 26# L-80, LTC liner to TD
 - M/U float shoe on bottom joint of casing, float collar on the bottom of the second joint (40' up) and the landing collar on the bottom of the third joint (80' up).
 - Bow spring centralizers to be run on every other joint
 - Three short joints to be placed from the 7" liner lap to TD (random spacing better than uniform).
 - Run in the hole slowly to avoid surging the formation.
 - A circulating swage with a safety valve will be on the rig floor.
 - 9 5/8" x 7" Liner Hanger to be set at +/- 4700' MD
 - N/U Cement Head assembly w/ manifold
9. Cement 7" Liner 3-5' off bottom as follows:
 - Circulate a minimum of 150% of the hole volume prior to cementing.
 - Reciprocate casing while circulating
 - RU and pressure test cement lines
 - Set liner hanger
 - Mix and pump cmt per BJ plan
 - Displace with mud at max rate to displace plug to landing collar. Reduce rate to 2bbls/min for the final 10 bbls of displacement.
 - Bump plug with 500 psi over.
 - Set Liner Top Packer
 - PU and circulate out cement w/ 150% of the hole volume.
 - Monitor drill-pipe and annulus at surface for gas migration.
 - Test Liner Top Packer to 2300 psi for 30 min. (Gas lift pressure of 1800 psi + 500 psi)
NOTE: Frac pressure at shoe + 500 psi = 1275psi
 - POOH with running tools

10. Make 7" bit and scraper run to landing collar at +/-5850'. Circulate and condition mud but do not change over at this time to maintain hydrostatic on casing to allow for bond log results. Displace WBM to weighted seawater. POOH.
11. Rig up wireline and run cement bond logs over the 7" casing. Evaluate logs and determine if block squeezing of completion interval will be required. Squeeze well as required.
12. RIH to displace WBM to seawater. Displace the drilling mud and circulate the well with filtered seawater until <30 NTU's obtained. POOH.
13. Run in hole w/Schlumberger TCP guns on 3 1/2" x 5" drill pipe and perforate the following zones:
5125 – 5205'
5315 – 5498'
5610 – 5665'
NOTE: Take all necessary precautions to protect personnel from Carbon Monoxide poisoning
14. Make bit and scraper run to below perfs. POOH
15. Make up Weatherford cup wash system and RIH
 - Rig up BJ acid equipment, poly tanks, and lines and pressure test to 3000 psi. Hydrostatic test Poly tanks prior to loading with acid
 - Acidize perforations per BJ program.
 - POOH LD DP
16. Pull wear bushing
17. Production tubing to be yellow band or better 3 1/2" 9.3# L-80 EUE 8rd.
18. Pick up the completion equipment in following order:
 - Wireline entry guide
 - 3 1/2" Baker 'BXN' seating nipple
 - 1 joint of 3 1/2" EUE 8rd Tubing
 - 3 1/2" Baker 'BX' seating nipple
 - 1 joints of 3 1/2" EUE 8rd Tubing
 - Baker 9 5/8" HS Packer w/ 6' pup joints made up to the top and bottom of the packer
 - XX joints of 3 1/2" EUE 8rd Tubing
 - 3 1/2" GLM with live valve run in place
 - XX joints of 3 1/2" EUE 8rd Tubing
 - 3 1/2" GLM with live valve run in place
 - XX joints of 3 1/2" EUE 8rd Tubing
 - 3 1/2" Baker TE-5 TRSSSV
 - XX joints of 3 1/2" EUE 8rd Tubing
 - Cameron Tubing Hanger
19. After pick up TRSSSV, install control line and pressure test to 7000 psi. Run in hole with tubing and control line banding the line to the tubing with 2 bands per joint. Run in to landing depth, pick up and install Cameron tubing hanger and install control line and pressure test to 7000 psi. Pump XX bbls packer fluid and place from packer set depth to above the bottom GLM. Get up and down

weight prior to landing. Follow Cameron procedure for landing tubing hanger. At no time will hanger hold down pin be removed. Pressure test tubing hanger void.

20. After tubing hanger is landed and tested, RU slickline and set tbg plug in XN nipple.
21. Pressure up tubing to 3000 psi in 500 psi increments to set the HS packer and hold 3000 psi on tubing for 15 minutes. Slowly bleed pressure off of tubing.
22. Bleed off control line pressure to close TRSSV
23. Pressure up on annulus and pressure test the packer, annulus, tubing plug, and TRSSV to 1000 psi. Bleed pressure off of annulus (Note: live gas lift valves will be run)
24. Pressure up tubing to 1100psi and open TRSSV to release pressure trapped b/w TRSSV and tubing plug. Close TRSSV.
NOTE: Tubing plug and TRSSV will constitute our 2 tested barriers.
25. Install BPV into tubing hanger. ND BOPE and NU Cameron 3 ½" tree with adapter. Install blanking plug and pressure test bonnet void and tree to 3000 psi. Remove blanking plug.
26. Release rig and turn well over to production.

Requested Waivers

None requested

Other Data

Please see the E-4ST5 APD for the following material:

- BSR shear test data and calculations
- Detailed choke manifold schematics
- BOP control schematics

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Completion Date: 1/24/06
Recompletion: 4/2/06
Drawing Revised 05/17/11 JCR

Lease: CCS-P-0205
SOCKEYE FIELD
WELL E-24 ST1
 Proposed

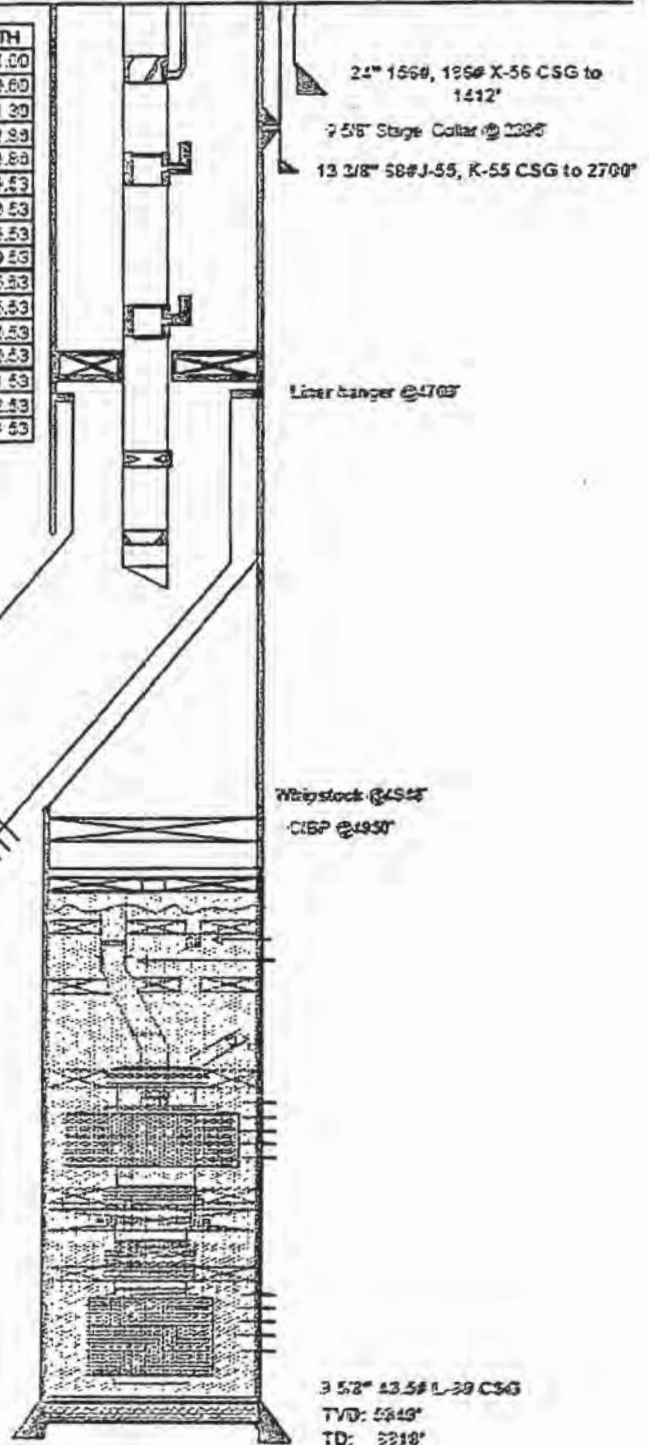
Vertical to 2750'
 Max Angle: 55 deg @ 4800'
 D.F. Elevation: 107'
 DUF to Tubing Head: 51 34'
 Water Depth: 730'
 Tree: Cameron 5000 FSI WP

Completion Date: 1/24/08
 Recompletion: 4/2/08
 Drawing Revised 05/25/10 JCR

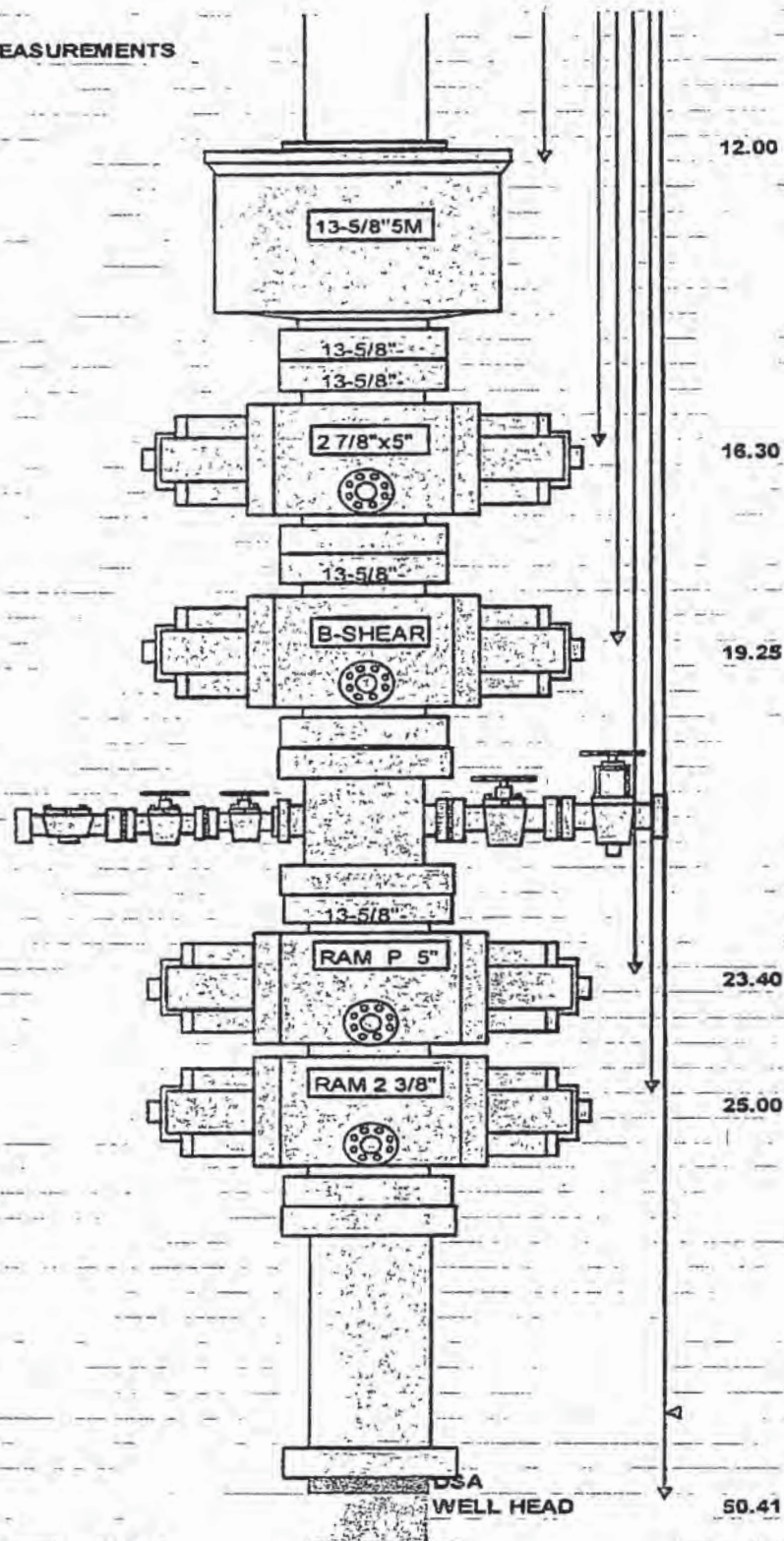
Description	LENGTH	DEPTH
LS	50.00	0.00
Tub. Hanger 3-1/2" EUE Box X 2-1/2" EUE Box	0.70	50.60
3 1/2" 9.3# L80 EUE SRD PIN X PIN	2.56	51.30
150' of 3 1/2" 9.3# L80 EUE SRD	150.00	53.86
3 1/2" TRSSSV	5.67	100.80
2015' of 3 1/2" 9.3# L80 EUE SRD	2015.00	1009.63
3 1/2" GLM with cups	15.00	1024.63
1090' of 3 1/2" 9.3# L80 EUE SRD	1090.00	1133.63
3 1/2" GLM with cups	15.00	1148.63
120' of 3 1/2" 9.3# L80 EUE SRD	120.00	1268.63
BAKER 9 5/8" HG Packer with cups	15.00	1283.63
3 1/2" 9.3# L80 EUE SRD cup	10.30	1293.93
2.5 13" SX Nipple	1.00	1294.93
31' of 3 1/2" 9.3# L80 EUE SRD	31.00	1325.93
2.5 13" SX Nipple	1.00	1326.93
3 1/2" WLEG	1.00	1327.93

Perforation Detail:	
M2	5125 - 5205'
M4	5315 - 5400'
M4A	5500 - 5585'

7" 26# L-80 LTC
 5937' MD
 5050' TVD
 3 1/2" Hole



BOPE
KENAI BOPE
RIG FLOOR MEASUREMENTS



MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP
4950'-5937' (8 1/2" hole)	UltraDril WBM	8.7 - 9.5	<6	8.0-9.5	18-25

4950'-5937'

The objective in this interval is to drill an 8 1/2" hole from the window in the 9 5/8" casing to 5937' and run 7" 26# liner from TD to 4700'. The fluid system recommended is UltraDril WBM, MI's high performance water based mud system.

Notes:

- 1) Operate solids control equipment to maintain drill solids as low as possible.
- 2) **Maintain 2 bbls (104 gal) of H₂S scavenger on board.** ZnO or Safe-Scav HS (triazine) are both compatible with this mud system. 2 bbls can treat 1040 bbls of mud.
- 3) **A minimum of 500 sx of barite shall be kept on the platform at all times, enough to raise the mud weight 0.5 ppg.**
- 4) There is no minimum amount of Xanthan gum viscosifier to be kept on the platform, as it is not required to raise the mud weight of the UltraDril system.

Hydrogen Sulfide Considerations:

The Monterey has potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

CEMENT PROGRAMWELL DATAANNULAR GEOMETRY

ANNULAR I.D. (in)	DEPTH(ft)	
	MEASURED	TRUE VERTICAL
9.755 CASING	4.950	4.950
8.500 HOLE	5.937	5.050

SUSPENDED PIPES

DIAMETER (in)		WEIGHT (lbs/ft)	DEPTH(ft)	
O.D.	I.D.		MEASURED	TRUE VERTICAL
7.000	6.276	26	5.937	5.050

Drill Pipe 5.0 (in) OD, 4.276 (in) ID, 19.5 (lbs/ft) set @ 4,700 ft
 Drill Pipe 7.0 (in) OD, 6.276 (in) ID, 26 (lbs/ft) set @ 5,937 ft
 Depth to Top of Liner 4,700 ft
 Float Collar set @ 5,937 ft
 Mud Density 9.00 ppg
 Mud Type Water Based
 Est. Static Temp. 156 °F
 Est. Circ. Temp. 110 °F

VOLUME CALCULATIONS

200 ft x 0.4181 cf/ft with 0 % excess = 84 cf
 250 ft x 0.1508 cf/ft with 0 % excess = 38 cf
 987 ft x 0.1268 cf/ft with 20 % excess = 150 cf
TOTAL SLURRY VOLUME = 272 cf
 = 40 bbls

FLUID SPECIFICATIONS

Spacer 40.0 bbls Ultra Flush II + 229.37 lbs/bbl Sante - Sacked @ 12.5 ppg

FLUID	VOLUME CU-FT	VOLUME FACTOR	AMOUNT AND TYPE OF CEMENT
Cement Slurry	272	1.1	= 232 sacks Class G Cement + 0.6% bwoc FL-63 + 0.5% bwoc CD-32 + 0.1% bwoc ASA-301 + 2 gals/100 sack FP-6L + 0.4% bwoc P-21 + 45.7% Sea Water

Disp-Spacer 59.5 bbls Fresh Water @ 8.34 ppg

Displacement 72.2 bbls Lease Water @ 8.43 ppg

CEMENT PROPERTIES

	SLURRY NO. 1
Slurry Weight (ppg)	15.80
Slurry Yield (cf/sack)	1.17
Amount of Mix Water (gals)	5.03
Amount of Mix Fluid (gals)	5.05

EVALUATION PROGRAM

1) MUD LOGGING

8 1/2" Hole Section – Continuous mud logging shall be performed from drilling out the shoe of the 7" window to the total depth. Collect dry samples at 30' intervals.

2) CORING – none

3) LOGGING WHILE DRILLING

8 1/2" Hole Section – MWD/Resistivity/GR will be run for the entirety of the hole

4) ELECTRIC LOGGING

8 1/2" Hole Section

None Planned

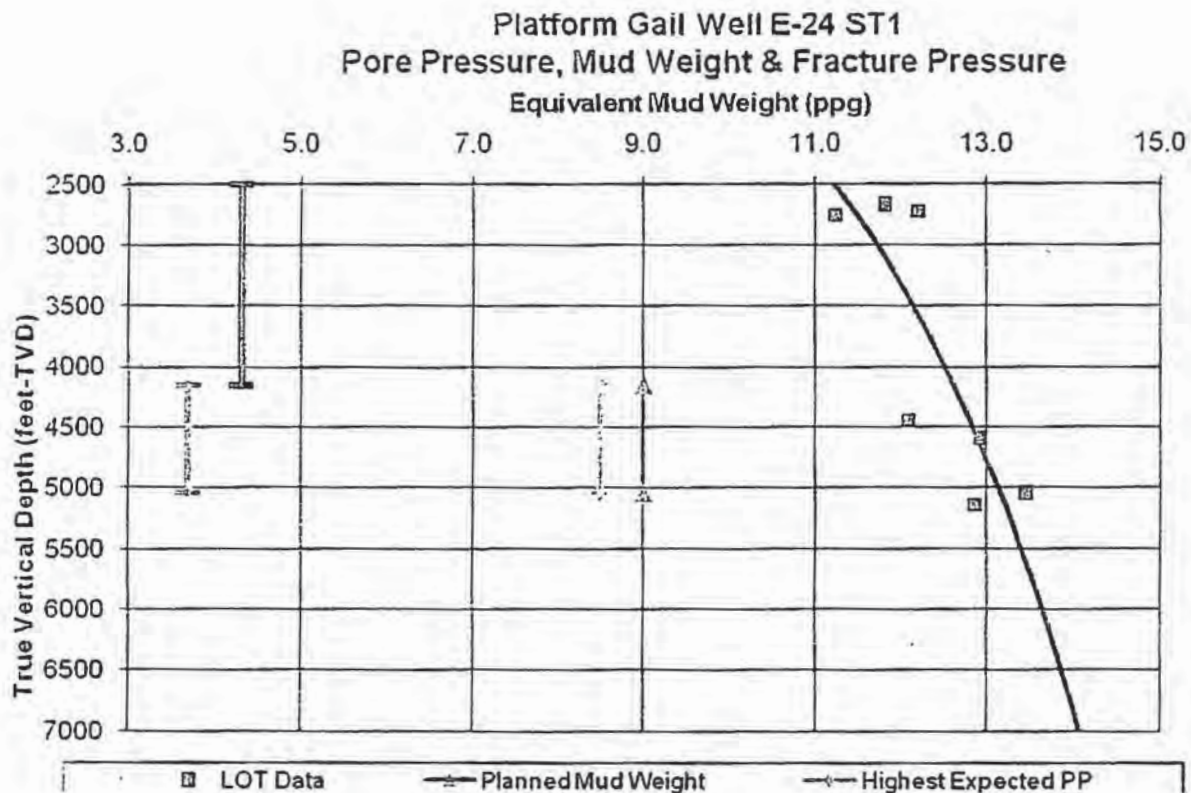
Notify Geologist to witness all logs.
Primary Geologist: Monica Carlsen
805-745-2115 office
805-448-5622 cell

Back-up Geologist: Chris Peltonen
805-745-2266 office
805-732-8846 cell

MASP CALCULATIONS

	Window	Pilot Hole
1 Casing Size (in)	9-5/8	8 1/2
2 Setting Depth (feet - TVD)	4157	5050
3 Expected Leak Off Test EMW at shoe (ppg)	11	11
4 Expected Mud Weight (ppg)	9	9
5 Depth of next Casing (feet - TVD)	5050	5050
6 Maximum Expected Formation Pressure (psi)	2232	2232
7 Expected gas gradient (psi/ft)	0.05	0.05
8 Formation Equivalent Mud Weight (ppg)	8.5	8.5
Max Pressures using 100% Gas to Surface		
9 Max Surface Pressure neglecting shoe (psi)	1980	1980
10 Fracture Gradient at shoe (psi/ft)	0.57	0.57
11 Fracture Pressure at shoe (psi)	2378	2889
12 Surface pressure to break down shoe (psi)	2170	2636
13 Maximum Anticipated Surface Pressure (psi)	1980	1980
Max Pressures using 70% Gas & 30% Mud		
14 Maximum Anticipated Surface Pressure (psi)	1346	1346
15 Top of fluid (feet-TVD)	3535	3535
16 Pressure at shoe (psi)	1814	2232
17 Margin between pressure and breakdown(psi)	564	657

Pore Pressure Plot



CASING DESIGN

Hole Section	Existing	8 1/2"
Mud Weight	9	9
Buoyancy Factor	0.863	0.863
MASP (psi)	1980	1980
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9-5/8"	7
Setting Depth, MD (ft)	4950	5937
Setting Depth, TVD (ft)	4157	5050
Top of Casing, MD (ft)	0	4700
Weight (lb/ft)	43.5	26
Grade	L-80	L-80
Threads	STL	LTC
ID (in)	8.755	6.276
Drift diameter (in)	8.599	6.151
Collapse (psi)	3810	5410
Burst (psi)	6330	7240
Joint Strength (kips)	825	519
Body Strength (kips)	1005	604
Collapse Safety Factor Assumes Complete Evacuation	1.96	2.29
Burst Safety Factor Assumes No Backup at Surface	3.20	3.66
Tensile Safety Factor	2.89	4.06

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydrii") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydrii") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.
Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.
Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).
Read drill pipe pressure.
Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.
Shut down pump and close choke at the same time. SEE NOTE.
Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

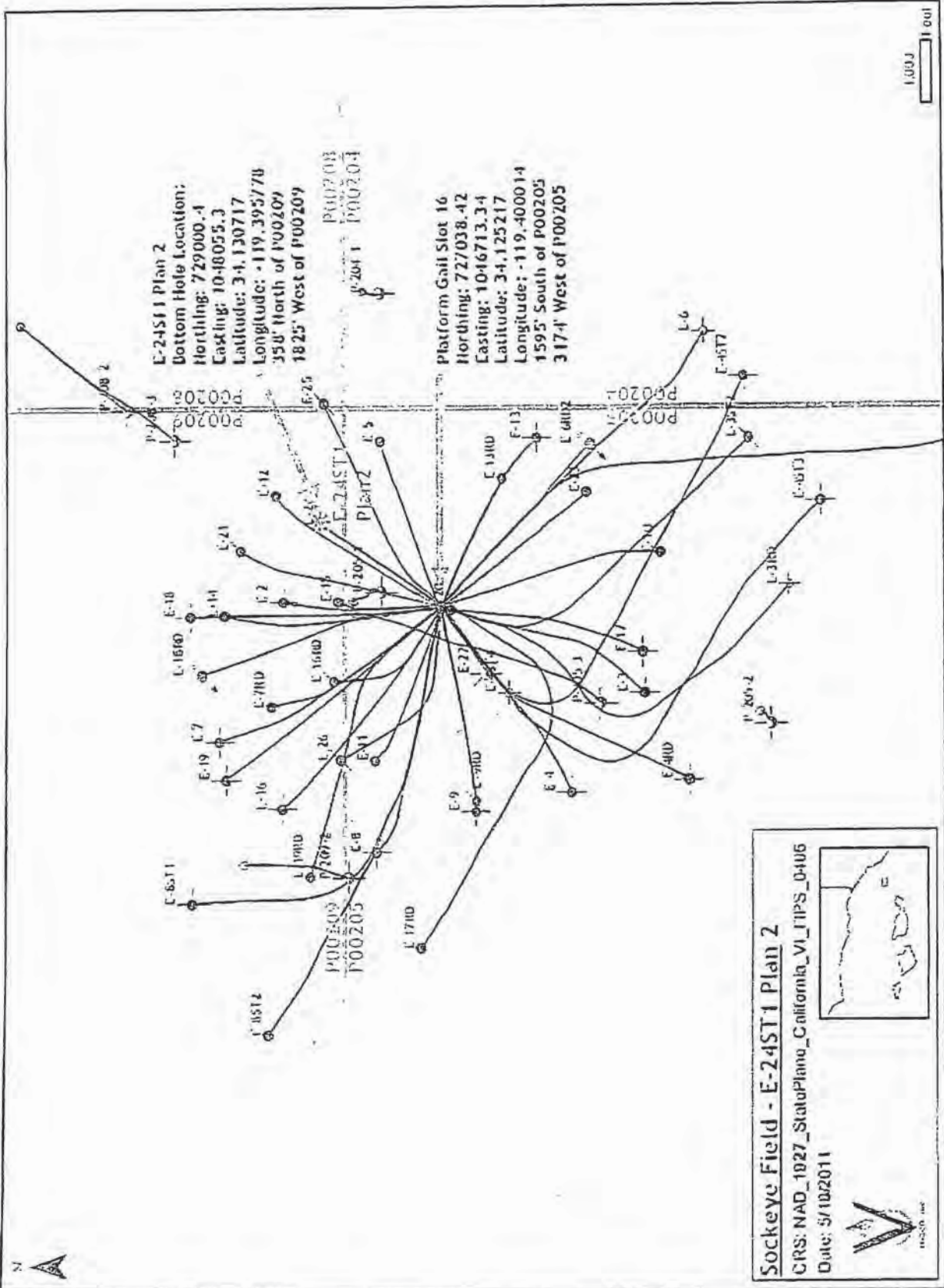
Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. **Assume any gas circulated to surface to have hydrogen sulfide potential.** Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

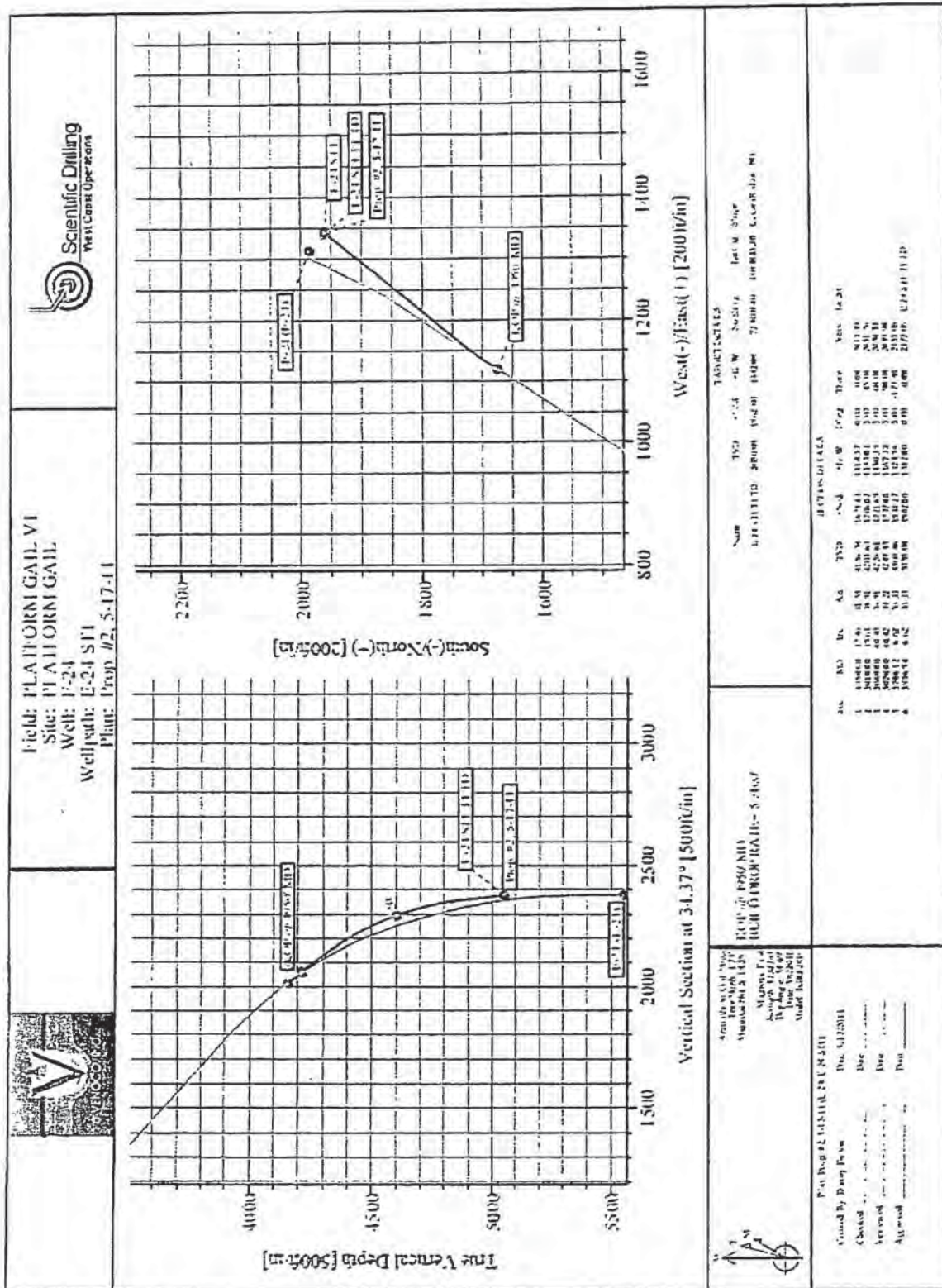
RIG SPECS



Rig #2 Specifications

<u>Drilling Range:</u>	21,000' with 3" Drillpipe.
<u>Drawworks:</u>	Skytop Brewster N-12 / 2,000 H.P. Driven by (2)-1,000 H.P. General Electric 752 DC Traction Motors With a Parkersburg V-200 Hydromatic Brake and Electronic Control Panel.
<u>Mast:</u>	Skytop Brewster 142' High, Rated at 1,250,000# GNC and 1,000,000# Static Hook Capacity.
<u>Substructure:</u>	Skytop Brewster 21' High (10' Pony Available), With 1,250,000# Capacity.
<u>Mud Pump #1:</u>	National 12P-160 Triplex, 7"x12" 1,600 H.P., Powered by (2)-1,000 H.P. General Electric 752 DC Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Mud Pump #2:</u>	National 12P-160 Triplex, 7"x12" 1,600 H.P., Powered by (2)-1,000 H.P. General Electric 752 Traction Motors Charged by (1)-5x6 Centrifugal Pump.
<u>Rotary Table:</u>	Continental Emsco 27-1/2" (37-1/2" Optional)
<u>Traveling System:</u>	Skytop Brewster 6 Sheave, 500 Ton Block/Hook Combination and National P-500 Ton Swivel.
<u>SCR/Power System:</u>	Ross Hill 4 Bridge, 4 Input SCR Unit With Highline Connection and G.E. Electrical Control Unit.
<u>Mud System:</u>	(2)-Pit System, 1,000 Total Barrels, With Trip, Shaker, Volume, Mud Cleaning, Suction and Pill Mixing Compartments, (6)-Lightning Mud Agitators, Submerged Guns, (2)-5x6 Centrifugal Pumps and (2)-Flowline Cleaners.
<u>B.O.P.E.:</u>	Hydril GK 13-5/8", 5,000# Annular, Shaffer LWS 13-5/8", 5,000# D-Ram, Hydril 220 Gallon Accumulator and 5,000# Choke Manifold or as Designated by Contract.
<u>Water Storage:</u>	400 BBLS.
<u>Auxiliary Equipment:</u>	(2)-Air Winches, Wireline Unit (.092"), (2)-Air compressors, Upper & Lower Doghouses, Toolpusher Trailer.





Scientific Drilling International

Planning Report



Company: VENOCO		Date: 5/17/2011	Time: 11:43:40	Page: 1						
Field: PLATFORM GAIL V1		Co-ordinate(N/E) Reference:	Well: E-24, Grid North							
Site: PLATFORM GAIL		Vertical (TVD) Reference:	E-24 103.0							
Well: E-24		Section (VS) Reference:	Well (0.00N,0.00E,34.57Az)							
Wellpath: E-24 ST1		Survey Calculation Method:	Minimum Curvature DB: Sybase							
Plan: Prop #2, 5-17-01		Date Composed:	5/17/2011							
Printpath: Yes		Version:	1							
		Tag-to:	User Defined							
Site: PLATFORM GAIL CALIFORNIA, U.S.A. VENTURA										
Site Position:		Northings:	727050.42 ft							
From: Map		Eastings:	1049713.56 ft							
Position Uncertainty: 0.00 ft		Latitude:	34 7 50.901 N							
Ground Level: 3.03 ft		Longitude:	119 24 0054 W							
		North Reference:	Grid							
		Grid Convergence:	-1.73 deg							
Field: PLATFORM GAIL V1 VENTURA CALIFORNIA, U.S.A. Map System: US State Plane Coordinate System 1927 Geo Datum: NAD83 (Clarke 5566) Sys Datum: Mean Sea Level										
		Map Zone:	California, Zone VI							
		Coordinate System:	Well Centre							
		Geocentric Model:	IGRF2010							
Well: E-24 SUR. N 727050.42 E 1049713.56										
Well Position:		Northings:	727050.42 ft							
-N-S -12.02 ft		Eastings:	1049713.56 ft							
-E-W -0.05 ft		Latitude:	34 7 50.793 N							
Position Uncertainty: 0.00 ft		Longitude:	119 24 0050 W							
Wellpath: E-24 ST1 Drilled From: E-24 Tis-to Depth: 0.00 ft Above System Datum: Mean Sea Level Declination: 12.52 deg Mag Dip Angle: 59.92 deg Direction: deg										
Current Datum: E-24		Height: 109.00 ft								
Magnetic Data: 5/17/2011										
Field Strength: 47.32 pT										
Vertical Section: Depth From (TVD)										
		+N-S								
		-E-W								
		DLS								
		Build								
		Tare								
		TFO								
		Target								
Plan Section Information										
MD	Ind	Act	TVD	-N-S	-E-W	DLS	Build	Tare	TFO	Target
ft	deg	deg	ft	ft	ft	deg/100ft	deg/100ft	deg/100ft	deg	
4950.00	37.49	31.55	4456.70	1674.33	1162.57	0.00	0.00	0.00	0.00	
5010.00	38.09	34.28	4223.83	1705.07	1139.02	5.00	3.62	5.54	45.00	
5040.00	40.43	38.24	4229.81	1724.89	1150.39	5.00	2.58	6.68	50.00	
5070.00	41.42	39.22	4242.45	1737.00	1162.33	5.00	0.08	7.71	50.00	
5140.12	5.62	38.33	4952.46	1944.27	1229.56	5.00	-5.00	-0.43	-179.40	
5036.94	3.42	38.33	5050.60	1993.00	1242.09	0.00	0.00	0.00	0.00	E-24 ST1 T1 TD
Survey										
MD	Ind	Act	TVD	VS	NS	E/W	DLS	MapN	MapE	Sys TVD
ft	deg	deg	ft	ft	ft	ft	deg/100ft	ft	ft	ft
4950.00	37.49	31.55	4456.70	2013.99	1674.33	1162.57	0.00	723713.23	1047831.97	4048.70
5010.00	38.09	34.28	4223.83	2044.20	1705.07	1139.02	5.00	723739.25	1047843.77	4087.91
5040.00	40.43	38.24	4229.81	2051.29	1724.89	1150.39	5.00	723744.47	1047852.38	4095.63
5070.00	41.42	39.22	4242.45	2070.54	1737.00	1162.33	5.00	723750.09	1047862.69	4113.81
5070.00	40.42	39.22	4249.45	2089.24	1737.00	1162.33	5.00	723775.40	1047875.88	4141.45
5100.00	39.21	39.22	4272.54	2109.02	1751.34	1174.49	5.00	723790.34	1047887.79	4164.54
5100.00	39.02	39.10	4382.29	2123.17	1797.58	1213.22	5.00	723836.28	1047925.29	4244.99
5100.00	39.02	39.05	4438.39	2220.11	1838.34	1244.79	5.00	723870.74	1047953.09	4330.29
5400.00	39.21	39.21	4527.52	2264.48	1972.66	1272.73	5.00	723911.38	1047986.03	4419.82
5500.00	39.02	38.45	4620.39	2300.89	1991.49	1295.55	5.00	723939.28	1048004.35	4512.89
5600.00	39.02	38.11	4716.77	2329.09	1929.82	1313.09	5.00	723982.02	1048024.39	4603.77
5700.00	3.03	37.21	4514.78	2342.83	1939.27	1325.22	5.00	723977.67	1048038.52	4709.78
5745.12	5.62	35.33	4560.45	2354.08	1944.27	1329.56	5.00	723982.67	1048042.29	4722.46
5870.00	5.62	39.23	4913.67	2361.27	1949.27	1332.64	0.00	723987.67	1048045.94	4825.87
5900.00	5.62	35.33	5013.31	2372.90	1959.57	1339.48	0.00	723990.97	1048052.79	4925.31

Scientific Drilling International Planning Report



Company: VENOCO	Date: 5/17/2011	Time: 11:43:40	Page: 1
Field: PLATFORM GAIL V1	Co-ordinate(NE) Reference:	Well: E-24, Grid North	
Sht: PLATFORM GAIL	Vertical(TVD) Reference:	E-24 103.0	
Well: E-24	Section (VS) Reference:	Well (0.00N,0.00E,34.37A)	
Wellpath: E-24 ST1	Survey Calculation Method:	Minimum Curvature	DB: Sybase

Survey

MD ft	Lat deg	Long deg	TVD ft	VS ft	NIS ft	EW ft	DLS deg/100ft	MspN ft	MspE ft	Sys TVD ft
6535.64	4.62	85.23	6050.00	2377.08	1962.00	1342.00	0.00	729000.40	1048645.30	4942.00

Annotation

MD ft	TVD ft
6550.00	4158.70

ROP @ 4950' MD



Scientific Drilling International

Anticollision Report



Company:	VENOCO	Date:	5/17/2011	Time:	11:45:22	Page:	1	
Field:	PLATFORM GAIL V1	Co-ordinate(N/E) Reference:	Well: E-24, Grid North					
Reference Site:	PLATFORM GAIL	Vertical (TVD) Reference:	E-24 108.0					
Reference Well:	E-24						Doc Sybase	
Reference Wellpath:	E-24 ST1							
NO GLOBAL SCAN: Using user defined selection & scan criteria		Reference:	Plan: Prop. #2, 5-17-11					
Interpolation Method:	VO	Interval:	100.00 ft					
Depth Range:	-450.00 to 5933.64 ft	Error Model:	ISOWSA EFlow					
Maximum Radius:	100.00 ft	Scan Method:	Closest Approach 3D					
		Error Surface:	EFlow					
Plan:	Prop. #2, 5-17-11	Date Composed:	5/17/2011					
Principal:	Yes	Version:	1					
		Tied-to:	User Defined					
Summary								
Site	Offset Wellpath	Wellpath	Reference MID	Offset MID	Cur-Cur Distance	Edge Distance	Separation Factor	Warning
PLATFORM GAIL	E-10	E-10 VO						Out of range
PLATFORM GAIL	E-11	E-11 VO						Out of range
PLATFORM GAIL	E-12	E-12 VO	5400.00	5412.63	152.05	134.79	8.38	
PLATFORM GAIL	E-13	E-13 OH VO						Out of range
PLATFORM GAIL	E-13	E-13 RD VO						Out of range
PLATFORM GAIL	E-14	E-14 VO						Out of range
PLATFORM GAIL	E-15	E-15 VO						Out of range
PLATFORM GAIL	E-16	E-16 OH VO						Out of range
PLATFORM GAIL	E-16	E-16 RD VO						Out of range
PLATFORM GAIL	E-17	E-17 RD1 VO						Out of range
PLATFORM GAIL	E-17	E-17 VO						Out of range
PLATFORM GAIL	E-18	E-18 RD VO						Out of range
PLATFORM GAIL	E-18	E-18 VO						Out of range
PLATFORM GAIL	E-19	E-19 RD VO						Out of range
PLATFORM GAIL	E-19	E-19 VO						Out of range
PLATFORM GAIL	E-20	E-20 VO						Out of range
PLATFORM GAIL	E-21	E-21 VO						Out of range
PLATFORM GAIL	E-22	E-22 VO						Out of range
PLATFORM GAIL	E-23	E-23 VO						Out of range
PLATFORM GAIL	E-24	E-24 VO	4250.00	4250.00	0.00	-7.51	0.00	Level 1
PLATFORM GAIL	E-25	E-25 PLAN 3 VO						Out of range
PLATFORM GAIL	E-25	E-25 PLAN 4 VO						Out of range
PLATFORM GAIL	E-26	E-26 SUR VO						Out of range
PLATFORM GAIL	E-26	E-26 VO Plan: Plan #1						Out of range
PLATFORM GAIL	E-2	E-2 VO						Out of range
PLATFORM GAIL	E-3	E-3 OH VO						Out of range
PLATFORM GAIL	E-3	E-3 RD VO						Out of range
PLATFORM GAIL	E-3	E-3 ST2 VO						Out of range
PLATFORM GAIL	E-4	E-4 ST1 VO						Out of range
PLATFORM GAIL	E-4	E-4 ST2 VO						Out of range
PLATFORM GAIL	E-4	E-4 ST3 VO						Out of range
PLATFORM GAIL	E-4	E-4 ST4 VO						Out of range
PLATFORM GAIL	E-4	E-4 ST5 PLAN VO Plan:						Out of range
PLATFORM GAIL	E-4	E-4 ST5 SUR VO						Out of range
PLATFORM GAIL	E-4	E-4 OH VO						Out of range
PLATFORM GAIL	E-5	E-5 VO						Out of range
PLATFORM GAIL	E-6	E-6 RD VO						Out of range
PLATFORM GAIL	E-6	E-6 RD2 VO						Out of range
PLATFORM GAIL	E-6	E-6 VO						Out of range
PLATFORM GAIL	E-7	E-7 OH VO						Out of range
PLATFORM GAIL	E-7	E-7 RD VO						Out of range
PLATFORM GAIL	E-8	E-8 OH VO						Out of range
PLATFORM GAIL	E-8	E-8 ST1 VO						Out of range
PLATFORM GAIL	E-8	E-8 ST2 VO						Out of range
PLATFORM GAIL	E-8	E-8 OH VO						Out of range
PLATFORM GAIL	E-9	E-9 RD1 VO						Out of range
PLATFORM GAIL	P-234_1	P-234_1 VO						Out of range
PLATFORM GAIL	P-235_1	P-235_1 VO						Out of range
PLATFORM GAIL	P-235_2	P-235_2 VO						Out of range
PLATFORM GAIL	P-235_3	P-235_3 VO						Out of range
PLATFORM GAIL	P-236_1	P-236_1 VO						Out of range
PLATFORM GAIL	P-236_2	P-236_2 VO						Out of range
PLATFORM GAIL	P-236_3	P-236_3 VO						Out of range
PLATFORM GAIL	P-237_1	P-237_1 VO						Out of range
PLATFORM GAIL	P-237_2	P-237_2 VO						Out of range

Scientific Drilling International

Anticollision Report



Company: VENOCO Date: 5/17/2011 Time: 11:45:22 Page: 2
 Field: PLATFORM GAIL V1
 Reference Site: PLATFORM GAIL Co-ordinates(NE) Reference: Well: E-24, Gnd North
 Reference Well: E-24 Vertical (TYD) Reference: E-24 108.0
 Reference Wellpath: E-24 ST1 Db: Sybase

Site: PLATFORM GAIL
 Well: E-12
 Wellpath: E-12 V0

Later-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis		Offset Location			Cor-Cor		Edge		Separation		Warning
SID	TYD	SID	TYD	Ref	Offset	TFO-HS	North	East	Distance	Distance	Distance	Factor	Factor	Factor	
4950.00	4559.70	4581.38	4339.48	0.00	14.28	229.79	1577.56	674.21	166.44	154.77	14.28				
5030.00	4565.91	4350.30	4272.29	0.15	15.11	229.15	1709.89	963.53	161.28	149.08	13.22				
5100.00	4572.54	4127.23	4337.32	0.73	15.43	230.50	1789.64	1031.47	159.01	144.42	11.43				
5200.00	4582.69	4222.37	4402.71	1.23	15.88	237.50	1828.72	1067.31	159.04	140.95	10.27				
5300.00	4593.29	4318.35	4470.11	1.70	16.57	246.56	1897.27	1102.54	153.77	136.90	9.12				
5400.00	4607.82	4413.93	4538.11	2.10	18.29	259.43	1944.90	1137.72	153.05	134.79	8.38				
5500.00	4623.88	4504.33	4603.33	2.44	19.23	274.31	1993.14	1170.54	159.04	140.29	8.43				
5600.00	4716.77	4593.49	4667.48	2.70	19.93	294.45	2050.95	1202.27	175.68	157.80	9.74				

Site: PLATFORM GAIL
 Well: E-24
 Wellpath: E-24 V0

Later-Site Error: 0.00 ft

Reference		Offset		Semi-Major Axis		Offset Location			Cor-Cor		Edge		Separation		Warning
SID	TYD	SID	TYD	Ref	Offset	TFO-HS	North	East	Distance	Distance	Distance	Factor	Factor	Factor	
4950.00	4159.70	4950.00	4159.70	0.00	14.85	0.00	1974.93	1118.57	0.00	-7.51	0.00				Level 1
5030.00	4165.91	4990.94	4165.98	0.15	15.00	206.56	1700.18	1134.01	1.85	-2.62	0.18				Level 1
5100.00	4172.54	5028.88	4278.97	0.73	15.30	225.55	1747.23	1163.11	13.81	1.74	1.14				Level 2
5200.00	4352.69	5197.12	4363.54	1.23	15.89	234.97	1789.68	1190.71	25.45	12.14	1.91				
5300.00	4438.29	5264.42	4451.97	1.70	15.89	233.41	1823.57	1214.69	35.84	21.19	2.45				
5400.00	4527.82	5391.80	4541.59	2.10	15.18	233.22	1854.39	1234.77	44.37	18.60	2.31				
5500.00	4623.88	5469.26	4633.09	2.44	16.47	237.91	1892.55	1250.88	49.61	33.02	2.45				
5600.00	4716.77	5566.80	4726.55	2.70	16.78	214.14	1908.22	1262.97	53.33	35.38	2.97				
5700.00	4814.78	5665.48	4821.98	2.99	17.09	222.81	1933.47	1273.70	62.77	33.92	2.90				
5800.00	4913.67	5763.92	4918.22	3.09	17.35	233.18	1949.08	1282.68	59.14	30.45	2.55				
5900.00	5013.31	5863.00	5015.86	3.37	17.65	239.98	1964.14	1290.09	49.78	29.48	2.45				
5950.54	5253.00	5918.57	5322.15	3.10	17.79	241.50	1968.90	1292.42	50.11	29.64	2.45				

RP 65 Compliance Questions:

GENERAL QUESTIONS:		
1	Have you considered the following in your well planning and drilling plan determinations: evaluation for flow potential, site selection, shallow hazards, deeper hazard contingency planning, well control planning for fluid influxes, planning for lost circulation control, regulatory issues and communications plans, planning the well, pore pressure, fracture gradient, mud weight, casing plan, cementing plan, drilling plan, wellbore hydraulics, wellbore cleaning, barrier design, and contingency planning? (API 65-2 1.5)	Yes/No
2	Have you considered the general well practices while drilling, monitoring and maintaining wellbore stability, curing and preventing lost circulation, and planning and operational considerations? (API 65-2 1.6)	Yes/No
FLOW POTENTIAL		
3	Will a pre-spud hazard assessment be conducted for the proposed well site?	Yes/No NA
4	List all potential flow zones within the well section to be cemented.	Describe below NA
5	Has the information concerning the type, location, and likelihood of potential flow zones been communicated to key parties (cementing service provider, rig contractor, or 3 rd parties)?	Yes/No NA
CRITICAL DRILLING FLUID PARAMETERS		
6	Are fluid densities sufficient to maintain well control without inducing lost circulation?	Yes/No
CRITICAL WELL DESIGN PARAMETERS		
7	Will you use a cementing simulation model in the design of this well?	Yes/No
7a	If yes, how is the output of this simulation model used in your decision-making process?	Describe below
7b	If no, include discussion of why a model is not being used.	Describe below
7c	Either way, include the number and placement of centralizers being used.	Describe below
8	Will you ensure the planned top of cement will be 500 feet above the shallowest potential flow zone?	Yes/No NA
9	Have you confirmed that the hole diameter is sufficient to provide adequate centralization?	Yes/No
10	If there are any isolated annuli, how have you mitigated thermal casing pressure build-up.	NA or Describe below
11	Will you ensure the well will be stable (no volume gain or losses, drilling fluid density equal in vs. out) before commencing cementing operations?	Yes/No
12	List all annular mechanical barriers in your design.	Describe below
13	Has the ratihole length been minimized or filled with drilling fluid with a density greater than the cement density?	Yes/No
14a	If you have any liner top packers exposed to the production or intermediate annulus, what is the rating for differential pressure across this packer?	NA or Describe below
14b	If you have any liner top packers exposed to the production or intermediate annulus, have you confirmed that your negative test will not exceed this rating?	Yes/No/NA
15	What type of casing hanger lock-down mechanisms will be used?	Describe below NA
16	For all intermediate and production casing hangers set in subsea, HP wellhead housing, will you immediately set/energize the lock-down ring prior to performing any negative test?	Yes/No NA
17	For all production casing hangers set in subsea, HP wellhead housing, will you set/energize the lock-down sleeve immediately after running the casing and prior to performing any negative test?	Yes/No NA
CRITICAL OPERATIONAL PARAMETERS		
18	Will you have 2 mechanical barriers in addition to cement in your final casing string (or liner if it is your final string)?	Yes/No
19	Do you plan to nipple down BOP in accordance with the WOC requirements in 30 CFR 250.422(a)?	Yes/No
20	Do you plan on running a cement bond log on the production and intermediate casing/liner prior to conducting the negative test on that string?	Yes/No
Are contingency plans in place for the following:		
21	Lost circulation?	Yes/No
22	Unplanned shut-down?	Yes/No
23	Unplanned rate change?	Yes/No
24	Float equipment does not hold differential pressures?	Yes/No
25	Surface Equipment issues?	Yes/No
26	Will you monitor the annulus during cementing and WOC time?	Yes/No
27	If using foam cement, is a risk assessment being conducted and incorporated into cementing plan?	Yes/No NA

28	If using foam cement, will the foamer, stabilizer, and nitrogen injection be controlled by an automated process system?	Yes/No NA
CRITICAL MUD REMOVAL PARAMETERS		
28	Have you tested your drilling fluid and cementing fluid programs for compatibility to reduce possible contamination?	Yes /No
29	Have you considered actual well conditions when determining appropriate cement volumes?	Yes /No
30	Has the spacer been modeled or designed to achieve the best possible mud removal?	Yes /No
CRITICAL CEMENT SLURRY PARAMETERS		
31	Have all appropriate cement slurry parameters been considered to ensure the highest probability of isolating all potential flow zones?	Yes /No
32	Do you plan on circulating bottom up prior to the start of the cement job?	Yes /No

If any question is answered "No", additional explanation will be needed as to why that practice is not being followed; identify the question and provide that explanation below. The follow questions are not "Yes/No" questions and will require a description (if not applicable, state "Not Applicable").

4. Monterey zones are "no flow"
- 7a. Ensures that our cement design is appropriate for this well
- 7b.
- 7c. Centralizers to be run every other joint - approx 12
- 10a.
12. Liger top packer, production packer, tree
- 14a. 7500 psi
- 15.



May 26, 2011

Mr. Jody Robins
Drilling Engineer
Venoco Inc.
Ventura California

4567 Telephone Road
Suite 203
Ventura, CA 93003

T: +1 805 658 5600
F: +1 805 658 5605
www.interactprojects.com

Subject: Venoco Inc. Platform Gail E-24 ST1 Casing and Cementing Certification

Dear Jody:

In response to the requirements set forth in The Code of Federal Regulations (CFR) Part 250- Oil and Gas and Sulphur Operations in The Outer Continental Shelf, Subpart A 250.420 What well casing and cementing requirements must I meet, InterAct provides the following verification for the Venoco Inc. Platform Gail E-24 ST1 Drilling Program.

I do hereby verify that:

The Venoco, Inc. Platform Gail E-24 ST1 Drilling Program (May 25th, 2011) provides two independent tested barriers, including one mechanical barrier, across each flow path during the well completion activities.

Furthermore, I verify that:

The casing and cementing design of the Platform Gail E-24 ST1 Drilling Program is appropriate for the expected wellbore conditions.

Sincerely,

Greg Stephens P.E. (California P 1377)

Attachment: InterAct Statement of Qualifications

InterAct Statement of Qualifications

InterAct Offers a broad range of professional engineering and project management services to the international oil and gas industry. InterAct assists operators at every stage of the field life cycle, from development through the production phase to facilities decommissioning and abandonment, both on and offshore. Key Services by InterAct are:

Drilling and production services

- Abandonment services (subsea well)
- Activity management Facility decommissioning and abandonment
- Field development concept studies
- Permitting and environmental services
- Subsea installation and intervention
- Drilling and Production Services

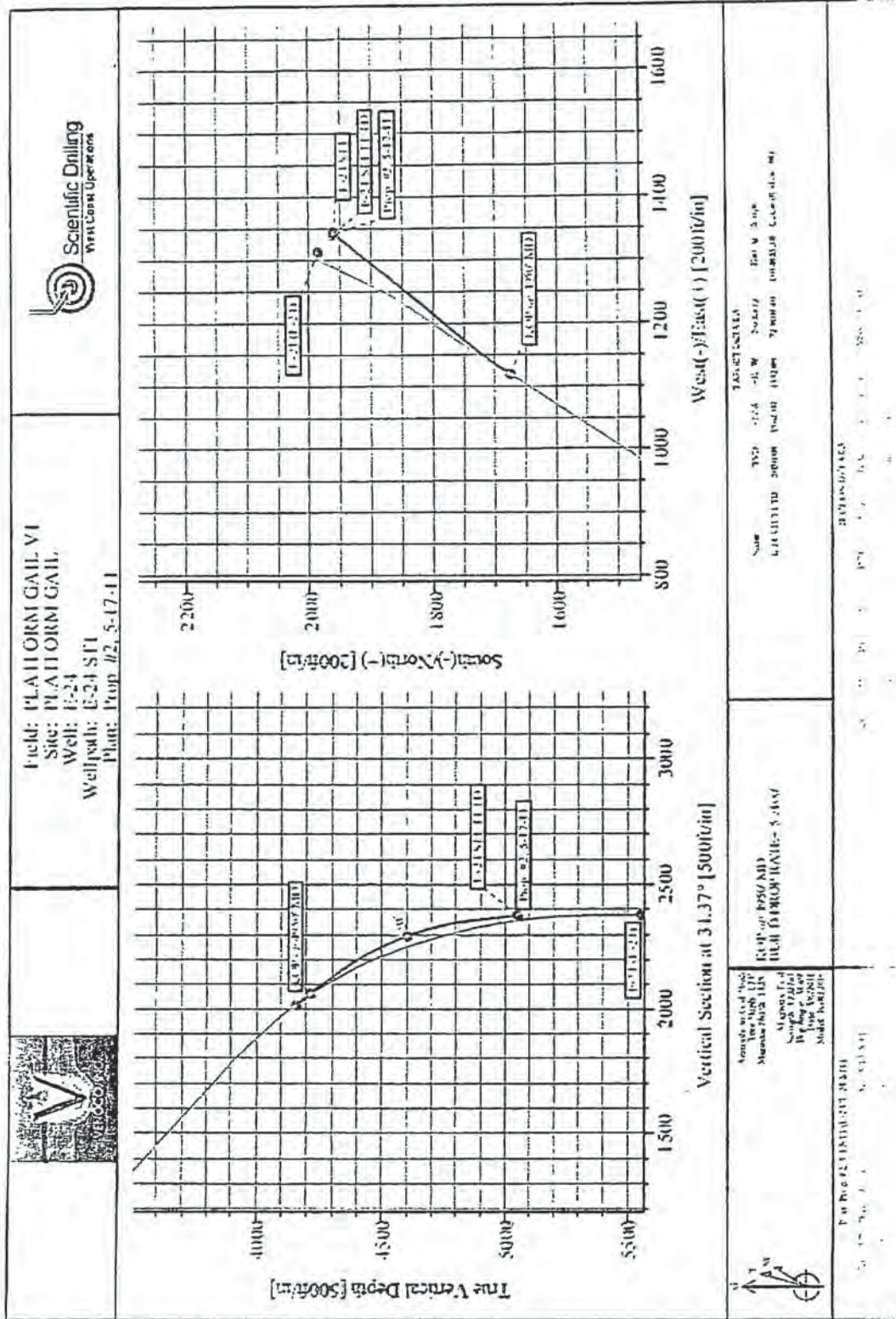
InterAct drilling engineers work closely with clients' geologists and reservoir engineers to prepare cost effective well designs that ensure maximum productivity. We have successfully designed and managed drilling projects for horizontal and extended reach wells, deepwater subsea wells, reservoirs with complex geological formations, and wells in urban areas. Our portfolio of services includes:

- Drilling and completion designs
- Directional design
- Testing work over and stimulation programs
- Artificial lift design and optimization
- Drilling and production services
- Rig and equipment sizing, contracting and procurement
- Well and drill site permitting
- Wellbore review and management of slot recovery programs

Website: www.interactprojects.com

Experience and Summary of Greg Stephens

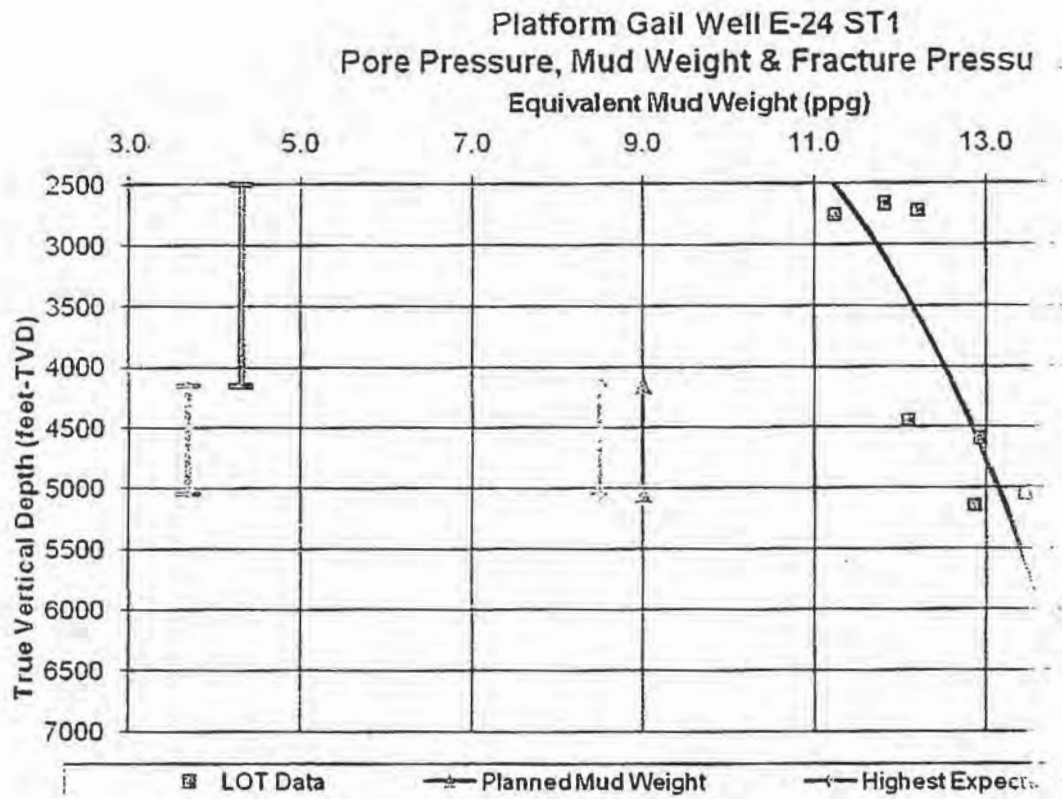
Mr. Stephens is a California registered professional engineer (P-1377) with 30 years of experience with major international oil companies. Mr. Stephens' experience includes staff assignments in drilling and production operations, including the Santa Barbara Channel and senior level assignments in Operations, Project Management, Business Development / Acquisitions, and Corporate Governance for domestic and international ventures.

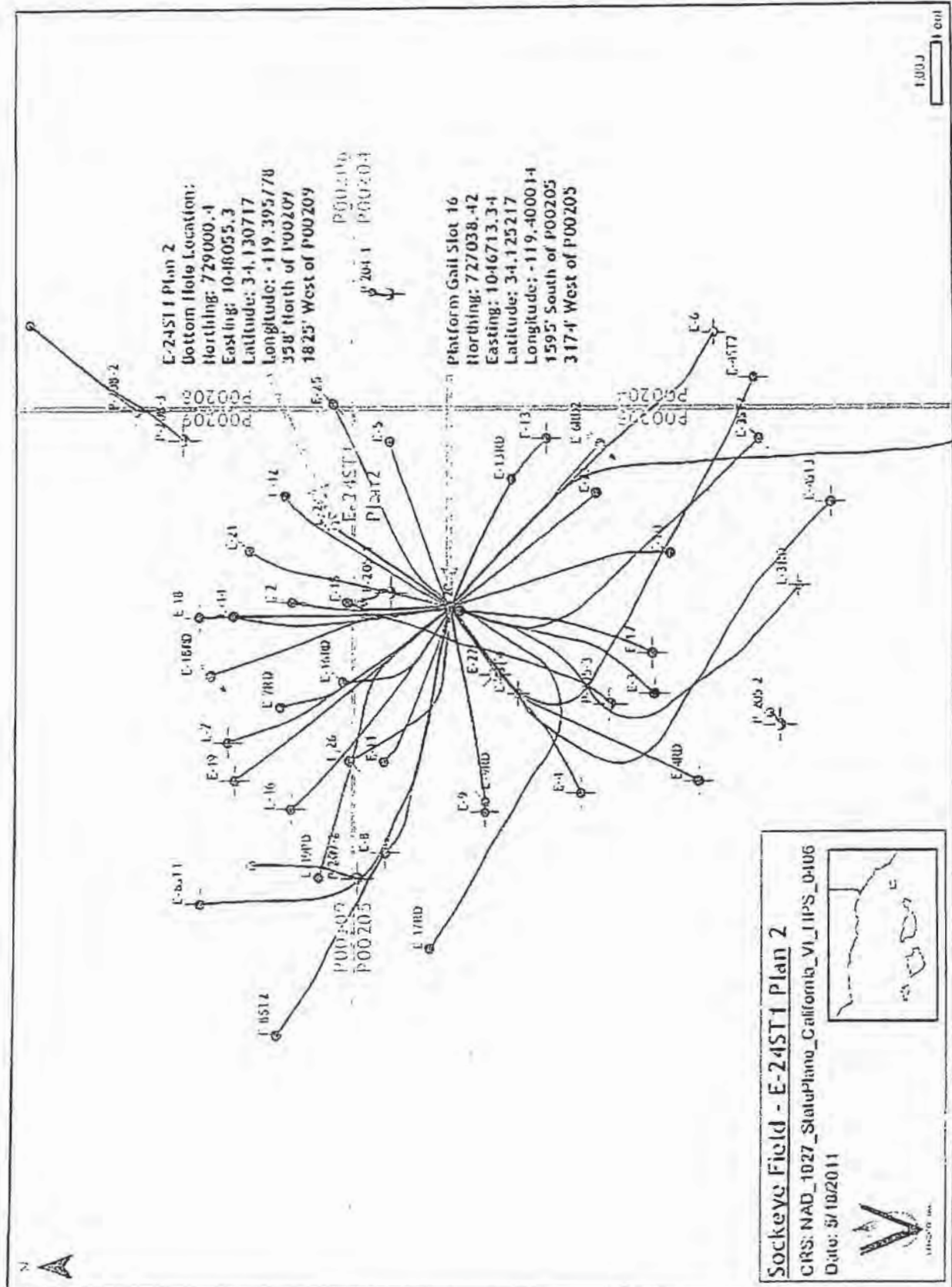


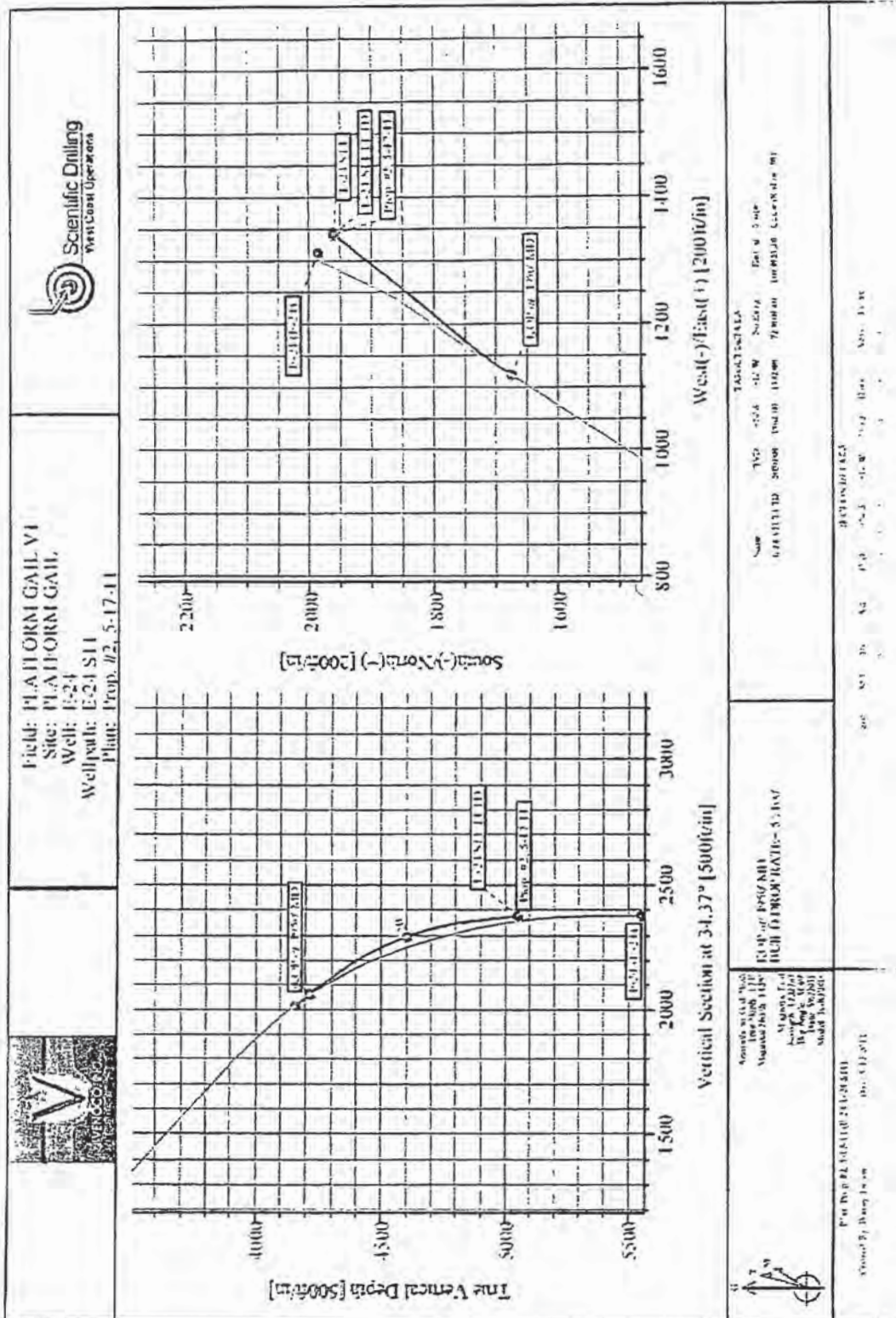
MASP CALCULATIONS

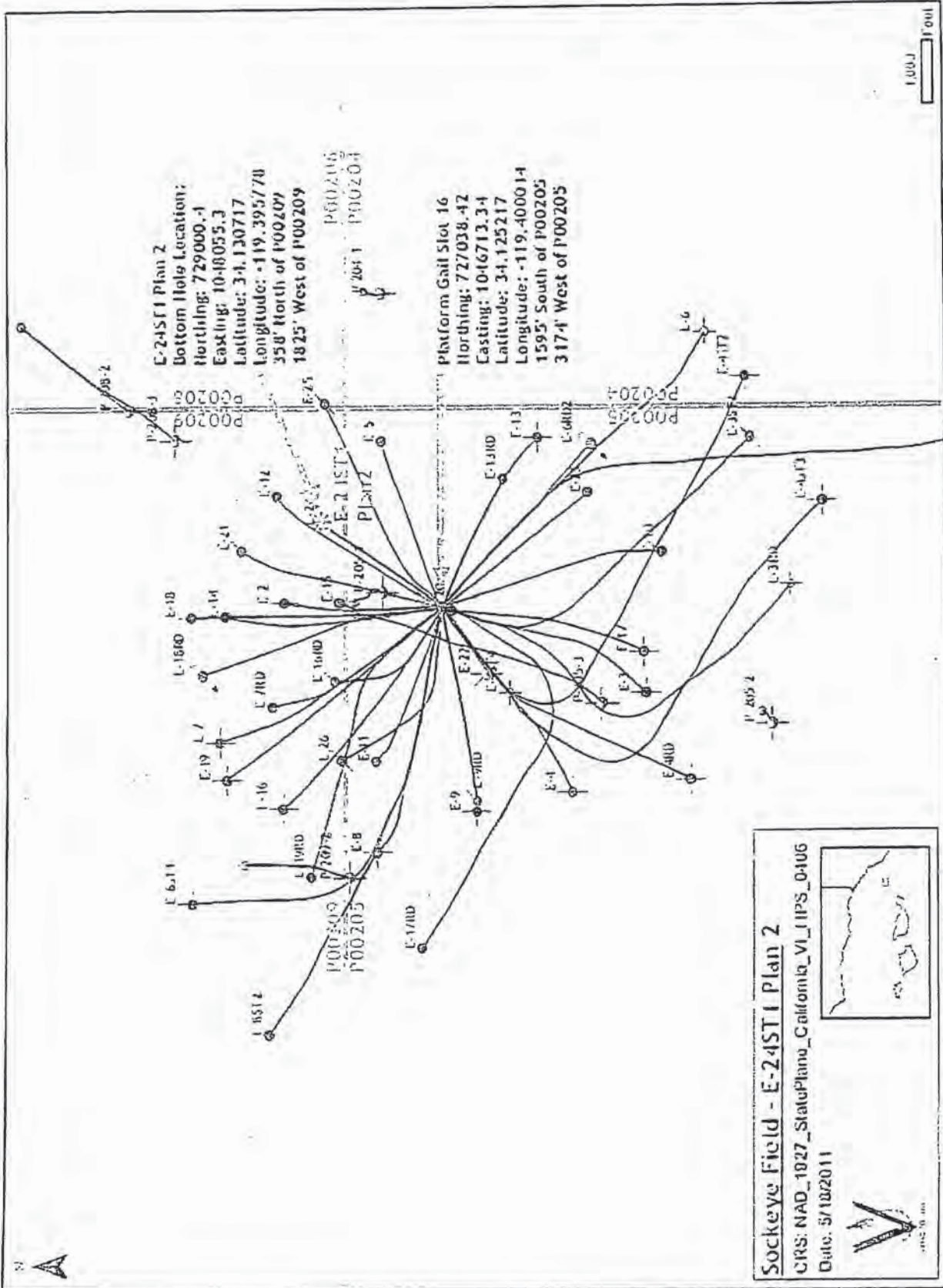
	Window	Pilot Hole
1 Casing Size (in)	9-5/8	8 1/2
2 Setting Depth (feet - TVD)	4157	5050
3 Expected Leak Off Test EMW at shoe (ppg)	11	11
4 Expected Mud Weight (ppg)	9	9
5 Depth of next Casing (feet - TVD)	5050	5050
6 Maximum Expected Formation Pressure (psi)	2232	2232
7 Expected gas gradient (psi/ft)	0.05	0.05
8 Formation Equivalent Mud Weight (ppg)	8.5	8.5
Max Pressures using 100% Gas to Surface		
9 Max Surface Pressure neglecting shoe (psi)	1980	1980
10 Fracture Gradient at shoe (psi/ft)	0.57	0.57
11 Fracture Pressure at shoe (psi)	2378	2889
12 Surface pressure to break down shoe (psi)	2170	2636
13 Maximum Anticipated Surface Pressure (psi)	1980	1980
Max Pressures using 70% Gas & 30% Mud		
14 Maximum Anticipated Surface Pressure (psi)	1346	1346
15 Top of fluid (feet-TVD)	3535	3535
16 Pressure at shoe (psi)	1814	2232
17 Margin between pressure and breakdown(psi)	564	657

Pore Pressure Plot











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MANAGEMENT, REGULATION AND ENFORCEMENT

RECEIVED

JUN - 6 2011

Pacific OCS Region
770 Paseo Camarillo, 2nd Floor
Camarillo, California 93010-6064

June 6, 2011

OFFICE OF FIELD OPERATIONS Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Geophysicist, Office of Production, Development, and Resource Evaluation

Through: Regional Supervisor, Office of Production, Development, and Resource Evaluation *For Dan Mayerson*

Subject: Geologic Hazards Analysis for Development Well APD (Proprietary)

NOTE: THIS GEOHAZARDS ANALYSIS IS INTENDED TO ALERT THE OPERATOR AND DISTRICT ENGINEERS TO POTENTIAL GEOLOGIC HAZARDS THAT MAY BE ENCOUNTERED DURING DRILLING OPERATIONS. THIS ANALYSIS DOES NOT RELIEVE THE OPERATOR OF THE RESPONSIBILITY TO CONDUCT THEIR OWN GEOHAZARD ANALYSIS PRIOR TO AND DURING THE DRILLING OF THIS WELL.

THE OFFICE OF FIELD OPERATIONS DID NOT REQUIRE A WCD ON THIS WELL AT THIS TIME.

Well No: E24- ST01

Operator: Venoco	Unit: Santa Clara
Lease OCS-P: 0209 (bottom)	Lease OCS-P: 0205 (top)
Field: Sockeye	Platform: Gail
KB Elev: 108 ft	Water Depth: 739 ft

Locations (est.)	X (ft)	Y (ft)	MD (ft)	TVD (ft)
Surface (Slot No. 16; OCS-P 205)	1,046,713.	727,038	+107	0
Monterey M2			5,060	4,243
Monterey M4			5,100	4,476

Permit TD OCS-P-0209	1,048,055	729,000	5,937	5,050
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Summary of the Planned Operation

Proposed well E-24 ST01 is a sidetrack well which will pass through two lease blocks, 205 and 209. The target zone is in the vicinity of several Monterey-oil production wells near the crest of the anticline. The closest wells are the original well E24 drilled in 2005, along with E12 and E25 in the Northeast quadrant of the field. The well is within the current field boundaries. This well will twin the original E24 and completed in the Monterey M2 and M4 through a 7" cemented liner. The well will mill out at 4,700 ft MD with a proposed 7" liner from 4700 to TD. The total sidetrack is only 1,200 feet of drilling.

1. Nearby Wells:

The two closest wells are E-12 and E25. The proposed Well E24-ST1 is closest to the E12 borehole and the original E24 well. The well mills out in the Upper part of the Monterey section at 4,700 ft MD. This is below any potential gas zones in the Pliocene. Strong oil shows can be expected throughout the section.

2. Potential Oil and Gas Reservoirs

In the zone of interest, proposed well SA-12 ST01 is mapped by ExxonMobil as being in a separate fault block from the other sandstone wells. Although there is offset along the faults, the stratigraphy is expected to be similar. The following table summarizes oil production in these wells:

Well	Formation/HC	Rate - Date Range	MD	TVD
E-24	Monterey Oil Production	Does Not Flow Requires Stimulation	5,000-5,300	4,200- 4,500

3. Possible Fresh Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of P-0205 E-24. The present operator and former operator of the Sockeye field have extensive drilling experience in this field. The proposed drilling program is similar to those utilized in drilling the production wells in the field.

5. Faulting

No major faulting is near the proposed well location. A small offset north-south trending fault may be encountered by the E24-ST1 well.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The P-0209-12 well did not find near surface gas, but did record gas shows in the Pliocene section.

7. Possible Overpressured or Depleted Zones

The kick off point for this well is below the Pliocene section and within the Monterey. Although there is some gas within the formation we do not expect any anomalous kick from the gas. The Operator has included a well control contingency plan with the Application.

8. Logging/Coring

Continuous mud logging shall be performed from the drilling out the shoe to total depth. No coring is planned. There will be logging while drilling. MWD/Resistivity/GR will be run for the entire well. The primary geologist is Monica Carlson.

9. H₂S Gas

The Monterey has the potential for hydrogen sulfide gas. It is assumed by the operator that any gas circulated to the surface to have hydrogen sulfide potential. Operators should adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur dioxide Contingency Plan.



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MANAGEMENT, REGULATION AND ENFORCEMENT

Pacific OCS Region
770 Paseo Camarillo, 2nd Floor
Camarillo, California 93010-6064

RECEIVED

JUN 16 2011

Memorandum

To: California District Manager

From: Chief, Environmental Analysis Section *[Signature]*

Subject: Categorical Exclusion Review (CER) – Venoco's Application for Permit to Drill, Well E-24ST1, Platform Gail, Santa Clara Unit, Pacific OCS Region, Offshore Ventura County, California

OFFICE OF FIELD OPERATIONS

The Environmental Analysis Section has reviewed Venoco's Application for Permit to Drill, dated May 26, 2011. The well, to be drilled from Platform Gail, is the first side-track well from the original Well E-24. The proposed well is included in Venoco's approved Development and Production Plan, dated January 29, 1986. An analysis conducted by the Office of Field Operations, in consultation with the Office of Resource Evaluation, determined that Venoco's proposed well will not flow without stimulation, in-well pumping, or other artificial lift. Therefore, the potential for a blowout and spill of oil from the proposed drilling of this well from Platform Gail is expected to be zero and overall the worst case discharge for all proposed activities on Platform Gail is consistent with Venoco's approved Oil Spill Response Plan.

This review was found to meet the requirements of BOEMRE's Categorical Exclusion for Approval of Applications for Permit to Drill ("Approval of an Application for Permit to Drill (APD) an offshore oil and gas exploration or development well, when said well and appropriate mitigation measures are described in an approved exploration plan, development plan, production plan, or Development Operations Coordination Document" 516 DM 15.4.C (12)). We also reviewed the extraordinary circumstances found at in Departmental regulations at 43 CFR 46.215 and found that none exist (Table 1). As a result, we have determined that Venoco's APD for Well E-24ST1 is categorically excluded from further National Environmental Policy Act review.

Table 1. Categorical Exclusion Review (CER) for Venoco's Application for Permit (APD) to Drill for Well E-24ST1, Platform Gail, Santa Clara Unit, Offshore Ventura County, California. The APD for Well E-24ST1 has been reviewed to determine whether any of the extraordinary circumstances listed below exist for this action within the exclusion category; (Approval of Applications for Permit to Drill [516 DM 15.5.C(12)]). An environmental document must be prepared for actions which may represent an extraordinary circumstance are found in Departmental regulations (43 CFR 46.215).

EXTRAORDINARY CIRCUMSTANCES REVIEW: Will the proposed activities	ANSWER
(a) Have significant impacts on public health or safety.	No The activities proposed in the APD will be conducted in compliance with proper safety protocol and applicable regulations.
(b) Have significant impacts on such natural resources and unique geographic characteristics as historic or cultural resources; park, recreation or refuge lands; wilderness areas; wild or scenic rivers; national natural landmarks; sole or principal drinking water aquifers; prime farmlands; wetlands (Executive Order 11990); floodplains (Executive Order 11988); national monuments; migratory birds; and other ecologically significant or critical areas.	No: The activities proposed in the APD will not be in the vicinity of any ecologically-significant areas on the Pacific OCS.
(c) Have highly controversial environmental effects or involve unresolved conflicts concerning alternative uses of available resources [NEPA Section 102(2)(E)].	No: Unresolved conflicts concerning alternative uses of available resources are not expected for this area of the Federal OCS, additionally, the proposed drilling will be conducted in compliance with all applicable environmental/operational regulations to insure that no highly-controversial effects occur.
(d) Have highly uncertain and potentially significant environmental effects or involve unique or unknown environmental risks.	No: BOEMRE does not expect any uncertain effects or unknown environmental risk based on the level of drilling activity on the Pacific OCS. Since activities proposed in the APD will be conducted in compliance with increased safety and environmental standards, no potentially significant environmental effects are expected.
(e) Establish a precedent for future action or represent a decision in principle about future actions with potentially significant environmental effects.	No: The activities proposed in the APD are similar to others conducted in the Pacific OCS; therefore, no precedent is involved.
(f) Have a direct relationship to other actions with individually insignificant but cumulatively significant environmental effects.	No: Activities identical to those proposed in the APD have been analyzed in previous NEPA analyses which concluded that when added to the impacts of past, present, or reasonably foreseeable oil and gas development in the area, as well as other activities in the area, that no significant cumulative effects are expected.
(g) Have significant impacts on properties listed, or eligible for listing, on the National Register of Historic Places as determined by either the bureau or office.	No: No seafloor disturbing activities will occur in the vicinity of any properties listed, or eligible for listing, on the National Register of Historic Places.
(h) Have significant impacts on species listed, or proposed to be listed, on the List of Endangered or Threatened Species, or have significant impacts on designated Critical Habitat for these species.	No: A no effect determination has been made for the purposes of this APD because no oil is expected to flow from this well.

EXTRAORDINARY CIRCUMSTANCES REVIEW: Will the proposed activities	ANSWER
(i) Violate a Federal law, or a State, local, or tribal law or requirement imposed for the protection of the environment.	No The activities proposed in the APD will be conducted in compliance with all applicable Federal laws and all applicable State, local, or tribal laws imposed for the protection of the environment.
(j) Have a disproportionately high and adverse effect on low income or minority populations (Executive Order 12898).	No: The activities proposed in the APD do not call for the development, modification, or installation of any onshore facilities or propose an increase in the use of any infrastructure that could be out of compliance with EO 12898.
(k) Limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or significantly adversely affect the physical integrity of such sacred sites (Executive Order 13007).	No: In the Pacific OCS, prehistoric Native American sites do not exist in the water depth at the proposed drill site (739 ft). Bottom-disturbing activities proposed in the APD will not have the potential to impact any sacred sites.
(l) Contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area or actions that may promote the introduction, growth, or expansion of the range of such species (Federal Noxious Weed Control Act and Executive Order 13112).	No: The activities proposed in the APD will be conducted on the Federal OCS using vessels (crewboats, workboats, etc.) that will be in compliance with U.S. Coast Guard requirements imposed to ensure compliance with the FFWCA and EO 13112.



United States Department of the Interior

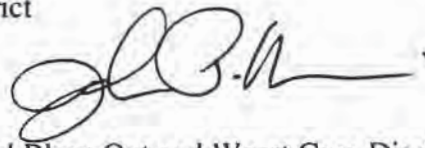
BUREAU OF OCEAN ENERGY MANAGEMENT, REGULATION AND ENFORCEMENT

Pacific OCS Region
770 Paseo Camarillo, 2nd Floor
Camarillo, California 93010-6064

June 2, 2011

Memorandum

To: District Manager, California District

From: District Engineer, John P. Kaiser 

Subject: Review of Venoco, Inc.'s Potential Blow-Out and Worst Case Discharge Scenarios Update to the Santa Clara Unit Development and Production Plan; Platform Gail

We have reviewed Venocos' submission dated May 20, 2011, subject: Platform Gail E-24ST1 Blowout and Worst Case Discharge.

We concur with the Venoco assertion that this well is a "no-flow" well. The stated initial reservoir pressure would result in a fluid level of -466' with the hole standing full of reservoir oil or significantly lower depending on water-cut (91% reported). With the hole standing full of completion fluid the resulting fluid level would be -690.' Current operations on well E-4 support these calculations. E-24 ST1 will bottom less than 100' from the location of the original E-24 wellbore path. The low GOR also tends to support the no-flow scenario.

100% of the calculated WCD in the subject document is attributed to platform piping, vessels and storage. None of the WCD is attributed to well E-24ST1. The argument for "no-flow" for well E-24ST1 appears to be a stronger case than the convincing argument for E-4 which currently has stuck drill pipe (further "no-flow" evidence).

There is no danger of formation fracture at the window in the 9 5/8" casing @ +/- 4156'TVD as the mud weight is almost 4 ppg less than the fracture gradient at that point. Even a substantial gas kick would not cause a fracture at the window if the stated kill procedure is followed.

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☒ NEW WELL ☐ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309		3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Carpinteria, CA 93013	
4 WELL NAME (CURRENT) E-26		5 SIDETRACK NO (CURRENT)		6 BYPASS NO (CURRENT)	
7 PROPOSED START DATE February 1, 2010		8 PLAN CONTROL NO (NEW WELL ONLY)			
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04311 XXXXXXXX					
10 ☐ Revision		11 If revision, please list changes			
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE		
12 LEASE NO P-209			17 LEASE NO P-0205		
13 AREA NAME 6B			18 AREA NAME 6B		
14 BLOCK NO 4761			19 BLOCK NO 4661		
15 LATITUDE 728 638.16 (☐ NAD 83 / ☒ NAD 27)		16 LONGITUDE 1044 250.18 (☐ NAD 83 / ☒ NAD 27)		21 LONGITUDE 1046 696.33 (☐ NAD 83 / ☒ NAD 27)	
		20 LATITUDE 727 032.45 (☐ NAD 83 / ☒ NAD 27)			
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME T/ Pico (1st Gas)		23 TOP (MD) 2758		24 TOP (TVD) 2713	
T/ M1		4644		4059	
T/ M4		5236		4465	
25 LIST ALL ATTACHMENTS (Attach complete well prognosis + attachments required by 30 CFR 250.414 or 30 CFR 250.1617(c) and (d) as appropriate) Drill program includes design criteria for well, BOPE, casing program, drilling prognosis, cement program, mud program, directional plan, surface and subsurface location map, 123S - Supplemental APD information					
26 CONTACT NAME Dana Billings		27 CONTACT TELEPHONE NO 805-745-2139		28 CONTACT E-MAIL ADDRESS dbillings@venocoinc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Gary Lower		30 TITLE Operations Manager			
31 AUTHORIZING SIGNATURE <i>Gary Lower</i>		32 DATE January 18, 2010			
THIS SPACE FOR MMS USE ONLY					
APPROVED: ☒ With Attached Conditions ☐ Without Conditions		BY <i>[Signature]</i>		TITLE District Manager	
API WELL NO ASSIGNED TO THIS WELL		043112080100		DATE 1/27/2010	

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings nserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☒ NO ☐ N/A	This is the 26th well drilled w/ same structural pipe set depth
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is with in 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	The 24", 13 3/8", 9 5/8" casing program is same as wells E-23, E-24, E-25
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	Approved Field Drilling Rules

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2-5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 5438, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet

1 OPERATOR NAME Venoco, Inc.		5 WELL NAME (Proposed) E-26		6 TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11 WATER DEPTH 739'		12 ELEVATION AT KB 108'	
2 API WELL NO (Proposed) (12 Digits) 0431120XXXX		3 BOTTOM LEASE NO (Proposed) P-0209		7 SIDETRACK NO (Proposed) 00		8 BYPASS NO (Proposed) 00		13 H ₂ S DESIGNATION ☒ KNOWN ☐ UNKNOWN ☐ ABSENT	
4 TOTAL DEPTH (Proposed) MD 6820		9 RIG NAME Kenai Drilling Rig No. 2		10 RIG TYPE PF		14 H ₂ S ACTIVATION PLAN DEPTH FT (TVD) 2617 (drilling below 13 3/8" casing)			

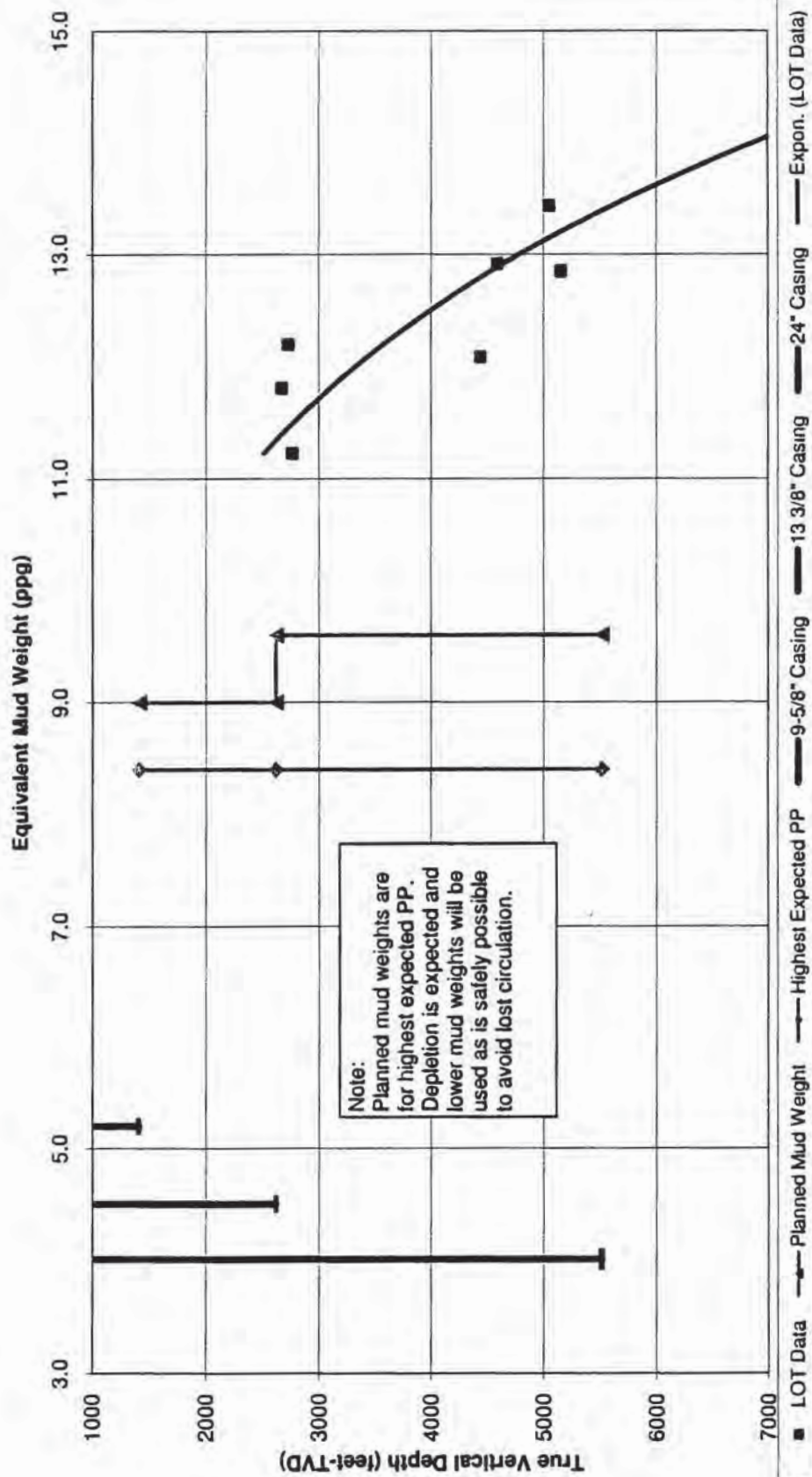
15. ENGINEERING DATA																					
Hole Size (in)	Casing Size (in)	Weight (lb/ft)	Burst Rating (psi)	Type of Connection	MASP (psi)	Safety Factors			Top of Liner	Casing Depth (Feet)		Casing Shoe (ppg)		BOP Size (in)	Well-head Rating (psi)	Rated BOP Working Pressure (psi)		Cement (Feet)	Drilling Fluid Type (Oil Based, Water Based, Synthetic)		
						B	C	T		MD	TVL	MQ	PP			MW	FG			Annular Overturn (psi)	Ram (psi)
26"	24"	186	3068						Surface	1400					21 1/4	3000	2000	200	NA	1460	WB
		X-56	1450							1400											
17 1/2"	13 3/8"	61	3090						Surface	2650					13 5/8	5000	5000	2500	2320	WB	
		K-55	1540							2617											
12 1/4"	9 5/8"	43.5	6330						Surface	6620					13 5/8"	5000	5000	2500	2300	WB	
		L-80	3810							5508											

16 CONTACT NAME Dana Billings		17 CONTACT PHONE NO (805) 745-2139		18 CONTACT E-MAIL ADDRESS dbillings@venoco.com	
----------------------------------	--	---------------------------------------	--	---	--

19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more? ☒ YES ☐ NO

20. REMARKS:

Platform Gail Well E-26 Pore Pressure, Mud Weight & Fracture Pressure





**VACO INC.**

STATE FIELD

127 Franklin Avenue
Suite 1000
Beverly Hills, CA 90210

Calgep: 00000000

1 inch = 3503 feet

E-26

Bottom Hole Location:
Northing: 728638.1
Easting: 1044250.2
(SPCS27 - CA6)
22 ft North of P-0205
5334 ft West of P-0208

P-0209 P-0208

P-0205 P-0204



**Platform Gail
Slot 18**

Surface Location:
Northing: 727032.45
Easting: 1046696.33
(SPCS27 - CA6)

**1589.6' South of P-0209
2886.7' West of P-0204**



Fertilization and Development of the Embryo

Formulation 1: *Formulation 1* in the *Journal of the American Chemical Society*, Vol. 118, No. 1, 1996.

2007-08-01

Fig. 1. a) and b) buttoning on a shirt.

Word Study

☆ 7.4

12

2

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Q +

20

50

④ M4 PUDs

© M4 current producers

23

E-25

E-9RD
E-9RD

E 321
E 322

E-22 / ESP-completed (TIM)

E-11 (ESP-comingled UTMA)

Verano Inc.	
Sockeye Development Plan	
NOTES	
Author Chris Ferguson	Date 25 June 2018

1 inch = 1280 feet

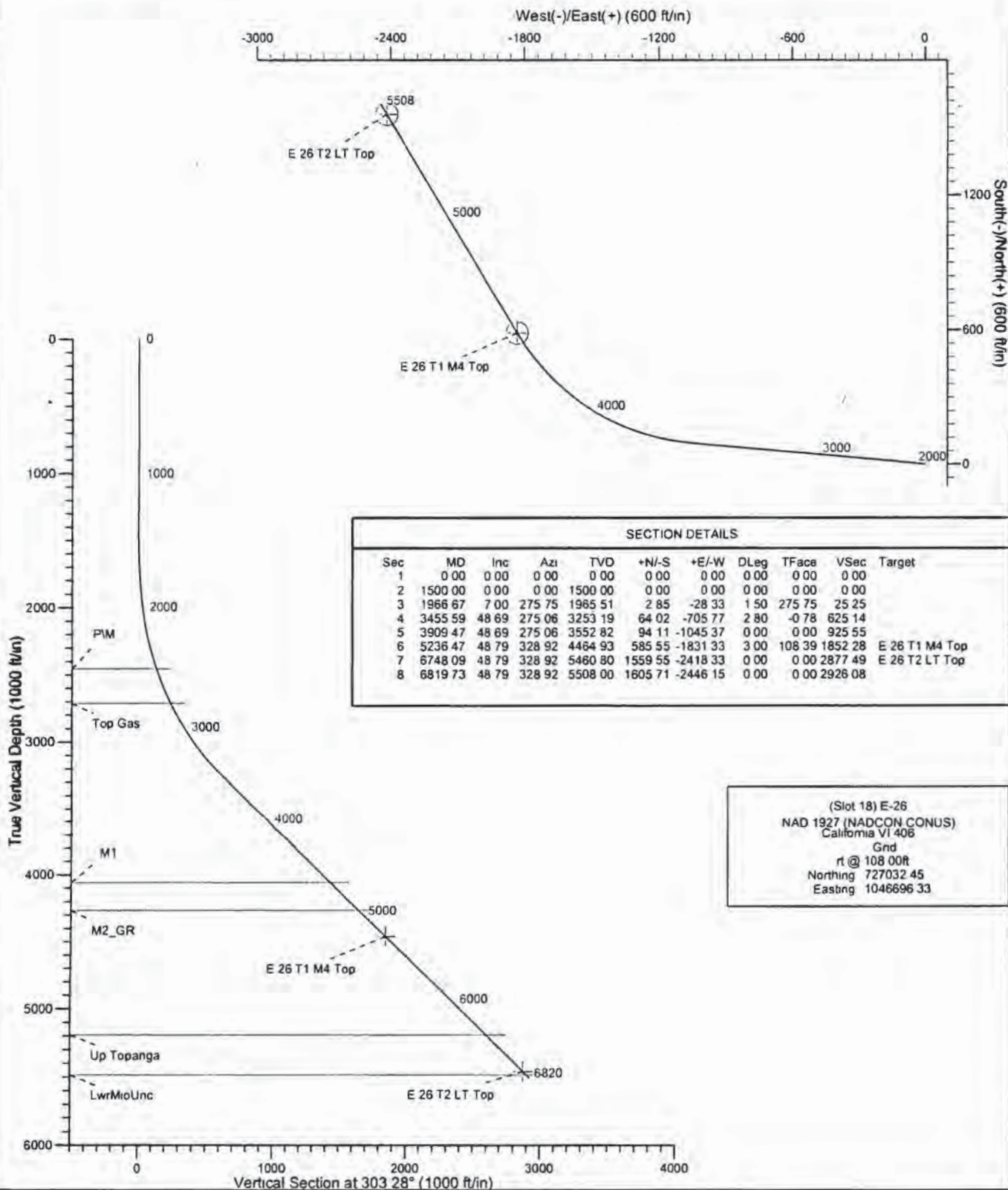


Azimuths to Gnd North
True North 1 73°
Magnetic North 14 76°
Magnetic Field
Strength 47489 0nT
Dip Angle 58 71°
Date 11/5/2009
Model IGRF200510

Venoco Inc.

Project: Platform Gail
Site: Block # 47N 60W
Well: (Slot 18) E-26
Wellbore: Wellbore #1
Design: Plan #2 (08-Dec-09)

HALLIBURTON
Sperry Drilling Services



Venoco Inc.

Platform Gail

Block # 47N 60W

(Slot 18) E-26

Wellbore #1

Plan: Plan #2 (08-Dec-09)

Job No. Plan #2 (08-Dec-09)

Sperry Drilling Services Combo Report

17 December, 2009

Well Coordinates 727,032.45 N, 1,046,696.33 E (34° 07' 30.72" N, 118° 24' 00.25" W)
Water Depth 739.00 ft

Local Coordinate Origin
Viewing Datum
TVDs to System.
North Reference
Unit System

Centered on Well (Slot 18) E-26
at @ 108.00ft
N
Grid
API - US Survey Feet

Version: 2003 14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for (Slot 18) E-26 - Plan #2 (08-Dec-09)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	108.00	0.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
100.00	0.00	0.00	8.00	100.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
200.00	0.00	0.00	-82.00	200.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
300.00	0.00	0.00	-192.00	300.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
400.00	0.00	0.00	-282.00	400.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
500.00	0.00	0.00	-392.00	500.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
600.00	0.00	0.00	-482.00	600.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
700.00	0.00	0.00	-592.00	700.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
800.00	0.00	0.00	-692.00	800.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
900.00	0.00	0.00	-792.00	900.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
1,000.00	0.00	0.00	-892.00	1,000.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
1,100.00	0.00	0.00	-992.00	1,100.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
1,200.00	0.00	0.00	-1,092.00	1,200.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
1,300.00	0.00	0.00	-1,192.00	1,300.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
1,400.00	0.00	0.00	-1,292.00	1,400.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	
1,500.00	0.00	0.00	-1,392.00	1,500.00	0.00 N	0.00 E	727.032 45	1,046.696 33	0.00	0.00	Start Build 1 50
1,600.00	1.50	275.75	-1,491.99	1,599.99	0.13 N	1.30 W	727.032 58	1,046.695 03	1.50	1.16	
1,700.00	3.00	275.75	-1,591.91	1,689.91	0.52 N	5.21 W	727.032 97	1,046.691 12	1.50	4.94	
1,800.00	4.50	275.75	-1,691.69	1,789.69	1.18 N	11.72 W	727.033 63	1,046.684 61	1.50	10.44	
1,900.00	6.00	275.75	-1,791.27	1,889.27	2.10 N	20.82 W	727.034 55	1,046.675 51	1.50	18.56	
1,966.67	7.00	275.75	-1,857.51	1,965.51	2.85 N	28.33 W	727.035 30	1,046.668 00	1.50	25.25	Start DLS 2 80 TFO -0.78
2,000.00	7.93	275.66	-1,890.56	1,998.56	3.28 N	32.64 W	727.035 73	1,046.663 69	2.80	29.09	
2,100.00	10.73	275.48	-1,989.22	2,087.22	4.85 N	48.78 W	727.037 30	1,046.647 55	2.80	43.44	
2,200.00	13.53	275.37	-2,086.98	2,194.98	6.84 N	69.70 W	727.039 29	1,046.626 63	2.80	62.02	
2,300.00	16.33	275.30	-2,183.59	2,291.59	8.23 N	95.36 W	727.041 68	1,046.600 97	2.80	84.78	
2,400.00	19.13	275.25	-2,278.83	2,386.83	12.03 N	125.68 W	727.044 48	1,046.570 65	2.80	111.67	
2,472.62	21.17	275.22	-2,347.00	2,455.00	14.32 N	150.59 W	727.046 77	1,046.545 74	2.80	133.75	PMA
2,500.00	21.93	275.22	-2,372.47	2,480.47	15.23 N	160.61 W	727.047 68	1,046.535 72	2.80	142.62	
2,600.00	24.73	275.19	-2,464.28	2,572.28	18.82 N	200.05 W	727.051 27	1,046.496 28	2.80	177.56	
2,700.00	27.53	275.16	-2,554.05	2,662.05	22.79 N	243.91 W	727.055 24	1,046.452 42	2.80	216.41	
2,757.89	28.15	275.15	-2,605.00	2,713.00	25.26 N	271.28 W	727.057 71	1,046.425 05	2.80	240.65	Top Gas
2,800.00	30.33	275.14	-2,641.56	2,749.56	27.14 N	292.08 W	727.059 59	1,046.404 24	2.80	259.07	
2,900.00	33.13	275.13	-2,726.60	2,834.60	31.84 N	344.47 W	727.064 29	1,046.351 86	2.80	305.44	
3,000.00	35.93	275.11	-2,808.98	2,916.98	36.80 N	400.92 W	727.069 35	1,046.295 41	2.80	355.41	
3,100.00	38.73	275.10	-2,888.48	2,996.48	42.29 N	461.32 W	727.074 74	1,046.235 01	2.80	408.86	
3,200.00	41.53	275.09	-2,964.93	3,072.93	48.01 N	525.52 W	727.080 46	1,046.170 81	2.80	465.67	
3,300.00	44.33	275.08	-3,038.14	3,146.14	54.05 N	593.35 W	727.086 50	1,046.102 98	2.80	525.69	
3,400.00	47.13	275.07	-3,107.93	3,215.93	60.38 N	664.68 W	727.092 83	1,046.031 65	2.80	588.79	
3,455.59	48.69	275.06	-3,145.19	3,253.19	64.02 N	705.77 W	727.096 47	1,045.990 56	2.80	625.14	Start 453.88 hold at 3455 59 MD
3,500.00	48.69	275.06	-3,174.51	3,282.51	66.96 N	739.00 W	727.099 41	1,045.957 33	0.00	654.53	

13 3/8" shot = 2650' MD = 2572
45

2617
108

HALLIBURTON

Plan Report for (Slot 18) E-26 - Plan #2 (08-Dec-09)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
3,600.00	48.69	275.06	-3,240.52	3,348.52	73.59 N	813.82 W	727,106.04	1,045,882.51	0.00	720.72	
3,700.00	48.69	275.06	-3,306.54	3,414.54	80.22 N	888.64 W	727,112.67	1,045,807.69	0.00	786.91	
3,800.00	48.69	275.06	-3,372.55	3,480.55	86.85 N	963.46 W	727,119.30	1,045,732.87	0.00	853.08	
3,909.47	48.69	275.06	-3,444.82	3,552.82	94.11 N	1,045.37 W	727,128.58	1,045,650.96	0.00	925.55	Start DLS 3.00 TFO 108.39
4,000.00	47.88	278.54	-3,505.06	3,613.06	102.10 N	1,112.45 W	727,134.55	1,045,583.88	3.00	986.02	
4,100.00	47.12	282.47	-3,572.63	3,680.63	115.52 N	1,184.92 W	727,147.97	1,045,511.41	3.00	1,053.96	
4,200.00	46.49	286.50	-3,641.08	3,749.09	133.74 N	1,255.48 W	727,166.19	1,045,440.85	3.00	1,122.95	
4,300.00	46.01	290.80	-3,710.26	3,818.26	156.70 N	1,323.94 W	727,189.15	1,045,372.39	3.00	1,192.78	
4,400.00	45.68	294.75	-3,779.93	3,887.93	184.34 N	1,390.12 W	727,216.79	1,045,308.21	3.00	1,263.27	
4,500.00	45.50	298.95	-3,849.93	3,957.93	216.59 N	1,453.83 W	727,248.04	1,045,242.50	3.00	1,334.22	
4,600.00	45.47	303.15	-3,920.05	4,028.05	253.35 N	1,514.89 W	727,285.80	1,045,181.44	3.00	1,405.44	
4,644.14	45.51	305.01	-3,951.00	4,059.00	270.99 N	1,540.95 W	727,303.44	1,045,155.38	3.00	1,436.91	M1
4,700.00	45.60	307.35	-3,990.12	4,098.12	294.53 N	1,573.14 W	727,328.98	1,045,123.18	3.00	1,476.74	
4,800.00	45.88	311.53	-4,059.93	4,167.93	340.01 N	1,628.42 W	727,372.48	1,045,087.91	3.00	1,547.91	
4,900.00	46.31	315.65	-4,129.28	4,237.28	389.66 N	1,680.57 W	727,422.11	1,045,015.76	3.00	1,618.76	
4,943.08	46.54	317.40	-4,159.00	4,267.00	412.32 N	1,702.05 W	727,444.77	1,044,994.28	3.00	1,648.14	M2_GR
5,000.00	46.88	319.70	-4,198.02	4,306.02	443.36 N	1,729.46 W	727,475.81	1,044,966.87	3.00	1,689.10	
5,100.00	47.60	323.67	-4,265.93	4,373.93	500.96 N	1,774.98 W	727,533.41	1,044,921.37	3.00	1,758.73	
5,200.00	48.45	327.54	-4,332.82	4,440.82	562.29 N	1,816.93 W	727,594.74	1,044,879.40	3.00	1,827.48	
5,236.47	48.79	328.92	-4,358.93	4,464.93	585.55 N	1,831.33 W	727,618.00	1,044,865.00	3.00	1,852.28	Start 1511.62 hold at 5236.47 MD - E 26 T1 M4 Top
5,300.00	48.79	328.92	-4,388.79	4,506.79	626.49 N	1,856.00 W	727,658.94	1,044,840.33	0.00	1,895.37	
5,400.00	48.79	328.92	-4,464.67	4,572.67	690.92 N	1,894.83 W	727,723.37	1,044,801.50	0.00	1,963.19	
5,500.00	48.79	328.92	-4,530.55	4,638.55	755.36 N	1,933.67 W	727,787.81	1,044,762.66	0.00	2,031.02	
5,600.00	48.79	328.92	-4,596.43	4,704.43	819.79 N	1,972.50 W	727,852.24	1,044,723.83	0.00	2,098.84	
5,700.00	48.79	328.92	-4,662.31	4,770.31	884.22 N	2,011.33 W	727,916.67	1,044,685.00	0.00	2,166.66	
5,800.00	48.79	328.92	-4,728.19	4,836.19	948.66 N	2,050.16 W	727,981.11	1,044,646.17	0.00	2,234.48	
5,900.00	48.79	328.92	-4,794.07	4,902.07	1,013.09 N	2,089.00 W	728,045.54	1,044,607.33	0.00	2,302.30	
6,000.00	48.79	328.92	-4,859.95	4,967.95	1,077.53 N	2,127.83 W	728,109.98	1,044,568.50	0.00	2,370.13	
6,100.00	48.79	328.92	-4,925.83	5,033.83	1,141.96 N	2,166.66 W	728,174.41	1,044,529.67	0.00	2,437.95	
6,200.00	48.79	328.92	-4,991.71	5,099.71	1,206.39 N	2,205.49 W	728,238.84	1,044,490.84	0.00	2,505.77	
6,300.00	48.79	328.92	-5,057.60	5,165.60	1,270.83 N	2,244.33 W	728,303.28	1,044,452.00	0.00	2,573.59	
6,341.60	48.79	328.92	-5,085.00	5,193.00	1,297.63 N	2,260.48 W	728,330.08	1,044,435.85	0.00	2,601.90	Up Topanga
6,400.00	48.79	328.92	-5,123.48	5,231.48	1,335.26 N	2,283.16 W	728,367.71	1,044,413.17	0.00	2,641.41	
6,500.00	48.79	328.92	-5,189.36	5,297.36	1,399.70 N	2,321.98 W	728,432.15	1,044,374.34	0.00	2,709.24	
6,600.00	48.79	328.92	-5,255.24	5,363.24	1,464.13 N	2,360.82 W	728,496.58	1,044,335.51	0.00	2,777.06	
6,700.00	48.79	328.92	-5,321.12	5,429.12	1,528.56 N	2,399.66 W	728,561.01	1,044,298.67	0.00	2,844.88	
6,748.09	48.79	328.92	-5,352.80	5,460.80	1,558.55 N	2,418.33 W	728,592.00	1,044,278.00	0.00	2,877.49	Start 71.64 hold at 6748.09 MD - E 26 T2 LT Top

HALLIBURTON

Plan Report for (Slot 18) E-26 - Plan #2 (08-Dec-09)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
6,784.82	48.79	328.92	-5,377.00	5,485.00	1,583.22 N	2,432.59 W	728,615.67	1,044,263.74	0.00	2,902.41	LwrMolUnc
6,800.00	48.79	328.92	-5,387.00	5,495.00	1,593.00 N	2,438.49 W	728,625.45	1,044,257.84	0.00	2,912.70	
6,819.73	48.79	328.92	-5,400.00	5,508.00	1,605.71 N	2,446.15 W	728,638.16	1,044,250.18	0.00	2,928.08	TD at 6819.73

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N-S (ft)	+E-W (ft)	Comment
1,500.00	1,500.00	0.00	0.00	Start Build 1.50
1,966.87	1,965.51	2.85	-28.33	Start DLS 2.80 TFO -0.78
3,455.59	3,253.19	64.02	-705.77	Start 453.88 hold at 3455.59 MD
3,909.47	3,552.82	94.11	-1,045.37	Start DLS 3.00 TFO 108.38
5,236.47	4,464.93	585.55	-1,831.33	Start 1511.62 hold at 5236.47 MD
6,748.09	5,460.80	1,559.55	-2,418.33	Start 71.64 hold at 6748.09 MD
6,819.73	5,508.00	1,605.71	-2,446.15	TD at 6819.73

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N-S (ft)	+E-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	303.28	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Plan #2 (08-Dec-09)	Survey/Plan	Survey Tool
0.00	6,819.73	Plan #2 (08-Dec-09)		MWD Magnetic

HALLIBURTON

Plan Report for (Slot 18) E-26 - Plan #2 (08-Dec-09)

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	TVDSS (ft)	Name	Lithology	Dip Direction (°)	Dip (°)
2,472.52	2,455.00	2,347.00	PUM			
2,757.89	2,713.00	2,605.00	Top Gas			
4,644.14	4,059.00	3,951.00	M1			
4,943.09	4,267.00	4,159.00	M2_GR			
6,341.60	5,193.00	5,085.00	Up Topanga			
6,784.82	5,485.00	5,377.00	LwrMioUnc			

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
E 26 T2 LT Top	0.00	0.00	5,460.80	1,559.55	-2,418.33	728,592.00	1,044,278.00	34° 7' 45.4150234 N 119° 24' 29.5619283 W	
- plan hits target									
- Circle (radius 50.00)									
E 26 T1 MA Top	0.00	0.00	4,464.63	565.55	-1,831.33	727,618.00	1,044,865.00	34° 7' 35.9605022 N 119° 24' 22.2324251 W	
- plan hits target									
- Circle (radius 50.00)									

HALLIBURTON

North Reference Sheet for Block # 47N 60W - (Slot 18) E-26 - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to rt @ 108.00ft. Northing and Easting are relative to (Slot 18) E-26

Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 116° 15' 0.000000 W", Longitude Origin 0° 0' 0.000000 E", Latitude Origin 33° 52' 59.999999 N"

False Easting: 2,000,000.00ft, False Northing 0.00ft, Scale Reduction 1.00004935

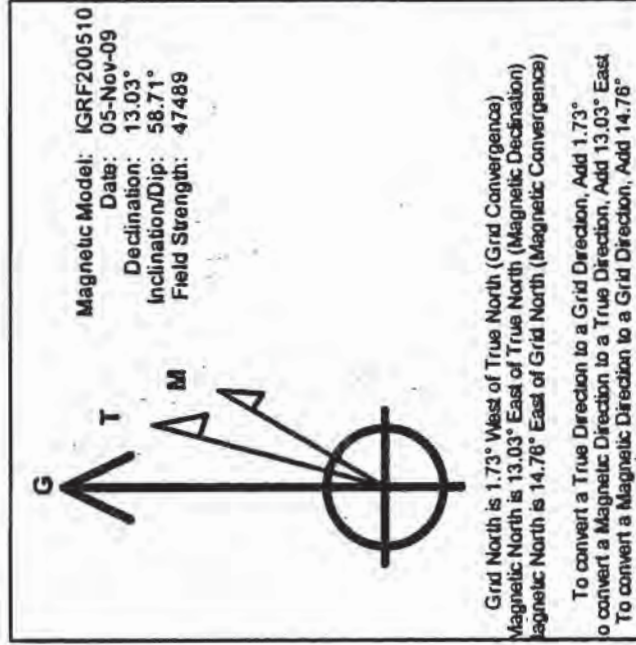
Grid Coordinates of Well 727,032.45 ft N, 1,046,696.33 ft E

Geographical Coordinates of Well 34° 07' 30.72" N, 119° 24' 00.25" W

Grid Convergence at Surface is -1.73°

Based upon Minimum Curvature type calculations, at a Measured Depth of 6,819.73ft
the Bottom Hole Displacement is 2,926.08ft in the Direction of 303.28° (Grid).

Magnetic Convergence at surface is -14.76° (5 November 2009, IGRF200510)



VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-26 NEW WELL DRILLING PROGRAM
API# 04-311- 20xxx00
LEASE OCS-P-0209
January 12, 2009
Attachment to MMS Permit - Drilling Program

Objective: Development well E-26 will be drilled and it will be a dual completion well with production from the short string in the Monterey Formation and injection into the long-string in the Lower Topanga Formation. Well TD's in OCS-P- 0209 Lease.

Surface Location: OCS-P-205 - Slot No. 18 (X= 1,046,696.33' & Y= 727,032.45')

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Proposed TD: OCS-P-209 6820' MD/ -5460' VSS/ 5508' TVD

TD Location: 1605.71' N and 2446.15'W' or (X = 1,044,250.18' and Y = 728,638.16')

Markers:	MD	TVD	VSS	Press	EMW	Comments
13 3/8" Casing	2650	2617	-2509			
T/ Pico - 1 st Gas)	2758	2713	-2605	1146	8.5	Estimated BHP
T/ Monterey M1	4644	4059	-3951	1383	6.7	Estimated BHP
Monterey M4	5236	4465	-4357	1525	6.7	Estimated BHP
T/ Upper Topanga	6342	5193	-5085	1800	6.8	Estimated BHP
T/ Lower Topanga	6748	5461	-5353	1606	5.8	Estimated BHP
T/ Upper Sespe	6780	5481	-5373	1700	6.1	May not be penetrated – Not an objective – zone currently under gas injection
TD	6820	5508	-5400			

<u>Proposed Casing:</u>	<u>MD</u>	<u>TVD</u>
24", 186# (.75" Wall), X-56, Dril-Quip S-60	1400'	1400'
13 3/8", 61#, K-55, Buttress	2650'	2617'
9 5/8", 43.5#, L-80, LT&C	6820'	5508'

RIG-UP AND PRE-SPUD

- Position a Baker tank on the Drill Deck to be used for pre-hydrated gel storage. Refer to Thomas & Beers layout drawing before setting tank. **Confirm location and mark area clearly on deck due to lower strength inner beams.**
 - The Cameron Sliplock starting wellhead will be installed after cementing. Ensure that the Cameron provide cutting tools can be located for use in cutting the 24" before the 24" casing is run.
 - The cuttings pile should be inspected and arrangements made with Production Operations to ensure pile is clean and ready for high volume discharge.
 - MI-Swaco to install rental solids control components and install the additional augers, as required for carrying the cuttings to the end of the pits for haul-off.
 - An inventory of the rig's 5" drill pipe pup joints should be made.
 - Additional pups should be ordered to use for space out during the stab-in cement job.
 - Rig up a casing fill-up line on the rig floor.
 - Have sufficient 5" heavy weight and 1000' of 5" drill pipe picked up for stab in job..
 - Following is a guide in confirming adequate water deliverability: The 2nd Fire Water pump should be available and the delivery rate of seawater measured. Production will review and allow use of diesel firewater pump that can put out 2500 gpm (60 bpm). The electric pumps can put out 1500 gpm (~ 36 bpm) but have had poor run time. Need to test delivery rate to confirm flow rate for 26" hole.
 - Use Baker Tank for gel as well as suction pit, keeping shaker pit for sea water reservoir and pill pit for Durogel sweeps while drilling. This will provide adequate gel to spot in the open hole before pulling out for casing.
 - Top off water legs on the Platform.
 - 24" circulating sub for 24" casing to be cleaned and inspected by Pacific Inspection and on board.
 - Rudy's Oilfield Welding Service to make centralizer lugs for 24" casing at 15' level & wellhead level and pollution cap for wellhead deck. – these will be installed after the conductor is installed – this was done on both E-23, E-24 and E-25.
 - Confirm Station Bills reflect Safe Briefing Areas and the areas are ready for use. Hold safety meetings to document drills.
 - Skid the drilling rig over slot # 18.
 - Make up 26" bit stand of 8" DC's and 5" heavyweight drill pipe and make a run through the guide rings to the mud line to check for obstructions and/or junk. Record the mudline depth.
Note: If problems with the guide rings arise, have Divecon (805-488-6428) or HDI (805-339-9259) on hook, located in Oxnard, and available to dispatch a boat equipped with an ROV.
 - 21 1/4" annular and the 13 5/8" BOPE should have been serviced and stump tested prior to start up. Service control panels and accumulator.
 - Offload all conductor equipment and prep the deck for the equipment necessary for the 26" hole section.
 - Bring the 24" structural pipe onboard.
 - Confirm racking layout. Inspect and remove tubing racking board or any other obstructions. Pick-up joint prior to spudding for practice.
 - The 24" structural pipe should be measured and the protectors should be removed and
- Gail E-26 Drilling Proc -Attach to APD.doc Page 2 of 27

- inspected for O ring installation
- Confirm all measurements to decks from rig floor. Confirm height for starting head, well head stack-up height and riser spools for each hole section.
 - Pump the required cement into the BJ silos and spot liquid additives.
 - Refer to Thomas & Beers layout drawing before setting cement storage silo/pods.
 - The MMS permit requires 550 sacks of barite on board at all times. Order in sacks. Cover and use for emergency only. If barite unused return to MI for credit.
 - Plumb the Baker tank to receive pre-hydrated gel from the active pits via a gun line, and return fluid to the pill pit via a 5X6 centrifugal pump provided by the rig.
 - The following is recommended rig up - if not already in place - change the 4" suction line from tanks 3, 4, and 5 to 6" (or larger), and combine the two original charge pump suctions into a common header. This will allow both charge pumps to function on all the pits. Centrifugal to be tied into gun line in shaker pit to keep solids from settling.
 - Mix and fill the Baker tank with pre-hydrated gel. Pre-hydrate with fresh water in pits and ship the shaker tank to Baker Tank, leaving suction pit with gel.
 - Fill the shaker pit with seawater. Mix Durogel sweep material in pill pit for sweeps (need total of 600 bbls of Durogel sweeps for drilling riserless section). Notify the Production Control desk that this hole section will require a large volume of both seawater and fresh water
 - Rudy's Oilfield Welding Service will install the floor braces for the diverter line, and cut the necessary holes in the end of the main rig support beams. Rig up diverter lines and confirm that lines extend far enough to keep them liquid from hitting lower deck.
 - Dril-Quip man should be lined up for 24" casing job in advance (travel from Houston).
 - Confirm additional spare O-rings and anti-rotation keys are available -have Dril Quip man bring extras if needed..
 - Obtain Halliburton 4.44" rubber cement wiper balls for stab-in job.
 - Calculate approximate cut-off point of the wellhead joint and grind seam weld off of 24" casing to allow cutter and slip-lok starting wellhead to function – this should be done on the deck prior to spud.
 - Post a copy of the MMS permit in the rig floor doghouse.
 - Ensure that the board in the rig floor dog house and the IADC report correctly denote the well, API number, etc.
 - Review NPDES requirements and MMS Regulations. Cuttings and Mud for Riserless hole section need to be recorded/reported.

26" HOLE SECTION

1. Before spud of the well:

- A) Confirm that drill pipe is already picked up in the derrick for 24" cement job and the stab-in equipment is ready;
- B) The 24" casing should all be on the deck, strapped, numbered and ready to run;
- C) The casing equipment should be verified and organized so that it can be rigged up efficiently;
- D) The 24" circulating head should be on location and fit tested to spare joint of 24"
- E) The equipment and handling tools to run the inner string should be verified and ready, and
- F) Cement and liquid additives are on board for cement job.
- G) Equipment for maximum flow of water into the suction pit required during this hole section.
- H) That wells in the table below are properly secured and/or bled down.

Prior to drilling the 26" hole the following wells will be prepared as follows:

Well	Well Type	Action
E-1	Gas injector/makeup to process and PSA unit	Shut gas lift in process (the ones listed below may be enough) so as not to over amp compressors, shut down PSA skid
E-11	ESP	Shut down ESP
E-19	Sweet oil, gas lifted	Shut in, blow down casing
E-8	Sour, gas lifted	Shut in, blow down casing
E-9	Sour injector, sour producer	Shut in, blow down casing
E-20	Short string is sour injector, long string is sweet gas flowing well	Shut in well.

NOTE: Wells to be brought back on when bit reaches +/- 1420' – 24" casing point.

M/U 26" bit and BHA #1 with MWD as per Sperry Halliburton (confirm 30" UR on location). Bit should be jetted to provide good hydraulics at expected flow rate. All equipment run through guide rings should be tapered top and bottom. **Use caution while tripping the bit through the 11 guide rings from the water line to the mud line. Note: See Guide Bucket depths on schematic. Last guide bucket 2' below original mud line. Mud line at 847' from Kenai #2 rig floor with 108' KB. Be cautious if mud line is tagged high as this will increase the distance between mud line and last guide bucket.**

2. Drill a riserless 26" hole from the ocean floor to +/- 1410' (573' penetration) utilizing both pumps at 900-950 gpm and minimum weight on bit. Hole should be drilled at 75 to 100 fph rate unless WOB indicates rock is firm. Pump Durogel sweeps prior to each connection out of the pill pit timed to be in open hole when connection is made. Drill the hole to fit the pipe plus 20' of rat hole (this was done on both E-23 and E-24). A vertical hole within 3' radius is to be maintained. Run a drift shot with MWD after passing through the last guide funnel before commencing to drill the surface hole to ensure the drill pipe did not get outside the guide buckets. Make drift checks every connection with MWD to ensure straight hole. Calculate worst case cumulative drift.
- Review NPDES and perform all required sampling, testing and monitoring. Fill out discharge sheet daily. Mud volumes and cuttings must be accounted for and reported while drilling the riserless hole section. Report any spills immediately.

3. Circulate hole clean to mud line with seawater/50 bbl sweep at as high a rate as possible. Spot a 100+ viscosity pre-hydrated gel pill across the open hole. Assume 32" hole with washout (600 bbls). Note: Wells that successfully got pipe to bottom (no washing down casing) did so by minimizing the time from reaching TD to getting casing on bottom (no wiper trip), as well as minimizing the amount of time to drill the hole.
 - NOTE: Baker has an 18-1/2" body X 30" under reamer prepped as a contingency. This decision will be made based on hole conditions, drilling time, etc.
 - If the under reamer is run, make sure the under reamer is below the bottom guide ring (+/- 850') before starting the pumps and opening the arms. Use the same practices as when drilling the 26" hole. After the hole has been opened to 30" and the gel pill spotted across the open hole, pull out of the hole. Ensure that the arms have closed before attempting to pull through the guide rings.
4. POH. Do not lay down equipment to minimize time spent out of hole – 30' pendulum assembly should allow this.. Rack the BHA on the opposite side from the drill pipe. After drilling, there should be +/- 1450' of drill pipe total in the derrick to use for the cement job plus pup joints to allow space out. LD stabs and bit after running 24" casing.
5. Run 24" casing with Dril-Quip Representative on location:
 - a. Rig up Weatherford Baash-Ross spider bowl and hand slips, 250 ton side door elevator, power tong, and bull back-up tong. Consider having back up 500 ton elevators on location.
 - b. R/U casing fill-up line. Be ready to wash down casing if necessary – 24" circulating swage is required. Test fit head prior to spud well.
 - c. P/U 41' joint with float shoe installed.
 - d. P/U joint #2. No centralizers will be run.
 - Install anti-rotation keys two per joint.
 - If required use Threadlock but only per Dril-Quip instructions. Pump through these joints to check the floats in the shoe. Floor is 50 psi (107') above sea level.
 - Dril-Quip S-60 connections require 30,000 ft/lb. torque and only make up 5/8 of a turn. It is suggested that a chalk line be made across each connection to monitor the 5/8 turn.
 - Use the crane to tail each joint to the rig floor. Do not let the pin protector hit the catwalk, or the rig floor.
 - e. Fill joints with calculated amount of seawater.
 - f. Continue to run range 3 (~40' each) 75" wall X-56 casing with Dril-Quip S-60 connections. Do not fill joints #xx & #xx. The 24" casing will be landed below the rig floor and need volume to dump cement and clean drill pipe during stab in cement job.
 - g. P/U splash zone joint #xx that is coated with thick application of Carboline 1207. This joint is designed to be run in the tide / wave area. There is not a back up splash zone joint. The slips and tong areas above the pin and below the box are coated with primer only. Do not fill this joint.
 - h. P/U wellhead joint # xx. This joint is coated with white System IV to prevent corrosion. Do not fill this joint. There is a back-up coated wellhead joint in the event it is needed.
 - i. Calculate approximate cut-off point of the wellhead joint and grind seam weld off of 24" casing to allow cutter and slip-lok starting wellhead to function – this should be done on the deck prior to spud.
 - j. Land the casing with splash zone joint positioned +/- midway at MLLW. Do not fill these joints.

6. P/U Weatherford slotted base plate designed to function on top of the 24" with 5" bowl and slips.
7. M/U Gemoco stab-in cement stinger on 5" drill pipe. Check the O-ring seals on the stinger. A set of spare rings to be sent with the stinger.
8. TIH with the stinger on 5" drill pipe. Place centralizers on the bottom joint and the third joint across a stop collar. Space out the drill pipe with pup joints to get as close to the rig floor as possible. Strap pipe to ensure accuracy.
9. Stab into the shoe and slack off DP weight (keep elevators on DP). Note: This shoe is beveled inside to guide the stinger into the seal area. Rig up BJ cement line with enough slack to unsting from the shoe to dump cement on top of float shoe at end of job.
10. Pump 200+ bbl of seawater at a high rate to clean the annulus and verify the stinger is in place. The fracture gradient is very low (65 psi surface pressure over seawater) and ensure there is enough DP weight to prevent hydraulic lifting of the cement string.
11. Cement the 24" structural pipe as per the attached cementing program (use 32" hole for volume calculation and no OHE), bringing the cement back to the ocean floor. Displace cement from unit with enough seawater to leave 20 bbls in drill string (total drill string volume +/- 25 bbls - need good cement line volume). Pick up quickly to unsting from stab-in shoe and dump cement inside 24" casing on top of shoe. Top of cement +/- 40' above the shoe. Break off cement line.
12. Pull out of the hole with one stand. Pump a 4.44" wiper ball (from Halliburton) through the drill pipe with 26 bbls of seawater to clear any residual cement from the string. POH and lay down excess drill pipe (last +/- 1000').
13. Wait on cement until the cement develops 500 psi compressive strength, based on the BJ cement lab test. P/U pipe to check cement bond. If the pipe is supported by the cement, continue with the following operations. If the pipe slips in the rathole, wait on cement an additional 4 hours, repeat tests before releasing casing.
14. Once 24" conductor is fully supported by cement, rig up casing cutter. Cut casing at +/- 63" above the wellhead deck. NOTE: Cameron to confirm measurements to provide for tubing head flange to be at the mezzanine grating with hold downs accessible but directly below the mezzanine. Lay down cut-off and landing joint. Lay down the 26" stabilizers and pick up the 17-1/2" stabilizers. Check measurements – valve and bull plug may need to be removed from starting head before lowering into place.
15. Nipple up and pressure test the diverter riser assembly as follows and confirm measurements including height of API ring to ensure no conflict with rig sub-structure :
 - a. 20-3/4" 3M X 21-1/4" 2M DSA.
 - b. 6' X 21-1/4" 2M X 21-1/4" 2M spool.
 - c. 20' X 21-1/4" 2M X 21-1/4" 2M spool.
 - d. 2' X 21-1/4" 2M X 21-1/4" 2M diverter spool.
 - e. 4.375' X 21-1/4" 2M Hydril.

- f. Bell nipple.
- Install the diverter lines as per the attached schematic. The final adjustments on the diverter line stands will be made at this time.
- Rudy Welding to fabricate the drill deck pollution cap to fit around the 24" conductor. After it has been installed, the remaining gaps should be filled with foam to form a water-tight barrier. Rudy Welding will fabricate and install split rings to stabilize the 24" in the guide ring at the wellhead deck and the +15 deck.
- **DEPARTURE FROM PREVIOUS DIVERTER INSTALLATIONS:** In lieu of 8" Hydraulically controlled ball valves on the outboard valve locations, if they are not available, Venoco propose to use 9" hydraulically controlled single gate shear rams installed with straight through flowpath. If the valves are available they will be used. The main valve located at the Tee under the annular will be an 8" ball valve as in previous installations.
- **DIVERTER TESTING:** Follow specific MMS regulations for pressure testing, flow testing of vent lines and actuation of the diverter system. Diverter to be flow tested at initial installation. Pressure test to 200 psi and within 7 days of previous test if still in use. Actuate once every 24 hrs and alternate stations for actuation and tests. Plan initial pressure test against the casing and cement in the shoe. If casing does not test or if follow up tests are required plan to use Cameron supplied test plug.
- All pressure test, flow test, and actuation results shall be recorded in the IADC drillers report.
- Perform diverter drill with each crew on tour while drilling section.

17-1/2" HOLE SECTION

1. Install wear bushing. M/U 17-1/2" bit and Sperry Halliburton recommended directional drilling BHA #2 (steerable assembly with MWD and set-up for gyro survey). Run in the hole and tag top of cement. Note depth. Pressure test, function test and flow test the diverter system per MMS regulations (see below). Pressure test the diverter and casing to 200 psi. Flow test the diverter with seawater. Subsequent flow tests are not required, but actuation test is required daily at alternating stations and pressure test every 7 days at alternating station.
 - Run Multi-shot gyro to confirm exact bottom hole location and reduce uncertainty. Keep wireline Gyro Equipment on stand-by during 17 1/2" hole section.
 - Carefully review anti-collision plots and contingency plans. 1 spider wall map scaled to 1" = 5 ft and 1" = 25' should be provided
 - Directional drill as per the Sperry directional drilling plan (Slot 18) E-26, Plan#2 (dated 08-Dec-09). Gyro surveys will be used to kick off and drill until magnetic interference is not present, follow progress by plot on spider map.

Prior to drilling the 17 1/2" hole the following wells will be prepared as follows:

Well	Well Type	Action
E-1	Gas injector/makeup to process and PSA unit	Shut gas lift in process (the ones listed below may be enough) so as not to over amp compressors, shut down PSA skid
E-11	ESP	Shut down ESP
E-19	Sweet oil, gas lifted	Shut in, blow down casing
E-8	Sour, gas lifted	Shut in, blow down casing
E-9	Sour injector, sour producer	Shut in, blow down casing

E-20	Short string is sour injector, long string is sweet gas flowing well	Shut in well.
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NOTE: Wells to be brought back on after E-26 well is at +/- 2000' MD dependent upon directional progress and actual separation established.

- Use spider plot and Sperry anti-collision software program to monitor proximity. Continue to gyro survey until MWD surveys confirm free of interference.
 - If casing or diverter does not pressure test, set Cameron test plug in wellhead and test diverter system.
 - EPOCH should be on location to calibrate Rig Watch monitoring system.
 - Safety Company should be on location to install and calibrate their gas monitors (No H2S in this interval).
 - **DIVERTER TESTING:** Follow specific MMS regulations for pressure testing, flow testing of vent lines and actuation of the diverter system. Diverter to be flow tested at initial installation. Pressure test to 200 psi and within 7 days of previous test if still in use. Actuate once every 24 hrs and alternate stations for actuation and tests. Plan initial pressure test against the casing and cement in the shoe. If casing does not test or if follow up tests are required plan to use Cameron supplied test plug.
2. Drill out cement with seawater. Circulate out cement and change the well over to mud (see attached mud program). Shut off pumps. Monitor the well to confirm the fluid level is static. Notify engineer if losses occur.
 3. Directional drill a 17 1/2" hole to the 13 3/8" casing point at 2650' MD / 2617' TVD. Control drill with low mud weight to keep from losing returns at the conductor shoe. Historically mud weights over 9.1 ppg have led to losses. Run all solids control equipment to reduce low gravity solids in the mud. Notify engineer if losses occur. LCM pill should be ready in pill pit. Circulate and condition the drilling mud to reduce the viscosity and prepare for running the casing. Open hole logs will not be run at this casing point.
 - Overboard dump and dilution of mud and cuttings will be required in this hole section to maintain low mud weight. Prior to drilling sample the mud mixed for drilling this section and send to lab for base line test. Follow all NPDES requirements for measurement, monitoring and reporting prior to dumping. Sample and send mud in for testing at 80% depth.
 - Perform and log Diverter tests on tour sheet per MMS regulations.
 - Control drill to keep from loading up hole. CBU as necessary.
 - Have Back up motor, MWD and gyro tools on location.
 4. Rig up casing running equipment. Rig up and run the 13-3/8" casing string to +/- 2650'. Circulate and reciprocate pipe until hole cleans up. **Ensure casing coupling is not in wellhead landing area while reciprocating.** Notify engineer if losses are encountered. If full circulation is established, consider shipping excess mud (cement volume) to Baker tank for reserve, keeping enough for displacement in pits. Cement the 13-3/8" casing through the shoe to the mud line, per the attached cement program. Reciprocate the casing while circulating, cementing and displacing the cement job. **Ensure casing coupling is not in**

wellhead landing area while reciprocating. Displace cement with the cement unit using mud. The last 20 bbls should be seawater for pending casing cut.

- a) Float shoe
- b) 2 joints of 13-3/8" 61# K-55 Buttress casing
- c) Float collar
- d) 13-3/8" 61# K-55 Buttress casing to surface

Notes:

- Fill pipe while running. Swage with safety valve on rig floor (function for MMS).
 - Baker-Lock the first four joints. Pump through float equipment to check.
 - Centralize the casing with centralizers in the middle of the two shoe joints then every third joint over the collar back to the mud line (+/- 850') and every 5th joint inside the 24" casing. Do not run centralizer on top three joints below wellhead.
 - Use top and bottom plugs. BJ to supply plugs and cement head.
 - Bump plug with 1000 psi over final circulating pressure.
 - Bleed off pressure and check floats.
 - Note all cement volumes, weights and additives on morning report. Include comments on circulation, up/down weights, how long reciprocation was performed, displacement volume, bump pressure, float check and CIP.
5. Wait on cement until cement passes transition time per cement tests. Monitor annulus and casing for losses. Keep track of fill up volumes. Notify engineer if losses are occurring. Ensure well is static and it is safe to remove the diverter.
- Pressure test the 13 3/8" casing to 2150 psi (70% of burst of 13 3/8" 61# K-55) for 30 minutes and record on pressure chart.
 - Rig down BJ cement head and lines.
 - Drain the diverter and flush with seawater (starting head valve).
 - Nipple down DSA with ELCO hydraulic wrenches and pick up the diverter system.
 - Install the 13-3/8" by 20-3/4" Cameron casing slips. Set the 13 3/8" casing in the slips with Cameron recommended slack-off and activate the slips per Cameron procedures. Cut the 13 3/8" casing with pneumatic saw. Refer to Cameron drawing for proper cut off dimensions and bevel. Be prepared for seawater coming out of the cut off. Lay down extra joint and cut off.
 - Nipple down diverter system and offload.
 - Install casing head, 20-3/4", 3k x 13-5/8", 5k, per Cameron procedure.
 - Test the void/seals to 1078 psi (70% collapse of 13-3/8" 61# K-55 casing).
 - Install +/- X' 13-5/8" 5k x 13-5/8" 5k riser spacer spool (to match height of 13-5/8" 5k x 11" 5k tubing spool, and 11" 5k x 13-5/8" DSA). Nipple up the 13 5/8", 5M BOPE with annular preventer, 2 7/8" X 5" VBR in top ram, blind shear rams, and 5" pipe rams in lower set of rams.
 - Set test plug and test BOP per MMS regulations to 250/2500 psi and chart. Pull test plug. Install the wear bushing.

12-1/4" HOLE SECTION

1. M/U 12-1/4" bit and clean out BHA. Drill out to within 30' of the 13 3/8" casing shoe. Test the casing to 2150 psi for 30 minutes and chart. Drill out the casing shoe and 10' of new

formation. Rig up BJ cement unit and perform a leak off test or formation integrity test to 11 ppg on the 13 3/8" casing shoe. If an 11 ppg FIT is not obtained, graph the LOT data to determine leak-off pressure and discuss with drilling engineer. Squeeze the shoe if necessary. Pull out of hole.

2. Make up a 12-1/4" bit on BHA #3 (steerable assembly with MWD and O-sub). Drill a 12-1/4" hole to the 9-5/8" casing point at +/- 6820' MD / 5508' TVD as per the attached directional drilling plan. Cut 60' core starting 10' above the top of the M2 – Geologist to make determination of core point.

Notes:

- Directional drill as per the Sperry directional drilling plan (Slot 18) E-26, Plan#2 (dated 08-Dec-09).
 - Cut 60' core starting 10' above the top of the M2 – Geologist to make determination of core point.
 - Overboard discharge will not be allowed in this hole section. Follow all NPDES requirements for measurement, monitoring and reporting
 - Perform and log BOP tests (2 weeks) on tour sheet per MMS regulations. Perform and document all weekly BOP/H2S drills and all items on MMS checklist. Fill out NPDES monitoring information daily.
 - H2S is present in the 12 1/4" hole section intervals. Rig up H2S equipment per MMS approved H2S and SO2 Contingency Plan. Safety company should calibrate monitors every 12 hours and document on tour sheets. H2S drills should continue throughout operations.
 - The mud loggers must be operational when drilling out the 13-3/8" casing shoe. MWD/GR will be run through this section of the hole to assist in correlation.
 - The casing shoe will be set at TD
 - There has been a history of lost circulation in the Upper Topanga but since water injection commenced in this zone instances and severity have been reduced.
 - Historically mud weights to drill this section and manage background and trip gas have ranged up to 9.6 ppg.
 - The first gas should be seen in Pico Sands and start around 2758' MD and contain hydrocarbons in non-commercial quantities.
 - There may be high gas units while drilling but the sands but they are forecast to be normally pressured (water gradient).
 - Perform flow checks and circulate bottoms up as necessary.
 - Keep fluid loss low in mud to reduce swelling/swabbing in the clay formation.
 - Make wiper trips as necessary to keep hole in good shape. As a guide plan to wipe new hole at lease every 12 hrs and pull back to the shoe every 24 hours until hole conditions are understood.
 - Notify engineer if losses occur. All LCM material to be acid soluble. A sized CaCO3 LCM pill should be ready in pill pit.
3. Pull out of the hole and lay down drilling assembly. If indicated make up clean out assembly (bull nosed 12-1/4" fixed hole opener). Run in the hole and ream and circulate as necessary. Due lower hole angle the hole opener run may be skipped. Note: In E-23 well the HO was run before logs and logs got to bottom, E-24 the HO run was skipped, logs did not get to bottom, HO was run and subsequent logging run got to bottom.

4. Circulate and condition the hole in preparation of the open hole logs. Plan to add lubricants to improve probability to reach TD by wireline logs. Pull out of the hole and rig up the logging unit.
5. Run open hole logs per attached logging program. Utilize electronic disconnect to allow for increase weak point.
6. Run in the hole with hole opener BHA after logging and condition the hole for the 9 5/8" casing. Have pipe tally ready and confirm pipe connection will be near rig floor for cementing and connection will not be across wellhead landing area. Pull out of the hole and rig up the casing crew. Pull the wear bushing.
7. Run the 9 5/8", 43.5#, L-80, LT&C API modified casing to +/- 6820'.
NOTE: Review and confirm correct equipment and back-ups available. Do not circulate casing at higher pressure than recommended by Davis-Lynch after stage collar is picked up and in the string. Stage collar opens with hydraulic pressure.
 - a) Davis Lynch Float shoe
 - b) 2 joints 9-5/8" 43.5# L80 LTC API Modified
 - c) Davis Lynch Float collar
 - d) 4340' +/- 9-5/8" 43.5# L80 LTC API Modified
 - e) Davis Lynch LT&C API Modified Hydraulic Stage collar at +/- 2400'
 - f) 2400' of 9-5/8" 43.5# L80 LTC API Modified to surface

Notes:

- Swage with safety valve on rig floor. Function and note for MMS on tour sheets.
 - XO to fit the safety valve and all casing threads
BJ to supply cement head but not the plugs. Davis Lynch plugs to be used.
 - Confirm cement head is designed for the Davis Lynch multi plug system.
 - Baker-Lock the first four joints, the stage collar and the two joints above the stage collar. Pump through float equipment to check. Fill pipe while running.
 - Centralize the casing with centralizers in the middle of the two shoe joints then every joint to +/- 4800' and then every other joint into the 13-3/8" shoe. Run one centralizer below and above the stage collar, then every 5th joint to the mud line (+/- 850').
8. Circulate and reciprocate pipe until hole cleans up. Cement the 9 5/8" casing in two stages per the attached cementing program. Cement the first stage of the 9 5/8" casing through the shoe to the 13 3/8" casing shoe.
 - If possible reciprocate the casing while circulating, cementing and displacing the cement job. Ensure casing coupling is not in well head landing area while reciprocating.
 - The hydraulic stager collar and all plugs for cement job will be supplied by Davis Lynch. The stage collar opens with hydraulic pressure applied after the top plug is bumped on the primary job. There is a back-up "bomb" that can be dropped and fall which can be used in the event the lower plug does not bump. A detailed procedure for the stage collar will be provided by Davis Lynch.
 - Displace cement with the cement unit using mud. Pump calculated volume at 5-6 BPM – BJ will provide recommended displacement rate - slowing down the last few barrels. Bump plug with 500 psi over final circulating pressure. Bleed off pressure and check floats. When reciprocation is finished, pull 9-5/8" in tension to last observed up weight if possible to minimize casing wear. Set pipe in floor slips. Keep head low to floor and

connection out of the well head landing area.

- Note all cement volumes, weights and additives on morning report. Include comments on circulation, up/down weights, how long reciprocation was performed, displacement volume, bump pressure, float check and CIP.
 - After the primary job is in place, the top plug is bumped, pressure up the casing to 2400 psi to open the stage collar.
 - Circulate through stage collar and allow the primary cement job to set up. Note if any spacer or cement is circulated out of the hole from the primary cement job.
 - Cement the second stage from the stage collar to the mudline per the attached cementing program.
 - There will not be a bottom plug for the stage job. The top plug (closing plug) is a special plug that closes the stage collar. Do not load top plug (closing plug) in plug dropping head until after cement is pumped.
 - Displace cement with the cement unit using mud. The last 20 bbls should be seawater for pending casing cut. Pump calculated volume at 5-6BPM – BJ will provide recommended displacement rate - slowing down the last few barrels. Bump plug with 1500 psi over final circulating pressure to close stage collar. Bleed off pressure and check that stage collar has closed. If bleed back is occurring, repeat the process. If stage collar fails to close, bleed cement back into the casing (10 bbls) and shut-in the casing while cement sets up.
 - Note all cement volumes, weights and additives on morning report. Include comments on circulation, displacement volume, closing pressure, stage collar holding (or not) and CIP.
9. Wait on cement until cement passes transition time per cement tests. Monitor annulus and casing for losses. Keep track of fill up volumes. Notify engineer if losses are occurring.
- After WOC is completed, pressure test annulus to 800 psi and ensure annulus is static prior to picking up BOPE.
 - Drain the BOP stack and flush with seawater (casing head valve).
 - Nipple down the 13-5/8" riser spool (4') with ELCO hydraulic wrenches and pick up the BOP system as needed for cutter.
 - Install the 9 5/8" by 13 3/8" Cameron casing slips. Set the 9 5/8" casing in the slips and activate the slips per Cameron procedures.
 - Cut the 9 5/8" casing with pneumatic saw. Refer to Cameron drawing for proper cut off dimensions and bevel. **Be prepared for seawater coming out of the cut off.** Lay down extra joint and cut off. Remove 13-5/8" riser spacer spool.
 - Install Cameron tubing spool (13-5/8", 5k x 11", 5k) per Cameron procedure.
 - Pressure test the void/seals to 2667 psi (70% collapse of 9-5/8" 43.5# L-80).
 - If indicated be prepared to install Cameron tubing landing spool, tubing head adaptor and dual tree per Cameron procedure. Have Facilities ready to confirm field measurements for all required well tie-ins. Remove tree and tree adaptor.
 - Install DSA (11" 5k x 13-5/8" 5k) on top of tubing landing spool. Nipple up the 13 5/8", 5M BOPE
 - Set test plug and test BOP to 250/2500 psi per MMS regulations and chart. Pressure test against 5" and 2 7/8" tubing. Pull test plug. Install the wear bushing.
10. Pick up an 8 1/2" bit and clean out BHA. Run in hole and tag cement. Pressure test the 9 5/8" casing to 2500 PSI for 30 minutes and chart test. Clean out to the float collar or deeper if indicated by log results and need to perforate deeper. Pressure test the 9 5/8" casing to 2500

PSI for 30 minutes and chart test. Pull out of the hole.

11. Pick up and run in the hole with bit and 9 5/8", 43.5# casing scraper to effective clean out depth. Circulate and condition mud but do not change over at this time to maintain hydrostatic on casing to allow for bond log results. Pull out of the hole with the drillpipe.
12. Rig up wireline and run cement bond logs over the 9 5/8" casing. Be prepared to run log under pressure if recommended. Evaluate logs and determine if block squeezing of completion interval will be required. Squeeze well as required.
13. After squeezing and cleaning out as necessary, run in hole and dump and clean mud pits to prepare for changeover. Displace the drilling mud and circulate the well with clean filtered seawater using sweeps as recommended by MIDF. Filter seawater until < 30 NTU's obtained. Pull out of the hole.

NOTE: BOP test on 2 7/8" tubing will be required if this tubing is picked up at this step. NOTE: In addition install a 2 1/16" 5M casing valve below the tubing hanger with a 1502 tee and pressure gauge, a check valve and high pressure hose connection to it will be installed and tested to 3000/250 psi for 5 minutes. It will be used continuously pumping seawater into the well, at 3 bpm or as needed to control the well, below the hanger landing profile to keep the well under control and to prevent visual obstruction when landing the tubing hanger.

NOTE: BOPE testing to continue on 14 day frequency through the completion that is approved as part of the APD.

Completion Procedure

1. The well will be a dual completion with the long string for injecting into the Lower Topanga and the short string producing the Monterey (see attached Proposed Completion Diagram).
 - Dual Production packer will be set at +/- 5100' MD. Dual packer is short string set.
 - Tubing to be yellow band or better with special clearance double bevel couplings. All equipment above the dual packer to be special clearance and bevel.
2. Make up 4 1/2" TCP Perforation guns, run in hole, rig up wireline, correlate and put guns on depth. Pressure up to fire guns and perforate the Monterey M4 from 5300'-5500' (estimated depths – subject to revision after open hole log evaluation) .

NOTE: Be prepared to fill hole after perforations. Use the previously installed and tested 2 1/16" 5M casing valve below the tubing hanger with a 1502 tee and pressure gauge, a check valve and high pressure hose connection. It will be used continuously pumping seawater into the well, at 3 bpm or as needed to control the well, below the hanger landing profile to keep the well under control and to prevent visual obstruction when landing the tubing hanger.

3. Make up 8 1/2" bit and 9 5/8" scraper and run in hole to scrape perforations. Circulate hole clean. With bit at TD spot 8.5 ppg KCl mixed in freshwater from TD to +/- 6000' – this will be fluid that Lower Topanga will be perforated in.

4. Make up, run and set 9 5/8" Model D packer with, Mill out extension, 10' seal bore extension 2 7/8" tail, hydro-trip sub and completion equipment at +/- 6600' MD. Take over pull on Model D during setting process to confirm packer is set. TCP guns will be positioned on bottom of tubing tail to perforate the Lower Topanga – estimated perforation depth 6750' – 6770' (to be determined from open hole logs)
5. Pick up the long string completion equipment as per attached schematic and equipment listing. The dual packer will be configured for short string set to allow the long string seal assembly to be tested. The snap latch will be run above the seal assembly to confirm seal location when spacing out. Run in hole to above the Model D sump packer at +/- 6600'. Stab into sump packer, locate and snap in. Get space out measurement, pick up and space out to land, make up hanger half and lower completion and land same. Get up and down weight prior to landing. Follow Cameron procedure for landing dual hanger half. At no time will hanger hold down pin be removed. Orient the hanger half at surface and lower into position in the wellhead. Do not put high compression load onto Model D packer during space-out.
6. Drop ball and pump ball down onto seat at low pump rate. After ball lands pressure up tubing to 2000 psi to pressure test seal assembly to 2000 psi for 15 minutes. Continue to pressure up to 3000 psi to expel ball. Rig up slickline on the long string and pressure test lubricator to 2000 psi and pressure test before each run when the lubricator connection is broken. Run and set injection valve in the X nipple at +/- 1000', rig down slickline. Set short string hanger half, install BPV in long string. Pull short string hanger half.
7. Rig up and run in hole with short string with completion equipment. Do not make up make up TRSSV, run in and stab into seal bore of 9 5/8" Model GT dual packer. Drop X.XXX" OD, Kirksite setting ball down short string landing joint. Pressure short string to 3000 psi in 500 psi increments to set the Model GT packer. Hold 3000 psi on tubing for 15 minutes, slowly bleed pressure off of tubing. Pressure test the packer and annulus to 2000 psi. Do not pressure up the short string and blow the packer setting ball at this point.
8. Pick up short string, pull out of hole and make up TRSSV and pressure test the control line. Run in with short string, get space out measurements, Pick up and install hanger half, reconnect and pressure test the control line to top of hanger. Get up and down weight prior to landing.
9. Prior to seals entering the seal assembly spot 50 bbls of packer fluid with NALCO product - EC1120A. This chemical is to added at 50 gals/100 bbls or as indicated by Nalco Engineer. Contact for this chemical is Michael Whittington - Nalco Energy Services -Mobile: 805.479.5006.
10. Follow Cameron procedure for landing dual hanger half. At no time will hanger hold down pin be removed. Orient the hanger half at surface and lower into position in the wellhead. Pressure test the packer, tubing hanger and annulus to 2500 psi for 30 minutes and record on chart. With pressure on control line to keep TRSSSV open pressure up tubing to 3500 psi against ball and seat and shear out ball.
11. Bleed off control line pressure to close the short string TRSSV. Install BPV in short

string. Injection valve and BPV previously set in the long string.

12. Nipple down BOPE and nipple up Cameron adapter and FMC dual tree. Remove BPVs and Install blanking plugs and pressure test bonnet void and tree to 3000 psi. Remove blanking plugs.

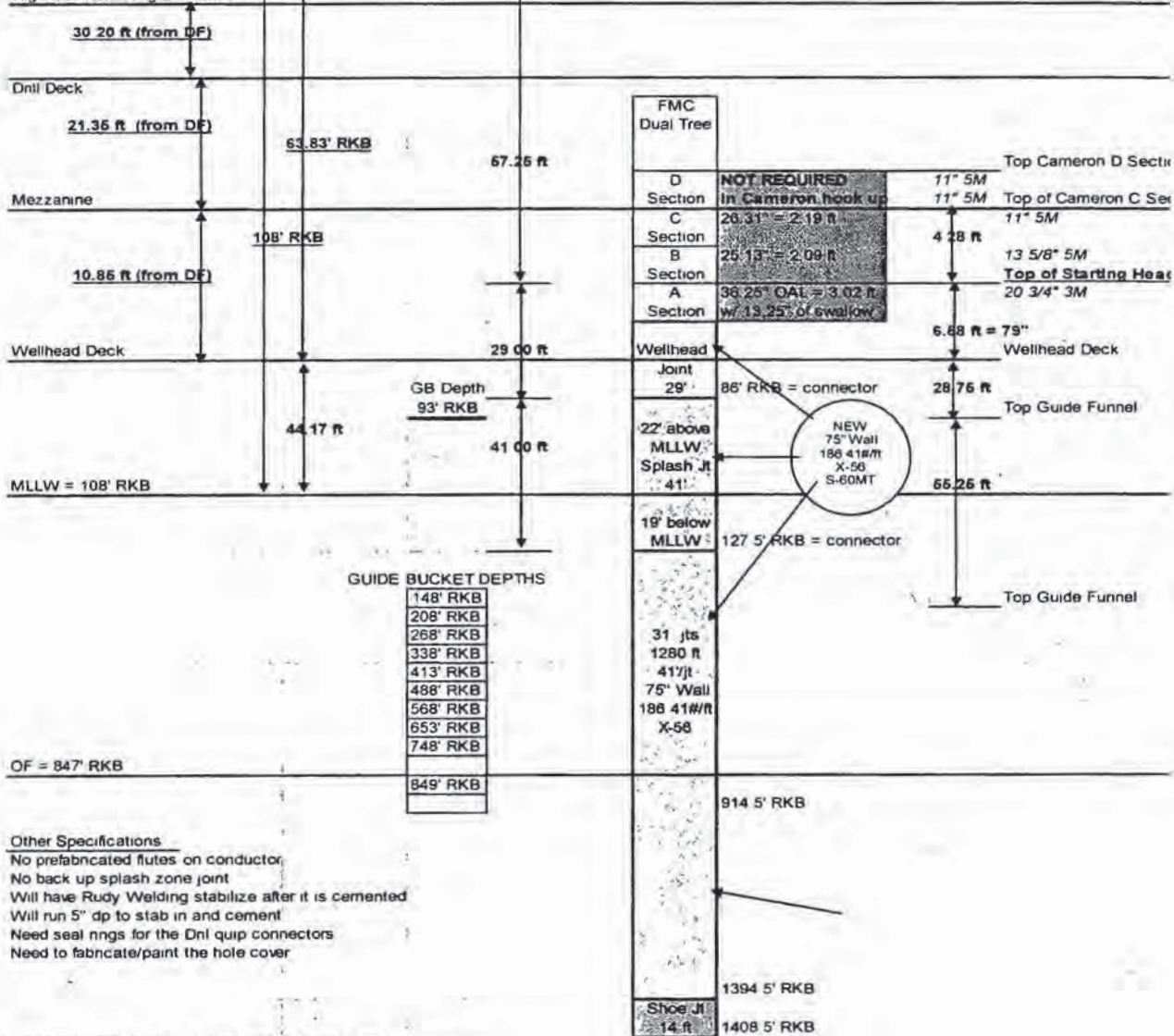
13. Release rig.

PLATFORM GAIL NEW WELL STARTING HEAD AND CONDUCTOR

REV January 12, 2010

KB Kenai Rig 2 = 108

Rig Floor Kenai Rig 2 = 106 5'



Other Specifications

No prefabricated flutes on conductor
 No back up splash zone joint
 Will have Rudy Welding stabilize after it is cemented
 Will run 5" dp to stab in and cement
 Need seal rings for the Dnl quip connectors
 Need to fabricate/paint the hole cover

Notes on Materials and Welding and Specifications

Splash Zone Joint to have Carboline 1207

Wellhead Joint to have System 4 as defined by the SP-80-2 "Protective Coatings and Painting Specification"

Guide Buckets	
Below MLLW	
Divecon Depths 108 DF to MLLW	
15	-93
-40	-148
-100	-208
-160	-268
-230	-338
-305	-413
-380	-488
-460	-568
-545	-653
-640	-748

Vertical to xxxx'
Max Angle
D F Elevation 107'
D F to Tubing Head XX XX
Water Depth 739'
Tree FMC Dual (Proposed)
Wellhead Cameron

Lease OCS-P-0205
SOCKEYE FIELD
WELL E-26 Proposed

M4 Producer - Lower Topanga Injector

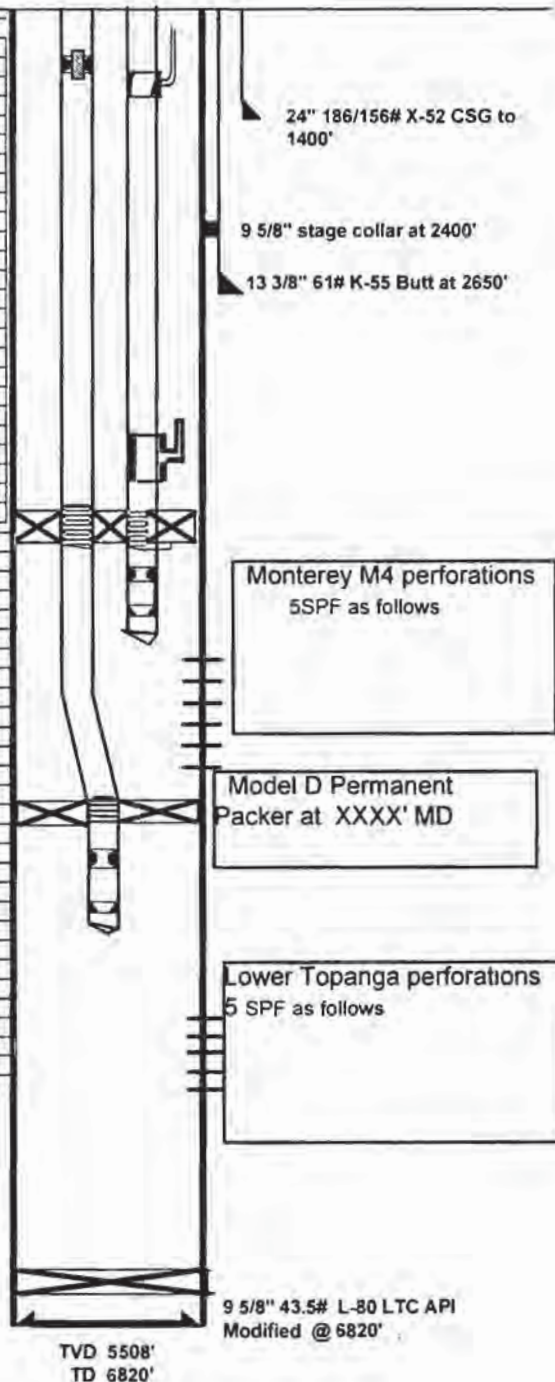
Drawing Revision d1b

Completion Date

As Run COMPLETION

Short String Description	OD	ID	Length	Top
RFKB			51.60	
FMC Tubing Hanger Half	11.000	2.441	1.10	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint	2.875	2.441	3.73	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint (Space Out)	2.875	2.441	4.05	
2-7/8" 6 5/8" L-80 EUE 8rd Tubing SC/DB	2.875	2.441	963.37	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint	2.875	2.441	6.19	
Baker 2-7/8" TE-5 SSSV	4.630	2.441	4.76	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint	2.875	2.441	4.73	
2-7/8" 6 5/8" L-80 EUE 8rd Tubing SC/DB	2.875	2.441	XXXX	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint	2.875	2.441	4.60	
Gas Lift Mandrel	4.750	2.441	6.15	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint	2.875	2.441	3.64	
2-7/8" 6 5/8" L-80 EUE 8rd Tubing SC/DB	2.875	2.441	61.22	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint	2.875	2.441	6.19	
Baker Locator Seal Assembly - 9 84 overall w/7 56' seals	3.240	2.441	1.61	
Upper Mandrel to Scoop Head - Scoop Head OD 8.313	4.250	2.991	11.32	
Baker 9-5/8" "GT" Dual Pkr - shrt strg set-40k shear	8.500	2.441	3.63	
Lower Mandrel	2.991	2.441	1.83	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint	2.875	2.441	4.13	
2-7/8" 6 5/8" L-80 EUE 8rd Tubing SC/DB	2.875	2.441	31.44	
Baker BX Nipple	3.700	2.310	1.12	
2-7/8" 6 5/8" L-80 EUE 8rd Tubing SC/DB	2.875	2.441	31.57	
Baker BXN Nipple	3.700	2.205	1.12	
Ball Seat Re-Entry Guide	3.690	2.441	0.60	

Long String Item Description	OD	ID	Length	Top
RFKB			51.60	
FMC Tubing Hanger Half	11.000		0.89	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint W/SC&B*	2.875	2.441	3.65	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint (Space Out) SCB*	2.875	2.441	14.25	
2-7/8" 6 5/8" L-80 EUE 8rd Tubing w/SC&B*	2.875	2.441	985.60	
Baker X Nipple for Injection Valve	3.470	2.312	1.12	
2-7/8" 6 5/8" L-80 EUE 8rd Tubing w/SC&B*	2.875	2.441	XXXX	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint SC&B*	2.875	2.441	6.16	
Upper Mandrel to Scoop Head - Scoop Head OD 8.313	2.875	2.441	10.13	
Baker 9-5/8" "GT" Dual Packer - short string	8.500	2.441	3.63	
Lower Mandrel	2.991	2.441	4.08	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint W/SC&B*	2.875	2.441	4.17	
2-7/8" 6 5/8" L-80 EUE 8rd Tubing w/SC&B*	2.875	2.441	XXXX	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint W/SC&B*	2.875	2.441	6.14	
Locator Seal Assembly - 10 65 overall 9' seals	3.480	2.441	1.60	
Baker 9-5/8" Model "DB" Packer (set at 7030' drill pipe)	8.130	4.750	4.04	
Mill Out Extension	7.070	6.000	6.35	
Mill Out Extension crossover	7.680	3.250	1.10	
Seal Bore Extension	4.230	3.250	9.38	
Crossover Seal box x 2-7/8 pin*	2.875	2.441	0.66	
2-7/8" 6 5/8" L-80 EUE 8rd Pup Joint W/SC&B*	2.875	2.441	2.07	
2-7/8" 6 5/8" L-80 EUE 8rd Tubing w/SC&B*	2.875	2.441	30.62	
Baker BX Nipple	3.470	2.310	1.12	
2-7/8" 6 5/8" L-80 EUE 8rd Tubing w/SC&B*	2.875	2.441	31.40	
Baker BXN Nipple	3.700	2.21	1.12	
Ball Seat Sub w/ Re-Entry Guide	3.700	2.44	1.05	



EVALUATION PROGRAM

1) MUD LOGGING

12 1/4" Hole Section – Continuous mud logging shall be performed from drilling out the shoe of the 13 3/8" casing at 2650' to the total depth. Collect dry samples at 30' intervals.

2) CORING – 60' continuous core to be cut in M1/M2

3) LOGGING WHILE DRILLING - NONE

12 1/4" Hole Section – An MWD/GR will be used for directional surveys.

4) ELECTRIC LOGGING

12 1/4" Hole Section

Log Run #1

Platform Express – HALS-HGNS

Logging interval: Total Depth to 4120' MD

Log Run #2

FMI-GR

Logging Interval: Total Depth to 4120' MD

Notify Geologist to witness all logs.

Primary Geologist: Chris Peltonen

805-745-2266 office

805-732-8846 cell

Back-up Geologist: Monica Carlsen

805-745-2115 office

805-448-5622 cell

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	24"	13 3/8"	9 5/8"
2	Setting Depth (feet - TVD)	1400	2617	5508
3	Expected Leak Off Test EMW at shoe (ppg)	9.4	11	12
4	Depth of next Casing (feet - TVD)	2617	5508	5508
5	Maximum Expected Formation Pressure (psi)	1143	2406	2406
6	Expected Mud Weight (ppg)	9.1	9.6	9.6
7	Formation Equivalent Mud Weight (ppg)	8.4	8.4	8.4
8	Expected Hydrostatic Pressure at TD (psi)	1238	2750	2750
9	Amount of Overbalance at TD (psi)	95	344	344
10	Fracture Gradient at shoe (psi/ft)	Diverter	0.57	0.62
11	Fracture Pressure at shoe (psi)	Diverter	1497	3437
12	Hydrostatic Pressure at shoe (psi)	662	1306	2750
13	Margin between Mud Weight and LOT (psi)	Diverter	191	687

Maximum Anticipated Surface Pressures

1	Casing Size (in)	24"	13 3/8"	9 5/8"
2	Setting Depth (feet - TVD)	1400	2617	5508
3	Expected Leak Off Test EMW at shoe (ppg)	9.4	11	12
4	Expected Mud Weight (ppg)	9.1	9.6	9.6
5	Depth of next Casing (feet - TVD)	2617	5508	5508
6	Maximum Expected Formation Pressure (psi)	1143	2406	2406
7	Expected gas gradient (psi/ft)	0.05	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.4	8.4	8.4
	Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	1012	2130	2130
10	Fracture Gradient at shoe (psi/ft)	Diverter	0.57	0.62
11	Fracture Pressure at shoe (psi)	Diverter	1497	3437
12	Surface pressure to break down shoe (psi)	Diverter	1366	3162
13	Maximum Anticipated Surface Pressure (psi)	Diverter	1366	2130

CASING PROGRAM

m

Hole Section	26"	17 1/2"	12 1/4"
Mud Weight	8.6	9.5	9.5
Buoyancy Factor	0.869	0.855	0.855
MASP (psi)	200	2130	2130
Gas Lift Pressure (psi)	0	0	1800
Casing Size (in)	24"	13.375"	9.625"
Setting Depth, MD (ft)	1400	2650	6820
Setting Depth, TVD (ft)	1400	2617	5508
Top of Casing, MD (ft)	0	0	0
Weight (lb/ft)	186	61	43.5
Grade	X-56	K-55	L-80
Threads	DQ S-60 MT	BTC	LTC
ID (in)	22.5	12.515	8.755
Drift diameter (in)		12.359	8.599
Collapse (psi)	1450	1540	3810
Burst (psi)	3060	3090	6330
Joint Strength (kips)	3068	633	825
Body Strength (kips)	3068	962	1005
Collapse Safety Factor	2.32	1.19	1.40
Burst Safety Factor	15.30	1.45	2.97
Tensile Safety Factor	9.40	2.66	2.33

Notes:

- 1) Burst is calculated on the greater of MASP or gas lift pressure.
- 2) Collapse is based on mud outside of an evacuated casing string.
- 3) Tension is based on buoyed weight of casing string + 100 kips overpull.

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Seafloor-1,400' (26" hole)	SW/Gel/Durogel Sweeps	8.6-8.8	<20	8.5-9.5	20-35	
1,400'-2,650' (17-1/2" hole)	SW/Gel/Gelite/Polypac	8.9 - 9.1	<8	8.5-9.0	18-30	23k-29k
2,650'-6,820' (12-1/4" hole)	SW/Gelite/Gel/SP-101	8.9 - 9.6	<6	8.0-9.5	18-25	23k-29k

Sea Floor –1,400' This interval will be drilled with a seawater / Durogel high viscosity sweeps with returns to the sea floor. Build seawater/Durogel sweeps with PV:YP ratio of 1:4+ using high rate of dispersion. Add Soda Ash after Durogel is dispersed to extend viscosity. It is imperative to make sure the hole is clean and stable to get the casing to bottom.

1,400'-2,650' The objective in this interval is to drill a 17 ½ inch hole from the 24 inch casing shoe to 2,650 ft and run 13 3/8 inch 61# casing from 2,650 ft. to surface. The fluid system recommended is a Seawater/MI Gel/Gelite/Polypac system. Maintain the 3 RPM reading higher than 10, with additions of Duovis. It is planned to ocean discharge the 17 ½" hole section per the approved NPDES Permit.

2,650'-6,820' The objective in this interval is to drill an 12 ¼ inch hole from the 13 3/8 inch casing shoe to 6820 ft and run 9 5/8 inch 43.5# casing from TD to surface. The fluid system recommended is a Seawater/MI Gel/Gelite/SP101 system. Maintain the 3 RPM reading higher than 10, with additions of Duovis.

Notes:

- 1) Operate solids control equipment to maintain drill solids as low as possible.
- 2) Maintain supply of ZnO₂ onboard to treat out H₂S.
- 3) A minimum amount of barite shall be kept on the platform at all times to raise the mud weight .5 ppg or as per MMS regulations.

Hydrogen Sulfide Considerations:

Both the Monterey, Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.
Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.
Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).
Read drill pipe pressure.
Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.
Shut down pump and close choke at the same time. SEE NOTE.
Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. **Assume any gas circulated to surface to have hydrogen sulfide potential.** Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

CEMENTING PROGRAM

24" Structural Casing

Objective: Cement 24" casing as an anchor for the diverter system and provide drilling fluid returns to surface. The 24" will be cemented back to the mud line. 40 feet of cement will be left inside the 24" casing on top of the stab-in guide shoe.

General information:

24", 186#, X-56 Casing 0' - 1400' (22.50" ID)

5", 19.5#, S-135 DP 0' - 1400' (4.276" ID)

Open Hole Size: 26" drilled, 32" assumed for volume calculations

Open Hole Volume Factor is 2.444 CF/FT (for 32" hole)

Shoe Joint Volume Factor is 2.823 CF/FT

Open Hole Excess 0% over estimated 32" hole

24" Conductor Pipe 3/2/2009

Well Data

Casing Size: 24"

Open Hole: 32"

Depth: 1400'/MD/ 1400' TVD

Mud Line: 847'

TOC 847'

BHST:80 deg. F BHCT: 80 deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Tail Volume			
24" Conductor Pipe in 32" O.H.	553	2.44	= 1349.32 cft
Shoe Joint	40	2.76	= 110.40 cft
			= 1459.72 cft

Cement System & Volumes

Preflush: 50 bbls Sea water

Class G with 10 gal/100 sx CaCl₂, 2 gal/100 sx FP-6L, 10 gal/100 sx CD-32L mix in seawater.

Tail Cement Volume: 1065 sks

Mix Weight: 16 ppg

Yield: 1.14 cft/sk

Total Liquid: 4.96 gal/sk

Mix Water Seawater

Thickening Time TBD

24 hrs C. S. TBD

48 hrs C. S. TBD

Note: Lab and field blend tests will be performed to verify slurry properties

13 3/8" Surface Casing

Objective: Set and cement 13 3/8" casing prior to drilling oil or gas bearing zones. The shoe of the 13 3/8" casing will provide a fracture gradient sufficient to drill through the zones of interest safely. A formation integrity or leak off test will be conducted after drilling out this shoe. The 13-3/8" will be cemented back to the mud line.

General Information:

13 3/8", 61#, K-55 Casing @ 2650' MD / 2617' VD (12.415" ID)

24", 186#, X-56 Casing (22.5" ID) Shoe at 1400'

Lap Volume Factor is 1.300 CF/FT

Open Hole Size: 17 1/2"

Open Hole Volume Factor is 0.6946 CF/FT

Shoe Joint Volume Factor is 0.8543 CF/FT (61# shoe)

Open Hole Excess 50% over theoretical

13 3/8" Surface Pipe

Well Data

Casing Size: 13 3/8" 61#

Open Hole: 17 1/2"

Depth: 2650'

Mud Line: 847'

TOC 847'

BHST: 116 deg. F BHCT: 90 deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Lead Volume			
13 3/8" Csg in 24" Casing	553	1.754	= 969.96 cft
13 3/8" Csg in 17 1/2 Open Hole	797	0.6946	= 553.60 cft
Excess 50%			= 276.80 cft
			= 1800.36 cft
Tail Volume			
13 3/8" Csg in 17 1/2 Open Hole	500	0.6946	= 347.30 cft
Excess 50%			= 173.65 cft
Shoe Joint 80 0.8542			= 68.34 cuft
			= 520.95 cft

Cement System & Volumes

Preflush: 40 bbls Seawater

Lead: +/- 600 sks Class G cement with additives to be determined

Cement Volume	610 sks
Mix Weight	11.6 ppg
Yield:	2.95 cuft/sk
Total Liquid	18.51 gal/sk
Thickening Time:	X hrs XX mins hrs/min
Mix Water	SEAWATER
24 hrs C.S.	XXX psi
Free Water	Zero

Tail: +/- 440 sks Class G cement with additives to be determined

Cement Volume	438 sks
Mix Weight	15.8 ppg
Yield:	1.19 cuft/sk
Total Liquid	5.41 gal/sk
Thickening Time:	X hrs/min
Mix Water	SEAWATER
24 hrs C.S.	XXXX psi
Free Water	Zero

9 5/8" Production Casing UNDER REVIEW

Objective: Cement 9 5/8" casing at Total Depth of the well. This casing string will be cemented back to the mud line in two stages and will be exposed to gas lift pressure. The first stage will bring cement to the 13 3/8" shoe at 2650' and will be 10% over caliper volume. The second stage w

General Information:

9-5/8" 43.5# L-80 Casing @ 7515' MD / 5603' VD (8.755" ID)

13 3/8", 61#, L-80 Casing (12.515" ID) Shoe at 2650' MD

9 5/8" x 13 3/8" stage collar at 2400' MD

Lap Volume Factor is 0.349 CF/FT

Open Hole Size: 12 1/4"

Open Hole Volume Factor is 0.3132 CF/FT

Shoe Joint Volume Factor is 0.4181 CF/FT

Open Hole Excess 35% over theoretical or 10% over caliper log – minimize excess due to surface handling constraints.

9 5/8" Producton Pipe 3/2/2009

Well Data First Stage

Additives and Pre-flush to be determined through BJ Services lab testing

Casing Size: 9 5/8" 43.5 #

Open Hole: 12 1/4"

Depth: 6820' MD/5508' TVD

Mud Line: 847'

Stage Collar 2400'

Temperatures BHST XXX deg. F BHCT: XXX deg. F

Volume Calculations	Depth	Volume Factor	Total Volume
	ft.	cu.ft./ft.	cu. ft.
Lead Volume			
9 5/8" Casing in 12 1/4" Open Hole	2150	0.3132	= 673 cf
Excess 35%			= 235 cft
			= 908 cft
Tail Volume			
9 5/8" Casing in 12 1/4" Open Hole	2000	0.3132	= 626 cft
Excess 35%			= 219 cft
Shoe Joint 80 0.42			= 33.60 cuft
			878 cft

9 5/8" Production Casing (contd)

Cement System & Volumes

Additives and Pre-flush to be determined through BJ Services lab testing

Well Data Second Stage

Casing Size: 9 5/8" 43.5# Casing Size: 13 3/8" 61#

Depth: 2400'

Mud Line: 847'

Stage Collar 2400'

Temperatures BHST: XXX deg. F BHCT: XX deg. F

Volume Calculations

	Depth ft.	Volume Factor cu.ft./ft.	Total Volume cu. ft.
Lead Volume			
9 5/8" Csg in 13 3/8" Csg	777	0.349	= 271.17 cft
Excess 5%			= 13.56 cft
			= 284.73 cft
Tail Volume			
9 5/8" Casing in 13 3/8" Csg	777	0.349	= 271.17 cft
Excess 5%			= 13.56 cft
			= 284.73 cft

Platform Gail Diverter System Description

The diverter line system for Platform Gail will include 8" North and South overboard lines located along the East end of the Main Deck (see Diverter Line Layout drawing). An 8" East and West line will join the diverter spool to the overboard lines at a targeted cross.

Three 8" hydraulically controlled ball valves will be used, one main valve and two overboard valves. The main valve will be adjacent to the diverter spool (see attached Diverter Stack drawing) and will open automatically when the 21-1/4" 2M diverter element is closed. Both overboard valves, located on either side of the targeted cross, will normally remain open. The prevailing winds should allow the simultaneous venting through both lines, however, the overboard line valves will be hydraulically controlled so that either North or South can be selected.

PLATFORM GAIL
DIVERter STACK

21-1/4" 2M HYDRILL MSP
PREVENTOR

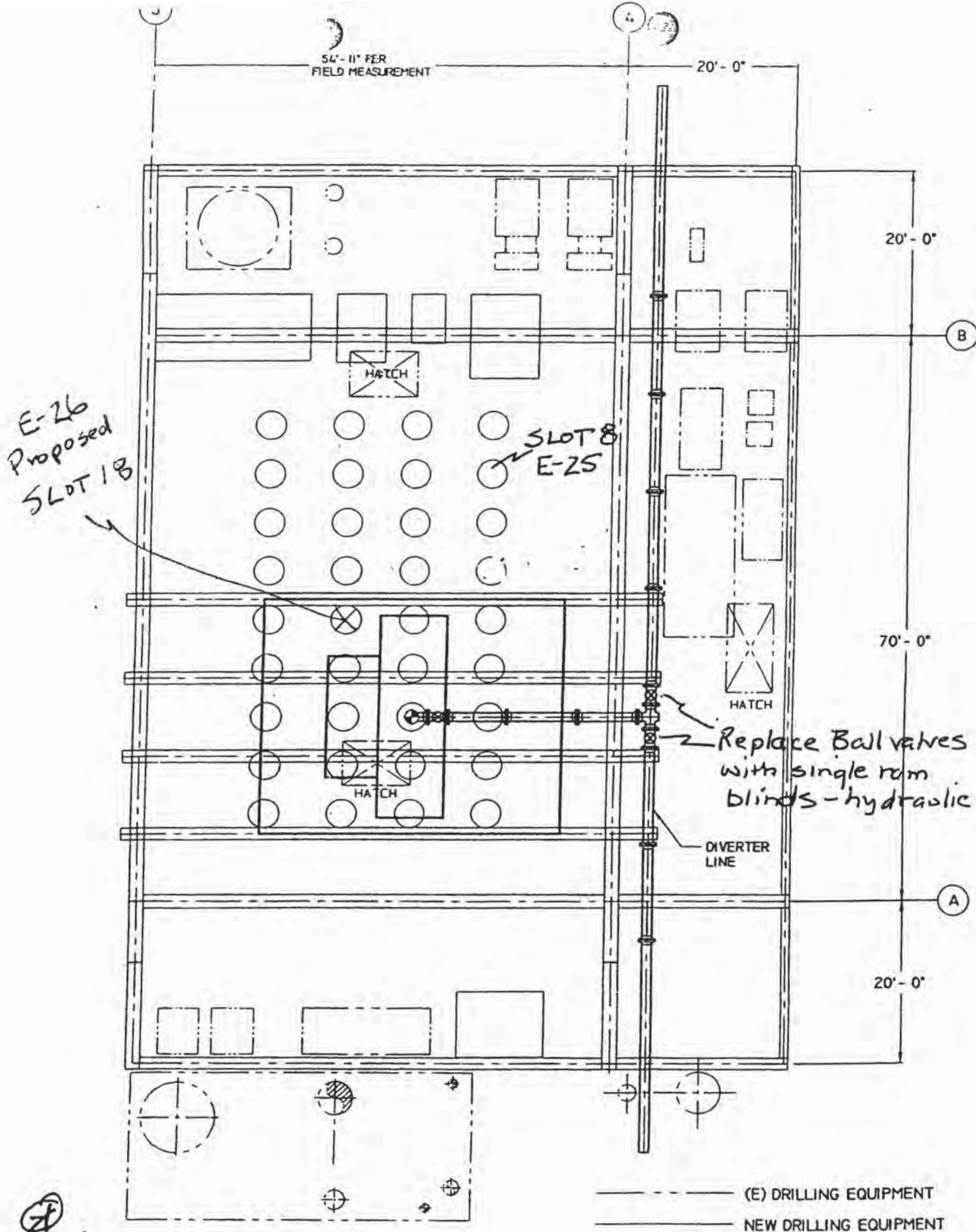
FLOWLINE

FILL UP LINE

8" DIVERter LINE

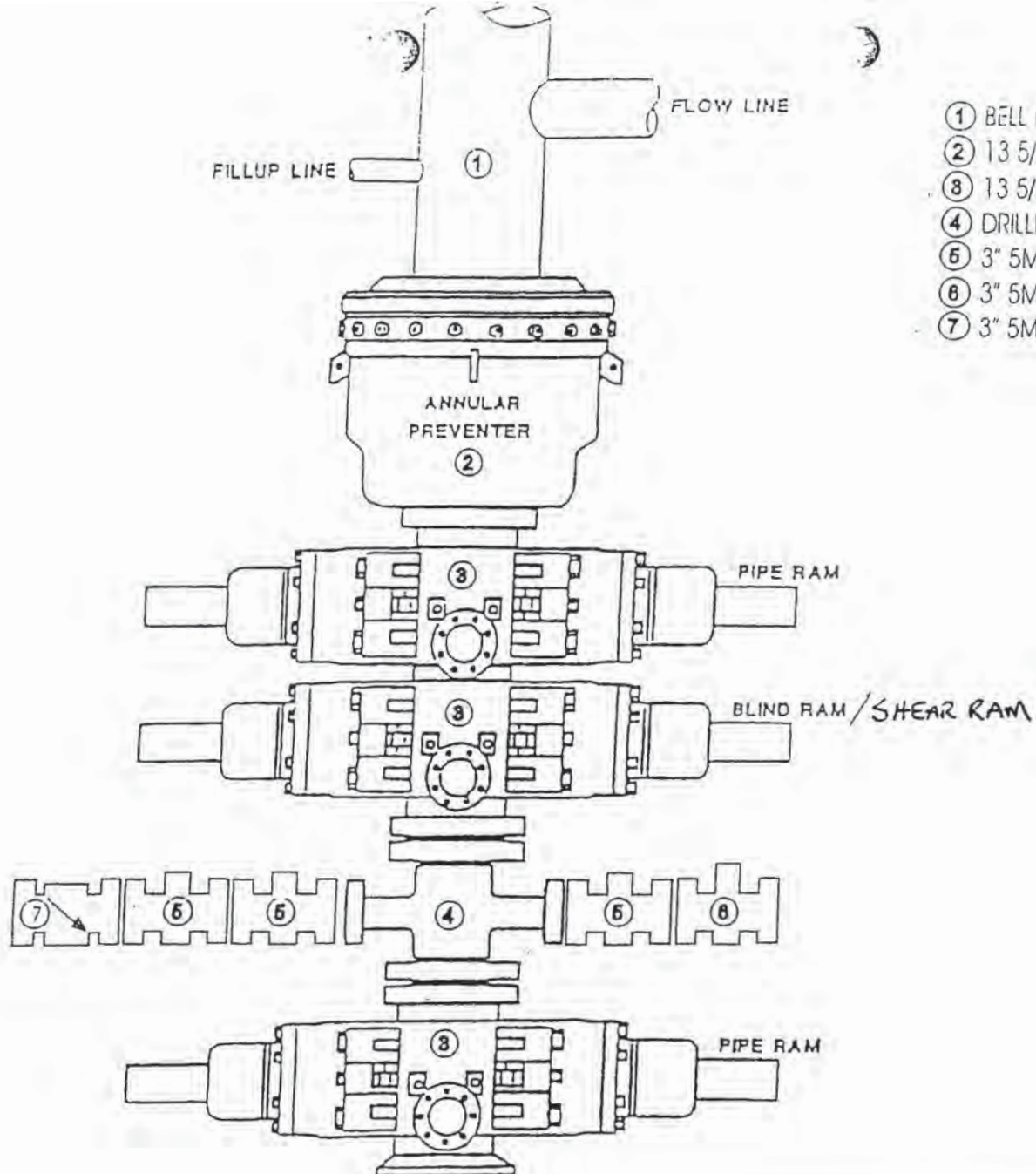
8" HYD. OP
VALVE

REV	1	ISSUED FOR PERMIT	7-11-02				
 VENOCO INC. 5464 Carpinteria Ave., Suite J Carpinteria, CA. 93013-1423							DR ACS CH
							DR APP.
DIVERter STACK PLATFORM GAIL							ENGR. JI
							OPR' G. DEPT. AP
SCALE NTS DATE 7-11-02							ENG' R. DEPT.
A						C. C	11365
						S O	

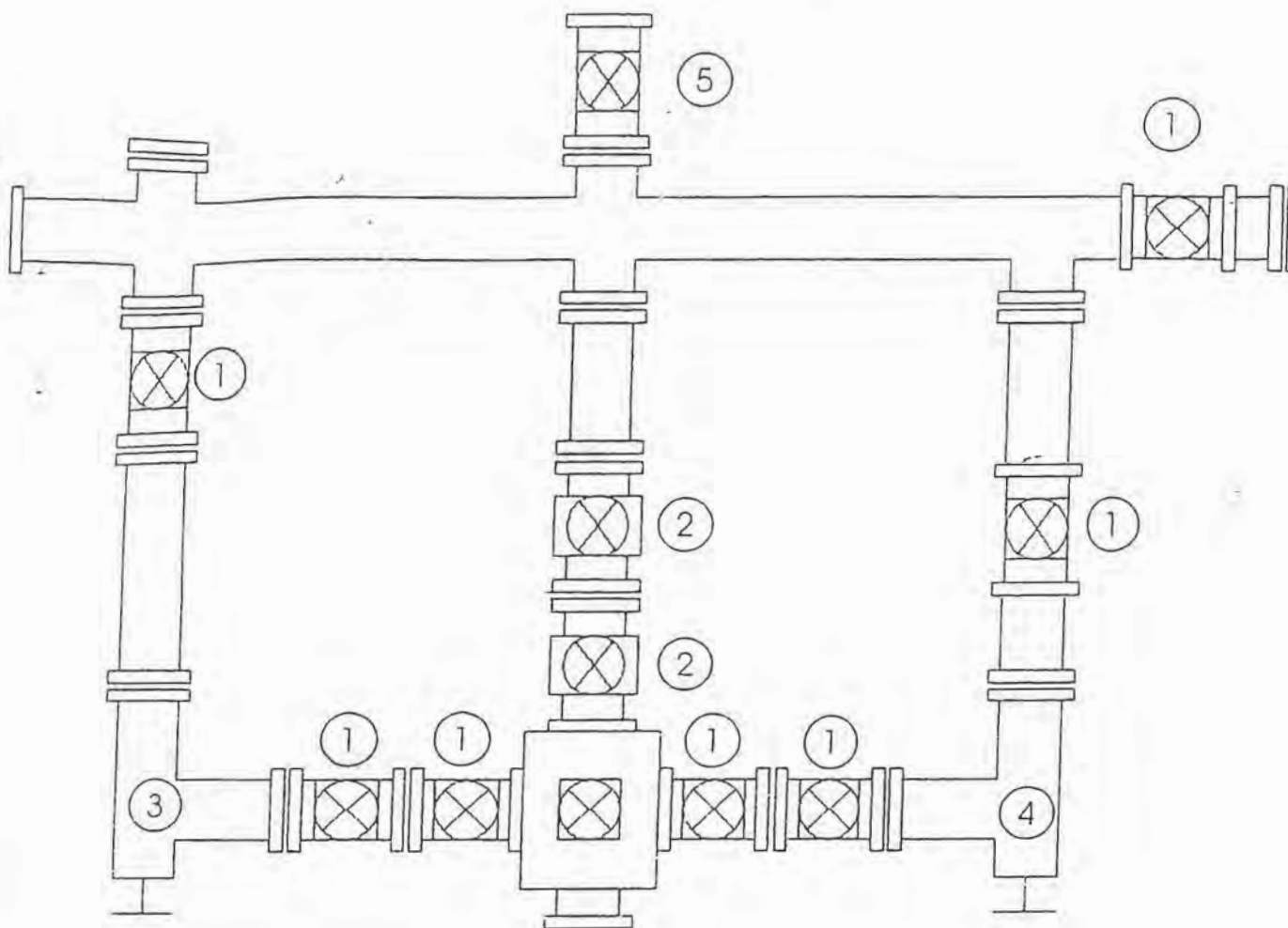


NOTE: LAY-OUT WILL
BE SHIFTED TO
SLOT #18 - SAME COMPARTMENT

DIVERTER LINE LAYOUT
PLATFORM GAIL MAIN DECK PLAN
O.S. = 76'-6"



BLOWOUT PREVENTION SYSTEM PLATFORM GAIL



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD PLATFORM GAIL

HALLIBURTON

North Reference Sheet for Block # 47N 60W - (Slot 18) E-26 - Wellbore #1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference
Vertical Depths are relative to rt @ 108.00ft. Northing and Easting are relative to (Slot 18) E-26

Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 116° 15' 0.000000 W, Longitude Origin 0° 0' 0.000000 E, Latitude Origin 33° 52' 59.999999 N

False Easting 2,000,000.00ft, False Northing 0.00ft, Scale Reduction 1.00004935

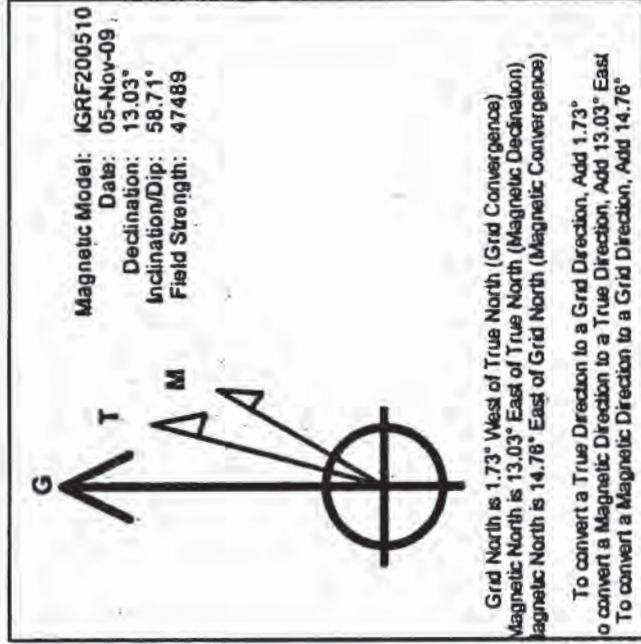
Grid Coordinates of Well 727,032.45 ft N, 1,048,696.33 ft E

Geographical Coordinates of Well 34° 07' 30.72" N, 119° 24' 00.25" W

Grid Convergence at Surface is -1.73°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,819.73ft
the Bottom Hole Displacement is 2,828.08ft in the Direction of 303.28° (Grid)

Magnetic Convergence at surface is -14.76° (5 November 2009, IGRF200510)



VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-26 NEW WELL DRILLING PROGRAM
API# 04-311- 20xxx00
LEASE OCS-P-0209
January 12, 2009
Attachment to MMS Permit - Drilling Program

Objective: Development well E-26 will be drilled and it will be a dual completion well with completion from the short string in the Monterey Formation and injection into the long-string completion in the Topanga Formation. Well TD's in OCS-P- 0209 Lease.

Surface Location: OCS-P-205 - Slot No. 18 (X= 1,046,696.33' & Y= 727,032.45')

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Proposed TD: OCS-P-209 6820' MD/ -5460' VSS/ 5508' TVD

TD Location: 1605.71' N and 2446.15'W' or (X = 1,044,250.18' and Y = 728,638.16')

Markers:	MD	TVD	VSS	Press	EMW	Comments
13 3/8" Casing	2650	2617	-2509			
T/ Pico - 1 st Gas)	2758	2713	-2605	1146	8.5	Estimated BHP
T/ Monterey M1	4644	4059	-3951	1383	6.7	Estimated BHP
Monterey M4	5236	4465	-4357	1525	6.7	Estimated BHP
T/ Upper Topanga	6342	5193	-5085	1800	6.8	Estimated BHP
T/ Lower Topanga	6748	5461	-5353	1606	5.8	Estimated BHP
T/ Upper Sespe	6780	5481	-5373	1700	6.1	May not be penetr: an objective – zone under gas injection
TD	6820	5508	-5400			

<u>Proposed Casing:</u>	<u>MD</u>	<u>TVD</u>
24", 186# (.75" Wall), X-56, Dril-Quip S-60	1400'	1400'
13 3/8", 61#, K-55, Buttress	2650'	2617'
9 5/8", 43.5#, L-80, LT&C	6820'	5508'



United States Department of the Interior

MINERALS MANAGEMENT SERVICE
Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010-6064



7106

Jan 22, 2010

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation & Production

Subject: Geologic Hazards Analysis for Development Well P-0209 E-26

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Sockeye Oil Field
Lease: OCS-P 0205 (Bottom location in OCS-P 0209)
Platform: Gail
Well/Slot: E-26 in slot 18 (New Well)
Objective: Duel Completion: Monterey production (short string),
Lower Topanga injection (long string)
API: 04-311-20XXX-00

Surface Location: X = 1,046,696 ft
Lambert Zone 6 Y = 727,032 ft

Estimated Top of X =
Productive Zone Y =

Estimated Bottom X = 1,044,250 ft
Hole Location Y = 728,638 ft

Elevation of KB: + 107 feet
Est. Total Depth (measured): - 6,820 feet (RKB)
Est. Total Depth (true vert.): - 5,508 feet (RKB)

Water Depth (Gail): 739 feet +/-

TAKE PRIDE
IN AMERICA 

Overview of Proposal

Venoco, Inc., designated operator of the Sockeye Field within the Santa Clara Unit, proposes to drill well OCS-P 0209 #E-26 as a dual completion into the Monterey Formation (short string) for production and Lower Topanga (long string) for injection. The objective of the well is to exploit proven reservoirs in the Miocene Monterey M4 and injection into the Lower Topanga. The well is planned with a new casing program and is a new borehole, not a re-drill. The closest existing production well is E-11 to the south.

The proposed well will be drilled using Kenai Rig #2 on Platform Gail to a bottom hole location in Lease OCS-P 0208, northeast of the platform.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Pico	Pliocene	2,758 feet	2,713 feet
Top Monterey M1	Miocene	4,644 feet	4,059 feet
Top Monterey M4	Miocene	5,236 feet	4,465 feet
Upper Topanga	Miocene	6,342 feet	5,193 feet
Lower Topanga	Miocene	6,748 feet	5,461 feet

2. Potential Oil and Gas Reservoirs

Formation	Age	(TVD)	Thickness	HC Type
Monterey M1 & M4*	Miocene	4,059 feet	400 +/- feet	Oil/Gas

* Operator's stated objective.

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of P-0205 E-5. The present operator and former operator of the Sockeye field have extensive drilling experience in this field. The proposed drilling program is similar to those utilized in drilling the production wells in

the field. In the event a new pool is discovered, unrelated to the Main zones of the field, the operator should be prepared for higher than expected formation pressure.

5. Faulting and Folding

Several important faults have been mapped by the Operator. Faulting is an important consideration for the success of the well. The well as mapped crosses a minor northwest-southeast trending fault in the north-east corner of block 205.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The P-0209-2 well did not find near surface gas, but did record gas shows in the Pliocene section. The closest production well E-11 did not have any usual gas kick or anomalies on the mud log, however a number of gas zones are encountered from the top of the Pico Formation to the top of the M1 Monterey.

7. Possible Over-pressured or Depleted Zones

Several ditch gas kicks are noted in the mud logs for E-11. However, as noted above, in the event of a new pool discovery the operator should be prepared for higher than expected formation pressures, similar to the original formation pressures noted at the discovery of the Sockeye field. The Operator has included a well control contingency plan with the Application.

8. Logging/Coring

Mud logging will be continuous out of the casing shoe of the 13 3/8" to the total depth. There will be no logging while drilling. An MWD/GR will be used for directional surveys. Electric Logging will have 2 runs:

1- Platform Express – HALS-HGNS from 4120 MD to TD

2- FMI-GR from 4120 MD to TD.

Sixty feet of coring will be done in the M1/M2 Monterey.

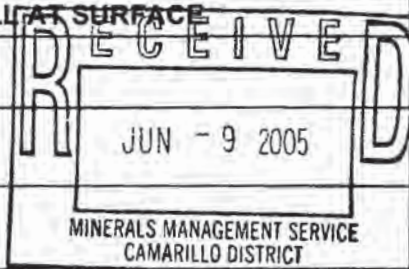
9. Other Comments

The Monterey Formations may contain hydrogen sulfide gas. Oil and associated gas shows should be present throughout the entire Monterey section to be drilled.

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting Office) Venoco, Inc. 5464 Carpinteria Ave. Suite J Carpinteria, CA 93013-1423
4 WELL NAME (Current) E-7	5 SIDETRACK NO (Current) 00	6 BYPASS NO (Current) 00	
7 PROPOSED START DATE 20050620	8 PLAN CONTROL NO (New Well Only)		
9 API WELL NO (Current Sidetrack / Bypass) (12 Digits) 043112067300			

WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE	
10 LEASE NO P-0209	11 AREA NAME 6B	15 LEASE NO P-0205	16 AREA NAME 6B
12 BLOCK NO 4761	13 LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 729783.13 N	17 BLOCK NO 4661	18 LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 1045108.35 E
19 LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 727056.46 N	20 LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska) 1046687.37 E		



LIST OF SIGNIFICANT MARKERS ANTICIPATED			
20 NAME Monterey (Top)	21 TOP (MD) 5380'	20 NAME Monterey M4	21 TOP (MD) 5695'
Upper Topanga	6452'	Lower Topanga	6708'
Sespe C1	7179'		

22 LIST ALL ATTACHMENTS (Attach Complete Well Prognosis and Attachments Required by 30 CFR 250 414(B) through (G) or 30 CFR 250 1617(C) and (D), As Appropriate)

Redrill Program (includes: design criteria for well, BOPE, casing program, drilling prognosis), cementing program, drilling mud program, directional program and surface/subsurface well location plat map, Supplemental APD Information Sheet

23 AUTHORIZING OFFICIAL (Type or Print Name) Roger Hamson	24 TITLE V. P. Southern Assets
25 AUTHORIZING SIGNATURE <i>[Signature]</i> for Roger Hamson	26 DATE 20050606

THIS SPACE FOR MMS USE ONLY		
APPROVED ☒ With Attached Conditions ☐ Without Conditions	BY <i>[Signature]</i>	TITLE District Manager
API WELL NO ASSIGNED TO THIS WELL 04 311 20673 01	DATE 6/24/05	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 2 1/4 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, N.W., Washington, DC 20240.

Supplemental APD Information Sheet

1 OPERATOR NAME Venoco, Inc		5 WELL NAME (Proposed) E-7		6 TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11 WATER DEPTH 739'		12 ELEVATION AT KB 108'	
2 API WELL NO (Proposed) (12 Digits) 043112067301		3 BOTTOM LEASE NO (Proposed) P-0209		7 SIDETRACK NO (Proposed) 01		8 BYPASS NO (Proposed) 00		13 H ₂ S DESIGNATION ☒ KNOWN ☐ UNKNOWN ☐ ABSENT	
4 TOTAL DEPTH (Proposed) MD 7258'		9 RIG NAME Kenai Drilling Rig No 2		10 RIG TYPE PF		14 H ₂ S ACTIVATION PLAN DEPTH FT (TVD) 5025' MD / 4127' TVD (Kick off Point)			

16. ENGINEERING DATA

Hole Size (in)	Casing (Indicate if Liner)	Casing Size (in)	Weight (lb/ft)	Burst Rating (psi)	Type of Connection	MMSF (psi)	Safety Factors			Top of Liner	Casing Depth (feet)		Well head Rating (psi)	BOP Size (in)	Test Pressures			Current (Feet)	Drilling Fluid Type (Oil Base Water Base Synthetic)
							B	C	T		MD	TVD			Annular Diverted (psi)	Casing Test (psi)	MW Used for Test (ppg)		
26"	Conductor	24"	201#									1407'							
			X-52									Existing							
22"	Surface	18 5/8"	117 5									2043'							
			K-55									Existing							
17 1/2"	Production	13 3/8"	88 & 72									4959'							
			L-80									Existing							
12 1/4"	Long String	9 5/8"	40 & 47	5750								5000'							
			L-80	3090								4113'							
8 1/2"	Prod Liner	7"	26	7240								7258'							
			L-80	5410								5964'							

18 CONTACT E-MAIL ADDRESS

jhood@venoco.com

17 CONTACT PHONE NO

(805) 745-2164

19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more? ☒ YES ☐ NO

20. REMARKS:

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain well status, well and casing test, and well casing configuration data. MMS uses this information to have accurate data and information on all wells under its jurisdiction and to ensure compliance with approved plans. Responses are necessary (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.186. An agency may not conduct or sponsor an information collection and a person is not required to respond to a collection of information unless it displays a currently valid OMB Control Number. Send comments regarding this burden estimate or any other aspect of this form to the Information Collection Clearance Office, Mail Stop 4230, Minerals Management Service, 1848 C Street NW, Washington, DC 20240.

MMS FORM MMS-123S (October 2002 - Supersedes all previous versions of form MMS-123S which may not be used)

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-7 REDRILL PROGRAM
API# 04-311-20673-01
LEASE OCS-P-0205
June 6, 2005

Objective: Redrill the well to the northern fault block in an up-structure location in the Upper and Lower Topanga and Upper Sespe intervals. The well will be a dual completion with the long string producing the gravel packed Lower Topanga / Upper Sespe. The Upper Topanga will also be a gravel packed completion and produce through the short string.

Surface Location: OCS-P-205, Slot No. 1 (X= 1,046,687.37' & Y= 727,056.46')

Elevation: 739' WD, 108' Above MLLW, 847' Ocean Floor to Rig Floor

Proposed TD: OCS-P-209; 7258' MD / 5964' TVD / -5850' SS

TD Location: 2726.67' N and 1579.02' W or (X = 1,045,108.35' and Y = 729,783.13')

<u>Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. Press.(psi)</u>
M2	5380'	4344'	-4230'	1800 psi
M4	5695'	4553'	-4442'	1800 psi
Upper Topanga	6452'	5168'	-5054'	1300-1400 psi
Lower Topanga/Sespe	6708'	5407'	-5293'	1000-1200 psi
Sespe C-1 Sand	7179'	5885'	-5771'	1000-1300 psi

Existing Casing:

24", 201#, X-52	1407'	Cmtd w/ 1140 cf
18 5/8", 117.5#, K-55	2043'	Cmtd w/ 1655 cf, Squz w/ 345 cf @ 2000'
13 3/8", 68 & 72#, L-80	4959'	Cmtd w/ 3542 cf, DV @ 2131'
9 5/8", 40 & 47#, L-80	7572'	Cmtd w/ 3140 cf, Top @113' 47#, DV @ 4756'

Proposed Casing:

24", 201#, X-52	1407' (Existing)
18 5/8", 117.5#, K-55	2043' (Existing)
13 3/8", 68 & 72#, L-80	4959' (Existing)
9 5/8", 40 & 47#, L-80	5025' (Existing)
7", 26#, L-80, Hydril 513	4800'-7258' (New-KOP @ +/- 5025')

The well will be abandoned as per the attached drawing. The work is being performed under a previously submitted APM.

Drilling Procedure

Note: This procedure picks up from the abandonment procedure submitted in the approved APM (approved 6/2/05). The existing completion in the well will be abandoned, the casing will have been tested to 3000 psi and the BOP will have been tested to 250/3000 psi with 3-1/2" & 5" drill pipe. The well will be full of mud and ready for sidetracking. The 13 5/8" BOPE (RSRDA) will be configured for drilling operations, with 5" drill pipe rams in the top of the double gate and blind rams in the bottom. The 2 7/8" to 5" VBR rams will be located in the single gate below the mud cross. All tests will be recorded on a chart for the MMS to review. The BOPE will be tested every 14 days during the drilling phase of the operations.

1. Make up a 9 5/8", 40# bottom trip whipstock and starting mills. Pick up an MWD. Run the equipment in the hole on the 5" drill pipe in the derrick to 30' above the CIBP at +/-5025'. Orient the whipstock 45 degrees right of high side using the measurements from the MWD. Set the whipstock on the CIBP and shear the tools off the whipstock face. Condition the mud in the hole to higher viscosity for milling the window and carry the metal cuttings out of the hole. Mill and dress the window as required to obtain good exit point for sidetrack. Drill enough rathole to pass all mills through the window. Mills must smoothly pass through the window before finalizing milling operations. Perform a Formation Integrity Test to 11.0 ppg EMW (13 3/8" casing shoe at 4958' had a 12.2 ppg EMW leak off test). Reduce the viscosity of the mud to desired drilling parameters. Pull out hole and lay down the milling tools.
2. Pick up an 8 1/2" bit on a steerable directional drilling assembly including MWD. Run in the hole and sidetrack the well. Continue directionally drilling an 8 1/2" hole from 5025' to the total depth of 7258' MD / 5964' TVD. The 8 1/2" hole will be drilled with a SP 101 drilling fluid system. The well will be drilled through the Monterey, Upper and Lower Topanga and Upper Sespe formations that are pressure depleted. There could be problems with lost circulation and differential sticking. Make bit and wiper trips as necessary.

Notes:

- See the attached drilling fluids program.
- Review the attached directional program.
 1. Target No. 1: Upper Topanga; X=1,045,132.06, Y=729,700.06 or 2644' N and 1555' W at 6452' MD / 5169' TVD / -5054' SS
 2. Target No. 2: Total Depth; X=1,045,108.35, Y=729,783.13 or 2727' N and 1579' W at 7258' MD / 5964' TVD / -5850' SS
- Mud loggers to start upon drilling out of the 9 5/8" casing window.
- Some small faults will be crossed when drilling through the M4 Monterey interval at approximately 5695' MD.

3. Circulate and condition the mud for logging. Wipe the hole to the 9 5/8" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
4. Rig up wire line and prepare to run open hole logs (see attached logging program). Condition the hole if necessary between runs.
5. Run back to bottom with an 8 1/2" bit and circulate and condition the hole for the 7" liner. Wipe the hole to the 9 5/8" casing shoe. Pull out of the hole and stand the 5" drill pipe back.

6. Rig up casing crew and run the 7", 26#, L-80, Hydril 513 liner from +/- 4800' to 7258' as follows:

1. 7", 26#, L-80 Float Shoe
2. 1 Joints of 7", 26#, L-80 Casing
3. 7", 26#, L-80 Float Collar
4. 1 Joint of 7", 26#, L-80 Casing
5. 7", 26#, L-80 Landing Collar
6. +/- 2378' of 7", 26#, L-80 Casing
7. 7", 26#, Hyflo II Hydraulic Liner Hanger
8. RS Nipple with 6.188" Profile
9. ZXP Liner Top Packer, 7" x 9 5/8", HR Profile w/ 10' tie-back extension

Notes:

- Centralize the 7" liner inside the 8 1/2" open hole using positive stand-off centralizers with stop rings. Centralizer spacing will be determined after the directional work is completed. Consider running one centralizer in the middle of each joint through the production intervals (approximately 30 centralizers needed).
 - Drift DP to ensure cementing dart will pass.
 - Run in the hole slowly to avoid surging the formation.
 - A circulating swage with a safety valve will be on the rig floor.
7. Run the liner in the hole, tag bottom and pick up 5' and circulate the well until the returns are clean. Reciprocate the liner while circulating. Drop the setting ball and set the liner hanger.
 8. Mix and pump the cement job as per the attached program. Bump the plug with 500 psi above the final circulating pressure. Bleed the pressure back and check the floats. Pick up and set the liner packer at the top of the liner hanger. While waiting on cement, pull out of the hole and rack the 5" drill pipe back and lay down any drilling tools that will not be needed.

Notes:

- See attached cementing program for slurry specifications.
- Cement volumes are based on 50% excess in the open hole.
- Do not circulate at the top of the liner prior to pulling out of the hole.
- Set the liner 5' off bottom.
- The 3 1/2" drill pipe needed to clean out the 7" liner will be in the derrick.

9. Pick up an 8 1/2" bit and run in the hole. Clean out to the top of the liner at 4800'. Pressure test the liner top to 3000 psi. Pull out of the hole.
10. Pick up a 6 1/8" bit and 3 1/2" drill pipe and run in the hole. Clean out the 7" liner to the landing collar at +/- 7173'. Pressure test the 7" liner to 3000 psi. Displace the drilling fluid out of the hole with clean filtered sea water. Circulate the well until return fluids are clean. Pull out of the hole with the 3 1/2" drill pipe.
11. Pick up and run in the hole with a 7", 26# casing scraper. Circulate the well with clean filtered sea water. Pull out of the hole with the drill pipe.
12. Rig up wireline and run a cement bond log (USIT/GR) across the 7" liner. Squeeze the liner if necessary
13. A detailed completion procedure will be provided after the open hole logs have been evaluated. After successfully completing the previous steps (esp. casing test to 3000 psi), close the blind rams and change the upper pipe rams from 5" to 2-3/8" in preparation for completion activities.

GENERAL COMPLETION PROCEDURE

Note: For the completion mode, the 13-5/8" 5M BOPE will be configured with 2-3/8" pipe rams in the top of the double gate and blind rams in the bottom. The 2 7/8" to 5" VBR rams will be located in the single gate below the mud cross. Prior to initiating completion operations below, the BOP will be tested with 2-3/8", 2-7/8", 3-1/2" and 5" pipe to 250/3000 psi (the blind rams to 250/3000 psi). All tests will be recorded. The BOPE will be tested every 7 days during the completion phase of the operation.

1. Perforate the Lower Topanga / Upper Sespe interval with 12 SPF big hole TCP guns.
2. Run a 4" SSWW screen and gravel pack the Lower Topanga / Upper Sespe interval. Isolate the gravel packed interval.
3. Perforate the Upper Topanga interval with 12 SPF big hole TCP guns.
4. Run a 4" SSWW screen and gravel pack the Upper Topanga.
5. Run the dual production completion equipment with the long string producing from the Lower Topanga/Upper Sespe. The short string will produce from the Upper Topanga.
6. Rig down and move the rig to the next well.

Vertical to 1400'
 Max Angle: 58 deg @4900, 31 deg @8900
 D.F. Elevation: 113'
 D.F. to Tubing Head: 62'
 Water Depth: 739'
 Tree: FMC 5000 PSI WP

SOCKEYE FIELD **WELL E-7**

Drawing Revision 6/2/05 JLH

Lease: OCS-P-0209

Completion Date: 3/21/89
 Recompletion: 10/9/92, 11/23/94,
 3/20/96, 7/28/98

PROPOSED ABANDONMENT

+/- 5025' Bridge Plug for sidetrack

Casing filled with 9.6 ppg drilling mud from
 6250' to 5025'. Casing and cement pressure
 tested to 3000 psi for 30 minutes.

Cement retainer +/- 6425'. 25 CF of cement
 squeezed below retainer. 75 CF balanced on
 top of retainer. Top of cement 6250'.

Perforation Detail

Upper Topanga 6524-6548' 12spf- 46" Prod 7/98
 Upper Topanga 6556-6560' 12spf-.46" Prod 7/98
 Lower Topanga 6806-6810' 14spf-.95" Abdn 7/98 (Prod 3/96)
 Upper Sespe 6835-6855' 22spf-var Abdn 7/98 (14spf-.95" 3/96, 4spf-24"
 10/92, 4spf-32" 10/91)
 Upper Sespe 6861-6868' 20spf-var Abdn 7/98 (14spf-.95" 3/96, 6spf-1/2"
 11/94)
 Upper Sespe 6897-6912' 8spf-1/2" Abdn 7/98 (Prod 3/89)
 Upper Sespe 6924-6934' 8spf-1/2" Abdn 7/98 (Prod 3/89)
 Upper Sespe 6946-6952' 8spf-1/2" Abdn 7/98 (Prod 3/89)
 Upper Sespe 6973-6985' 8spf-1/2" Abdn 7/98 (Prod 3/89)
 Upper Sespe 6986-7008' 8spf-1/2" Abdn 7/98 (Prod 3/89)
 Upper Sespe 7028-7066' 8spf-1/2" Abdn 7/98 (Prod 3/89)
 Upper Sespe 7148-7180' 8spf-1/2" Abdn 7/98 (Prod 3/89)

24" 201# X-52 CSG to 1407'

18 5/8" 117.5# K-55 CSG to 2024'

Stage Collar in 13-3/8" csg @2131'

Stage Collar in 9-5/8" csg @4756'

13 3/8" 68# L-80 CSG to 4958'

6445' Baker "SC1-L" Packer/Hanger
 6450' Mill Out Ext.
 6455' Baker "S" Sliding Sleeve
 6458' Baker Lower Extension
 6480' Blank Liner (5 1/2", 17#, L-80)
 6497' Armored wire wrapped liner (5 1/2"
 inner liner w/ 12 mesh screen, 6 5/8"
 outer liner)
 6570' Bull Plug

Gravel Packed w/ 20-40 mesh Low Fine
 sand

6539' Top of FILL in Screen (Wireline - 5/16/00)

6524- 6548
 6556- 6560

6656' Baker "N-1" Perm. Bridge Plug

Bad spots in casing: 6816, 6836' - 6967'

JUNK: 71' of 3-1/2" D P @ 6863'

6986' Baker "N-1" Bridge Plug

JUNK: 25' length 2-1/8" perf gun @ 7363'

7485'- 7572' Cement Plug

9 5/8" 40# L-80 CSG to 7572'
 (top 113' is 47#)

7581'- 8350' Cement Plug

JUNK: @ 8352' (DLL logging tool)

TD: 8900' PBTD: 6986'

Vertical to 1400'
 Max Angle: 58 deg @4900, 31 deg @8900
 D.F. Elevation: 113'
 D.F. to Tubing Head: 62'
 Water Depth: 739'
 Tree: FMC 5000 PSI WP

SOCKEYE FIELD WELL E-7

Lease: OCS-P-0209

Completion Date: 3/21/89
 Recompletion: 10/9/92, 11/23/94,
 3/20/96, 7/28/98

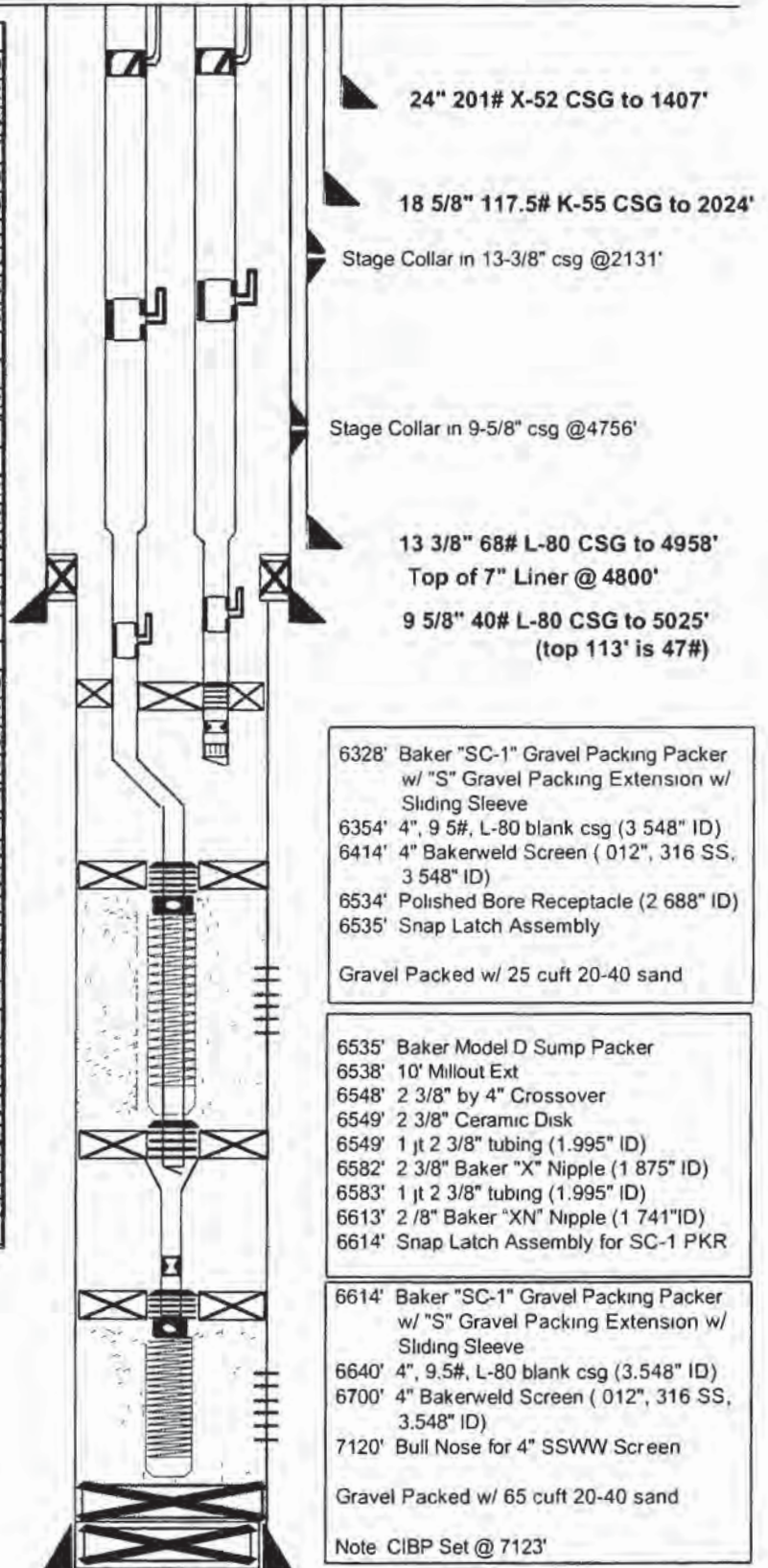
PROPOSED COMPLETION

Short String Description	ID	LENGTH	DEPTH
KB		52.00	0
Dual Tbg Hanger		1.00	52
32 jts 2-7/8" 6 5# L-80 8rd EUJE SC-Dbl Bev tbg	2.441"	964.00	53
2-3/8" Baker "T-5" SSSV w/ XO & Pups	1.875"	13.00	1017
96 jts 2-7/8" tbg as above	2.441"	2880.00	1030
2-3/8" GLMA-1 Mandrel (CLV-1.0R) w/ XO & Pups		14.00	3910
28 jts 2-7/8" tbg as above	2.441"	840.00	3924
2-7/8" by 2-3/8" Crossover		1.00	4764
44 jts 2-3/8" 4 6# L-80 EUJE SC Bev tbg	1.995"	1320.00	4765
2-3/8" GLMA-1 Mandrel (9/64" Orifice) 6085		6.50	6085
2 jts 2-3/8" tbg as above	1.995"	60.00	6091
Locator Sub		1.00	6151
Seal Assembly		9.00	6152
Bottom of Baker GT dual packer	2.441"	10.00	6161
Crossover 2-7/8" EUJE Box by 2-3/8" EUJE Pin		1.00	6171
1 jt 2-3/8" 4 6# L-80 EUJE tbg	1.995"	30.00	6172
2-3/8" Baker "X" Nipple	1.875"	1.24	6202
1 jt 2-3/8" tbg as above	1.995"	31.00	6203
2-3/8" Baker hydro-lmp sub w/ wireline re-entry guide	1.906"	1.48	6234
Tail			6236
Long String Description			
KB		52.00	0
Dual Tbg Hanger		1.00	52
34 jts 2-7/8" 6 5# L-80 8rd EUJE SC-Dbl Bev tbg	2.441"	989.00	53
2-7/8" Baker "T-5" SSSV	2.31	4.75	1042
123 jts 2-7/8" tbg as above	2.441"	3690.00	1047
2-7/8" GLMA-1 Mandrel (CLV-1.0R)		6.15	4737
1 jt 2-7/8" tbg as above	2.441"	30.00	4743
2-7/8" by 2-3/8" Crossover		1.00	4773
45 jts 2-3/8" 4 6# L-80 EUJE SC Bev tbg	1.995"	1350.00	4774
2-3/8" GLMA-1 Mandrel (9/64" Orifice)		6.50	6124
1 jt 2-3/8" tbg as above	1.995"	30.00	6131
Baker Model "GT" Dual Pkr w/ Scoophead Ass'y	2.441"	10.00	6161
Crossover - 2-7/8" 8rd box by 2-3/8" Hydnl 511 Pin		1.00	6171
11 jts 2-3/8" 4 6# L-80 Hydnl 511 tbg	1.995"	330.00	6172
2-3/8" Baker "X" Nipple Hydnl 511	1.875"	1.00	6502
1 jt 2-3/8" tbg as above	1.995"	30.00	6503
Crossover - 2-3/8" Hydnl 511 box by 2-3/8" 8rd pin	1.995"	1.00	6533
Seal Assembly w/ locator sub w/ dip tube		16.00	6534
Tail			6550

Proposed Perforation Detail

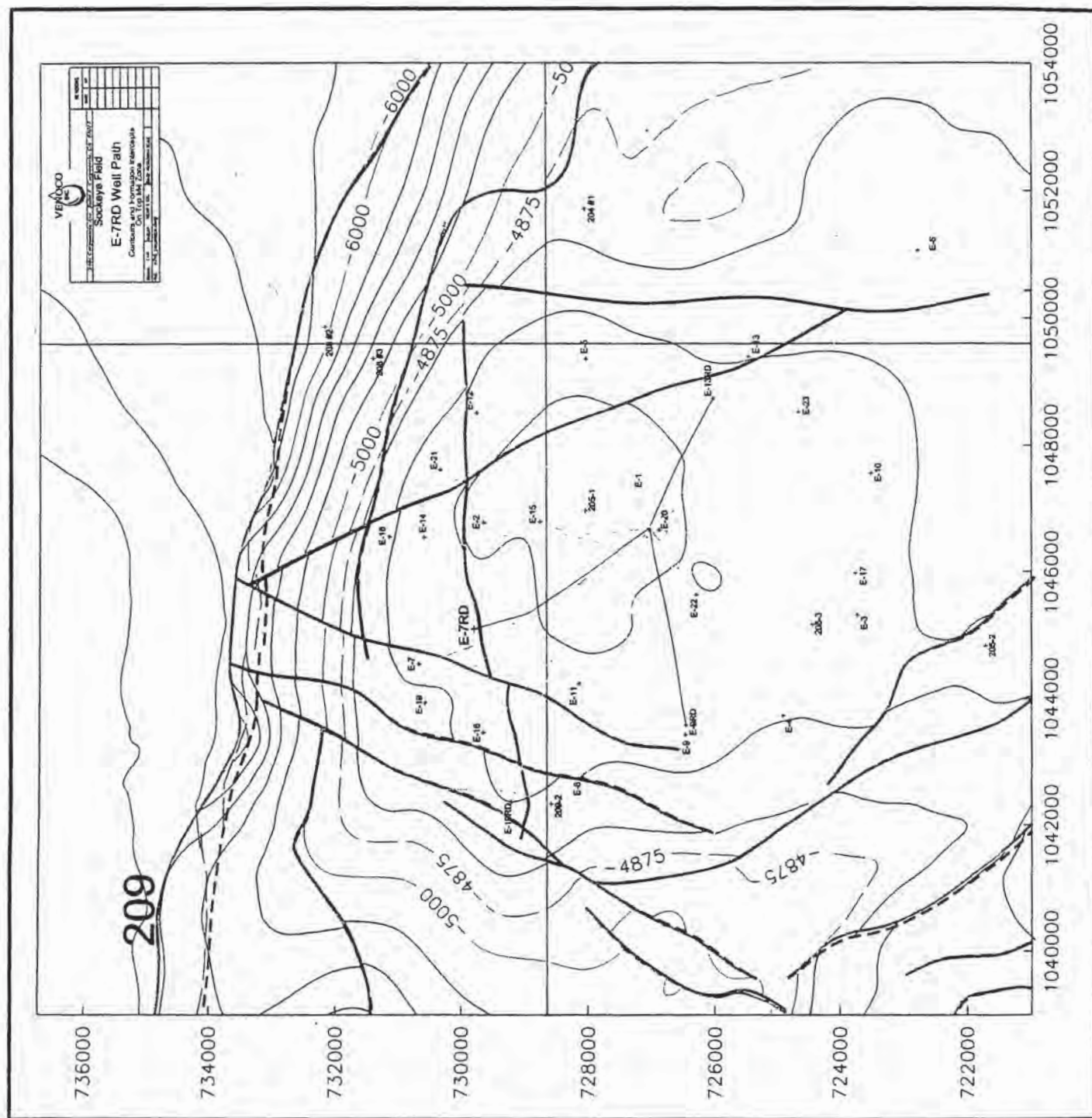
Upper Topanga
 6452' - 6522': 70' Gross / 35' Net

Lower Topanga & Upper Sespe
 6708' - 7108': 400' Gross / 200' Net



TD: 7258' / PBD: 7123' / TVD : 5964'

7" 26# L-80 Liner @ 7258'



HALLIBURTON

Venoco Inc.

DrillQuest
Sperry-Sun

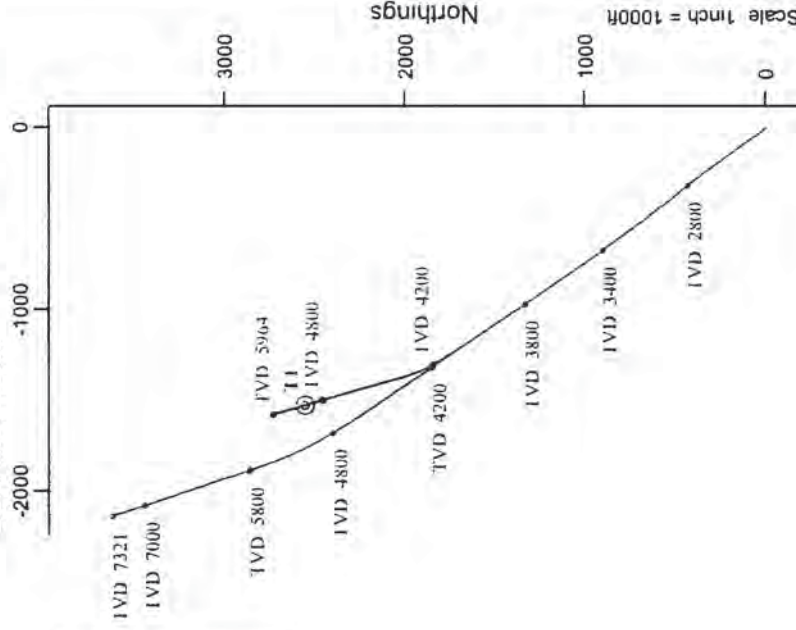
Sockeye Field Platform Gail (Slot 01) E-7

RD1 Plan 6 (25-Oct-04) Proposal Data

Coordinate System	NAD27 California State Planes, Zone VI	Measured Depth	Incl	Azim	Vertical Depth	Northings	Eastings	Vertical Section	Dogleg Rate
Stem Drop/Loss	50.850	325.617	4112.74	1243.51 N	1243.51 W	2124.59			
Hold Angle	48.106	344.067	4543.76	2002.57 N	1372.31 W	2420.48			4.500
Stem Drop/Loss	48.106	344.067	4592.38	2269.05 N	1446.38 W	2689.40			0.000
Drop to Vertical	20.000	344.067	5188.69	2443.60 N	1555.31 W	3067.11			4.000
Hold Angle	0.000	0.000	5658.60	2726.67 N	1579.02 W	3150.88			4.000
Total Depth	7237.85		5963.90						0.000

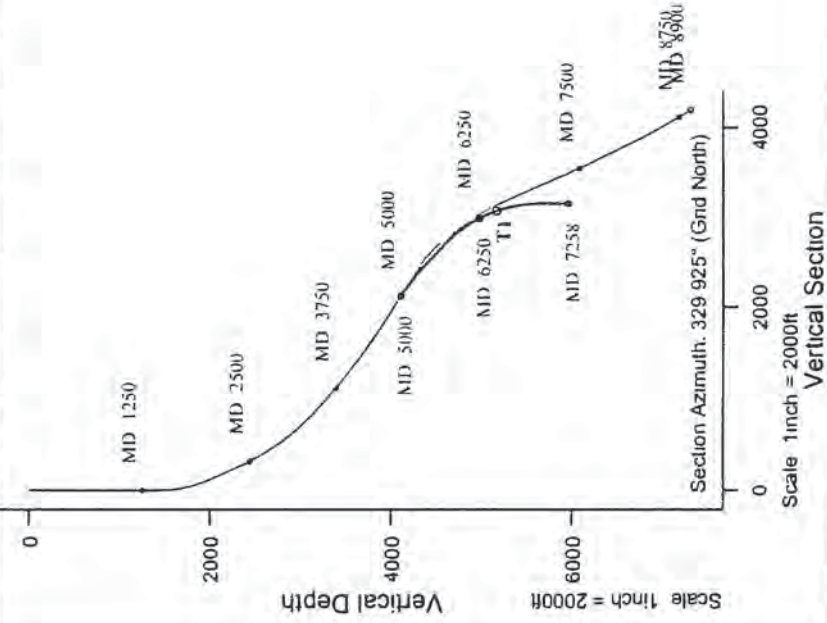
Eastings

Scale 1 inch = 1000ft



Vertical Depth

Scale 1 inch = 2000ft





**Venoco Inc.
Sockeye Field
Platform Gail
(Slot 01) E-7 - RD1 Plan 6 (25-Oct-04)**

Sperry-Sun

Proposal Report

25 October, 2004

Surface Coordinates 727056 46 N, 1046687 37 E (34 12526485° N, 119 40010141° W)
Grid Coordinate System NAD27 California State Planes, Zone VI

RKB Elevation 113 90ft above Mean Sea Level
Water Depth 739 00ft

Proposal Ref pro132732

HALLIBURTON

HALLIBURTON

Venoco Inc.
Sockeye Field
Platform Gail

Proposal Report for Platform Gail - (Slot 01) E-7

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
E-7 Original Hole											
0 00	0 000	0 000	113 90	0 00	0 00 N	0 00 E	727056 46 N	1046687 37 E	0 000	0 00	
852 00	0 000	0 000	-738 10	852 00	0 00 N	0 00 E	727056 46 N	1046687 37 E	0 000	0 00	
900 00	0 183	152 867	-786 10	900 00	0 07 S	0 04 E	727056 39 N	1046687 41 E	0 382	-0 08	
1000 00	0 200	237 900	-886 10	1000 00	0 30 S	0 04 W	727056 16 N	1046687 33 E	0 259	-0 24	
1100 00	0 200	256 250	-986 10	1100 00	0 44 S	0 36 W	727056 02 N	1046687 01 E	0 064	-0 20	
1200 00	0 150	281 317	-1086 10	1200 00	0 45 S	0 66 W	727056 01 N	1046686 71 E	0 090	-0 06	
1300 00	0 250	246 783	-1186 10	1300 00	0 51 S	0 98 W	727055 95 N	1046686 39 E	0 152	0 05	
1400 00	0 400	278 783	-1286 10	1400 00	0 55 S	1 53 W	727055 91 N	1046685 84 E	0 230	0 29	
1500 00	3 700	301 433	-1386 02	1499 92	1 19 N	4 63 W	727057 65 N	1046682 74 E	3 334	3 35	
1600 00	7 300	310 667	-1485 54	1599 44	7 01 N	12 20 W	727063 47 N	1046675 17 E	3 696	12 19	
1700 00	10 900	323 450	-1584 28	1698 18	18 76 N	22 66 W	727075 22 N	1046664 71 E	4 108	27 58	
1800 00	15 317	327 217	-1681 65	1795 55	37 46 N	35 45 W	727093 92 N	1046651 92 E	4 497	50 18	
1900 00	20 033	324 083	-1776 91	1890 81	62 46 N	52 66 W	727118 92 N	1046634 71 E	4 810	80 43	
2000 00	22 483	324 083	-1870 09	1983 99	91 82 N	73 92 W	727148 28 N	1046613 45 E	2 450	116 50	
2100 00	22 233	325 800	-1962 58	2076 48	122 95 N	95 77 W	727179 41 N	1046591 60 E	0 699	154 39	
2200 00	23 583	325 217	-2054 69	2168 59	155 03 N	117 82 W	727211 49 N	1046569 55 E	1 369	193 20	
2300 00	24 300	324 550	-2146 08	2259 98	188 22 N	141 17 W	727244 68 N	1046546 20 E	0 766	233 62	
2400 00	25 667	322 633	-2236 73	2350 63	222 20 N	166 25 W	727278 66 N	1046521 12 E	1 588	275 59	
2500 00	26 967	322 533	-2326 36	2440 26	257 41 N	193 18 W	727313 87 N	1046494 19 E	1 301	319 56	
2600 00	28 467	326 083	-2414 89	2528 79	295 18 N	220 28 W	727351 64 N	1046467 09 E	2 230	365 83	
2700 00	30 650	324 733	-2501 87	2615 77	335 78 N	248 30 W	727392 24 N	1046439 07 E	2 283	415 00	
2800 00	32 700	322 933	-2586 97	2700 87	378 15 N	279 30 W	727434 61 N	1046408 07 E	2 257	467 20	
2900 00	35 117	322 117	-2669 96	2783 86	422 41 N	313 25 W	727478 87 N	1046374 12 E	2 460	522 52	
3000 00	37 817	318 767	-2750 38	2864 28	468 18 N	351 13 W	727524 64 N	1046336 24 E	3 354	581 11	
3100 00	39 917	320 900	-2828 24	2942 14	516 14 N	391 57 W	727572 60 N	1046295 80 E	2 490	642 88	
3200 00	42 033	325 150	-2903 75	3017 65	568 53 N	430 95 W	727624 99 N	1046256 42 E	3 498	707 95	
3300 00	44 333	322 100	-2976 67	3090 57	623 59 N	471 55 W	727680 05 N	1046215 82 E	3 105	775 95	
3400 00	46 333	322 467	-3046 96	3160 86	679 85 N	515 06 W	727736 31 N	1046172 31 E	2 017	846 43	
3500 00	48 300	323 867	-3114 76	3228 66	738 69 N	559 11 W	727795 15 N	1046128 26 E	2 220	919 43	
3600 00	49 517	323 267	-3180 48	3294 38	799 32 N	603 87 W	727855 78 N	1046083 50 E	1 298	994 33	

Proposal Report for Platform Gail - (Slot 01) E-7

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
3700.00	49.467	324.817	-3245.44	3359.34	850.86 N	648.51 W	727917.32 N	1046038.86 E	1.179	1069.95	
3800.00	50.317	323.717	-3309.87	3423.77	922.94 N	693.18 W	727979.40 N	1045994.19 E	1.196	1146.06	
3900.00	50.750	325.767	-3373.43	3487.33	985.97 N	737.74 W	728042.43 N	1045949.63 E	1.641	1222.94	
4000.00	51.633	325.150	-3436.10	3550.00	1050.16 N	781.93 W	728106.62 N	1045905.44 E	1.006	1300.62	
4100.00	52.333	325.900	-3497.69	3611.59	1115.10 N	826.52 W	728171.56 N	1045860.85 E	0.916	1379.17	
4200.00	53.683	325.967	-3557.86	3671.76	1181.27 N	871.26 W	728237.73 N	1045816.11 E	1.351	1458.85	
4300.00	54.650	325.533	-3616.40	3730.30	1248.28 N	916.89 W	728304.74 N	1045770.48 E	1.029	1539.71	
4400.00	55.767	326.017	-3673.46	3787.36	1316.18 N	963.07 W	728372.64 N	1045724.30 E	1.185	1621.61	
4500.00	56.217	326.733	-3729.40	3843.30	1385.21 N	1008.97 W	728441.67 N	1045678.40 E	0.745	1704.35	
4600.00	56.617	326.067	-3784.71	3898.61	1454.59 N	1055.08 W	728511.05 N	1045632.29 E	0.684	1787.50	
4700.00	57.583	326.067	-3839.03	3952.93	1524.26 N	1101.95 W	728580.72 N	1045585.42 E	0.966	1871.27	
4800.00	57.867	326.350	-3892.43	4006.33	1594.52 N	1148.97 W	728650.98 N	1045538.40 E	0.372	1955.64	
4900.00	58.350	326.133	-3945.26	4059.16	1665.11 N	1196.15 W	728721.57 N	1045491.22 E	0.517	2040.37	
5000.00	56.850	325.617	-3998.84	4112.74	1735.00 N	1243.51 W	728791.46 N	1045443.86 E	1.562	2124.59	Tied at 5000.00ft
RD1 Plan 6 (25-Oct-04)											
5100.00	54.266	330.085	-4055.41	4169.31	1804.77 N	1287.42 W	728861.23 N	1045399.95 E	4.500	2206.96	
5200.00	51.858	334.843	-4115.52	4229.42	1875.58 N	1324.40 W	728932.04 N	1045362.97 E	4.500	2286.77	
5300.00	49.655	339.911	-4178.80	4292.70	1947.00 N	1354.22 W	729003.46 N	1045333.15 E	4.500	2363.52	
5377.62	48.106	344.067	-4229.86	4343.76	2002.57 N	1372.31 W	729059.03 N	1045315.06 E	4.500	2420.68	End of Drop/Turn at 5377.62ft
5400.00	48.106	344.067	-4244.81	4358.71	2018.59 N	1376.89 W	729075.05 N	1045310.48 E	0.000	2436.84	
5500.00	48.106	344.067	-4311.58	4425.48	2090.17 N	1397.32 W	729146.63 N	1045290.05 E	0.000	2509.02	
5600.00	48.106	344.067	-4378.36	4492.26	2161.75 N	1417.75 W	729218.21 N	1045269.62 E	0.000	2581.20	
5700.00	48.106	344.067	-4445.13	4559.03	2233.33 N	1438.19 W	729289.79 N	1045249.18 E	0.000	2653.38	
5749.90	48.106	344.067	-4478.46	4592.36	2269.05 N	1448.38 W	729325.51 N	1045238.99 E	0.000	2689.40	Start Drop/Turn at 5749.90ft
5800.00	46.102	344.067	-4512.55	4626.45	2304.34 N	1458.46 W	729360.80 N	1045228.91 E	4.000	2724.99	
5900.00	42.102	344.067	-4584.35	4698.25	2371.24 N	1477.55 W	729427.70 N	1045209.81 E	4.000	2792.46	
6000.00	38.102	344.067	-4660.83	4774.73	2433.17 N	1495.24 W	729489.63 N	1045192.13 E	4.000	2854.91	
6100.00	34.102	344.067	-4741.61	4855.51	2489.82 N	1511.41 W	729546.28 N	1045175.96 E	4.000	2912.03	
6200.00	30.102	344.067	-4826.30	4940.20	2540.91 N	1525.99 W	729597.37 N	1045161.38 E	4.000	2963.55	
6300.00	26.102	344.067	-4914.49	5028.39	2586.19 N	1538.92 W	729642.65 N	1045148.45 E	4.000	3009.22	

HALLIBURTON

Venoco Inc.
Sockeye Field
Platform Gail

Proposal Report for Platform Gail - (Slot 01) E-7

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft) Eastings (ft)	Global Coordinates Northings (ft) Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
6400 00	22 102	344 067	-5005 76	5119 66	2625 45 N 1550 13 W	729681 91 N 1045137 24 E	4 000	3048 81	
6452 54	20 000	344 067	-5054 79	5168 69	2643 60 N 1555 31 W	729700 06 N 1045132 06 E	4 000	3067 11	Drop to Vertical at 6452 54ft Target - T1
6500 00	18 102	344 067	-5099 65	5213 55	2658 49 N 1559 56 W	729714 95 N 1045127 81 E	4 000	3082 13	
6600 00	14 102	344 067	-5195 70	5309 60	2685 16 N 1567 17 W	729741 62 N 1045120 20 E	4 000	3109 02	
6700 00	10 102	344 067	-5293 46	5407 36	2705 31 N 1572 93 W	729761 77 N 1045114 44 E	4 000	3129 34	
6800 00	6 102	344 067	-5392 44	5506 34	2718 86 N 1576 80 W	729775 32 N 1045110 57 E	4 000	3143 01	
6900 00	2 102	344 067	-5492 17	5606 07	2725 74 N 1578 76 W	729782 20 N 1045108 61 E	4 000	3149 94	
6952 54	0 000	0 000	-5544 70	5658 60	2726 67 N 1579 02 W	729783 13 N 1045108 35 E	4 000	3150 88	End of Drop at 6952 54ft
7000 00	0 000	0 000	-5592 15	5706 05	2726 67 N 1579 02 W	729783 13 N 1045108 35 E	0 000	3150 88	
7100 00	0 000	0 000	-5692 15	5806 05	2726 67 N 1579 02 W	729783 13 N 1045108 35 E	0 000	3150 88	
7200 00	0 000	0 000	-5792 15	5906 05	2726 67 N 1579 02 W	729783 13 N 1045108 35 E	0 000	3150 88	
7257 85	0 000	0 000	-5850 00	5963 90	2726 67 N 1579 02 W	729783 13 N 1045108 35 E	0 000	3150 88	Total Depth at 7257 85ft

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grid North. Vertical depths are relative to Well. Northings and Eastings are relative to Well. Global Northings and Eastings are relative to NAD27 California State Planes, Zone VI.

The Dogleg Severity is in Degrees per 100 feet (US).

Vertical Section is from Well and calculated along an Azimuth of 329 925° (Grid)

Based upon Minimum Curvature type calculations, at a Measured Depth of 7257 85ft, The Bottom Hole Displacement is 3150 88ft, in the Direction of 329 925° (Grid)

HALLIBURTON

Venoco Inc.
Sockeye Field
Platform Gail

Proposal Report for Platform Gail - (Slot 01) E-7

Comments

Measured Depth (ft)	TVD (ft)	Station Coordinates		Comment
		Northings (ft)	Eastings (ft)	
5000.00	4112.74	1735.00 N	1243.51 W	Tied on at 5000.00ft
5377.62	4343.76	2002.57 N	1372.31 W	End of Drop/Turn at 5377.62ft
5749.90	4592.36	2269.05 N	1448.38 W	Start Drop/Turn at 5749.90ft
6452.54	5168.69	2643.60 N	1555.31 W	Drop to Vertical at 6452.54ft
6952.54	5658.60	2726.67 N	1579.02 W	End of Drop at 6952.54ft
7257.85	5963.90	2726.67 N	1579.02 W	Total Depth at 7257.85ft

Targets associated with this wellpath

Target Name	TVD (ft)	Target Northings (ft)	Entry Eastings (ft)	Coordinates Distance (ft)	Direction (°Grid)
T1 (Circle)	5168.69 -5054.79	2548.00 N 729604.46 N 34 13213600° N	1528.00 W 1045159.37 E 119 40540213° W	2971.04	329.049
T1 (Point)	5168.69 -5054.79	2643.60 N 729700.06 N 34 13239629° N	1555.31 W 1045132.06 E 119 40550189° W	3067.18	329.530

North Reference Sheet for Platform Gail - (Slot 01) E-7

Coordinate System is NAD27 California State Planes, Zone VI, US Foot
Source Snyder, J P, 1987, Map Projections - A Working Manual

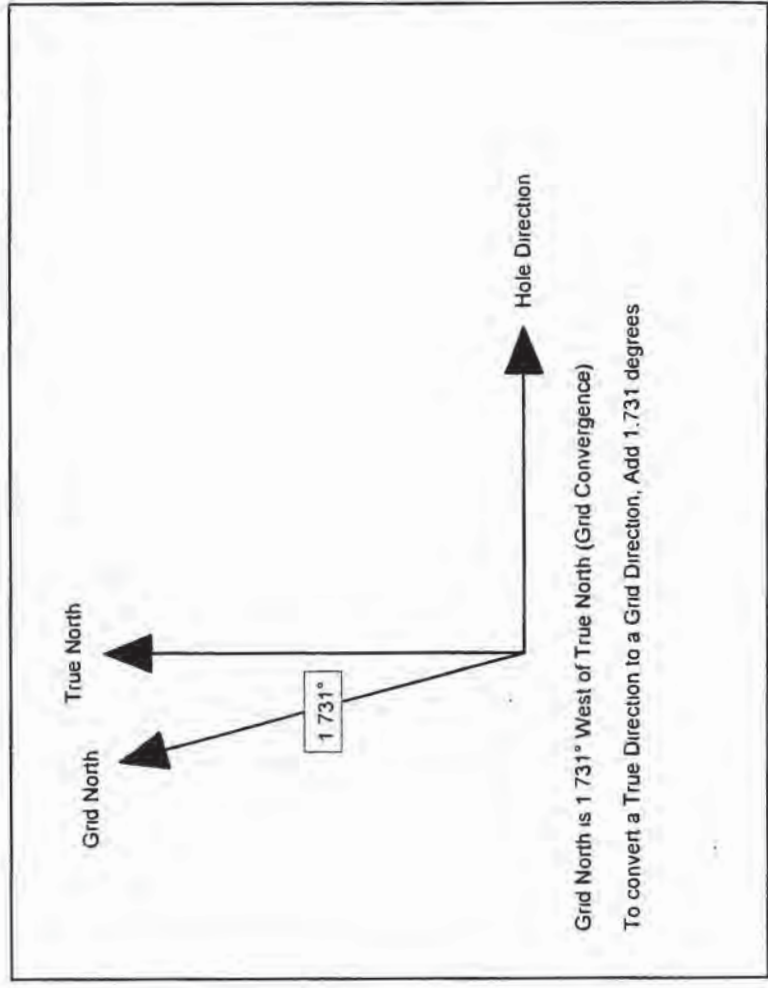
Datum is North American Datum of 1927 (US48, AK, HI, and Canada)

Spheroid is Clarke - 1866
Equatorial Radius 6378206 400m
Polar Radius 6356583 800m
Inverse Flattening 294 978698213901

Projection method is Lambert Conformal Conic Projection

Central Meridian is -116 250°
Longitude Origin -116 250°
Latitude Origin 32 167°
False Easting 609600 00m
False Northing 0 00m
Scale Reduction 1 000000000

Grid Coordinates of Well 727056 46 N, 1046687 37 E
Geographical Coordinates of Well 34 12526485° N, 119 40010141° W
Surface Elevation of Well 113 90ft
Grid Convergence at Surface is -1.731°



EVALUATION PROGRAM

1) MUD LOGGING

8 1/2" Hole Section - Mud logging will be used from the kick off point at 5025' through to the total depth of 7258'.

2) ELECTRIC LOGGING

8 1/2" Hole Section

The following logs will be run using wire line:

Run #1: PEX-HALS-NGT

Run #2 – FMI – GR (across Monterey)

Actual logging runs will depend on hole conditions. Some

SWC's may be shot.

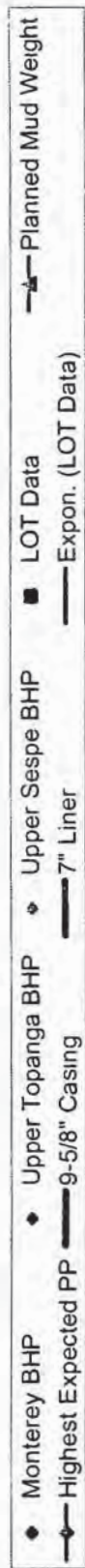
Notify Geologist to witness all logs.

Primary Geologist: Mike Wratcher

Work: 805-745-2272
Home: 805-682-4780
Cell: 805-689-8666

Back-up Geologist: Marc Kamerling

Work: 805-745-2177
Home: 805-898-7975
Cell: 805-450-0612

[illegible]

CASING PROGRAM

Hole Section	12.25*	8.5
Mud Weight	9.6	9.6
Buoyancy Factor	0.853	0.853
MASP (psi)	1502	1502
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9-5/8*	7
Setting Depth, MD (ft)	5025	7258
Setting Depth, TVD (ft)	4127	5964
Top of Casing, MD (ft)	0	4800
Weight (lb/ft)	40	26
Grade	L-80	L-80
Threads	NKK3SB	513
ID (in)	8.835	6.276
Drift diameter (in)	8.679	6.151
Collapse (psi)	3090	5410
Burst (psi)	5750	7240
Joint Strength (kips)	800	448
Body Strength (kips)	916	604
Collapse Safety Factor	1.50	1.82
Burst Safety Factor	3.19	4.02
Tensile Safety Factor	2.95	2.90

* Existing Casing

Notes:

Burst is calculated on the greater of MASP or gas lift pressure.

Collapse is based on mud outside of an evacuated casing string.

Tension is based on buoyed weight of casing string + 100 kips over pull.

PRESSURE SUMMARY

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8
2	Setting Depth (feet – TVD)	4127
3	Expected Leak Off Test EMW at shoe (ppg)	11
4	Depth of next Casing (feet - TVD)	5964
5	Maximum Expected Formation Pressure (psi)	1800
6	Expected Mud Weight (ppg)	9.6
7	Formation Equivalent Mud Weight (ppg)	5.8
8	Expected Hydrostatic Pressure at TD (psi)	2977
9	Amount of Overbalance at TD (psi)	1177
10	Fracture Gradient at shoe (psi/ft)	0.57
11	Fracture Pressure at shoe (psi)	2361
12	Hydrostatic Pressure at shoe (psi)	2060
13	Margin between Mud Weight and LOT (psi)	300

Maximum Anticipated Surface Pressures

1	Casing Size (in)	9-5/8
2	Setting Depth (feet – TVD)	4127
3	Expected Leak Off Test EMW at shoe (ppg)	11
4	Expected Mud Weight (ppg)	9.6
5	Depth of next Casing (feet - TVD)	5964
6	Maximum Expected Formation Pressure (psi)	1800
7	Expected gas gradient (psi/ft)	0.05
8	Formation Equivalent Mud Weight (ppg)	5.8
	Max Pressures using 100% Gas to Surface	
9	Max Surface Pressure neglecting shoe (psi)	1502
10	Fracture Gradient at shoe (psi/ft)	0.57
11	Fracture Pressure at shoe (psi)	2361
12	Surface pressure to break down shoe (psi)	2154
13	Maximum Anticipated Surface Pressure (psi)	1502
	Max Pressures using 70% Gas & 30% Mud	
14	Maximum Anticipated Surface Pressure (psi)	698
15	Top of fluid (feet-TVD)	4175
16	Pressure at shoe (psi)	904
17	Margin between pressure and breakdown(psi)	1456

CEMENTING PROGRAM

7" Production Liner

Objective: Cement 7" liner set across entire open hole interval. Liner will extend 200' back into the 9 5/8" casing and cement will be brought back 200' over the top of the liner hanger. A liner top packer will be used to ensure pressure integrity of the lap for the productive life of the well since it will be exposed to gas lift.

General Information:

9 5/8", 40#, L-80 Casing Window 5025' (8.835" ID)
7", 26#, L-80 Liner (6.276" ID) Shoe at 7258' & TOL at 4800'
Lap Volume Factor is 0.1585 CF/FT
Open Hole Volume Factor is 0.1268 CF/FT
Shoe Joint Volume Factor is 0.2148 CF/FT
Open Hole Excess 50% over theoretical
Static Temperature is 170 F (@ 5964' TVD)

Slurry Volume:

563 CF of cement total required to bring cement to 200' above the top of the 7" liner including 50% excess in the open hole. Actual volumes will be determined from the caliper log volumes.

Cement Slurry Details:

Pre-flush: 20 bbls of Ultra Flush II

Lead Cement: 326 CF (137 sx) of Class "G" + 8 gals/100 sx R-8L + 2 gals/100 sx FP-6L + 50 gals/100 sx Liquid Sodium Silicate

Yield: 2.38 CF/sx
Water: 13.61 gal/sx
Weight: 12.2 ppg
Mix Water: Seawater
Height: 1100 linear feet

Tail Slurry: 237 CF (206 sx) of Class "G" + 6 gals/100 sx R21L + 10 gals/100 sx FL-67L + 5 gals/100 sx CD-31-L + 2 gals/100 sx ASA-301L

Yield: 1.15 CF/sx
Water: 4.80 gal/sx
Weight: 15.8 ppg
Mix Water: Fresh Water
Height: 1158'

Note: Lab tests will be performed prior to cementing to verify slurry properties. Actual materials that will be used on location will be used to perform tests.

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Whipstock	Drilplex	9.0-9.6	NC	+/-10.5	40-50	+9-10 K
5025'-7258'	SP 101	9.0-9.6	<6	+/-8.5	15-20	+19-20 K

Whipstock: The fluid system used for the milling operations will be Drilplex. The products used for this interval are approved for offshore Region 9. The mud system and cuttings can be dumped overboard if all the environmental tests are negative. The low shear rate viscosity will be raised as necessary to transport metal cuttings out of the well with the use of Drilplex and Gelplex. Add soda ash to control total hardness and caustic soda to control the pH.

5025'-7258': Convert over to SP 101 by adding 1.5 to 2.5 ppb of SP 101 to the system. Continue with the additions of SP 101 for fluid loss reductions (<6.0 cc). Add dry NaCl to maintain the chloride content between 19,000 and 25,000. Stop additions of Durogel and build up the surface system with MI Gel pre-hydrated in fresh water at a concentration of 12 to 15 ppb. Maintain the mud weight as low as possible with the solids control equipment. Condition the mud with water to keep the MBT below 30 ppb and treat out calcium with Soda Ash to below 200 ppm. Reduce the mud weight and add calcium carbonate if mud losses are encountered while drilling this section.

Notes:

1. Operate solids control equipment to maintain drill solids as low as possible.
2. Maintain supply of $ZnCO_3$ onboard to treat out H_2S .
3. A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised 0.85 ppg using +/-1000 bbl total circulating volume (538 open hole volume & 390 bbl active system).
4. Add Calcium Carbonate to the mud system after drilling through the Monterey interval. This will help prevent lost circulation in the Upper Topanga.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.
Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.
Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).
Read drill pipe pressure.
Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.
Shut down pump and close choke at the same time. SEE NOTE.
Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

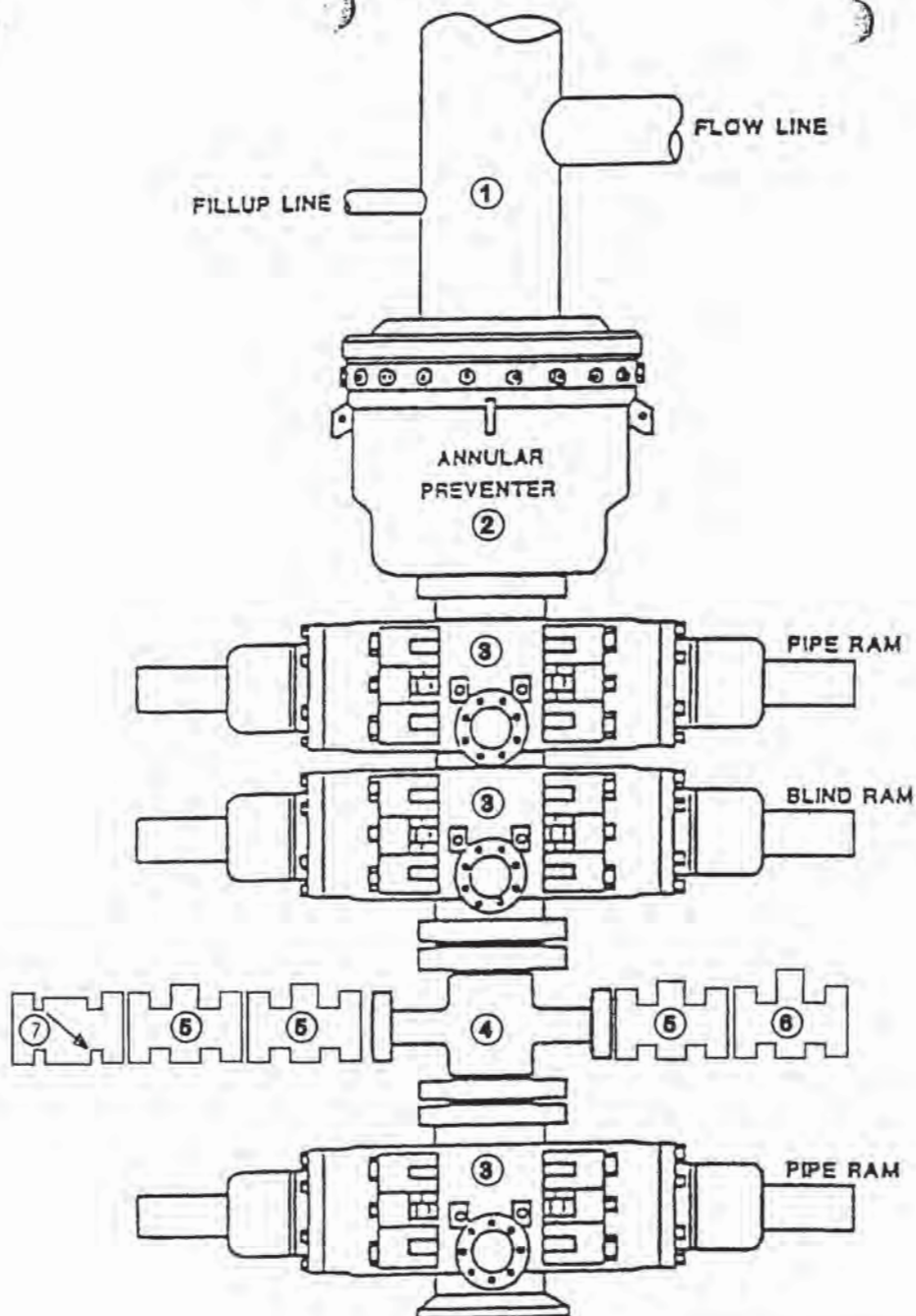
Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas.

Assume any gas circulated to surface to have hydrogen sulfide potential.

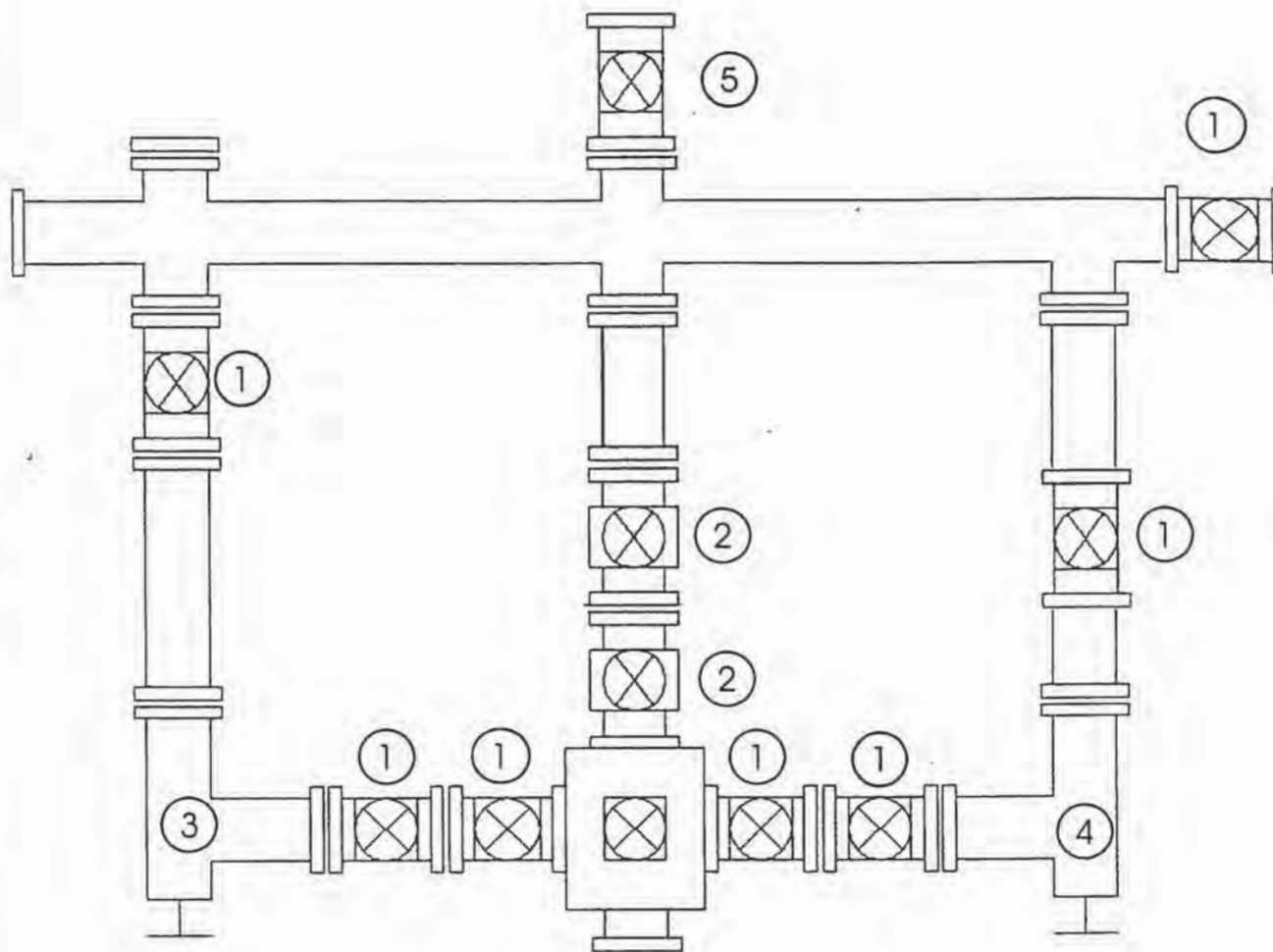
Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.



- ① BELL NIPPLE
- ② 13 5/8" 5M GK HYDRILL
- ③ 13 5/8" 5M DOUBLE GATE
- ④ DRILLING SPOOL
- ⑤ 3" 5M MANUAL VALVE
- ⑥ 3" 5M HCR VALVE
- ⑦ 3" 5M CHECK VALVE



BLOWOUT PREVENTION SYSTEM PLATFORM GAIL



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD PLATFORM GAIL

HALLIBURTON

Venoco Inc.
Sockeye Field
Platform Gail

Proposal Report for Platform Gail - (Slot 01) E-7

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft) Eastings (ft)	Global Coordinates Northings (ft) Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
6400 00	22 102	344 067	-5005 76	5119 66	2625 45 N 1550 13 W	729681 91 N 1045137 24 E	4 000	3048 81	
6452 54	20 000	344 067	-5054 79	5168 69	2643 60 N 1555 31 W	729700 06 N 1045132 06 E	4 000	3067 11	Drop to Vertical at 6452 54ft
6500 00	18 102	344 067	-5099 65	5213 55	2658 49 N 1559 56 W	729714 95 N 1045127 81 E	4 000	3082 13	
6600 00	14 102	344 067	-5195 70	5309 60	2685 16 N 1567 17 W	729741 62 N 1045120 20 E	4 000	3109 02	
6700 00	10 102	344 067	-5293 46	5407 36	2705 31 N 1572 93 W	729761 77 N 1045114 44 E	4 000	3129 34	
6800 00	6 102	344 067	-5392 44	5506 34	2718 86 N 1576 80 W	729775 32 N 1045110 57 E	4 000	3143 01	
6900 00	2 102	344 067	-5492 17	5606 07	2725 74 N 1578 76 W	729782 20 N 1045108 61 E	4 000	3149 94	
6952 54	0 000	0 000	-5544 70	5658 60	2726 67 N 1579 02 W	729783 13 N 1045108 35 E	4 000	3150 88	End of Drop at 6952 54ft
7000 00	0 000	0 000	-5592 15	5706 05	2726 67 N 1579 02 W	729783 13 N 1045108 35 E	0 000	3150 88	
7100 00	0 000	0 000	-5692 15	5806 05	2726 67 N 1579 02 W	729783 13 N 1045108 35 E	0 000	3150 88	
7200 00	0 000	0 000	-5792 15	5906 05	2726 67 N 1579 02 W	729783 13 N 1045108 35 E	0 000	3150 88	
7257 85	0 000	0 000	-5850 00	5963 90	2726 67 N 1579 02 W	729783 13 N 1045108 35 E	0 000	3150 88	Total Depth at 7257 85ft

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grid North. Vertical depths are relative to Well Northings and Eastings are relative to Well Global Northings and Eastings are relative to NAD27 California State Planes, Zone VI

The Dogleg Severity is in Degrees per 100 feet (US)

Vertical Section is from Well and calculated along an Azimuth of 329 925° (Grid)

Based upon Minimum Curvature type calculations, at a Measured Depth of 7257 85ft, The Bottom Hole Displacement is 3150 88ft, in the Direction of 329 925° (Grid)

Proposal Report for Platform Gail - (Slot 01) E-7

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft) Eastings (ft)	Global Coordinates Northings (ft) Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
3700.00	49.467	324.817	-3245.44	3359.34	860.86 N 648.51 W	727917.32 N 1046038.86 E	1.179	1069.95	
3800.00	50.317	323.717	-3309.87	3423.77	922.94 N 693.18 W	727979.40 N 1045994.19 E	1.196	1146.06	
3900.00	50.750	325.767	-3373.43	3487.33	985.97 N 737.74 W	728042.43 N 1045949.63 E	1.641	1222.94	
4000.00	51.633	325.150	-3436.10	3550.00	1050.16 N 781.93 W	728106.62 N 1045905.44 E	1.006	1300.62	
4100.00	52.333	325.900	-3497.69	3611.59	1115.10 N 826.52 W	728171.56 N 1045860.85 E	0.916	1379.17	
4200.00	53.683	325.967	-3557.86	3671.76	1181.27 N 871.26 W	728237.73 N 1045816.11 E	1.351	1458.85	
4300.00	54.650	325.533	-3616.40	3730.30	1248.28 N 916.89 W	728304.74 N 1045770.48 E	1.029	1539.71	
4400.00	55.767	326.017	-3673.46	3787.36	1316.18 N 963.07 W	728372.64 N 1045724.30 E	1.185	1621.61	
4500.00	56.217	326.733	-3729.40	3843.30	1385.21 N 1008.97 W	728441.67 N 1045678.40 E	0.745	1704.35	
4600.00	56.617	326.067	-3784.71	3898.61	1454.59 N 1055.08 W	728511.05 N 1045632.29 E	0.684	1787.50	
4700.00	57.583	326.067	-3839.03	3952.93	1524.26 N 1101.95 W	728580.72 N 1045585.42 E	0.966	1871.27	
4800.00	57.867	326.350	-3892.43	4006.33	1594.52 N 1148.97 W	728650.98 N 1045538.40 E	0.372	1955.64	
4900.00	58.350	326.133	-3945.26	4059.16	1665.11 N 1196.15 W	728721.57 N 1045491.22 E	0.517	2040.37	
5000.00	56.850	325.617	-3998.84	4112.74	1735.00 N 1243.51 W	728791.46 N 1045443.86 E	1.562	2124.59	Tied on at 5000.00ft
RD1 Plan 6 (25-Oct-04)									
5100.00	54.266	330.085	-4055.41	4169.31	1804.77 N 1287.42 W	728861.23 N 1045399.95 E	4.500	2206.96	
5200.00	51.858	334.843	-4115.52	4229.42	1875.58 N 1324.40 W	728932.04 N 1045362.97 E	4.500	2286.77	
5300.00	49.655	339.911	-4178.80	4292.70	1947.00 N 1354.22 W	729003.46 N 1045333.15 E	4.500	2363.52	
5377.62	48.106	344.067	-4229.86	4343.76	2002.57 N 1372.31 W	729059.03 N 1045315.06 E	4.500	2420.68	End of Drop/Turn at 5377.62ft
5400.00	48.106	344.067	-4244.81	4358.71	2018.59 N 1376.89 W	729075.05 N 1045310.48 E	0.000	2436.84	
5500.00	48.106	344.067	-4311.58	4425.48	2090.17 N 1397.32 W	729146.63 N 1045290.05 E	0.000	2509.02	
5600.00	48.106	344.067	-4378.36	4492.26	2161.75 N 1417.75 W	729218.21 N 1045269.62 E	0.000	2581.20	
5700.00	48.106	344.067	-4445.13	4559.03	2233.33 N 1438.19 W	729289.79 N 1045249.18 E	0.000	2653.38	
5749.90	48.106	344.067	-4478.46	4592.36	2269.05 N 1448.38 W	729325.51 N 1045238.99 E	0.000	2689.40	Start Drop/Turn at 5749.90ft
5800.00	46.102	344.067	-4512.55	4626.45	2304.34 N 1458.46 W	729360.80 N 1045228.91 E	4.000	2724.99	
5900.00	42.102	344.067	-4584.35	4698.25	2371.24 N 1477.56 W	729427.70 N 1045209.81 E	4.000	2792.46	
6000.00	38.102	344.067	-4660.83	4774.73	2433.17 N 1495.24 W	729489.63 N 1045192.13 E	4.000	2854.91	
6100.00	34.102	344.067	-4741.61	4855.51	2489.82 N 1511.41 W	729546.28 N 1045175.96 E	4.000	2912.03	
6200.00	30.102	344.067	-4826.30	4940.20	2540.91 N 1525.99 W	729597.37 N 1045161.38 E	4.000	2963.55	
6300.00	26.102	344.067	-4914.49	5028.39	2586.19 N 1538.92 W	729642.55 N 1045148.45 E	4.000	3009.22	

7106

June 13, 2005

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation and Production *FW*

Subject: Geologic Hazards Analysis for Development Well P-0205 E-7RD

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Sockeye Oil Field
Lease: OCS-P 0205 (well TD's in OCS-P 0209)
Platform: Gail
Well/Slot: E-7 in slot 1
Objective: Production U. Topanga and Lower Topanga/ Upper Sespe Fm.
API: 04-311-20673-01

Surface Location: X = 1,046,687 ft
Lambert Zone 6 Y = 727,056 ft

Estimated Top of X =
Productive Zone Y =

Estimated Bottom X = 1,045,108 ft
Hole Location Y = 729,783 ft

Elevation of KB: + 113 feet
Est. Total Depth (measured): - 7,258 feet (RKB)
Est. Total Depth (true vert.): - 5,964 feet (RKB)

Water Depth (Gail): 739 feet +/-

Overview of Proposal

Venoco, Inc., designated operator of the Sockeye Field within the Santa Clara Unit, proposes to redrill well OCS-P 0205 #E-7 into the Upper and Lower Topanga and Upper Sespe. The objective of the well is to produce from both the Topanga and Sespe. The well will be a dual completion, with production in the Upper Topanga through a short string and production from the Lower Topanga and Upper Sespe gravel packed through a long string.

The proposed well will be drilled on Platform Gail to a bottom hole location in Lease OCS-P 0209, north of the platform. The original E-7RD will use the original casing from E-7 down to 5025 feet.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Top Monterey M2	Miocene	5380 feet	4344 feet
Top Monterey M4	Miocene	5695 feet	4442 feet
Top Upper Topanga	L. Miocene	6452 feet	5168 feet
Top Lower Topanga/Sespe	L. Miocene	6708 feet	5407 feet
Sespe C-1 Sand	Oligocene	7179 feet	5885 feet

2. Potential Oil and Gas Reservoirs Targets

Formation	Age	(TVD)	HC Type
Upper/Lower Topanga	L. Miocene	5168 feet	Oil
Upper Sespe	Oligocene	5885 feet	Oil

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. The top 5,025 feet of this well is the existing casing from the original E-7 well so any potential shallow aquifers are already behind casing.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of the original P-0209 E-7. The present operator and former operator of the Sockeye field have extensive drilling experience in this field. The proposed drilling program is similar to those utilized in drilling the

production wells in the field.

5. Faulting and Folding

Several important faults have been mapped by the Operator. Faulting is an important consideration for the success of the well. The well at total depth should cross one east-west trending fault at the final TD location as mapped.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The P-0209-2 Well also drill into block 209 did not find near surface gas, but did record gas shows in the Pliocene section.

7. Possible Over-pressured or Depleted Zones

Several ditch gas kicks are noted in the mud logs for E-10 and E-17. However, as noted above, in the event of a new pool discovery the operator should be prepared for higher than expected formation pressures, similar to the original formation pressures noted at the discovery of the Sockeye field.

8. Logging/Coring

The Operator plans a standard set of logs, as is the common practice with production wells in this area. A standard mud log will be taken to total depth from the kick off point at 5025 feet.

Mudlog from 5025-7258

Wire Line Logs: 2 Runs: PEX-HALS-NGT & FMI-GR Sidewall cores may be shot.

9. Other Comments

The Monterey and Topanga Formations may contain hydrogen sulfide gas. The directional path of E-7 RD (map view) is parallel to E-19. Care should be taken to make sure the E-7 RD does not intersect this existing borehole.

APPLICATION FOR PERMIT TO DRILL

CHECK LIST

OPERATOR Venoco, Inc. ENGRG. REVIEW BY S.J. Shaw
 LEASE NO. surf: P-0205/BHL; P-0209 DATE COMPLETED 6/22/05
 WELL NO. E-7 ST01, BP00
 COPIES RECEIVED 3 P.I. 1
 GEOLOGIC/GEOPHYSICAL REVIEW COMPLETED BY F. Victor DATE 6/13/05
 COPIES ON FILE WITH APD Yes
 LEASE INSTRUMENT CHECKED No
 DESIGNATION OF OPERATOR APPROVED yes
 SPECIAL LEASE STIPULATIONS NOTED Lease instrument not examined.

POE/POD APPROVED DATE N/A
 SPECIAL CONDITIONS OF APPROVAL standard COAs to drill OCS well attached to all copies of APD

MOBIL DRILLING UNIT NO TYPE Platform Rig - Kenai Drlg.
 ABS & COASTGUARD DOCUMENTS ON FILE Yes
 FRONTIER AREA YES/NO NO
 SEA FLOOR CONDITIONS EXAMINED, DOCUMENTED AND APPROVED Yes

RIG DESCRIPTION AND SPECIFICATIONS ON FILE? No
 PLAT PROVIDED 2000 FEET/ONE INCH Yes
 SURFACE LOCATION CHECKED Yes
 SUBSURFACE LOCATION CHECKED Yes

RKB TO WATER 108' asl WD 739 RKB TO ML 847' window in 9 5/8" csq.
 TVD 5964' MD 7258' KOP ± 5025' MD / 4127' VD

WELL DESIGN CRITERIA:

	NO	TO L - 4800' MD CALCULATED	Yes
TAKEN FROM OFFSET WELL			
CASING SIZE <u>13 3/8"</u>	<u>9 5/8"</u>	<u>7" (Liner)</u>	
(MD/VD) CASING DEPTH <u>4959' MD</u>	<u>5000' / 4113'</u>	<u>7258' / 5964'</u>	
PORE PRESS.	<u>1800 psi</u>	<u>1800 psi</u>	
FRAC. PRESS.	<u>0.57 ppg</u>	<u>0.57 ppg</u>	
ANTICIPATED			
SURFACE PRESS.	<u>1800 psi</u>	<u>1800 psi</u>	
MUD WEIGHT	<u>9.0 ppg</u>	<u>9.6 ppg</u>	
LOST CIRCULATION ZONES			
SHALLOW HAZARDS FROM GEOLOGIC/GEOPHYSICAL REVIEW <u>None identified - shallow zones are already behind casing(s).</u>			

BOPE - RSRDA arrangement

ANNULAR PIPE RAMS
 NO. AND TYPE 1-13 5/8" - 5M - Hydri 2-13 5/8" - 5M - Double Gate 1-13 5/8" - 5M - Double Gate
"GK" 2 7/8" to 5" VBRs in
single gate below cross.

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Supervisor.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, etc., shall be verbally reported immediately to the District Supervisor.
6. The District Supervisor shall be notified in advance in the event of production tests.
7. Two copies of all logs, including the mud log to date, shall be furnished to this office immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Supervisor shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309		3 OPERATOR NAME and ADDRESS (Submitting office) Venoco, Inc. 6267 Carpinteria Ave., Suite 100 Carpinteria, CA 93013 - 1423	
4 WELL NAME (CURRENT) E8		5 SIDETRACK NO (CURRENT) 00		6 BYPASS NO (CURRENT) 00	
7 PROPOSED START DATE May 12, 2006		8 PLAN CONTROL NO (NEW WELL ONLY)			
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112067400					
10 ☐ Revision		11 If revision, please list changes			
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE		
12 LEASE NO P-0209			17 LEASE NO P-0205		
13 AREA NAME 6B			18 AREA NAME 6B		
14 BLOCK NO 4761			19 BLOCK NO 4661		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) 731.303°N / 730.380°N		16 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1041920°E / 1039018°E		21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) 1,046,687.33°E	
20 LATITUDE (☐ NAD 83 / ☒ NAD 27) 727.032.46°N					
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME Monterey M1		23 TOP (MD) 5364'		24 TOP (TVD) 4109'	
Monterey M4		8590'		4754'	
Upper Sespe		10500'		5750'	
22 NAME Monterey M2		23 TOP (MD) 5773'		24 TOP (TVD) 4330'	
Upper Topanga		10033'		5420'	
25 LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250 414(b) through (g) or 30 CFR 250 1617 (c) and (d), as appropriate) Redrill Program (includes design criteria for well, BOPE, casing program, drilling prognosis), cementing program, drilling mud program, directional program and surface/subsurface well location plat map, Supplemental APD Information Sheet					
26 CONTACT NAME John Hood		27 CONTACT TELEPHONE NO 805-745-2164		28 CONTACT E-MAIL ADDRESS jhood@venoco.com	
29 AUTHORIZING OFFICIAL (Type or print name) Roger Hamson			30 TITLE V. P. Southern Assets		
31 AUTHORIZING SIGNATURE <i>[Signature]</i> for Roger Hamson			32 DATE May 5, 2006		
THIS SPACE FOR MMS USE ONLY					
APPROVED ☒ With Attached Conditions ☐ Without Conditions		BY <i>[Signature]</i>		TITLE District Manager	
API WELL NO ASSIGNED TO THIS WELL 04-311-20674-01		DATE 5/12/06			

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☒ YES ☐ NO ☐ N/A	will use mineral oil based mud with zero discharge. Cuttings and waste discharged in E-55 well.
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	CAG280000
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	Platform Gail Field Rules allow for Rig movement w/o shutting in other wells.

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco, Inc				2) Well Name (Proposed): E-8 Redrill ST. 01 BP ST 02			
3) Bottom Hole Lease: P-0209				4) Surface Lease: P-0205			
5) API Number: 043112067401				6) Type of Well ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): Surface			
9) Rig Name: Kenai Rig #2				10) SubSea BOP: ☐ Yes ☒ No			
11) Water Depth (ft): 739		12) RKB Height (ft): 107		13) Mineral Code:			
14) Drive Pipe Size (in): 24		15) Drive Pipe Depth (ft): 1409		16) Anchors ☐ Yes ☒ No			

17) Well Design Information							
Interval Number: Existing Casing				Type:		Name: Existing Casing	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
	18 625	87 5/117 5	K-55			2430	
	13 375	68/72	L-80			5350	
Production	9 625	43 5	L-80	6330	3810	5375 4115 1519	

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in) N/A	Type Annular/VB Rams/Shear Rams/Pipe Rams	Annular Test (psi) 250/3000 psi			
Mud Weight (ppg) N/A	Size (in) 13-5/8"	BOP/Diverter Test (psi) 250/3000 psi			
Mud Type Code N/A	Wellhead Rating (psi) 5000 psi	Mud Test Weight (ppg) 8.5 ppg			
Frac Gradient (ppg) N/A	Annular Rating (psi) 5000 psi	Casing/Liner Test (psi) 2500 psi			
Liner Top Depth (ft) N/A	BOP/Diverter Rating (psi) 5000 psi	Formation Test (ppg) N/A			
Cement Volume (ft ³) See old records					

Interval Number: One				Type: Sidetrack 01		Name: Pilot Hole	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
1	7	26	L-80	7240	5410	10803 5964	2605

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in) 8.5	Type Annular/VB Rams/Shear Rams/Pipe Rams	Annular Test (psi) 250/3000			
Mud Weight (ppg) 9.2	Size (in) 13-5/8"	BOP/Diverter Test (psi) 250/3000			
Mud Type Code Oil Based Mud	Wellhead Rating (psi) 5000 psi	Mud Test Weight (ppg) 9.2			
Frac Gradient (ppg) 10.5	Annular Rating (psi) 5000 psi	Casing/Liner Test (psi) 3000 psi			
Liner Top Depth (ft) 5100	BOP/Diverter Rating (psi) 5000 psi	Formation Test (ppg) 10.5			
Cement Volume (ft ³) 1100					

Interval Number: Two				Type: Sidetrack 02		Name: Lateral Hole	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
2	None	NA	NA	NA	NA	11,348 4972	1835

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in) 6 125	Type Annular/VB Rams/Shear Rams/Pipe Rams	Annular Test (psi) 250/3000			
Mud Weight (ppg) 8.5	Size (in) 13-5/8"	BOP/Diverter Test (psi) 250/3000			
Mud Type Code Seawater	Wellhead Rating (psi) 5000 psi	Mud Test Weight (ppg) 8.5			
Frac Gradient (ppg) 10.5	Annular Rating (psi) 5000 psi	Casing/Liner Test (psi) NA			
Liner Top Depth (ft) NA	BOP/Diverter Rating (psi) 5000 psi	Formation Test (ppg) 10.5			
Cement Volume (ft ³) NA					

* NOTE* For additional casing/liner intervals, please submit an additional Form MMS-123S.

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VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
Well E-8 RD
API# 04-311-20674-01
LEASE OCS-P-0205
May 4, 2006

Objective:

To re-drill the E-8 well as a dual lateral well. The 8-1/2" pilot hole will be drilled to intersect the Monterey horizontal kick off point and will continue deeper to the Upper Topanga and Lower Topanga/Upper Sespe intervals. A 7" liner will be run and cemented. The Upper Topanga interval will be perforated and gravel packed and isolated with a plug. A retrievable whipstock will be set above the gravel packed completion in the 7" casing. The Monterey section lateral wellbore will be sidetracked and drilled with 6 1/8" hole. The Monterey lateral wellbore will be left as an open hole completion. The whipstock will be retrieved. The completion will be a single 3 1/2" tubing string with production packers and sliding sleeve configured to allow for commingle production or shut-off selectively and allow for individual testing of each wellbore.

Surface Location: OCS-P-205, Slot No. 7 (X= 1,046,687.33' & Y= 727,032.46')

Elevation: 739' WD, 107' Above MLLW, 846' Ocean Floor to Rig Floor

Proposed TD: 8-1/2" Pilot Hole OCS-P-209; 10,803' MD/ 5,964' VD/ 5,857' SS
 6-1/8" Lateral Hole OCS-P-209; 11,348' MD/ 4,972' VD/ 4,865' SS

TD Location: 8-1/2" Pilot Hole OCS-P-209; Y = 731,303' N & X = 1,041,920' E
 6-1/8" Lateral Hole OCS-P-209; Y = 730,380' N & X = 1,039,018' E

Proposed and *Existing Casing: (USING NEW 107' DF)

*24", 201#, X-52	1403'	1140 cf
*18 5/8", 87.5, 117.5 K-55	2424'	1470 cf
*13 3/8", 68, 72# K-55	5344'	2451 cf DV @ 2557'
*9 5/8", 40, 43, 47 # L-80/SS-95	5375' (window)	2952 cf DV @ 5171' (6077')
*Top 4 jts 9 5/8" reported as 47#, next 177 jts are 43.5# to below 6800')		
7", 26#, L-80 Hydril 513	10,803'	1100 cf top at 5,100'

<u>Pilot Hole Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. Pressure</u>
M1	5,364'	4,109'	-4,002'	7.1 PPG
M2	5,773'	4,330'	-4,223'	7.1 PPG
M4	8,590'	4,754'	-4,647'	7.1 PPG
Upper Topanga	10,033'	5,420'	-5,383'	7.1 PPG
Upper Sespe	10,500'	5,750'	-5,643'	8.4 PPG
TD	10,803'	5,964'	-5,857'	8.4 PPG

Note: This procedure follows work to be performed under an approved APM for abandonment of E-8.

Drilling Procedure

1. Move rig to Well E-8 (slot 20) or continue operations if rig is already on the well. If not already on, nipple up BOP equipped with 4 ram preventers (2 – double gates) and an annular. Test the BOP to 250/3000 psi with 5" drill pipe, 4" drill pipe and 2 7/8" tubing. The 13 5/8" BOPE will be configured for drilling operations, with 2 7/8" X 5" VBR pipe rams in the top of the upper double gate and blind/shear rams in the bottom of the upper double gate, the mud cross will be below the upper double gate, 5" rams will be located in the top of the lower double gate and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. All tests will be recorded on a chart for the MMS to review. The applicable BOPE will be tested every 14 days during the drilling phase of the operations. NOTE: If work is continuation of abandonment operation – Drilling Engineer will request MMS approval to convert the testing frequency from 7 days to 14 days based upon last BOPE test. The 2 3/8" rams will not be tested since they will not be required.
2. Make up 9 5/8" 43.5#-47# bottom trip whipstock and starting mills. Tools to be designed to pass through 47# casing joint at surface. Lug will be designed to shear with 25M-30M#. Proposed window mill assembly: 8" starting mill, 8.215" lower watermelon mill, 9' flex joint, and 8.6" upper watermelon mill. Pick up an MWD. Run the equipment in the hole on the 5" drill pipe to 30' above the CIBP set at +/- 5375'. Orient the whipstock off of high side as per Sperry directional drilling supervisor using the measurements from the MWD. Set the whipstock on the CIBP and shear the tools off the whipstock face. Condition the oil base mud as necessary for milling the window and to carry the metal cuttings out of the hole. Mill and dress the window as required for a good exit point for sidetrack. Drill enough rathole to pass all mills through the window and allow for the directional drilling BHA to be below the whipstock face when commence drilling. Mills must smoothly pass through the window. Perform a Formation Integrity Test to 10.5 ppg EMW. Reduce the viscosity of the mud to desired drilling parameters. Pull out hole and lay down the milling tools.
3. Pick up an 8-1/2" PDC bit and drilling assembly on a 6 3/4" steerable directional drilling assembly including LWD triple combo. Run in the hole and sidetrack the well. Directionally drill the 8-1/2" hole from +/- 5,375' to 10,803' MD / 5964' TVD. Note: A 9-7/8" bicenter hole may be attempted on a bit trip after drilling through the Monterey, in order to establish LWD log quality in a bicenter hole. The depth of this attempt will be called by the Drilling Engineer and the Geologist, after consulting the on-site Supervisor and directional drilling/LWD personnel. The 8 1/2" hole will be drilled with a Mineral Oil Base Mud system – MI Drilling Fluid Versaclean System. No overboard discharge of mud or cuttings will be allowed.

- Review the attached directional program. Drill well per Halliburton Sperry-Sun (Slot 17) E-8 – Pilot Hole Plan 4 (27-Mar-06). All depths to be referenced to 107' DF elevation.
- Mud loggers to start upon drilling out of the 9 5/8" casing window and continue through pilot hole and horizontal lateral. ✓
- The BHA should not be rotated on the face of the whipstock. Ensure there is adequate hole drilled below the whipstock to bury the BHA. Take extra precaution when pulling or running the RWD assembly through whipstock.
- Per previous MMS approval, drill cuttings/waste fluids will be disposed of into well E-8S. Record injection volumes, rates and pressures on a daily basis.

3 SPS per telecon w/ J. Hock, and pending OK from OREP. 5/12/06.

4. Circulate and condition the mud for casing. Wipe the hole to the 9 5/8" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
5. Rig up casing crew and run the 7", 26#, L-80, Hydril 513 liner from +/- 5,100' to 10,803' as follows:
 1. 7", 26#, L-80 insert float shoe
 2. 2 Joints of 7", 26#, L-80 casing
 3. 7", 26# L-80 insert float collar
 4. 2 Joints of 7", 26# L-80 casing
 5. 7", 26# L-80 Landing collar
 6. +/- 4,270' of 7", 26#, L-80 Casing
 7. 7" 26# Baker Slope Nipple at +/- 6,365'

Note: Depth of slope nipple may be adjusted dependent upon top M2 penetration. Planned KOP for lateral is at 6325', Slope Nipple to be 40' below whipstock depth. Slope nipple includes independent wiper plug system.

 8. +/- 1200' of 7", 26#, L-80 Casing
 9. 7" 26# X 9 5/8" 40#, Baker Flexlock Hydraulic Liner Hanger
 10. RS Nipple with 6.188" Profile
 11. ZXP Liner Top Packer, 7" x 9 5/8", HR Profile w/ 10' tie-back extension

Notes:

- The 7" flush joint liner will be centralized in the open hole with Weatherford stand-off bands.
- Contact Hydril and have them provide nubbins for the 7" casing.
- Drift DP and xo to ensure cementing dart will pass.
- Run in the hole slowly to avoid surging the formation.
- Contact Hydril and have them provide 7" Hyd 513 XO and have a circulating swage with a safety valve on the rig floor.

6. Run the liner in the hole, tag bottom and pick up 5' and circulate the well until the returns are clean. Reciprocate the liner while circulating. Drop the setting ball and set the liner hanger.

7. Mix and pump the cement job as per the attached program. Bump the plug with 500 psi above the final circulating pressure. Bleed the pressure back and check the floats. Pick up and set the liner packer at the top of the liner hanger. While waiting on cement, pull out of the hole and lay down and pick up drill pipe and drilling tools as required.
- Notes:
- The Baker Slope Nipple has independent wiper plug system, carefully review Baker procedure for cementing of liner with Slope System.
 - A detailed cementing program will be provided with slurry specifications.
 - Cement volumes are based on 35% excess in the open hole and are calculated to bring cement to above the liner top.
 - Do not circulate at the top of the liner prior to pulling out of the hole.
 - Set the liner 3' off bottom.
8. Pick up an 8 1/2" bit and run in the hole. Clean out to the top of the liner at +/- 5100'. Pressure test the liner top to 3000 psi. Pull out of the hole.
9. Pick up a clean out assembly with 6 1/8" bit and 4" HT-38 drill pipe and run in the hole. Clean out the 7" liner to the landing collar or as indicated based upon completion intervals. Pressure test the 7" liner to 3000 psi. Change well over from oil based mud to seawater. Pull out of the hole.
10. Rig up wireline and run a cement bond log (USIT/Spectral GR) across 7" liner. The high angle will require drill pipe conveyed equipment. Rig down wireline.
11. Lift BOP stack and install new completion spool for 3-1/2" tubing with three 1/4" control lines for SCSSV and hydraulically operated sliding sleeve. Reland BOP and perform BOP test for completion operations. A detailed completion procedure will be provided after the LWD logs have been evaluated. The completion will include TCP overbalance perforation of the Upper Topanga and a gravel packed 4" liner. ✓

Notes:

Pressure test BOP equipped with 4 ram preventers (2 – double gates) and an annular. Test the BOP to 250/3000 psi with 5" drill pipe and 2-7/8" tubing. The 2 3/8" rams will not be tested because 2 3/8" tubing will not be used in this operation. The 13 5/8" BOPE will be configured for workover operations, with 2 7/8" X 5" VBR pipe rams in the top of the upper double gate and blind/shear rams in the bottom of the upper double gate, the mud cross will be below the upper double gate, 5" rams will be located in the top of the lower double gate and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. All tests will be recorded on a chart for the MMS to review. The applicable BOPE will be tested every 7 days during completion operations.

In addition a 2 1/16" 5M casing valve below the tubing hanger with a 1502 tee and pressure gauge, a check valve and high pressure hose connection to it will be installed and tested to 3000 psi for 5 minutes. It will be used for continuously pumping seawater into the well at 3 bpm below the hanger landing profile to keep the well under control. This line will be utilized throughout the remainder of the procedure. The BOP test frequency will remain at 7 days for the remainder of the procedure, since the lateral section is like a workover from a well control standpoint.

12. After gravel packing, set SB packer plug into the SC-1 Packer, spot a 10 bbl high viscosity cross-linked polymer pill on top of the gravel pack packer. This pill and the 90° inclination at the window depth will keep debris from the 2nd window suspended above the gravel pack packer plug. The hole will be full of seawater.

Note: The SB packer plug will isolate the Pilot hole interval from the Lateral interval during drilling operations.

13. Make up and run in the hole with the Slope Orientation sub and establish the orientation of the nipple for all future re-entry operations.
14. Make up 7" 26# bottom trip whipstock and starting mills with Baker Slope Nipple as per the following:

- Position # 1 Slope Locator
- x/o 3-1/2" IF Box x 2-7/8 IF Pin
- Ported Sub 3-1/2 IF Box x Pin
- 3-1/2" Drill Pipe f/ space Out w/ 3-1/2 IF Box x Pin
- X-O Sub with 2-7/8 IF Pin x 3-1/2 IF Pin
- Ret Bottom trip Anchor w/ 3-1/2 IF Box x 2-7/8 If box
- Debris Excluder w/ 3-1/2 IF Box x Pin
- Shear Disconnect w/ 3-1/2 If Box x Pin
- Unloader Sub w/ 3-1/2 IF Box x Pin
- Debris Excluder w/ 3-1/2 IF Box x Pin
- WindowMaster Whipstock w/ 3-1/2 IF Pin
- Window Mill w/ 3-1/2 Reg Pin
- Lower WaterMelon Mill w/ 3-1/2 IF Box x 3-1/2 Reg Box
- Flex Joint w/3-1/2 IF Box x Pin
- Upper Wartermelon Mill w/ 3-1/2 IF Box x Pin
- 1jt 3-1/2 HWDP
- Float Sub w/ 3-1/2 IF Box x Pin
- Monel Collar w/ 3-1/2 IF Box x Pin
- MWD w/ 3-1/2 IF Box x Pin
- Lubricated Bumper Sub w/ 3-1/2 IF Box x Pin
- DP to Surface

Run in the hole with whipstock assembly. Orient and set the Whipstock in Slope Nipple as per Baker Oil Tools detailed procedure. Shear mills off of the whipstock face and change the hole over to Durogel/Duovis milling fluid.

The Table below indicates the Shear Force settings:

	Force required <u>DOWNHOLE</u> to shear / set (Klbs)	Slack-Off required at <u>SURFACE</u> to shear / set (Klbs)
Whipstock Shear Bolt	45 Klbs (Lesson learned)	50 Klbs (may have to be fatigued – do not o/pull due to risk of shear / unseat bottom trip anchor)
Bottom Trip Anchor	20 Klbs	20 Klbs (applied repeatedly)
SLOPE Locator in SLOPE nipple	< 5 Klbs	maximum 10 Klbs

- Detailed Procedure for setting of whipstock in the Slope Nipple to be provided
- Orient the whipstock off of high side as per Sperry directional drilling supervisor using the measurements from the MWD.
- Mill and dress the window as required for a good exit point for sidetrack.
- Drill enough rathole to pass all mills through the window and allow for the directional BHA tools to be below the whipstock face when commence drilling. Mills must smoothly pass through the window.
- Perform a Formation Integrity Test to 10.5 ppg. Reduce fluid viscosity.
- Pull out of the hole and lay down the milling tools.

15. Pick up a 6 1/8" PDC bit and drilling assembly on a 4 3/4" steerable directional drilling assembly including LWD. Run in the hole and sidetrack the well. ✓
Directionally drill the 6 1/8" hole from +/- 6,325' to 11,348' MD / 4972' TVD. The 6 1/8" hole will be drilled with Durogel, Duovis, seawater and sweeps. Returns are expected to be intermittent due to the low pressure and extended horizontal section planned in the fractured M2 chert. No overboard discharge of mud or cuttings will be required, plan to utilize approved cuttings injection well.

Notes:

- Have 1600' of 5" HWDP available for this hole section. Kenai to provide 1000' and Weatherford will provide 600' (21 joints).
- Review the attached directional program. Drill well per Halliburton Sperry-Sun (Slot 17) E-8 – Wellbore #5 – Hzi Plan 4 (03-Apr-06)
- All depths to be referenced to 107' DF elevation ✓
- Mud loggers to start upon drilling out of the 7" casing window and continue through to TD of horizontal lateral. ✓
- The BHA should not be rotated on the face of the whipstock. Ensure there is adequate hole drilled below the whipstock to bury the BHA.
- Take extra precaution when pulling or running the assembly through whipstock.
- Per previous MMS approval, drill cuttings/waste fluids will be disposed of into well E-8S. Record injection volumes, rates and pressures on a daily basis.

3. per telecon w/ J. Hood, and pending OREP approval; 5/12/06.

16. Circulate the hole clean. Pull out of the hole and lay down directional drilling tools. Run in the hole with 6-1/8" fixed hole opener. Circulate the well clean, changing over to clean seawater. Wipe the hole to the 7" casing window. Run back to bottom, circulate the well clean and pull out of the hole. **Keep at least 3 bpm of seawater going into the well at all times as in all Platform Gail workovers.**
17. Rig up Schlumberger drill pipe conveyed logging equipment and run FMI/GR log to +/- 11,348' MD. Pull out of the hole and rig down Schlumberger.
18. Run in the hole with 6-1/8" fixed hole opener. Spot 8000 gallons of inhibited 15% HCl acid across the open hole interval. Pull out of the hole and lay down the 6-1/8" fixed hole opener.
19. Retrieve the Baker whipstock from the Slope Nipple and SB packer plug from the SC-1 gravel pack packer.
20. Run 3-1/2" 9.3# L-80 EUE 8rd tubing and production equipment as per the attached wellbore schematic. Hydrotest tubing to 5000 psi. Land tubing hanger and secure with lock down pins.
21. Rig up slickline and test lubricator to 3000 psi. Set XX plug in profile at +/- 5097'. Pressure up to 4500 psi to set the Baker 9-5/8" twin seal packer. Test the annulus to 2000 psi for 30 minutes. Shift open the hydraulically actuated sliding sleeve to prepare to clean up and test the Monterey M2 lateral section. Leave the XX plug in place to keep the Upper Topanga gravel packed completion isolated. Rig down slickline.
22. Close SCSSV. Set BPV. Remove BOP. Install and test void/tree to 5000 psi. Install and test new flowlines. Place well on gas lift production. Prepare to move rig to next well.

Note: After testing the Monterey M2 lateral section. Rig up slickline. Test lubricator to 2000 psi. Shift sliding sleeve closed and isolate the Monterey M2 lateral section. Test sleeve and tubing to 2000 psi. Retrieve XX plug from profile at 5097', exposing Upper Topanga completion. Rig down slickline. Flow test Upper Topanga formation. After obtaining individual tests on both completions. Obtain permission from MMS to commingle production. The hydraulically actuated sliding sleeve will allow for periodic well tests from individual zones without undue loss of production due to slickline intervention.

EVALUATION PROGRAM

Mudlogging Program for Pilot Hole and Horizontal Hole:

- Begin Mudlogging upon exiting shoe/casing above Monterey formation, including GR-Res curves on mudlog.
- Collect dry samples at 30' intervals throughout the well.

Testing Program

- None expected.

Open Hole Logging program

- LWD starting right out of casing with Sperry Gr-Res-Density-Neutron for both the pilot hole and the horizontal well. Real-time data images via Insite.
- Run#1 RD2 (horizontal): GR-FMI pipe conveyed from TD to casing tie-in.

Cased Hole Logging program

- RD1(pilot hole): Substitute Spectral GR for standard GR on CBL/USIT log run on the 7".

Logging geologist: Dale Kunitomi 805-987-3026

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8	7	Hz Lateral
2	Setting Depth (feet - TVD)	4131	5964	4972
3	Expected Leak Off Test EMW at shoe (ppg)	12.3	10.5	10.5
4	Depth of next Casing (feet - TVD)	5964	5964	4972
5	Maximum Expected Formation Pressure (psi)	2605	2605	1836
6	Expected Mud Weight (ppg)	9.2	9.2	8.5
7	Formation Equivalent Mud Weight (ppg)	8.4	8.4	7.1
8	Expected Hydrostatic Pressure at TD (psi)	2853	2853	2198
9	Amount of Overbalance at TD (psi)	248	248	362
10	Fracture Gradient at shoe (psi/ft)	0.64	0.55	0.55
11	Fracture Pressure at shoe (psi)	2642	3256	2715
12	Hydrostatic Pressure at shoe (psi)	1976	2853	2198
13	Margin between Mud Weight and LOT (psi)	666	403	517

Maximum Anticipated Surface Pressures

		Window	Pilot Hole	Horiz Lateral
1	Casing Size (in)	9-5/8	7"	OH
2	Setting Depth (feet - TVD)	4115	5964	4972
3	Expected Leak Off Test EMW at shoe (ppg)	12.9	10.5	10.5
4	Expected Mud Weight (ppg)	9.2	9.2	8.5
5	Depth of next Casing (feet - TVD)	5964	5964	4972
6	Maximum Expected Formation Pressure (psi)	2605	2605	1836
7	Expected gas gradient (psi/ft)	0.05	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.4	8.4	7.1
	Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	2307	2307	1587
10	Fracture Gradient at shoe (psi/ft)	0.67	0.55	0.55
11	Fracture Pressure at shoe (psi)	2760	3256	2715
12	Surface pressure to break down shoe (psi)	2555	2958	2466
13	Maximum Anticipated Surface Pressure (psi)	2307	2307	1587
	Max Pressures using 70% Gas & 30% Mud			
14	Maximum Anticipated Surface Pressure (psi)	1540	1540	1002
15	Top of fluid (feet-TVD)	4175	4175	3480
16	Pressure at shoe (psi)	1746	2605	1836
17	Margin between pressure and breakdown(psi)	1014	651	879

CASING PROGRAM

Hole Section	12.25	8 1/2" Pilot Hole
Mud Weight	9.2	9.2
Buoyancy Factor	0.860	0.860
MASP (psi)	2307	2307
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9-5/8*	7
Setting Depth, MD (ft)	5375	10803
Setting Depth, TVD (ft)	4115	5964
Top of Casing, MD (ft)	0	5175
Weight (lb/ft)	43.5	26
Grade	L-80	L-80
Threads	STL	513
ID (in)	8.681	6.199
Drift diameter (in)	8.525	6.151
Collapse (psi)	3810	5410
Burst (psi)	6330	7240
Joint Strength (kips)	813	448
Body Strength (kips)	1005	604
Collapse Safety Factor	1.94	1.90
Burst Safety Factor	2.74	3.14
Tensile Safety Factor	2.70	1.98

Notes:

*The existing 9 5/8" has reported 4 joints of 47# STL at surface.
 The ID/Drift are for the 47# casing since that causes the greatest restriction.
 Performance properties are for 43.5# casing, which is the grade at the window.

The 7" liner calculated safety factors are based upon pipe run to surface.
 Safety factors at actual liner setting depths will be higher.

The Horizontal wellbore, drilled out of the pilot hole's 7" liner, is an open hole completion and therefore does not have any casing design calculations to show.

CEMENTING PROGRAM

7" Protective/Production Liner

Objective: Cement 7" liner set across the 8 1/2" open hole interval. Liner will extend +/- 275' back into the 9 5/8" casing. Cement will be programmed to be brought back to the liner top'. A liner top packer will be installed at the liner top and will isolate the liner lap and provide for casing/liner pressure integrity.

General Information:

9 5/8", 43.5#, L-80 Casing Window 5375' (8.755" ID)

7", 26#, L-80 Hydril 513 Liner (6.276" ID) Shoe at 10,803' & TOL at 5100'

Lap Volume Factor is 0.1508 CF/FT

8 1/2" Open Hole Volume Factor is 0.3941 CF/FT

Shoe Joint Volume Factor is 0.2148 CF/FT

Open Hole Excess 50% over theoretical

Static Temperature is 173° F (@ 5964' TVD - shoe of the 7" liner)

Slurry Volume:

1100 CF (957 sx) of cement total required to bring cement from 10,803' to 5,100' which is 5,703 lineal feet. This volume includes 50% excess in the open hole. Oil base mud typically provides close to gauge hole.

Cement Slurry Details:

Pre-flush: 20 bbls of Ultra Flush II

Tail Slurry: 1100 CF (957 sx) of Class "G" + additives to be determined.

Yield: 1.15 CF/sx

Water: 4.80 gal/sx

Weight: 15.8 ppg

Mix Water: Fresh Water

Height: 5,703 lineal feet (10,803' – 5,175')

Note: Lab tests will be performed prior to cementing to verify slurry properties.

Actual materials that will be used on location will be used to perform tests.

DRILLING FLUIDS PROGRAM

8-1/2" PILOT HOLE

INTERVAL MUD PROPERTIES FOR VERSACLEAN OBM SYSTEM							
Depth MD (ft)	Mud Weight (ppg)	S/W Ratio	Plastic Viscosity (cp)	Yield Point (lb/100ft ²)	LSRV	CaCl ₂ % By Weight	Electric Stability
5375' Milling	9.2 - 9.5	70/30-75/25	12-20	10 - 16	10 -12	20 - 25	>400
5375' -10803'	9.2 - 9.5	70/30-75/25	12-20	10 - 16	10 -12	20 - 25	>400

The well will be changed over to seawater, the pits cleaned and the Versaclean OBM will be brought on board for the change-over. See the detailed mud program for description of the change-over.

Notes:

1. Prior to bring the OBM on board the drilling area will be made ready for full containment to prevent accidental overboard discharge of OBM.
2. Operate solids control equipment to maintain drill solids as low as possible.
3. Maintain supply of ZnCO₃ onboard to treat out H₂S.
4. A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised a minimum of 0.5 ppg using total circulating volume of 1200 bbls for 8 1/2" hole to 10,803'. This includes 760 bbls open hole volume & 440 bbls active system. (Actual to weight up 1200 bbls .5 ppg = 347 sx)
5. Review detailed program for lost circulation contingency plans and materials.

6-1/8" LATERAL HOLE

INTERVAL MUD PROPERTIES for Versaclean OBM System							
Depth MD (ft)	Mud Weight (ppg)	Fluid Loss (ml/30 min)	Plastic Viscosity (cp)	Yield Point (lb/100ft ²)	YS	Chlorides (kmg/l)	PH
+/- 6,325' Milling	8.6 - 8.8	NC	12 - 20	>40	>20	18 - 20	10 - 11
6,325' -11348'	8.5	NC	Water	Water	Water	Water	Water

Whipstock: The fluid system used for the milling operations will be Durogel and Duovis. This will provide adequate viscosity and carrying capacity for the milling operations. These products mix easily with seawater, which will be in the well after completing the Upper Topanga formation in the Pilot Hole.

6,325' – 11,348': Begin drilling with milling fluid system. As more lateral section is drilled in the fractured Monterey M2 chert, the percentage of returns will steadily decrease. At times drilling may have to occur with out returns. Drill 6-1/8" hole section using seawater, combined with Durogel/Duovis sweeps. While drilling, continue to pump 250 gpm (5.9 bpm) fluid through the drill string. This rate is nearly double the historical rate used to keep the depleted Monterey formation under control during workovers. Utilize high pressure casing fill up line (see notes under Step #11) to pump a minimum of 3 bpm down the casing while making connections and/or tripping. **Water must continuously be running into the well whenever the hole will not stand full.**

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

WHILE DRILLING

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

WHILE TRIPPING

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing.

Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

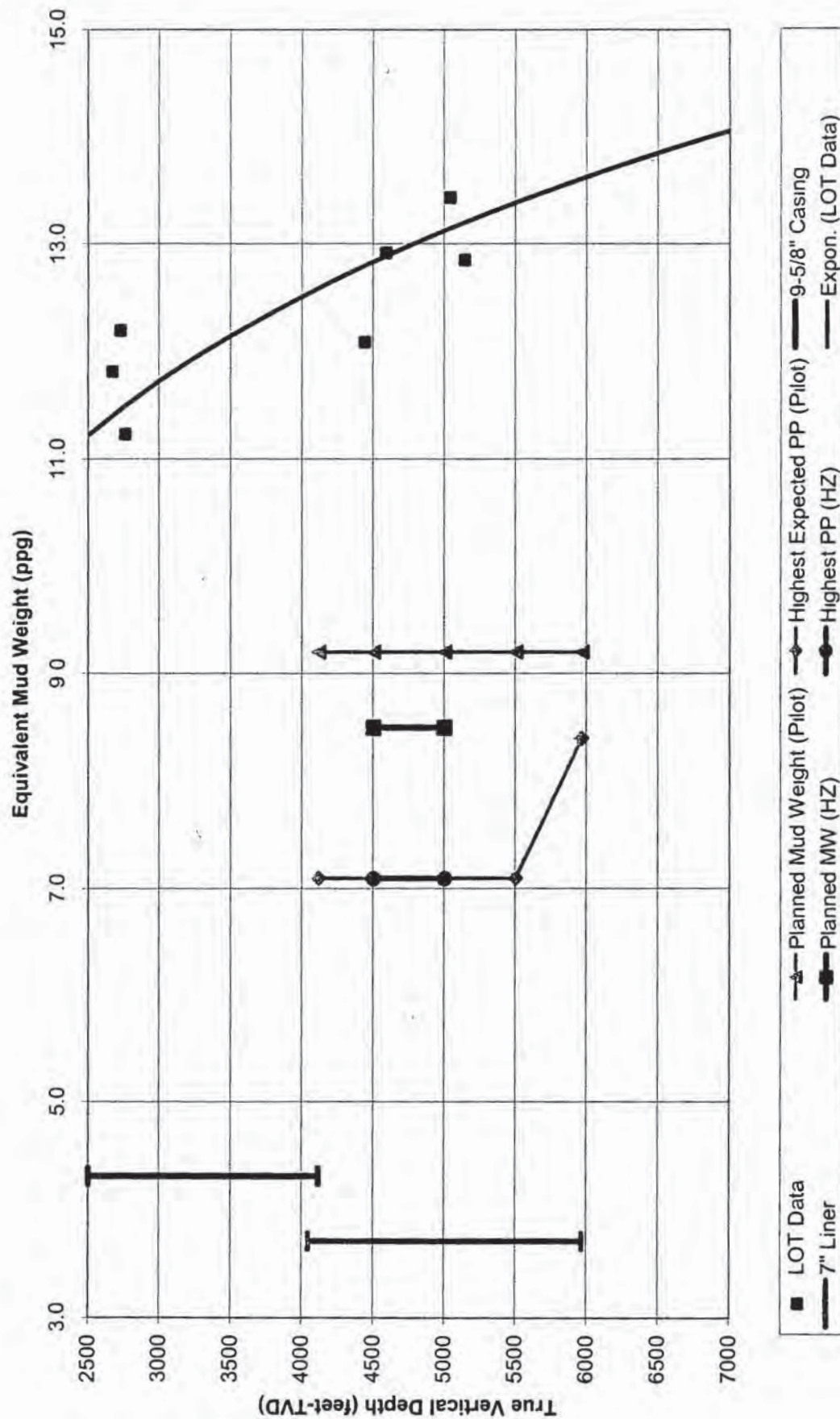
1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

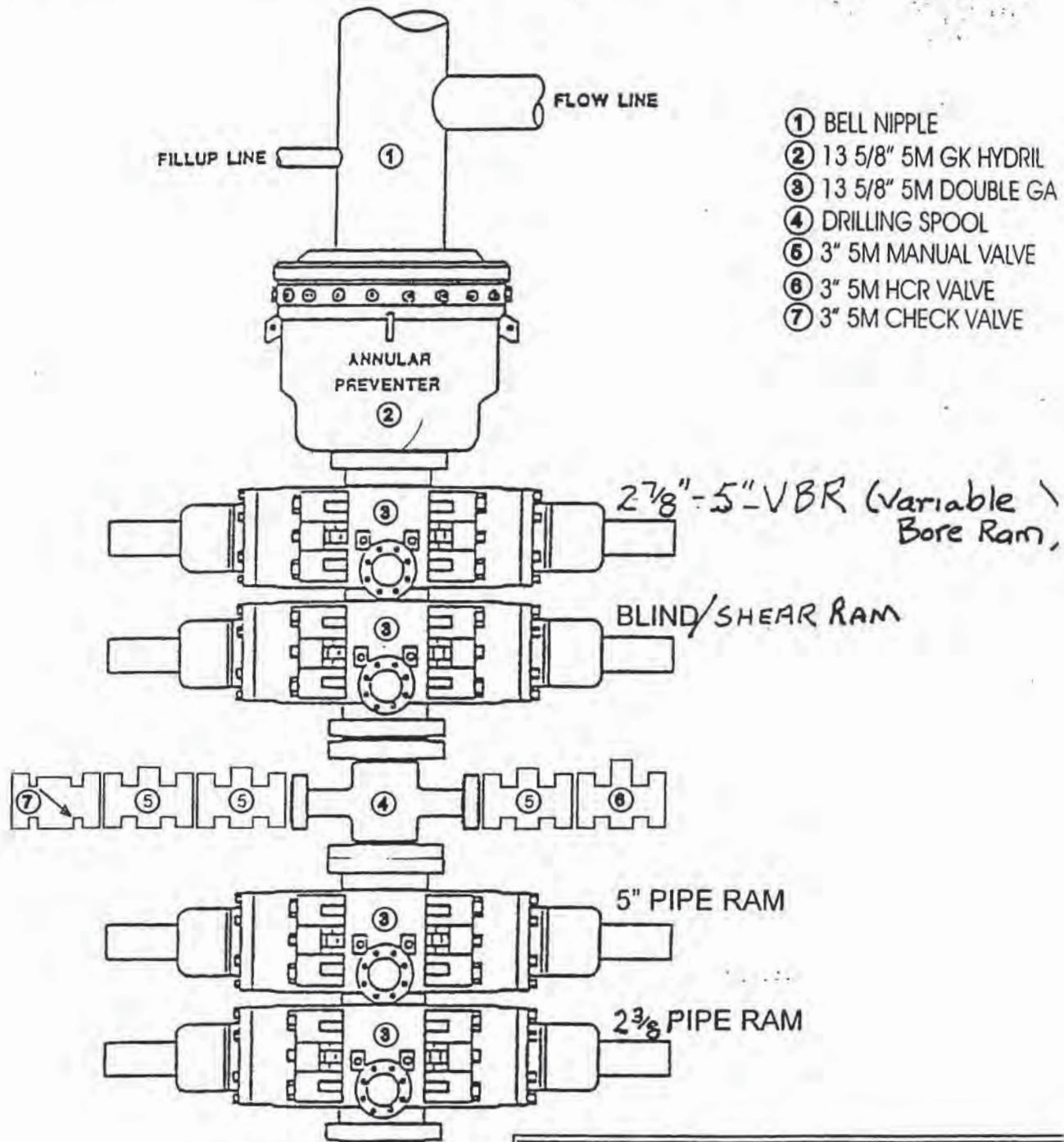
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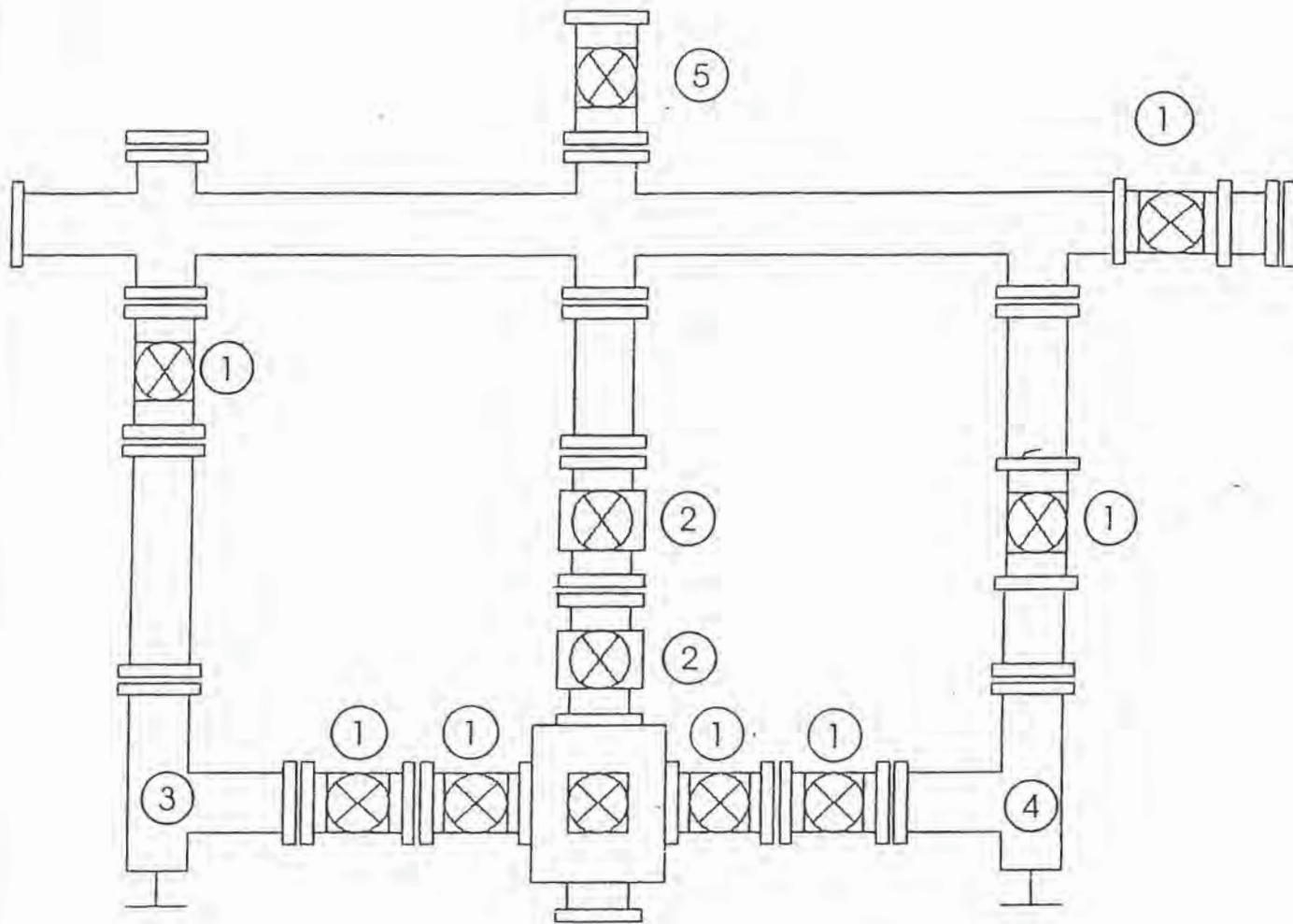
Platform Gail Well E-8 RD Pilot Hole/Horizontal Lateral Pore Pressure, Mud Weight & Fracture Pressure



BOP STACK COMPLETION CONFIGURATION



**BLOWOUT
PREVENTION SYSTEM
PLATFORM GAIL**



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD PLATFORM GAIL

Vertical to 1415'
 Inclination reaches 90° at 6300' MD/4,442' TVD
 Lateral Hole drilled at 83° 6,300' to 11,348' MD/4,972' TVD
 Pilot Hole drilled to 10,803' MD/5,964' TVD
 Inclination drops to 45° at 10,000' MD/5,400' TVD
 D.F. Elevation: 107'
 D.F. to Tubing Head: 50'
 Water Depth: 739'
 Tree: FMC 5000 PSI WP

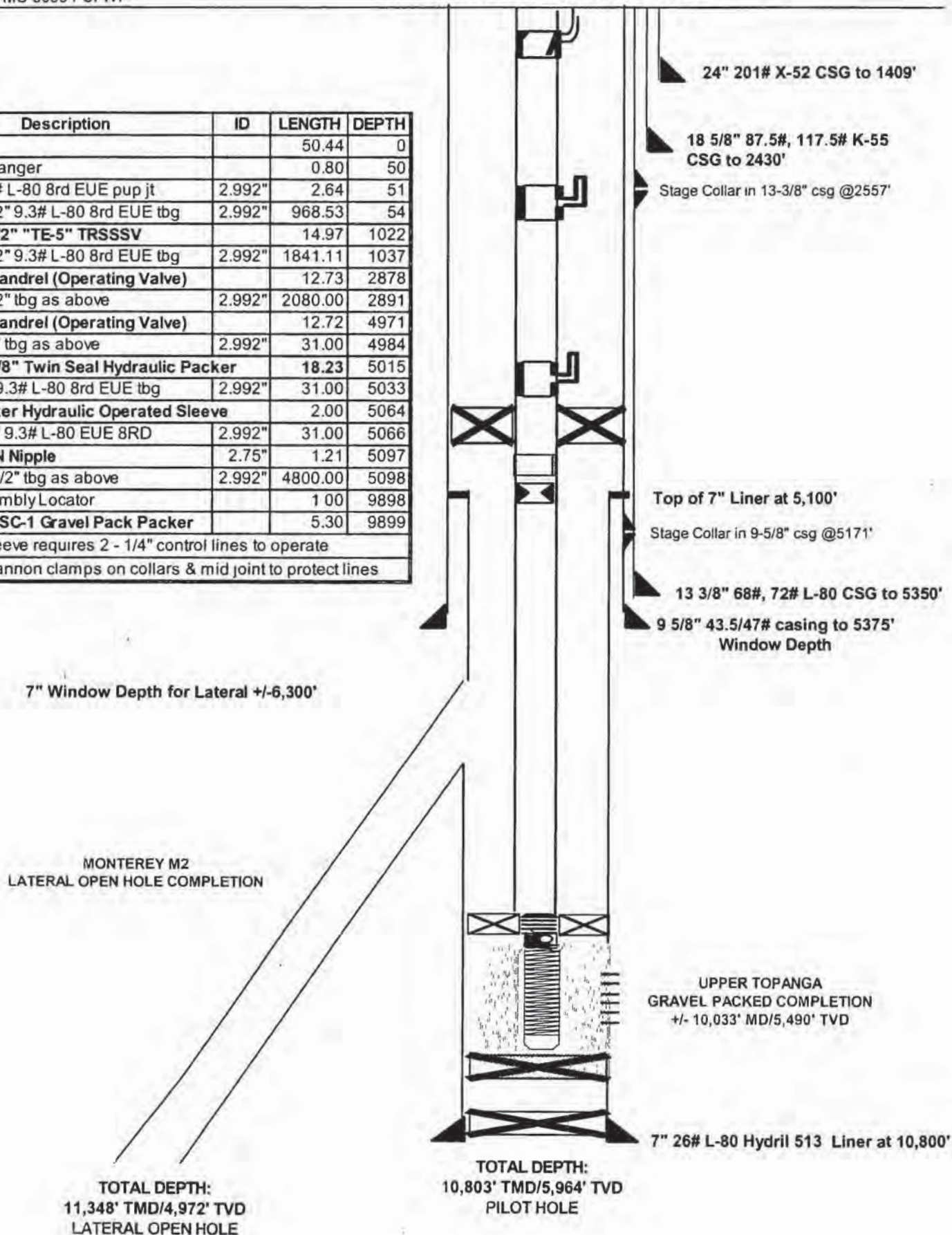
SOCKEYE FIELD **WELL E-8 RD**

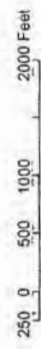
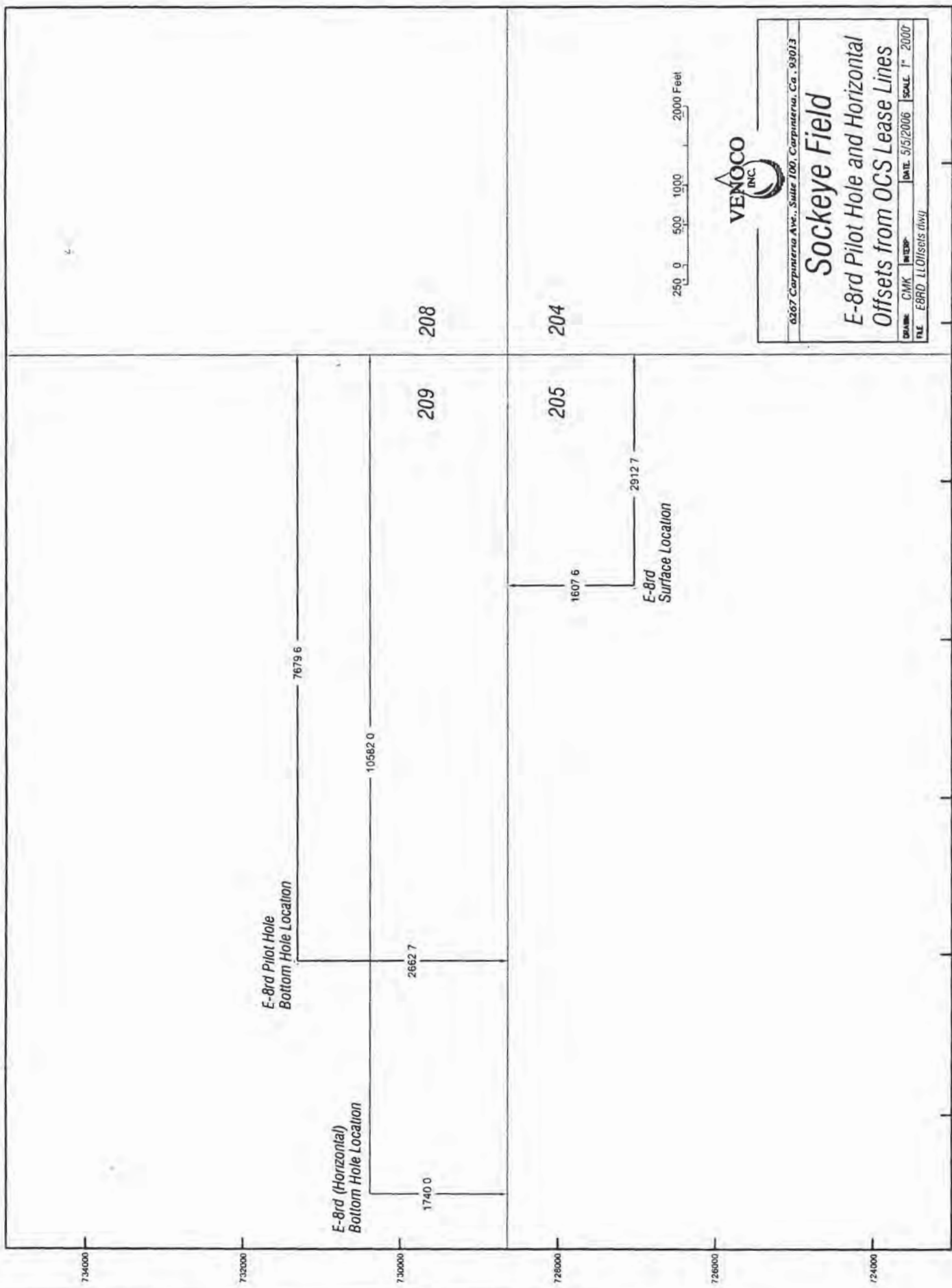
Drawing Revision 05/03/06 JLH

Completion Date:

Lease: OCS-P-0209 PROPOSED REDRILL PILOT HOLE & LATERAL HOLE

Description	ID	LENGTH	DEPTH
KB		50.44	0
FMC tbg hanger		0.80	50
3-1/2" 9.3# L-80 8rd EUE pup jt	2.992"	2.64	51
31 jts 3 1/2" 9.3# L-80 8rd EUE tbg	2.992"	968.53	54
Baker 3 1/2" "TE-5" TRSSSV		14.97	1022
60 jts 3 1/2" 9.3# L-80 8rd EUE tbg	2.992"	1841.11	1037
Gas Lift Mandrel (Operating Valve)		12.73	2878
66 jts 3 1/2" tbg as above	2.992"	2080.00	2891
Gas Lift Mandrel (Operating Valve)		12.72	4971
1 jts 3 1/2" tbg as above	2.992"	31.00	4984
Baker 9-5/8" Twin Seal Hydraulic Packer		18.23	5015
1 jt 3 1/2" 9.3# L-80 8rd EUE tbg	2.992"	31.00	5033
3 1/2" Baker Hydraulic Operated Sleeve		2.00	5064
1 jts 3 1/2" 9.3# L-80 EUE 8RD	2.992"	31.00	5066
3 1/2" BXN Nipple		2.75	5097
152 jts 3 1/2" tbg as above	2.992"	4800.00	5098
Seal Assembly Locator		1.00	9898
7" Baker SC-1 Gravel Pack Packer		5.30	9899
Sliding Sleeve requires 2 - 1/4" control lines to operate			
Will run Cannon clamps on collars & mid joint to protect lines			

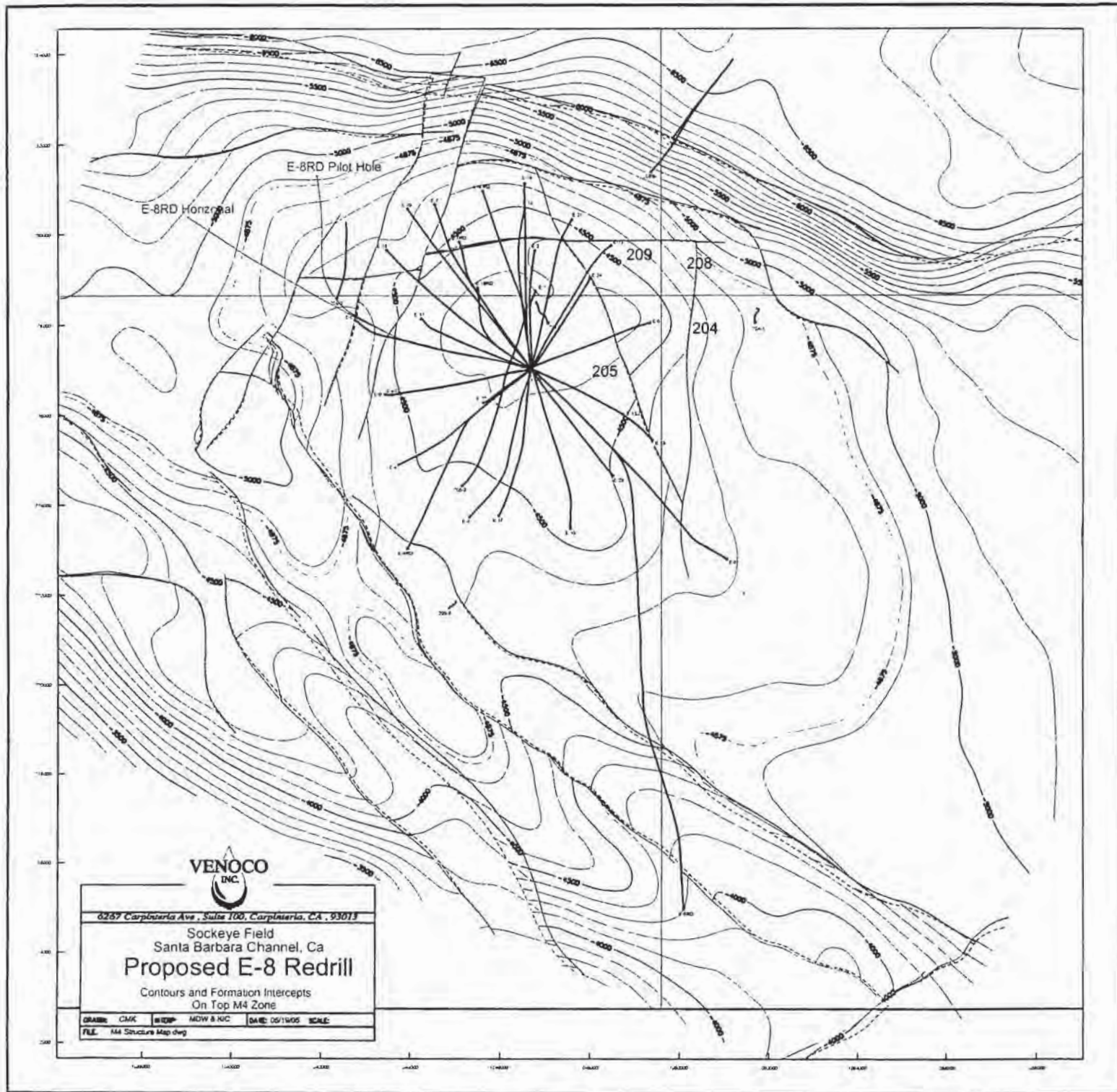




6367 Carpinteria Ave., Suite 100, Carpinteria, Ca 93013

Sockeye Field
E-8rd Pilot Hole and Horizontal
Offsets from OCS Lease Lines

DRAWN	CMK	REVISION	DATE	5/5/2006	SCALE	1" = 2000'
FILE	EBRD	LL01sets.dwg				





Azimuths to Grid North
True North 1.75°
Magnetic North 15.07°
Magnetic Field
Strength 47752 nT
Dip Angle 58.76°
Date 4/22/06
Model BGM2005

Venoco Inc

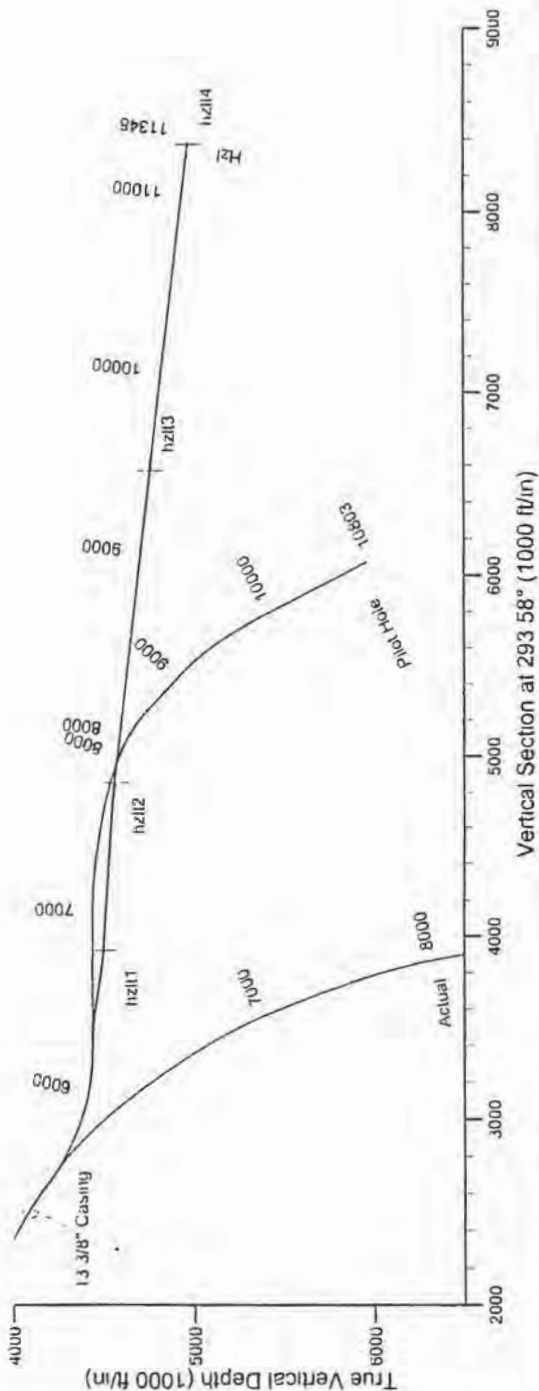
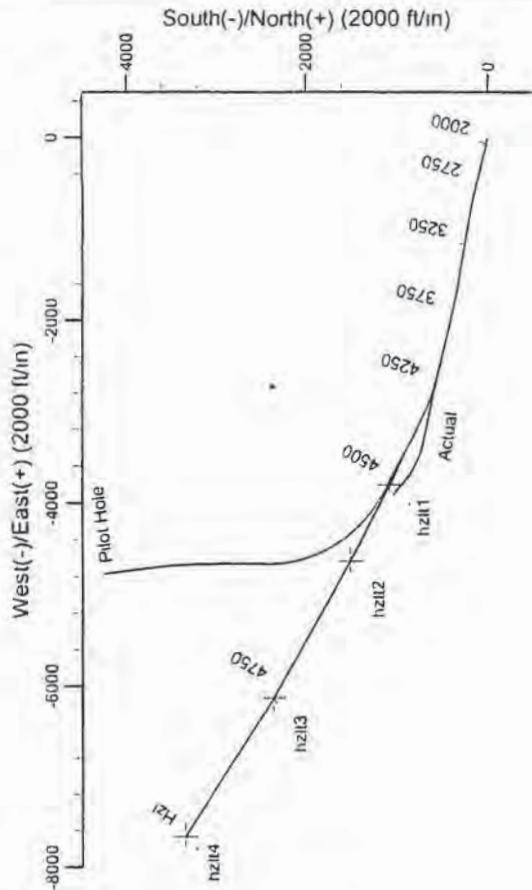
Project Platform Gail
Site, Platform Gail
Well, (Slot 17) E-8
Wellbore #5
Hzi Plan 4 (03-Apr-06)

(Slot 17) E-8
NAD 1927 (NADCON CONUS)
California VI 406
Reference Grid
Well @ 107 00ft (Original Well Elev)
Northing 727032.46
Easting 1045687.33

HALLIBURTON
Sparty Drilling Services

SECTION DETAILS

MD	Inc	Azi	TVD	+N/S	+E/W	DLeg	TFace	VSec	Target
6325.00	90.00	298.39	4442.00	859.59	-3345.53	0.00	0.00	3410.04	
6549.45	79.88	293.51	4461.78	957.34	-3546.21	5.00	-154.50	3633.07	
6631.54	79.88	293.51	4476.20	989.57	-3620.32	0.00	0.00	3713.88	
6841.71	86.01	297.61	4502.00	1079.54	-3808.33	3.50	33.87	3922.19	hzi1
6847.03	86.16	297.50	4502.36	1081.99	-3813.03	3.50	-35.90	3927.48	
7668.65	86.16	297.50	4557.36	1460.53	-4540.18	0.00	0.00	4745.34	
7776.17	83.55	299.40	4567.00	1511.54	-4634.33	3.00	144.10	4852.03	hzi2
9512.39	83.55	299.40	4762.00	2358.54	-6137.33	0.00	0.00	6568.36	hzi3
9630.22	83.43	302.96	4775.37	2419.15	-6237.48	3.00	92.22	6684.39	
11348.01	83.43	302.96	4972.00	3347.54	-7669.33	0.00	0.00	8368.07	hzi4





**Venoco Inc.
Sockeye Field
Platform Gail
(Slot 17) E-8 - Pilot Hole Plan 4 (27-Mar-06)**

Halliburton Sperry-Sun Proposal Report

27 March, 2006

Surface Coordinates 727032 46 N, 1046687 33 E (34 12519893" N, 119 40009914" W)
Grid Coordinate System NAD27 California State Planes, Zone VI

RKB Elevation 107 00ft above Mean Sea Level
Water Depth 739 00ft

Proposal Ref pro151755

HALLIBURTON

Proposal Report for Platform Gail - (Slot 17) E-8

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
0.00	0.000	0.000	107.00	0.00	0.00 N	0.00 E	727032.46 N	1046687.33 E		0.00	
846.00	0.000	0.000	-739.00	846.00	0.00 N	0.00 E	727032.46 N	1046687.33 E	0.000	0.00	
894.00	0.200	118.117	-787.00	894.00	0.04 S	0.07 E	727032.42 N	1046687.40 E	0.417	-0.08	
994.00	0.217	180.833	-887.00	994.00	0.31 S	0.23 E	727032.15 N	1046687.56 E	0.217	-0.38	
1094.00	0.100	293.483	-987.00	1094.00	0.47 S	0.14 E	727031.99 N	1046687.47 E	0.271	-0.42	
1194.00	0.150	83.433	-1087.00	1194.00	0.42 S	0.19 E	727032.04 N	1046687.52 E	0.242	-0.42	
1294.00	0.150	36.150	-1187.00	1294.00	0.29 S	0.40 E	727032.17 N	1046687.73 E	0.120	-0.49	
1394.00	0.250	317.500	-1287.00	1394.00	0.03 S	0.33 E	727032.43 N	1046687.66 E	0.265	-0.26	
1494.00	1.750	273.750	-1386.98	1493.98	0.23 N	1.34 W	727032.69 N	1046685.99 E	1.579	1.15	
1594.00	3.933	270.433	-1486.85	1593.85	0.36 N	6.30 W	727032.82 N	1046681.03 E	2.189	4.93	
1694.00	6.083	273.433	-1586.46	1693.46	0.70 N	15.02 W	727033.16 N	1046672.31 E	2.165	11.65	
1794.00	8.983	279.617	-1685.59	1792.59	2.32 N	28.01 W	727034.78 N	1046659.32 E	3.007	22.41	
1894.00	12.150	283.067	-1783.88	1890.88	6.01 N	45.96 W	727038.47 N	1046641.37 E	3.228	38.24	
1994.00	15.467	283.250	-1880.98	1987.98	11.45 N	69.20 W	727043.91 N	1046618.13 E	3.317	59.18	
2094.00	18.850	282.750	-1976.52	2083.52	18.07 N	97.94 W	727050.53 N	1046589.39 E	3.386	85.01	
2194.00	22.267	285.000	-2070.14	2177.14	26.54 N	132.01 W	727059.00 N	1046555.32 E	3.506	116.03	
2294.00	25.783	284.833	-2161.46	2268.46	37.01 N	171.34 W	727069.47 N	1046515.99 E	3.517	152.32	
2394.00	28.333	283.917	-2250.51	2357.51	48.29 N	215.41 W	727080.75 N	1046471.92 E	2.584	192.67	
2494.00	32.983	284.300	-2336.50	2443.50	60.73 N	264.84 W	727093.19 N	1046422.49 E	4.654	237.79	
2594.00	37.250	282.250	-2418.29	2525.29	73.88 N	320.82 W	727106.34 N	1046366.51 E	4.426	288.26	
2694.00	41.417	283.867	-2495.62	2602.62	88.24 N	382.54 W	727120.70 N	1046304.79 E	4.291	343.81	
2794.00	45.300	285.917	-2568.32	2675.32	105.92 N	448.86 W	727138.38 N	1046238.47 E	4.130	405.00	
2894.00	48.967	285.167	-2636.33	2743.33	125.54 N	519.46 W	727158.00 N	1046167.87 E	3.708	470.69	
2994.00	52.683	285.317	-2699.49	2806.49	145.92 N	594.25 W	727178.38 N	1046093.08 E	3.718	539.98	
3094.00	54.183	281.600	-2759.08	2866.08	164.58 N	672.34 W	727197.04 N	1046014.99 E	3.340	610.60	
3194.00	53.033	279.867	-2818.41	2925.41	179.58 N	751.42 W	727212.04 N	1045935.91 E	1.808	679.51	
3294.00	53.333	279.567	-2878.34	2985.34	193.09 N	830.33 W	727225.55 N	1045857.00 E	0.384	747.30	
3394.00	53.050	279.783	-2938.25	3045.25	206.54 N	909.25 W	727239.00 N	1045778.08 E	0.332	815.07	
3494.00	52.983	279.950	-2998.41	3105.41	220.23 N	987.95 W	727252.69 N	1045699.38 E	0.149	882.82	
3594.00	53.800	280.300	-3058.04	3165.04	234.35 N	1066.97 W	727266.81 N	1045620.36 E	0.864	951.10	

E-8

Proposal Report for Platform Gail - (Slot 17) E-8

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
3694 00	53 933	280 867	-3117 01	3224 01	249 18 N	1146 36 W	727281 64 N	1045540 97 E	0 477	1020 13	
3794 00	54 450	279 483	-3175 52	3282 52	263 50 N	1226 18 W	727295 96 N	1045461 15 E	1 235	1089 14	
3894 00	55 433	278 783	-3232 96	3339 96	276 49 N	1307 00 W	727308 95 N	1045380 33 E	1 138	1158 00	
3994 00	56 033	280 067	-3289 27	3396 27	290 03 N	1388 52 W	727322 49 N	1045298 81 E	1 219	1227 76	
4094 00	56 600	279 517	-3344 73	3451 73	304 18 N	1470 52 W	727336 64 N	1045216 81 E	0 728	1298 27	
4194 00	56 867	279 350	-3399 58	3506 58	317 88 N	1553 00 W	727350 34 N	1045134 33 E	0 301	1368 85	
4294 00	57 283	281 433	-3453 94	3560 94	333 02 N	1635 56 W	727365 48 N	1045051 77 E	1 798	1440 45	
4394 00	57 817	279 950	-3507 60	3614 60	348 68 N	1718 47 W	727381 14 N	1044968 86 E	1 361	1512 65	
4494 00	58 067	282 350	-3560 68	3667 68	365 07 N	1801 62 W	727397 53 N	1044885 71 E	2 049	1585 52	
4594 00	57 950	282 950	-3613 66	3720 66	383 64 N	1884 37 W	727416 10 N	1044802 96 E	0 522	1659 55	
4694 00	58 700	282 950	-3666 17	3773 17	402 71 N	1967 31 W	727435 17 N	1044720 02 E	0 750	1734 05	
4794 00	59 300	282 033	-3717 68	3824 68	421 25 N	2050 99 W	727453 71 N	1044636 34 E	0 989	1808 75	
4894 00	60 150	283 817	-3768 09	3875 09	440 57 N	2135 16 W	727473 03 N	1044552 17 E	1 759	1884 33	
4994 00	60 183	283 033	-3817 84	3924 84	460 71 N	2219 54 W	727493 17 N	1044467 79 E	0 680	1960 62	
5094 00	60 917	283 800	-3867 01	3974 01	480 92 N	2304 24 W	727513 38 N	1044383 09 E	0 992	2037 19	
5194 00	61 017	282 967	-3915 54	4022 54	501 15 N	2389 29 W	727533 61 N	1044298 04 E	0 735	2114 05	
5294 00	59 200	283 950	-3965 38	4072 38	521 32 N	2473 61 W	727553 78 N	1044213 72 E	2 007	2190 31	
5344 00	57 966	283 555	-3991 44	4098 44	531 47 N	2515 05 W	727563 93 N	1044172 28 E	2 558	2227 95	13 3/8" Casing Tied on at 5375 00ft
5375 00	57 202	283 305	-4008 06	4115 06	537 55 N	2540 51 W	727570 01 N	1044146 82 E	2 558	2250 96	
Pilot Hole Plan 4 (27-Mar-06)											
5400 00	56 023	283 805	-4021 81	4128 81	542 44 N	2560 80 W	727574 90 N	1044126 53 E	5 000	2269 34	
5472 71	52 608	285 340	-4064 22	4171 22	557 28 N	2617 95 W	727589 74 N	1044069 38 E	5 000	2321 81	End of Drop/Turn at 5472 71ft
5500 00	52 608	285 340	-4080 79	4187 79	563 01 N	2638 86 W	727595 47 N	1044048 47 E	0 000	2341 21	
5509 59	52 608	285 340	-4086 62	4193 62	565 03 N	2646 20 W	727597 49 N	1044041 13 E	0 000	2348 03	Start Build/Turn at 5509 59ft
5600 00	56 848	287 264	-4138 82	4245 82	585 77 N	2717 02 W	727618 23 N	1043970 31 E	5 000	2414 62	
5700 00	61 568	289 186	-4190 00	4297 00	612 67 N	2798 57 W	727645 13 N	1043888 76 E	5 000	2493 31	
5800 00	66 312	290 944	-4233 92	4340 92	643 50 N	2882 92 W	727675 96 N	1043804 41 E	5 000	2576 70	
5900 00	71 075	292 577	-4270 25	4377 25	678 05 N	2969 41 W	727710 51 N	1043717 92 E	5 000	2664 18	
6000 00	75 851	294 120	-4298 70	4405 70	716 04 N	3057 39 W	727748 50 N	1043629 94 E	5 000	2755 06	
6100 00	80 637	295 599	-4319 07	4426 07	757 20 N	3146 18 W	727789 66 N	1043541 15 E	5 000	2848 66	

Proposal Report for Platform Gail - (Slot 17) E-8

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
6200.00	85.429	297.038	-4331.20	4438.20	801.20 N	3235.13 W	727833.66 N	1043452.20 E	5.000	2944.27	
6295.33	90.000	298.391	-4335.00	4442.00	845.49 N	3319.43 W	727877.95 N	1043367.90 E	5.000	3036.61	End of Build/Turn at 6295.33ft
6300.00	90.000	298.391	-4335.00	4442.00	847.71 N	3323.53 W	727880.17 N	1043363.80 E	0.000	3041.15	
6354.33	90.000	298.391	-4335.00	4442.00	873.54 N	3371.33 W	727906.00 N	1043316.00 E	0.000	3093.99	Target - pht1, Current Target
6400.00	90.000	298.391	-4335.00	4442.00	895.26 N	3411.51 W	727927.72 N	1043275.82 E	0.000	3138.40	
6500.00	90.000	298.391	-4335.00	4442.00	942.80 N	3499.48 W	727975.26 N	1043187.85 E	0.000	3235.65	
6600.00	90.000	298.391	-4335.00	4442.00	990.35 N	3587.45 W	728022.81 N	1043099.88 E	0.000	3332.91	
6700.00	90.000	298.391	-4335.00	4442.00	1037.90 N	3675.42 W	728070.36 N	1043011.91 E	0.000	3430.16	
6800.00	90.000	298.391	-4335.00	4442.00	1085.45 N	3763.40 W	728117.91 N	1042923.93 E	0.000	3527.41	
6900.00	90.000	298.391	-4335.00	4442.00	1133.00 N	3851.37 W	728165.46 N	1042835.96 E	0.000	3624.66	
6999.99	90.000	298.391	-4335.00	4442.00	1180.54 N	3939.33 W	728213.00 N	1042748.00 E	0.000	3721.90	Start Drop/Turn at 6999.99ft Target - pht2, Current Target
7100.00	88.095	303.016	-4336.66	4443.66	1231.58 N	4025.29 W	728264.04 N	1042662.04 E	5.000	3819.98	
7200.00	86.203	307.650	-4341.64	4448.64	1289.32 N	4106.74 W	728321.78 N	1042580.59 E	5.000	3919.18	
7300.00	84.336	312.304	-4349.89	4456.89	1353.33 N	4183.09 W	728385.79 N	1042504.24 E	5.000	4018.75	
7400.00	82.507	316.988	-4361.35	4468.35	1423.11 N	4253.75 W	728455.57 N	1042433.58 E	5.000	4117.95	
7453.56	81.546	319.513	-4368.78	4475.78	1482.67 N	4289.07 W	728495.13 N	1042398.26 E	5.000	4170.65	End of Drop/Turn at 7453.56ft
7497.95	81.546	319.513	-4375.31	4482.31	1496.07 N	4317.57 W	728528.53 N	1042369.76 E	0.000	4214.17	Start Drop/Turn at 7497.95ft
7500.00	81.538	319.595	-4375.61	4482.61	1497.61 N	4318.89 W	728530.07 N	1042368.44 E	4.000	4216.18	
7600.00	81.130	323.620	-4390.68	4497.68	1575.08 N	4380.27 W	728607.54 N	1042307.06 E	4.000	4313.59	
7634.23	81.000	325.000	-4396.00	4503.00	1602.54 N	4400.00 W	728635.00 N	1042287.33 E	4.000	4346.60	Continue Drop/Turn at 7634.23ft
7700.00	80.030	327.480	-4406.84	4513.84	1656.47 N	4436.05 W	728688.93 N	1042251.28 E	4.000	4409.44	
7800.00	78.592	331.278	-4425.39	4532.39	1741.01 N	4486.10 W	728773.47 N	1042201.23 E	4.000	4503.12	
7900.00	77.203	335.115	-4446.37	4553.37	1828.25 N	4530.18 W	728860.71 N	1042157.15 E	4.000	4594.18	
8000.00	75.871	338.993	-4469.66	4576.66	1917.79 N	4568.10 W	728950.25 N	1042119.23 E	4.000	4682.16	
8100.00	74.601	342.915	-4495.15	4602.15	2009.16 N	4599.66 W	729041.62 N	1042087.67 E	4.000	4766.63	
8200.00	73.400	346.885	-4522.72	4629.72	2101.95 N	4624.70 W	729134.41 N	1042062.63 E	4.000	4847.19	
8300.00	72.276	350.903	-4552.24	4659.24	2195.68 N	4643.11 W	729228.14 N	1042044.22 E	4.000	4923.45	
8400.00	71.234	354.969	-4583.56	4690.56	2289.90 N	4654.80 W	729322.36 N	1042032.53 E	4.000	4995.02	
8500.00	70.282	359.084	-4616.53	4723.53	2384.16 N	4659.70 W	729416.62 N	1042027.63 E	4.000	5061.57	
8525.22	70.056	0.130	-4625.08	4732.08	2407.89 N	4659.87 W	729440.35 N	1042027.46 E	4.000	5077.52	End of Drop/Turn at 8525.22ft

Proposal Report for Platform Gail - (Slot 17) E-8

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft) Eastings (ft)	Global Coordinates Northings (ft) Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
8600.00	70.056	0.130	-4650.59	4757.59	2478.18 N 4659.71 W	729510.64 N 1042027.62 E	0.000	5124.30	
8700.00	70.056	0.130	-4684.70	4791.70	2572.19 N 4659.49 W	729604.65 N 1042027.84 E	0.000	5186.87	
8800.00	70.056	0.130	-4718.81	4825.81	2666.19 N 4659.28 W	729698.65 N 1042028.05 E	0.000	5249.43	
8900.00	70.056	0.130	-4752.92	4859.92	2760.19 N 4659.07 W	729792.65 N 1042028.26 E	0.000	5311.99	
9000.00	70.056	0.130	-4787.03	4894.03	2854.19 N 4658.86 W	729886.65 N 1042028.47 E	0.000	5374.56	
9100.00	70.056	0.130	-4821.14	4928.14	2948.20 N 4658.64 W	729980.66 N 1042028.69 E	0.000	5437.12	
9150.23	70.056	0.130	-4838.27	4945.27	2995.42 N 4658.54 W	730027.88 N 1042028.79 E	0.000	5468.55	Start Drop/Turn at 9150.23ft
9200.00	68.596	359.796	-4855.84	4962.84	3041.98 N 4658.57 W	730074.44 N 1042028.76 E	3.000	5499.64	
9300.00	65.665	359.104	-4894.70	5001.70	3134.10 N 4659.45 W	730166.56 N 1042027.88 E	3.000	5561.76	
9400.00	62.737	358.379	-4938.22	5045.22	3224.10 N 4661.42 W	730256.56 N 1042025.91 E	3.000	5623.28	
9500.00	59.812	357.615	-4986.28	5093.28	3311.73 N 4664.47 W	730344.19 N 1042022.86 E	3.000	5684.03	
9600.00	56.893	356.804	-5038.74	5145.74	3396.75 N 4668.61 W	730429.21 N 1042018.72 E	3.000	5743.83	
9700.00	53.979	355.937	-5095.47	5202.47	3478.92 N 4673.81 W	730511.38 N 1042013.52 E	3.000	5802.54	
9800.00	51.072	355.004	-5156.31	5263.31	3558.03 N 4680.06 W	730590.49 N 1042007.27 E	3.000	5859.97	
9900.00	48.172	353.992	-5221.08	5328.08	3633.85 N 4687.35 W	730666.31 N 1041999.98 E	3.000	5915.99	
10000.00	45.283	352.883	-5289.62	5396.62	3706.17 N 4695.66 W	730738.63 N 1041991.67 E	3.000	5970.44	End of Drop/Turn at 10007.63ft
10007.63	45.063	352.794	-5295.00	5402.00	3711.54 N 4696.33 W	730744.00 N 1041991.00 E	3.000	5974.52	Target - phi15, Current Target
10100.00	45.063	352.794	-5360.25	5467.25	3776.41 N 4704.53 W	730808.87 N 1041982.80 E	0.000	6023.91	
10200.00	45.063	352.794	-5430.88	5537.88	3846.64 N 4713.41 W	730879.10 N 1041973.92 E	0.000	6077.39	
10300.00	45.063	352.794	-5501.51	5608.51	3916.87 N 4722.29 W	730949.33 N 1041965.04 E	0.000	6130.86	
10400.00	45.063	352.794	-5572.14	5679.14	3987.10 N 4731.17 W	731019.56 N 1041956.16 E	0.000	6184.33	
10500.00	45.063	352.794	-5642.78	5749.78	4057.33 N 4740.05 W	731089.79 N 1041947.28 E	0.000	6237.81	
10503.15	45.063	352.794	-5645.00	5752.00	4059.54 N 4740.33 W	731092.00 N 1041947.00 E	0.000	6239.49	Target - phi16, Current Target
10600.00	45.063	352.794	-5713.41	5820.41	4127.56 N 4748.93 W	731160.02 N 1041938.40 E	0.000	6291.28	
10700.00	45.063	352.794	-5784.04	5891.04	4197.79 N 4757.81 W	731230.25 N 1041929.52 E	0.000	6344.75	
10800.00	45.063	352.794	-5854.68	5961.68	4268.02 N 4766.59 W	731300.48 N 1041920.64 E	0.000	6398.23	Total Depth at 10803.15ft
10803.15	45.063	352.794	-5856.90	5963.90	4270.23 N 4766.97 W	731302.69 N 1041920.36 E	0.000	6399.91	

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grid North.
Vertical depths are relative to Well. Northings and Eastings are relative to Well.
Global Northings and Eastings are relative to NAD27 California State Planes, Zone VI.

The Dogleg Severity is in Degrees per 100 feet (US).
Vertical Section is from Well and calculated along an Azimuth of 311.854° (Grid).

HALLIBURTON

Proposal Report for Platform Gail - (Slot 17) E-8

Based upon Minimum Curvature type calculations, at a Measured Depth of 10803 15ft.
The Bottom Hole Displacement is 6399 91ft., in the Direction of 311 854° (Grid)

Comments

Measured Depth (ft)	TVD (ft)	Station Coordinates		Comment
		Northings (ft)	Eastings (ft)	
5375 00	4115 06	537 55 N	2540 51 W	Tied on at 5375 00ft
5472 71	4171 22	557 28 N	2617 95 W	End of Drop/Turn at 5472 71ft
5509 59	4193 62	565 03 N	2646 20 W	Start Build/Turn at 5509 59ft
6295 33	4442 00	845 49 N	3319 43 W	End of Build/Turn at 6295 33ft
6999 99	4442 00	1180 54 N	3939 33 W	Start Drop/Turn at 6999 99ft
7453 56	4475 78	1462 67 N	4289 07 W	End of Drop/Turn at 7453 56ft
7497 95	4482 31	1496 07 N	4317 57 W	Start Drop/Turn at 7497 95ft
7634 23	4503 00	1602 54 N	4400 00 W	Continue Drop/Turn at 7634 23ft
8525 22	4732 08	2407 89 N	4659 87 W	End of Drop/Turn at 8525 22ft
9150 23	4945 27	2995 42 N	4658 54 W	Start Drop/Turn at 9150 23ft
10007 63	5402 00	3711 54 N	4696 33 W	End of Drop/Turn at 10007 63ft
10803 15	5963 90	4270 23 N	4766 97 W	Total Depth at 10803 15ft

Proposal Report for Platform Gail - (Slot 17) E-8

Casing details

Measured Depth (ft)	From		To	
	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Casing Detail
<Surface>	<Surface>	5344.00	4098.44	13 3/8" Casing

Targets associated with this wellpath

Target Name	TVD (ft)	Target Northings (ft)	Target Eastings (ft)	Target Coordinates Distance (ft)	Direction (°Grid)
pht1 (Point)	4442.00 -4335.00	873.54 N 727906.00 N 34 12731778° N	3371.33 W 1043316.00 E 119 41131995° W	3482.66	284.526
pht2 (Point)	4442.00 -4335.00	1180.54 N 728213.00 N 34 12811362° N	3939.33 W 1042748.00 E 119 41322649° W	4112.42	286.682
pht3 (Point)	4503.00 -4396.00	1602.54 N 728635.00 N 34 12923896° N	4343.33 W 1042344.00 E 119 41460300° W	4629.54	290.252
pht4 (Point)	4527.00 -4420.00	1985.54 N 729018.00 N 34 13029679° N	4272.33 W 1042415.00 E 119 41440692° W	4711.18	294.926
pht5 (Point)	5402.00 -5295.00	3711.54 N 730744.00 N 34 13500186° N	4696.33 W 1041991.00 E 119 41598033° W	5985.90	306.320

Proposal Report for Platform Gail - (Slot 17) E-8

Targets associated with this wellpath (Continued)

Target Name	TVD (ft)	Target Entry	Coordinates	Distance (ft)	Direction (°Grid)
phi6 (Point)	5752.00	Northings (ft)	Eastings (ft)		
	-5645.00	4059.54 N	4740.33 W	6241.04	310.576
		731092.00 N	1041947.00 E		
		34 13595397° N	119 41616057° W		
		Mean Sea Level/Global Coordinates			
		Geographical Coordinates			

North Reference Sheet for Platform Gail - (Slot 17) E-8

Coordinate System is NAD27 California State Planes, Zone VI, US Foot
Source Snyder, J.P., 1987, Map Projections - A Working Manual

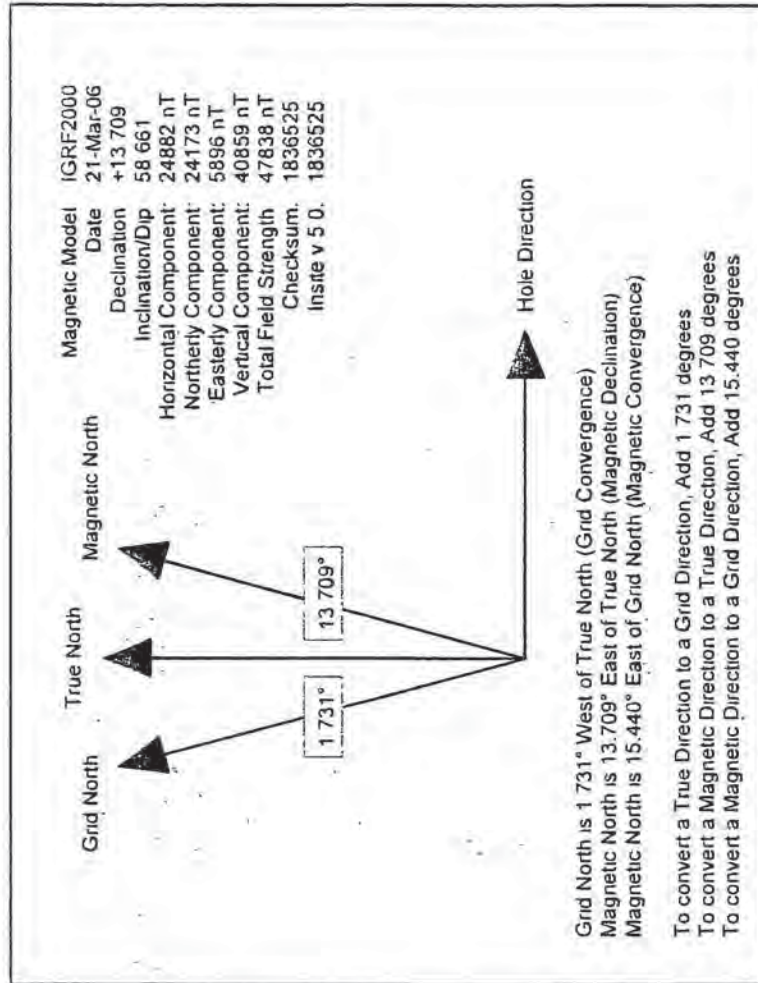
Datum is North American Datum of 1927 (US48, AK, HI, and Canada)

Spheroid is Clarke - 1866
Equatorial Radius 6378206 400m
Polar Radius 6356583 800m
Inverse Flattening 294 978698213901

Projection method is Lambert Conformal Conic Projection

Central Meridian is -116 250°
Longitude Origin -116 250°
Latitude Origin 32 167°
False Easting 609600 00m
False Northing 0 00m
Scale Reduction 1 000000000

Grid Coordinates of Well 727032 46 N, 1046687 33 E
Geographical Coordinates of Well 34 12519893° N, 119 40009914° W
Surface Elevation of Well 107 00ft
Grid Convergence at Surface is -1 731°
Magnetic Convergence at Surface is -15 440° (21 March, 2006)



Venoco Inc.

Platform Gail

Platform Gail

(Slot 17) E-8

Wellbore #5

Plan: Hzi Plan 4 (03-Apr-06)

Job No Hzi Plan 4 (03-Apr-06)

Sperry Drilling Services Combo Report

03 April, 2006

Well Coordinates 727,032 46 N, 1,046,687 33 E (34° 07' 30 72" N, 119° 24' 00 36" W)
Water Depth 739 00 ft

Local Coordinate Origin

Viewing Datum

TVDs to System

North Reference

Unit System

Centered on Well (Slot 17) E-8
Well @ 107 00ft (Original Well Elev)

N

Grid

API - US Survey Feet

Version 2003 14 Build 65

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Plan Report for (Slot 17) E-8 - Wellbore #5 - Hzi Plan 4 (03-Apr-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastng (ft)	Map Coordinates Northing (ft)	Eastng (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	107.00	0.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
100.00	0.00	0.00	7.00	100.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
200.00	0.00	0.00	-93.00	200.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
300.00	0.00	0.00	-193.00	300.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
400.00	0.00	0.00	-293.00	400.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
500.00	0.00	0.00	-393.00	500.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
600.00	0.00	0.00	-493.00	600.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
700.00	0.00	0.00	-593.00	700.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
800.00	0.00	0.00	-693.00	800.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
900.00	0.19	121.53	-793.00	900.00	0.05 S	0.09 E	727,032.41	1,046,687.42	0.19	-0.10	
1,000.00	0.20	182.41	-893.00	1,000.00	0.33 S	0.22 E	727,032.13	1,046,687.55	0.20	-0.34	
1,100.00	0.09	296.48	-993.00	1,100.00	0.46 S	0.13 E	727,032.00	1,046,687.46	0.25	-0.31	
1,200.00	0.15	80.86	-1,093.00	1,200.00	0.41 S	0.21 E	727,032.05	1,046,687.54	0.22	-0.36	
1,300.00	0.14	30.32	-1,193.00	1,300.00	0.28 S	0.41 E	727,032.18	1,046,687.74	0.12	-0.49	
1,400.00	0.32	304.35	-1,293.00	1,400.00	0.01 S	0.31 E	727,032.45	1,046,687.64	0.34	-0.28	
1,500.00	1.88	273.33	-1,392.98	1,499.98	0.24 N	1.53 W	727,032.70	1,046,685.80	1.62	1.50	
1,600.00	4.06	270.70	-1,492.84	1,599.84	0.36 N	6.71 W	727,032.82	1,046,680.62	2.18	6.30	
1,700.00	6.25	273.96	-1,592.43	1,699.43	0.74 N	15.66 W	727,033.20	1,046,671.67	2.21	14.65	
1,800.00	9.17	279.89	-1,691.52	1,798.52	2.48 N	28.94 W	727,034.94	1,046,658.39	3.02	27.52	
1,900.00	12.35	283.08	-1,789.75	1,896.75	6.30 N	47.20 W	727,038.76	1,046,640.13	3.23	45.78	
2,000.00	15.67	283.21	-1,886.76	1,993.76	11.81 N	70.76 W	727,044.27	1,046,616.57	3.32	69.58	
2,100.00	19.05	282.91	-1,982.19	2,089.19	18.50 N	99.84 W	727,050.96	1,046,587.49	3.39	98.90	
2,200.00	22.48	284.99	-2,075.68	2,182.68	27.13 N	134.21 W	727,059.59	1,046,553.12	3.50	133.86	
2,300.00	25.94	284.77	-2,166.86	2,273.86	37.68 N	173.87 W	727,070.14	1,046,513.46	3.46	174.43	
2,400.00	28.61	283.94	-2,255.78	2,362.78	48.98 N	218.18 W	727,081.44	1,046,469.15	2.70	219.56	
2,500.00	33.24	284.16	-2,341.53	2,448.53	61.53 N	268.02 W	727,093.99	1,046,419.31	4.63	270.26	
2,600.00	37.50	282.36	-2,423.05	2,530.05	74.66 N	324.38 W	727,107.12	1,046,362.95	4.39	327.16	
2,700.00	41.65	284.00	-2,500.11	2,607.11	89.19 N	386.40 W	727,121.65	1,046,300.93	4.28	389.82	
2,800.00	45.52	285.87	-2,572.53	2,679.53	107.09 N	452.97 W	727,139.55	1,046,234.36	4.08	457.98	
2,900.00	49.19	285.18	-2,640.26	2,747.26	126.72 N	523.84 W	727,159.18	1,046,163.49	3.70	530.79	
3,000.00	52.77	285.09	-2,703.13	2,810.13	147.17 N	598.85 W	727,179.63	1,046,088.48	3.58	607.72	
3,100.00	54.11	281.50	-2,762.59	2,869.59	165.55 N	677.10 W	727,198.01	1,046,010.23	3.18	686.79	
3,200.00	53.05	279.85	-2,822.02	2,929.02	180.40 N	756.14 W	727,212.86	1,045,931.19	1.70	765.17	
3,300.00	53.32	279.58	-2,881.92	2,988.92	193.88 N	835.07 W	727,226.35	1,045,852.26	0.34	842.90	
3,400.00	53.05	279.79	-2,941.86	3,048.86	207.36 N	913.98 W	727,239.82	1,045,773.35	0.32	920.61	
3,500.00	53.03	279.97	-3,002.02	3,109.02	221.06 N	992.67 W	727,253.52	1,045,694.66	0.14	998.21	
3,600.00	53.81	280.33	-3,061.59	3,168.59	235.21 N	1,071.74 W	727,267.67	1,045,615.59	0.83	1,076.34	
3,700.00	53.96	280.78	-3,120.54	3,227.54	250.09 N	1,151.13 W	727,282.55	1,045,536.20	0.39	1,155.05	
3,800.00	54.51	279.44	-3,179.01	3,286.01	264.30 N	1,231.00 W	727,296.76	1,045,456.33	1.22	1,233.94	
3,900.00	55.47	278.86	-3,236.36	3,343.36	277.25 N	1,311.88 W	727,309.71	1,045,375.45	1.07	1,313.25	

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Plan Report for (Slot 17) E-8 - Wellbore #5 - Hzi Plan 4 (03-Apr-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Easting (ft)	Map Coordinates Northing (ft)	Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
4,000.00	56.07	280.03	-3,292.62	3,399.62	290.90 N	1,393.42 W	727,323.36	1,045,293.91	1.14	1,393.44	
4,100.00	56.62	279.51	-3,348.03	3,455.03	305.01 N	1,475.46 W	727,337.47	1,045,211.87	0.70	1,474.27	
4,200.00	56.89	279.48	-3,402.86	3,509.86	318.70 N	1,557.96 W	727,351.16	1,045,129.37	0.28	1,555.36	
4,300.00	57.31	281.34	-3,457.18	3,564.18	334.02 N	1,640.51 W	727,366.48	1,045,048.82	1.62	1,637.14	
4,400.00	57.83	280.09	-3,510.79	3,617.79	349.56 N	1,723.48 W	727,382.02	1,044,963.85	1.17	1,719.40	
4,500.00	58.06	282.30	-3,563.83	3,670.83	368.16 N	1,808.59 W	727,398.62	1,044,880.74	1.96	1,802.21	
4,600.00	57.99	282.95	-3,616.84	3,723.84	384.78 N	1,889.33 W	727,417.24	1,044,798.00	0.48	1,885.49	
4,700.00	58.74	282.89	-3,669.29	3,776.29	403.86 N	1,972.31 W	727,436.32	1,044,715.02	0.74	1,969.17	
4,800.00	59.35	282.14	-3,720.74	3,827.74	422.33 N	2,056.04 W	727,454.79	1,044,631.29	0.89	2,053.31	
4,900.00	60.15	283.77	-3,771.08	3,878.08	441.81 N	2,140.21 W	727,474.27	1,044,547.12	1.62	2,138.24	
5,000.00	60.23	283.08	-3,820.82	3,927.82	461.89 N	2,224.61 W	727,494.35	1,044,462.72	0.60	2,223.62	
5,100.00	60.92	283.75	-3,869.92	3,976.92	482.16 N	2,309.33 W	727,514.62	1,044,378.00	0.91	2,309.38	
5,200.00	60.91	283.02	-3,918.45	4,025.45	502.33 N	2,394.41 W	727,534.79	1,044,292.92	0.63	2,395.42	
5,300.00	59.05	283.90	-3,968.45	4,075.45	522.56 N	2,478.61 W	727,555.02	1,044,208.72	2.01	2,480.68	
5,400.00	56.02	283.80	-4,021.81	4,128.81	542.44 N	2,560.80 W	727,574.90	1,044,126.53	3.03	2,563.96	
5,500.00	52.61	285.34	-4,080.79	4,187.79	563.01 N	2,638.86 W	727,595.47	1,044,048.47	3.64	2,643.74	
5,600.00	56.85	287.26	-4,138.82	4,245.82	585.77 N	2,717.02 W	727,618.23	1,043,970.31	4.52	2,724.48	
5,700.00	61.57	289.19	-4,190.00	4,297.00	612.67 N	2,798.57 W	727,645.13	1,043,888.76	5.00	2,809.98	
5,800.00	66.31	290.94	-4,233.92	4,340.92	643.50 N	2,882.92 W	727,675.96	1,043,804.41	5.00	2,899.61	
5,900.00	71.08	292.58	-4,270.25	4,377.25	678.05 N	2,969.41 W	727,710.51	1,043,717.92	5.00	2,992.70	
6,000.00	75.85	294.12	-4,298.70	4,405.70	716.04 N	3,057.39 W	727,748.50	1,043,629.94	5.00	3,088.53	
6,100.00	80.84	295.80	-4,319.07	4,426.07	757.20 N	3,146.18 W	727,789.66	1,043,541.15	5.00	3,186.38	
6,200.00	85.43	297.04	-4,331.20	4,438.20	801.20 N	3,235.13 W	727,833.66	1,043,452.20	5.00	3,285.50	
6,300.00	90.00	298.39	-4,335.00	4,442.00	847.71 N	3,323.53 W	727,880.17	1,043,363.80	4.77	3,385.13	
6,325.00	90.00	298.39	-4,335.00	4,442.00	859.59 N	3,345.53 W	727,892.05	1,043,341.80	0.00	3,410.04	Start Sidetrack 5.00 TFO -154.50
6,400.00	86.62	296.77	-4,337.21	4,444.21	894.30 N	3,411.96 W	727,926.76	1,043,275.37	5.00	3,484.81	
6,500.00	82.11	294.60	-4,347.04	4,454.04	937.43 N	3,501.61 W	727,969.89	1,043,185.72	5.00	3,584.23	
6,549.45	79.88	293.51	-4,354.78	4,461.78	957.34 N	3,546.21 W	727,989.80	1,043,141.12	5.00	3,633.07	Start 82.09 hold at 6549.45 MD
6,600.00	79.88	293.51	-4,363.66	4,470.66	977.19 N	3,591.84 W	728,009.65	1,043,095.49	0.00	3,682.83	
6,631.54	79.88	293.51	-4,369.20	4,476.20	989.57 N	3,620.32 W	728,022.03	1,043,067.01	0.00	3,713.88	Start DLS 3.50 TFO 33.87
6,700.00	81.88	294.86	-4,380.05	4,487.05	1,017.26 N	3,681.97 W	728,049.72	1,043,005.36	3.50	3,781.46	
6,800.00	84.79	296.80	-4,391.66	4,498.66	1,060.53 N	3,771.36 W	728,092.99	1,042,915.97	3.50	3,880.70	
6,841.71	86.01	297.61	-4,395.00	4,502.00	1,079.54 N	3,808.33 W	728,112.00	1,042,879.00	3.50	3,922.19	Start DLS 3.50 TFO -35.90 - hz11
6,847.03	86.16	297.50	-4,395.36	4,502.36	1,081.99 N	3,813.03 W	728,114.45	1,042,874.30	3.50	3,927.48	Start 821.62 hold at 6847.03 MD
6,900.00	86.16	297.50	-4,398.91	4,505.91	1,106.40 N	3,859.92 W	728,138.86	1,042,827.41	0.00	3,980.21	
7,000.00	86.16	297.50	-4,405.60	4,512.60	1,152.47 N	3,948.42 W	728,184.93	1,042,738.91	0.00	4,079.75	
7,100.00	86.16	297.50	-4,412.30	4,519.30	1,198.54 N	4,036.92 W	728,231.00	1,042,650.41	0.00	4,179.29	
7,200.00	86.16	297.50	-4,418.99	4,525.99	1,244.62 N	4,125.42 W	728,277.08	1,042,561.91	0.00	4,278.84	
7,300.00	86.16	297.50	-4,425.68	4,532.68	1,290.89 N	4,213.92 W	728,323.15	1,042,473.41	0.00	4,378.38	

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Plan Report for (Slot 17) E-8 - Wellbore #5 - Hzi Plan 4 (03-Apr-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastng (ft)	Map Coordinates Northing (ft)	Eastng (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
7,400.00	86.16	297.50	-4,432.38	4,539.38	1,336.76 N	4,302.43 W	728,369.22	1,042,384.90	0.00	4,477.92	
7,500.00	86.16	297.50	-4,439.07	4,546.07	1,382.83 N	4,390.93 W	728,415.29	1,042,296.40	0.00	4,577.46	
7,600.00	86.16	297.50	-4,445.77	4,552.77	1,428.90 N	4,479.43 W	728,461.36	1,042,207.90	0.00	4,677.01	
7,668.65	86.16	297.50	-4,450.36	4,557.36	1,460.53 N	4,540.18 W	728,492.99	1,042,147.15	0.00	4,745.34	Start DLS 3.00 TFO 144.10
7,700.00	85.40	298.05	-4,452.67	4,559.67	1,475.10 N	4,567.85 W	728,507.56	1,042,119.48	3.00	4,776.52	
7,776.17	83.55	299.40	-4,460.00	4,567.00	1,511.54 N	4,634.33 W	728,544.00	1,042,053.00	3.00	4,852.03	Start 1736.22 hold at 7776.17 MD - hzi12
7,800.00	83.55	299.40	-4,462.68	4,569.68	1,523.16 N	4,654.96 W	728,555.62	1,042,032.37	0.00	4,875.59	
7,900.00	83.55	299.40	-4,473.91	4,580.91	1,571.95 N	4,741.52 W	728,604.41	1,041,945.81	0.00	4,974.44	
8,000.00	83.55	299.40	-4,485.14	4,592.14	1,620.73 N	4,828.09 W	728,653.19	1,041,859.24	0.00	5,073.29	
8,100.00	83.55	299.40	-4,496.37	4,603.37	1,669.52 N	4,914.66 W	728,701.98	1,041,772.67	0.00	5,172.15	
8,200.00	83.55	299.40	-4,507.60	4,614.60	1,718.30 N	5,001.23 W	728,750.76	1,041,686.10	0.00	5,271.00	
8,300.00	83.55	299.40	-4,518.83	4,625.83	1,767.09 N	5,087.79 W	728,799.55	1,041,599.54	0.00	5,369.86	
8,400.00	83.55	299.40	-4,530.06	4,637.06	1,815.87 N	5,174.36 W	728,848.33	1,041,512.97	0.00	5,468.71	
8,500.00	83.55	299.40	-4,541.30	4,648.30	1,864.65 N	5,260.93 W	728,897.11	1,041,426.40	0.00	5,567.57	
8,600.00	83.55	299.40	-4,552.53	4,659.53	1,913.44 N	5,347.50 W	728,945.90	1,041,339.83	0.00	5,666.42	
8,700.00	83.55	299.40	-4,563.76	4,670.76	1,962.22 N	5,434.07 W	728,994.68	1,041,253.26	0.00	5,765.28	
8,800.00	83.55	299.40	-4,574.99	4,681.99	2,011.01 N	5,520.63 W	729,043.47	1,041,166.70	0.00	5,864.13	
8,900.00	83.55	299.40	-4,586.22	4,693.22	2,059.79 N	5,607.20 W	729,092.25	1,041,080.13	0.00	5,962.99	
9,000.00	83.55	299.40	-4,597.45	4,704.45	2,108.58 N	5,693.77 W	729,141.04	1,040,993.56	0.00	6,061.84	
9,100.00	83.55	299.40	-4,608.68	4,715.68	2,157.36 N	5,780.34 W	729,189.82	1,040,906.99	0.00	6,160.70	
9,200.00	83.55	299.40	-4,619.91	4,726.91	2,206.14 N	5,866.90 W	729,238.60	1,040,820.43	0.00	6,259.55	
9,300.00	83.55	299.40	-4,631.15	4,738.15	2,254.93 N	5,953.47 W	729,287.39	1,040,733.86	0.00	6,358.40	
9,400.00	83.55	299.40	-4,642.38	4,749.38	2,303.71 N	6,040.04 W	729,336.17	1,040,647.29	0.00	6,457.26	
9,500.00	83.55	299.40	-4,653.61	4,760.61	2,352.50 N	6,126.61 W	729,384.96	1,040,560.72	0.00	6,556.11	
9,512.39	83.55	299.40	-4,655.00	4,762.00	2,358.54 N	6,137.33 W	729,391.00	1,040,550.00	0.00	6,568.36	Start DLS 3.00 TFO 92.22 - hzi13
9,600.00	83.46	302.05	-4,664.91	4,771.91	2,403.01 N	6,212.15 W	729,435.47	1,040,475.18	3.00	6,654.73	
9,630.22	83.43	302.96	-4,668.37	4,775.37	2,419.15 N	6,237.48 W	729,451.61	1,040,449.85	3.00	6,684.39	Start 1717.78 hold at 9630.22 MD
9,700.00	83.43	302.96	-4,676.35	4,783.35	2,456.86 N	6,295.64 W	729,489.32	1,040,391.69	0.00	6,752.78	
9,800.00	83.43	302.96	-4,687.80	4,794.80	2,510.90 N	6,378.99 W	729,543.36	1,040,308.34	0.00	6,850.79	
9,900.00	83.43	302.96	-4,699.25	4,806.25	2,564.95 N	6,462.35 W	729,597.41	1,040,224.98	0.00	6,948.81	
10,000.00	83.43	302.96	-4,710.69	4,817.69	2,618.99 N	6,545.70 W	729,651.45	1,040,141.63	0.00	7,046.82	
10,100.00	83.43	302.96	-4,722.14	4,829.14	2,673.04 N	6,629.06 W	729,705.50	1,040,058.27	0.00	7,144.84	
10,200.00	83.43	302.96	-4,733.59	4,840.59	2,727.09 N	6,712.41 W	729,759.55	1,039,974.92	0.00	7,242.85	
10,300.00	83.43	302.96	-4,745.03	4,852.03	2,781.13 N	6,795.77 W	729,813.59	1,039,891.56	0.00	7,340.87	
10,400.00	83.43	302.96	-4,756.48	4,863.48	2,835.18 N	6,879.12 W	729,867.64	1,039,808.21	0.00	7,438.88	
10,500.00	83.43	302.96	-4,767.93	4,874.93	2,889.22 N	6,962.48 W	729,921.68	1,039,724.85	0.00	7,536.90	
10,600.00	83.43	302.96	-4,779.38	4,886.38	2,943.27 N	7,045.83 W	729,975.73	1,039,641.50	0.00	7,634.91	
10,700.00	83.43	302.96	-4,790.82	4,897.82	2,997.32 N	7,129.18 W	730,029.78	1,039,558.15	0.00	7,732.93	
10,800.00	83.43	302.96	-4,802.27	4,909.27	3,051.36 N	7,212.54 W	730,083.82	1,039,474.79	0.00	7,830.94	

HALLIBURTON

Plan Report for (Slot 17) E-8 - Wellbore #5 - Hzl Plan 4 (03-Apr-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft) Easting (ft)	Map Coordinates Northing (ft) Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
10,900.00	83.43	302.96	-4,813.72	4,920.72	3,105.41 N 7,295.89 W	730,137.87 1,039,391.44	0.00	7,928.96	
11,000.00	83.43	302.96	-4,825.16	4,932.16	3,159.45 N 7,379.25 W	730,191.91 1,039,308.08	0.00	8,026.97	
11,100.00	83.43	302.96	-4,836.61	4,943.61	3,213.50 N 7,462.60 W	730,245.96 1,039,224.73	0.00	8,124.99	
11,200.00	83.43	302.96	-4,848.06	4,955.06	3,267.55 N 7,545.96 W	730,300.01 1,039,141.37	0.00	8,223.00	
11,300.00	83.43	302.96	-4,859.50	4,966.50	3,321.59 N 7,629.31 W	730,354.05 1,039,058.02	0.00	8,321.02	
11,348.01	83.43	302.96	-4,865.00	4,972.00	3,347.54 N 7,669.33 W	730,380.00 1,039,018.00	0.00	8,368.07	TD at 11348.01 - h2l4

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft) +E/-W (ft)	Comment
6,325.00	4,442.00	859.59 -3,345.53	Start Sidetrack 5.00 TFO -154.50
6,549.45	4,461.78	957.34 -3,546.21	Start 82.09 hold at 6549.45 MD
6,631.54	4,476.20	989.57 -3,620.32	Start DLS 3.50 TFO 33.87
6,841.71	4,502.00	1,079.54 -3,808.33	Start DLS 3.50 TFO -35.90
6,847.03	4,502.36	1,081.99 -3,813.03	Start 82.62 hold at 6847.03 MD
7,668.65	4,557.36	1,460.53 -4,540.18	Start DLS 3.00 TFO 144.10
7,776.17	4,567.00	1,511.54 -4,634.33	Start 1736.22 hold at 7776.17 MD
9,512.39	4,762.00	2,358.54 -6,137.33	Start DLS 3.00 TFO 92.22
9,630.22	4,775.37	2,419.15 -6,237.48	Start 1717.78 hold at 9630.22 MD
11,348.01	4,972.00	3,347.54 -7,669.33	TD at 11348.01

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft) +E/-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	293.58	Slot	0.00 0.00	0.00

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
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HALLIBURTON

Plan Report for (Slot 17) E-8 - Wellbore #5 - Hzi Plan 4 (03-Apr-06)

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target - Shape									
hzi11	0.00	0.00	4,502.00	1,079.54	-3,808.33	728,112.00	1,042,879.00	34.128	-119.413
- plan hits target - Point									
hzi12	0.00	0.00	4,567.00	1,511.54	-4,634.33	728,544.00	1,042,053.00	34.129	-119.416
- plan hits target - Point									
hzi13	0.00	0.00	4,762.00	2,359.54	-6,137.33	729,391.00	1,040,550.00	34.131	-119.421
- plan hits target - Point									
hzi14	0.00	0.00	4,972.00	3,347.54	-7,669.33	730,380.00	1,039,018.00	34.134	-119.426
- plan hits target - Point									

HALLIBURTON

North Reference Sheet for Platform Gail - (Slot 17) E-8 - Wellbore #5

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to Well @ 107' 00ft (Original Well Elev). Northing and Easting are relative to (Slot 17) E-8.

Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866.

Projection method is Lambert Conformal Conic (2 parallel).

Central Meridian is -116 250°, Longitude Origin 0 000°, Latitude Origin 33 883°.

False Easting 2,000,000 00ft, False Northing 0 00ft, Scale Reduction 1 00004935.

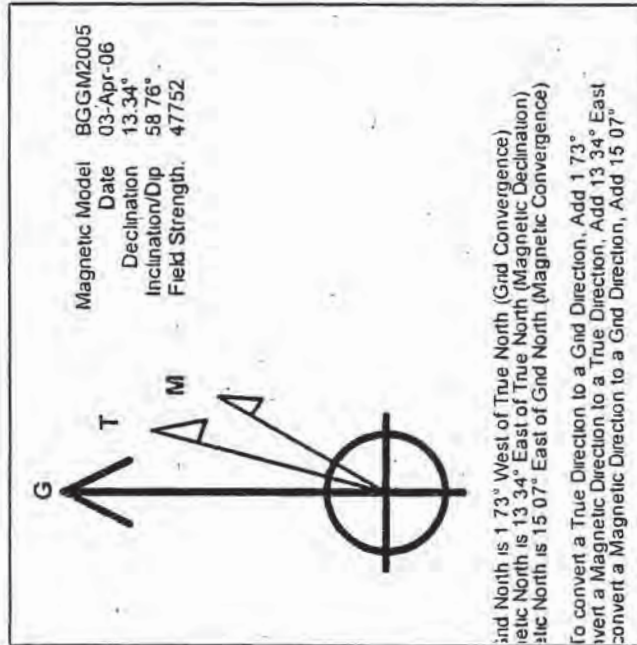
Grid Coordinates of Well 727 032 46 ft N, 1 046 687 33 ft E.

Geographical Coordinates of Well 34° 07' 30 72" N, 119° 24' 00 36" W.

Grid Convergence at Surface is -1 73°.

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,348 01ft the Bottom Hole Displacement is 8,368 07ft in the Direction of 293 58° (Grid).

Magnetic Convergence at surface is -15 07° (3 April 2006, BGGM2005).





United States Department of the Interior

MINERALS MANAGEMENT SERVICE
Pacific OCS Region
770 Paseo Camarillo
Camarillo California 93010-6064

7106

May 11, 2006

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation & Production *FW*

Subject: Geologic Hazards Analysis for Well P-0205 E-8RD

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Sockeye Oil Field
Lease: OCS-P 0205
Platform: Gail
Well/Slot: E-8RD in slot 7 (Dual Lateral)
Objective: Monterey, U. & L. Topanga, and Sespe Fm. reservoirs
API: 04-311-20674-01

Surface Location: X = 1,046,687 ft
Lambert Zone 6 Y = 727,032 ft

Estimated Top of X =
Productive Zone Y =

Estimated Bottom X = 1,039,018 ft & 1,041,920 ft
Hole Location Y = 730,380 ft & 731,303 ft

Elevation of KB: + 107 feet
Est. Total Depth (measured): - 11,348 feet (RKB) -10,803 feet (RKB)
Est. Total Depth (true vert.): - 4,865 feet (RKB) -5,857 feet (RKB)

Water Depth (Gail): 739 feet +/-

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Overview of Proposal

Venoco, Inc., designated operator of the Sockeye Field within the Santa Clara Unit, proposes to drill well OCS-P 0205 #E-8RD into the Sespe Formation. The objectives of the well are to exploit potential reservoirs in the Miocene Monterey, Lower Miocene Upper Topanga, and/or Oligocene Sespe Formations. This well will be a dual lateral well. The Upper Topanga interval will be perforated and gravel packed and isolated with a plug. The Monterey lateral will be left as an open hole completion. The completion will be a single 3 1/2" tubing string with production packers and sliding sleeve configured to allow for commingle production or shut-off selectively and allow for individual testing of each wellbore.

The proposed well will be drilled using Kenai Rig #2 on Platform Gail to a bottom hole location in Lease OCS-P 0209, northwest of the platform. E-8RD is a "new" well designed to explore the potential production on the undeveloped northwest anticlinal nose of the structure. The closest wells to this location are E11 and E9 an production wells north and south of E8.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Top Monterey M1	Miocene	5,364 feet	4,109 feet
Top Monterey M2	Miocene	5,773 feet	4,330 feet
Top Upper Topanga	L. Miocene	10,033 feet	5,420 feet
Top Sespe Fm.	Oligocene	10,500 feet	5,750 feet
Total Depth	Oligocene	10,803 feet	5,964 feet

2. Potential Oil and Gas Reservoirs (from OCS-P 0205 E-10)

Formation	Age	(TVD)	Thickness	HC Type
Monterey M4*	Miocene	4,603 feet	800 +/- feet	Oil/Gas
Upper Topanga*	L. Miocene	5,149 feet	350 +/- feet	Oil/Gas
Sespe*	Oligocene	5,446 feet	>1,700 feet	Oil/Gas

* Operator's stated objective. Thicknesses based on estimates.

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. This well is a side track from well E-8, therefore all the upper zones are already behind casing, and we expect normal salty or briny formation water while drilling.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of E8. The present operator and former operator of the Sockeye field have extensive drilling experience in this field. The proposed drilling program is similar to those utilized in drilling the production wells in the field. In the event a new pool is discovered, unrelated to the Main zones of the field, the operator should be prepared for higher than expected formation pressure.

5. Faulting and Folding

Several important faults have been mapped by the Operator. Faulting is an important consideration for the success of the well. The well will cross two north-south trending faults that border the structure. These faults exhibit minor offset and should not present any significant risk to the well.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The E8 well did not find near surface gas, but did record gas shows in the Pliocene/Upper Miocene section.

7. Possible Over-pressured or Depleted Zones

Several ditch gas kicks are noted in the mud logs for OCS-P-205#2. However, as noted above, in the event of a new pool discovery the operator should be prepared for higher than expected formation pressures, similar to the original formation pressures noted at the discovery of the Sockeye field. The Operator has included a well control contingency plan with the Application.

8. Logging/Coring

The Operator plans a standard set of logs, as is the common practice with production wells in this area. A standard mud log will be taken to total depth. Collection of dry wall samples will be at 30' intervals. The E-logs will include gamma ray, density, neutron, and resistivity, taken on wire line surveys. An LWD starting right out of the casing with Sperry Gr-Res-Density-Neutron for both pilot and the horizontal well will be run.

9. Other Comments

The Monterey and Topanga Formations may contain hydrogen sulfide gas. Well E-8RD drill path is located between E-11 to the north and E-9 to the south. The path of E-8RD comes the closest to well E-11, however based on the current drilling plan there is sufficient spacing between the two wells.

operator is preparing downhole commingling in the Monterey (M2) & Upper Tertiary Zones. Dual Zones of interest will consist of UT Gravel pack (7" casing) & 6 1/8" OH Monterey.
 [Epilot] [Lateral]
 ↳ 10,803'/5964' ↳ 11,348'/4972'

APPLICATION FOR PERMIT TO DRILL

CHECK LIST

OPERATOR Venoco, Inc. ENGRG. REVIEW BY ST Shams
 LEASE NO. P-0205@simf.; P-0209@BHL DATE COMPLETED _____
 WELL NO. E-8 ST-01 & ST-02 * *ST01 is designated 0431120674 01
 COPIES RECEIVED 3 P.I. 1 ST02 " " " " 02!
 GEOLOGIC/GEOPHYSICAL REVIEW COMPLETED BY F. Victor DATE 5/11/06
 COPIES ON FILE WITH APD Yes
 LEASE INSTRUMENT CHECKED NO
 DESIGNATION OF OPERATOR APPROVED Yes
 SPECIAL LEASE STIPULATIONS NOTED Lease instrument not examined.

POE/POD APPROVED DATE _____
 SPECIAL CONDITIONS OF APPROVAL Standard COAs to Drill OCS Well attached to all copies of APD.

MOBIL DRILLING UNIT NO TYPE Platform Rig-Kenai #2
 ABS & COASTGUARD DOCUMENTS ON FILE N/A
 FRONTIER AREA YES NO
 SEA FLOOR CONDITIONS EXAMINED, DOCUMENTED AND APPROVED N/A

RIG DESCRIPTION AND SPECIFICATIONS ON FILE? Yes
 PLAT PROVIDED 2000 FEET/ONE INCH Yes
 SURFACE LOCATION CHECKED Yes
 SUBSURFACE LOCATION CHECKED Yes

RKB TO WATER 107' asl WD 739' RKB TO ML 846'
 TVD 5964' & 4972' MD 10803' & 11348'

WELL DESIGN CRITERIA: ΔMASP values based on 100% gas to surface.
 KOP₁ = 5375' MD
 KOP₂ = 6300' MD
 TOL @ 5100' MD

TAKEN FROM OFFSET WELL	13 3/8"	9 5/8"	CALCULATED	7" Liner (std)	6 1/8" OH (STU)
CASING SIZE	13 3/8"	9 5/8"	7"	7"	6 1/8"
(MD) CASING DEPTH	2424'	5344'	8077'	10,803'	OH to 11,348'
PORE PRESS.	↑	↑	↑	8.4 ppq	7.10 ppq
FRAC. PRESS.	↑	↑	↑	10.5 ppq	10.5 ppq
ANTICIPATED SURFACE PRESS.	EXISTING	EXISTING	EXISTING	2307 psi	1587 psi
MUD WEIGHT	↓	↓	↓	9.2 OBM	8.5 (seawater)
LOST CIRCULATION ZONES <u>None anticipated - Perhaps in fractured Monterey.</u>					
SHALLOW HAZARDS FROM GEOLOGIC/GEOPHYSICAL REVIEW <u>Already behind existing casings</u>					

BOPE

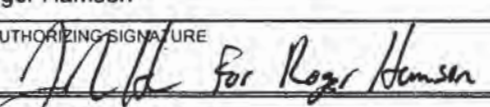
NO. AND TYPE	ANNULAR	PIPE RAMS	BLIND/SHEAR RAMS
1-13 5/8"-5M-GK	3-13 5/8"-5M	1-13 5/8"-5M	
	-1-2 7/8" to 5" VBR		
	-1-5"		
	-1-2 3/8"		

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Manager.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, etc., shall be verbally reported immediately to the District Manager.
6. The District Manager shall be notified in advance in the event of production tests.
7. One copy of all logs, including the mud log to date, shall be furnished to the Office of Reservoir Evaluation and Production immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Manager shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco, Inc. 6267 Carpinteria Ave., Suite 100 Carpinteria, CA 93013-1423		
4 WELL NAME (CURRENT) E8	5 SIDETRACK NO (CURRENT) 01	6 BYPASS NO (CURRENT) 00			
7 PROPOSED START DATE May 30, 2006	8 PLAN CONTROL NO (NEW WELL ONLY)				
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04-311-20674-01					
10 ☐ Revision	11 If revision, please list changes				
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE		
12 LEASE NO P - 0209			17 LEASE NO P - 0205		
13 AREA NAME 6B			18 AREA NAME 6B		
14 BLOCK NO 4761			19 BLOCK NO 4661		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27)	16 LONGITUDE (☐ NAD 83 / ☒ NAD 27)	20 LATITUDE (☐ NAD 83 / ☒ NAD 27)	21 LONGITUDE (☐ NAD 83 / ☒ NAD 27)		
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME	23 TOP (MD)	24 TOP (TVD)	22 NAME	23 TOP (MD)	24 TOP (TVD)
Monterey M2	6325'	4440'			
25 LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250 414(b) through (g) or 30 CFR 250 1617 (c) and (d), as appropriate) Revised redrill program package submitted with APD approved May 12, 2006. Package includes only lateral.					
26 CONTACT NAME John Hood		27 CONTACT TELEPHONE NO 805-745-2164	28 CONTACT E-MAIL ADDRESS jhood@venocoinc.com		
29 AUTHORIZING OFFICIAL (Type or print name) Roger Hamson		30 TITLE V. P. Southern Assets			
31 AUTHORIZING SIGNATURE 		32 DATE May 23, 2006			
THIS SPACE FOR MMS USE ONLY					
APPROVED ☒ With Attached Conditions ☐ Without Conditions		BY 		TITLE District Manager	
API WELL NO ASSIGNED TO THIS WELL 04-311-20674-02				DATE MAY 30 2006	

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings nserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is with in 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☐ NO ☒ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco, Inc.				2) Well Name (Proposed): E-8 Redrill ST: 02 BP: 00			
3) Bottom Hole Lease: P - 0209 4 535				4) Surface Lease: P - 0205			
5) API Number: 04311206702				6) Type of Well: ☐ Exploratory ☒ Development			
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown				8) H ₂ S Activation Plan Depth (TVD) (ft): Surface			
9) Rig Name: Kenai Rig #2				10) SubSea BOP: ☐ Yes ☒ No			
11) Water Depth (ft): 739		12) RKB Height (ft): 107		13) Mineral Code:			
14) Drive Pipe Size (in): 24		15) Drive Pipe Depth (ft): 1409		16) Anchors ☐ Yes ☒ No			
17) Well Design Information							
Interval Number: Existing Casing				Type:		Name:	
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
	13.375	68/72	L-80			5350	
	9.625	43.5	L-80	6330	3810	5375 4115	1519
	7	26	L-80	7240	5410	6325 4442	1600
GENERAL INFORMATION		PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in)		Type			Annular Test (psi)		
Mud Weight (ppg)		Size (in)			BOP/Diverter Test (psi)		
Mud Type Code		Wellhead Rating (psi)			Mud Test Weight (ppg)		
Frac Gradient (ppg)		Annular Rating (psi)			Casing/Liner Test (psi)		
Liner Top Depth (ft)		BOP/Diverter Rating (psi)			Formation Test (ppg)		
Cement Volume (ft ³)							
Interval Number: One Type: Sidelack 02 Name: Lateral Hole							
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
One	None	NA	NA	NA	NA	11,348 4972	1835
GENERAL INFORMATION		PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in) 6.125		Type Annular/VB Rams/Shear Rams/Pipe Rams			Annular Test (psi) 250/3000 psi		
Mud Weight (ppg) 8.5		Size (in) 13-5/8"			BOP/Diverter Test (psi) 250/3000 psi		
Mud Type Code Seawater		Wellhead Rating (psi) 5000 psi			Mud Test Weight (ppg) 8.5 ppg		
Frac Gradient (ppg) 10.5		Annular Rating (psi) 5000 psi			Casing/Liner Test (psi) NA		
Liner Top Depth (ft) NA		BOP/Diverter Rating (psi) 5000 psi			Formation Test (ppg) 10.5		
Cement Volume (ft ³) NA							
Interval Number: Type: Name:							
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
GENERAL INFORMATION		PREVENTER INFORMATION			TEST INFORMATION		
Hole Size (in)		Type			Annular Test (psi)		
Mud Weight (ppg)		Size (in)			BOP/Diverter Test (psi)		
Mud Type Code		Wellhead Rating (psi)			Mud Test Weight (ppg)		
Frac Gradient (ppg)		Annular Rating (psi)			Casing/Liner Test (psi)		
Liner Top Depth (ft)		BOP/Diverter Rating (psi)			Formation Test (ppg)		
Cement Volume (ft ³)							

* NOTE* For additional casing/liner intervals, please submit an additional Form MMS-123S

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123S, is estimated to average between 1-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
Well E-8 RD
API# 04-311-20674-02
LEASE OCS-P-0205
May 23, 2006

Objective:

To re-drill the E-8 well as a dual lateral well. The 8-1/2" pilot hole has been drilled through the Monterey horizontal kick off point and continued deeper through the Upper Topanga and Lower Topanga/Upper Sespe intervals. The final total depth was 10,530' TMD/5771' TVD. A 7" liner will be run and cemented. The Upper Topanga interval will be perforated and gravel packed and isolated with a plug. A retrievable whipstock will be set above the gravel packed completion in the 7" casing. The Monterey section lateral wellbore will be sidetracked and drilled with 6 1/8" hole. The Monterey lateral wellbore will be left as an open hole completion. The whipstock will be retrieved. The completion will be a single 3 1/2" tubing string with production packers and sliding sleeve configured to allow for commingle production or shut-off selectively and allow for individual testing of each wellbore.

Surface Location: OCS-P-205, Slot No. 7 (X= 1,046,687.33' & Y= 727,032.46')

Elevation: 739' WD, 107' Above MLLW, 846' Ocean Floor to Rig Floor

Proposed TD: 6-1/8" Lateral Hole OCS-P-209; 11,348' MD/ 4,972' VD/4,865' SS

TD Location: 6-1/8" Lateral Hole OCS-P-209; Y = 730,380' N & X = 1,039,018' E

Proposed and *Existing Casing: (USING NEW 107' DF)

*24", 201#, X-52	1403'	1140 cf
*18 5/8", 87.5,117.5 K-55	2424'	1470 cf
*13 3/8", 68,72# K-55	5344'	2451 cf DV @ 2557'
*9 5/8", 40,43,47 # L-80/SS-95	5375' (window)	2952 cf DV @ 5171'
*Top 4 jts 9 5/8" reported as 47# , next 177 jts are 43.5# to below 6800')		
7", 26#, L-80 Hydril 513	10,524'	1100 cf top at 5,100'

Hole Markers:	MD	TVD	SS	Est.Pressure
M1	5,364'	4,109'	-4,002'	7.1 PPG
M2	6,325'	4,442'	-4,339'	7.1 PPG
TD	11,348'	4,972'	-4,865'	7.1 PPG

Note: This procedure follows work to be performed after the completion of the pilot hole under an APD approved 5-12-06 and a proposed completion APM (to be submitted 5-24-06).

Drilling Procedure

Notes:

Pressure test BOP equipped with 4 ram preventers (2 – double gates) and an annular. Test the BOP to 250/3000 psi with 5" drill pipe and 2-7/8" tubing. The 2 3/8" rams will not be tested because 2 3/8" tubing will not be used in this operation. The 13 5/8" BOPE will be configured for workover operations, with 2 7/8" X 5" VBR pipe rams in the top of the upper double gate and blind/shear rams in the bottom of the upper double gate, the mud cross will be below the upper double gate, 5" rams will be located in the top of the lower double gate and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. All tests will be recorded on a chart for the MMS to review. The applicable BOPE will be tested every 7 days during completion operations.

In addition a 2 1/16" 5M casing valve below the tubing hanger with a 1502 tee and pressure gauge, a check valve and high pressure hose connection to it will be installed and tested to 3000 psi for 5 minutes. It will be used for continuously pumping seawater into the well at 3 bpm below the hanger landing profile to keep the well under control. This line will be utilized throughout the remainder of the procedure. The BOP test frequency will remain at 7 days for the remainder of the procedure, since the lateral section is like a workover from a well control standpoint.

1. After gravel packing, set SB packer plug into the SC-1 Packer, spot a 10 bbl high viscosity cross-linked polymer pill on top of the gravel pack packer. This pill and the 90° inclination at the window depth will keep debris from the 2nd window suspended above the gravel pack packer plug. The hole will be full of seawater.

Note: The SB packer plug will isolate the Pilot hole interval from the Lateral interval during drilling operations.

2. Make up and run in the hole with the Slope Orientation sub on MWD and establish the orientation of the nipple for all future re-entry operations.

3. Make up 7" 26# bottom trip whipstock and starting mills with Baker Slope Nipple as per the following:

- Position # 1 Slope Locator
- x/o 3-1/2" IF Box x 2-7/8 IF Pin
- Ported Sub 3-1/2 IF Box x Pin
- 3-1/2" Drill Pipe f/ space Out w/ 3-1/2 IF Box x Pin
- X-O Sub with 2-7/8 IF Pin x 3-1/2 IF Pin
- Ret Bottom trip Anchor w/ 3-1/2 IF Box x 2-7/8 If box
- Debris Excluder w/ 3-1/2 IF Box x Pin
- Shear Disconnect w/ 3-1/2 If Box x Pin
- Unloader Sub w/ 3-1/2 IF Box x Pin
- Debris Excluder w/ 3-1/2 IF Box x Pin
- WindowMaster Whipstock w/ 3-1/2 IF Pin
- Window Mill w/ 3-1/2 Reg Pin
- Lower WaterMelon Mill w/ 3-1/2 IF Box x 3-1/2 Reg Box
- Flex Joint w/3-1/2 IF Box x Pin
- Upper Wartermelon Mill w/ 3-1/2 IF Box x Pin
- 1jt 3-1/2 HWDP
- Float Sub w/ 3-1/2 IF Box x Pin
- Monel Collar w/ 3-1/2 IF Box x Pin
- MWD w/ 3-1/2 IF Box x Pin
- Lubricated Bumper Sub w/ 3-1/2 IF Box x Pin
- DP to Surface

Run in the hole with whipstock assembly. Orient and set the Whipstock in Slope Nipple as per Baker Oil Tools detailed procedure. Shear mills off of the whipstock face and change the hole over to Durogel/Duovis milling fluid.

The Table below indicates the Shear Force settings:

	Force required <u>DOWNHOLE</u> to shear / set (Klbs)	Slack-Off required at <u>SURFACE</u> to shear / set (Klbs)
Whipstock Shear Bolt	45 Klbs (Lesson learned)	50 Klbs (may have to be fatigued – do not o/pull due to risk of shear / unseat bottom trip anchor)
Bottom Trip Anchor	20 Klbs	20 Klbs (applied repeatedly)
SLOPE Locator in SLOPE nipple	< 5 Klbs	maximum 10 Klbs

- Detailed Procedure for setting of whipstock in the Slope Nipple has been provided by Baker. Service hand on location to be competent.
 - Orient the whipstock off of high side as per Sperry directional drilling supervisor using the measurements from the MWD.
 - Mill and dress the window as required for a good exit point for sidetrack.
 - Drill enough rathole to pass all mills through the window and allow for the directional BHA tools to be below the whipstock face when commence drilling. Mills must smoothly pass through the window.
 - Perform a Formation Integrity Test to 10.5 ppg. Reduce fluid viscosity.
 - Pull out of the hole and lay down the milling tools.
4. Pick up a 6 1/8" PDC bit and drilling assembly on a 4 3/4" steerable directional drilling assembly including LWD. Run in the hole and sidetrack the well. Directionally drill the 6 1/8" hole from +/- 6,325' to 11,348' MD / 4972' TVD. The 6 1/8" hole will be drilled with Durogel, Duovis, seawater and sweeps. Returns are expected to be intermittent due to the low pressure and extended horizontal section planned in the fractured M2 chert. No overboard discharge of mud or cuttings will be required, plan to utilize approved cuttings injection well.
- Notes:
- Have 1600' of 5" HWDP available for this hole section. Kenai to provide 1000' and Weatherford will provide 600' (21 joints).
 - Review the attached directional program. Drill well per Halliburton Sperry-Sun (Slot 17) E-8 – Wellbore #5 – Hzi Plan 4 (03-Apr-06)
 - All depths to be referenced to 107' DF elevation
 - Mud loggers to start upon drilling out of the 7" casing window and continue through to TD of horizontal lateral.
 - The BHA should not be rotated on the face of the whipstock. Ensure there is adequate hole drilled below the whipstock to bury the BHA.
 - Take extra precaution when pulling or running the assembly through whipstock.
 - Per previous MMS approval, drill cuttings/waste fluids will be disposed of into well E-3S. Record injection volumes, rates and pressures on a daily basis.
5. Circulate the hole clean. Pull out of the hole and lay down directional drilling tools. Run in the hole with 6-1/8" fixed hole opener. Circulate the well clean, changing over to clean seawater. Wipe the hole to the 7" casing window. Run back to bottom, circulate the well clean and pull out of the hole. **Keep at least 3 bpm of seawater going into the well at all times as in all Platform Gail workovers.**
6. Rig up Schlumberger drill pipe conveyed logging equipment and run FMI/GR log to +/- 11,348' MD. Pull out of the hole and rig down Schlumberger.

7. Run in the hole with 6-1/8" fixed hole opener. Spot 8000 gallons of inhibited 15% HCl acid across the open hole interval. Pull out of the hole and lay down the 6-1/8" fixed hole opener.
8. Retrieve the Baker whipstock from the Slope Nipple and SB packer plug from the SC-1 gravel pack packer.
9. Run 3-1/2" 9.3# L-80 EUE 8rd tubing and production equipment as per the attached wellbore schematic. Hydrotest tubing to 5000 psi. Land tubing hanger and secure with lock down pins.
10. Rig up slickline and test lubricator to 3000 psi. Set XX plug in profile at +/- 5097'. Pressure up to 4500 psi to set the Baker 9-5/8" twin seal packer. Test the annulus to 2000 psi for 30 minutes. Shift open the hydraulically actuated sliding sleeve to prepare to clean up and test the Monterey M2 lateral section. Leave the XX plug in place to keep the Upper Topanga gravel packed completion isolated. Rig down slickline.
11. Close SCSSV. Set BPV. Remove BOP. Install and test void/tree to 5000 psi. Install and test new flowlines. Place well on gas lift production. Prepare to move rig to next well.

Note: After testing the Monterey M2 lateral section. Rig up slickline. Test lubricator to 2000 psi. Shift sliding sleeve closed and isolate the Monterey M2 lateral section. Test sleeve and tubing to 2000 psi. Retrieve XX plug from profile at 5097', exposing Upper Topanga completion. Rig down slickline. Flow test Upper Topanga formation. After obtaining individual tests on both completions. Obtain permission from MMS to commingle production. The hydraulically actuated sliding sleeve will allow for periodic well tests from individual zones without undue loss of production due to slickline intervention.

EVALUATION PROGRAM

Mudlogging Program for Horizontal Hole:

- Begin Mudlogging upon exiting casing in the Monterey M2 formation, including GR-Res curves on mudlog.
- Collect dry samples at 30' intervals throughout the well.

Testing Program

- None expected.

Open Hole Logging program

- LWD starting right out of casing with Sperry Gr-Res-Density-Neutron for the horizontal well. Real-time data images via Insite.
- Run#1 RD2 (horizontal): GR-FMI pipe conveyed from TD to casing tie-in.

Logging geologist: Dale Kunitomi 805-987-3026

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8	7	Hz Lateral
2	Setting Depth (feet - TVD)	4131	5964	4972
3	Expected Leak Off Test EMW at shoe (ppg)	12.3	10.5	10.5
4	Depth of next Casing (feet - TVD)	5964	5964	4972
5	Maximum Expected Formation Pressure (psi)	2605	2605	1836
6	Expected Mud Weight (ppg)	9.2	9.2	8.5
7	Formation Equivalent Mud Weight (ppg)	8.4	8.4	7.1
8	Expected Hydrostatic Pressure at TD (psi)	2853	2853	2198
9	Amount of Overbalance at TD (psi)	248	248	362
10	Fracture Gradient at shoe (psi/ft)	0.64	0.55	0.55
11	Fracture Pressure at shoe (psi)	2642	3256	2715
12	Hydrostatic Pressure at shoe (psi)	1976	2853	2198
13	Margin between Mud Weight and LOT (psi)	666	403	517

Maximum Anticipated Surface Pressures

		Window	Pilot Hole	Horiz Lateral
1	Casing Size (in)	9-5/8	7"	OH
2	Setting Depth (feet - TVD)	4115	5964	4972
3	Expected Leak Off Test EMW at shoe (ppg)	12.9	10.5	10.5
4	Expected Mud Weight (ppg)	9.2	9.2	8.5
5	Depth of next Casing (feet - TVD)	5964	5964	4972
6	Maximum Expected Formation Pressure (psi)	2605	2605	1836
7	Expected gas gradient (psi/ft)	0.05	0.05	0.05
8	Formation Equivalent Mud Weight (ppg)	8.4	8.4	7.1
	Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	2307	2307	1587
10	Fracture Gradient at shoe (psi/ft)	0.67	0.55	0.55
11	Fracture Pressure at shoe (psi)	2760	3256	2715
12	Surface pressure to break down shoe (psi)	2555	2958	2466
13	Maximum Anticipated Surface Pressure (psi)	2307	2307	1587
	Max Pressures using 70% Gas & 30% Mud			
14	Maximum Anticipated Surface Pressure (psi)	1540	1540	1002
15	Top of fluid (feet-TVD)	4175	4175	3480
16	Pressure at shoe (psi)	1746	2605	1836
17	Margin between pressure and breakdown(psi)	1014	651	879

CASING PROGRAM

Hole Section	12.25	8 1/2" Pilot Hole
Mud Weight	9.2	9.2
Buoyancy Factor	0.860	0.860
MASP (psi)	2307	2307
Gas Lift Pressure (psi)	1800	1800
Casing Size (in)	9-5/8*	7
Setting Depth, MD (ft)	5375	10803
Setting Depth, TVD (ft)	4115	5964
Top of Casing, MD (ft)	0	5175
Weight (lb/ft)	43.5	26
Grade	L-80	L-80
Threads	STL	513
ID (in)	8.681	6.199
Drift diameter (in)	8.525	6.151
Collapse (psi)	3810	5410
Burst (psi)	6330	7240
Joint Strength (kips)	813	448
Body Strength (kips)	1005	604
Collapse Safety Factor	1.94	1.90
Burst Safety Factor	2.74	3.14
Tensile Safety Factor	2.70	1.98

Notes:

*The existing 9 5/8" has reported 4 joints of 47# STL at surface.

The ID/Drift are for the 47# casing since that causes the greatest restriction.

Performance properties are for 43.5# casing, which is the grade at the window.

The 7" liner calculated safety factors are based upon pipe run to surface.

Safety factors at actual liner setting depths will be higher.

The Horizontal wellbore, drilled out of the pilot hole's 7" liner, is an open hole completion and therefore does not have any casing design calculations to show.

CEMENTING PROGRAM

NONE - LATERAL WILL BE AN OPEN HOLE COMPLETION

DRILLING FLUIDS PROGRAM

6-1/8" LATERAL HOLE

INTERVAL MUD PROPERTIES for WBM System							
Depth MD (ft)	Mud Weight (ppg)	Fluid Loss (ml/30 min)	Plastic Viscosity (cp)	Yield Point (lb/100ft ²)	YS	Chlorides (kmg/l)	PH
+/- 6,325' Milling	8.6 - 8.8	NC	12 - 20	>40	>20	18 - 20	10 - 11
6,325' -11348'	8.5	NC	Water	Water	Water	Water	Water

Whipstock: The fluid system used for the milling operations will be Durogel and Duovis. This will provide adequate viscosity and carrying capacity for the milling operations. These products mix easily with seawater, which will be in the well after completing the Upper Topanga formation in the Pilot Hole.

6,325' – 11,348': Begin drilling with milling fluid system. As more lateral section is drilled in the fractured Monterey M2 chert, the percentage of returns will steadily decrease. At times drilling may have to occur with out returns. Drill 6-1/8" hole section using seawater, combined with Durogel/Duovis sweeps. While drilling, continue to pump 250 gpm (5.9 bpm) fluid through the drill string. This rate is nearly double the historical rate used to keep the depleted Monterey formation under control during workovers. Utilize high pressure casing fill up line (see notes at beginning of program) to pump a minimum of 3 bpm down the casing while making connections and/or tripping. **Water must continuously be running into the well whenever the hole will not stand full.**

Notes:

1. Operate solids control equipment to maintain drill solids as low as possible.
2. Maintain supply of ZnCO₃ onboard to treat out H₂S.
3. A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised a minimum of 0.5 ppg using total circulating volume of 1000 bbls for 8 1/2" hole to 11,348'. This includes 414 bbls open hole volume & 586 bbls active system. (Actual to weight up 1000 bbls .5 ppg = 290 sx)

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

WHILE DRILLING

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

WHILE TRIPPING

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing.

Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

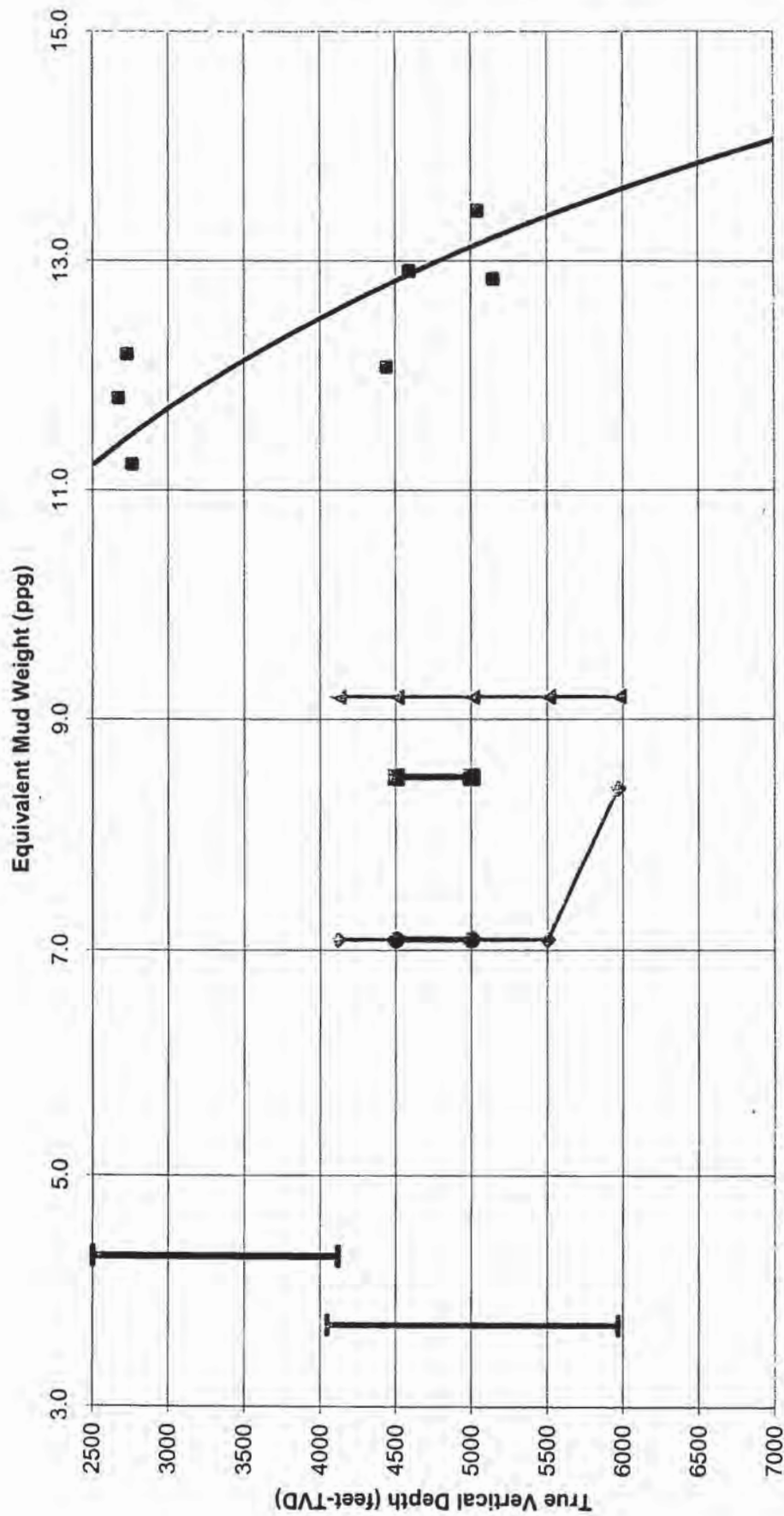
1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

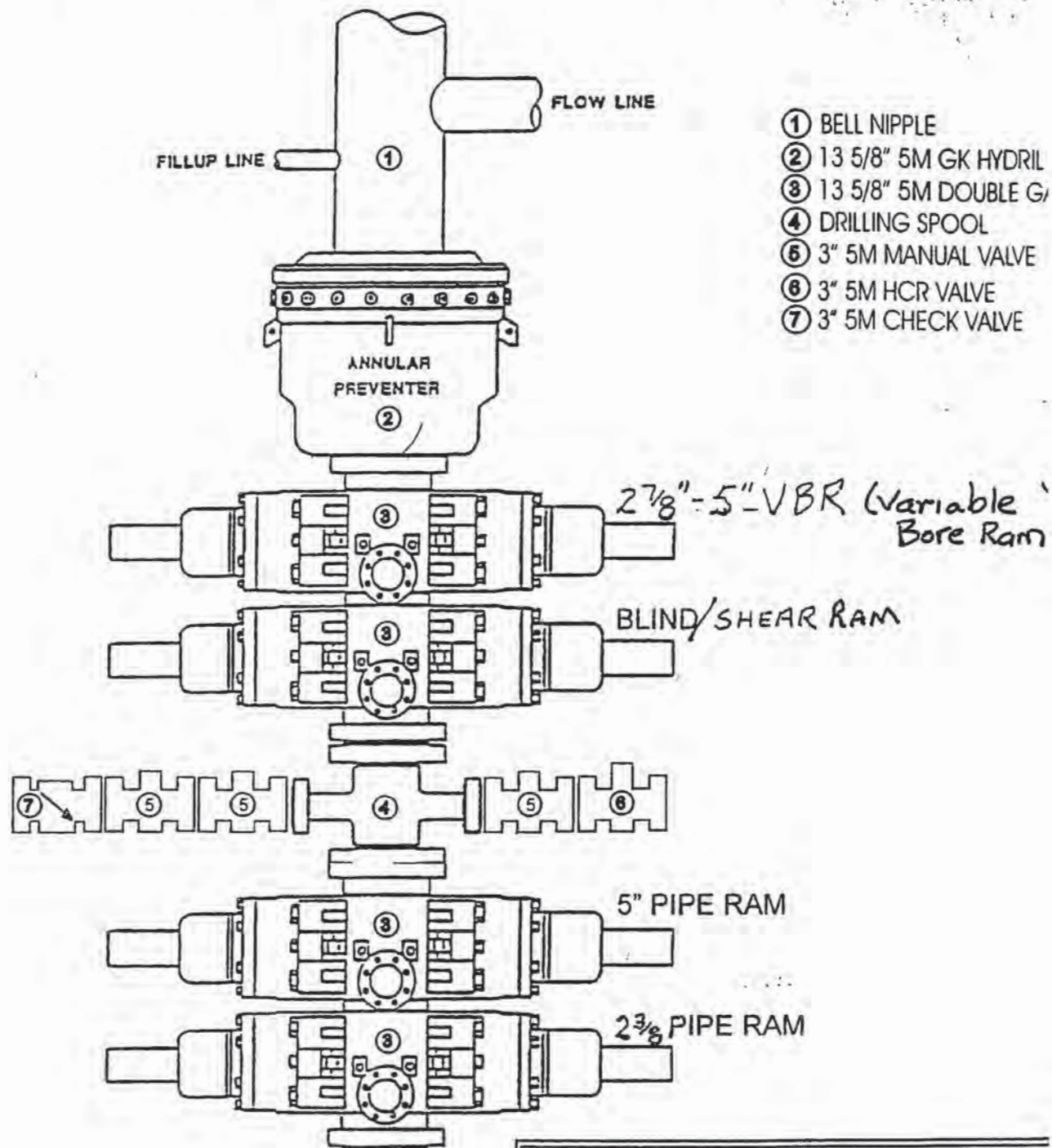
Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. **Assume any gas circulated to surface to have hydrogen sulfide potential.** Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

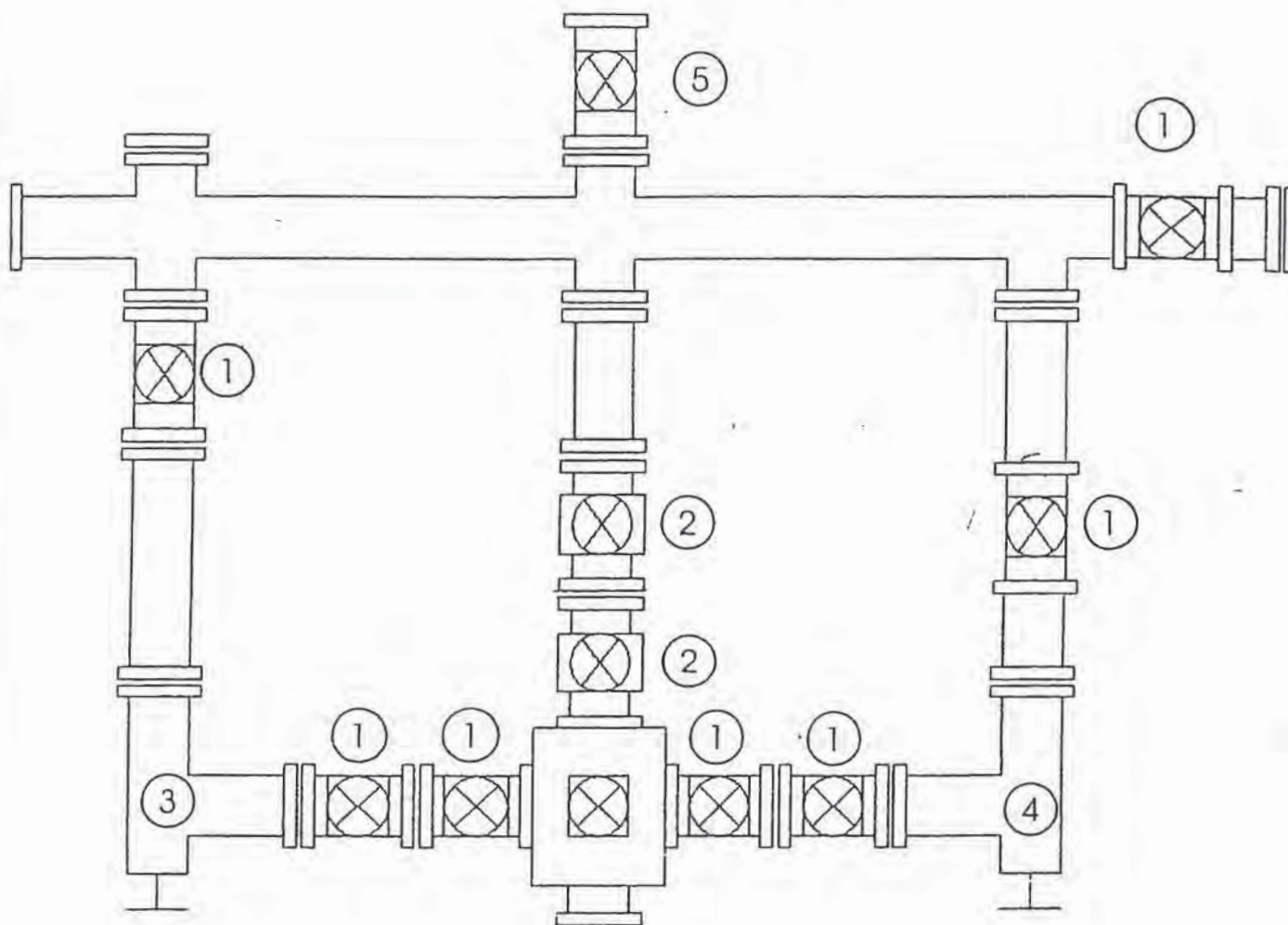
Platform Gail Well E-8 RD Pilot Hole/Horizontal Lateral Pore Pressure, Mud Weight & Fracture Pressure



BOP STACK COMPLETION CONFIGURATION



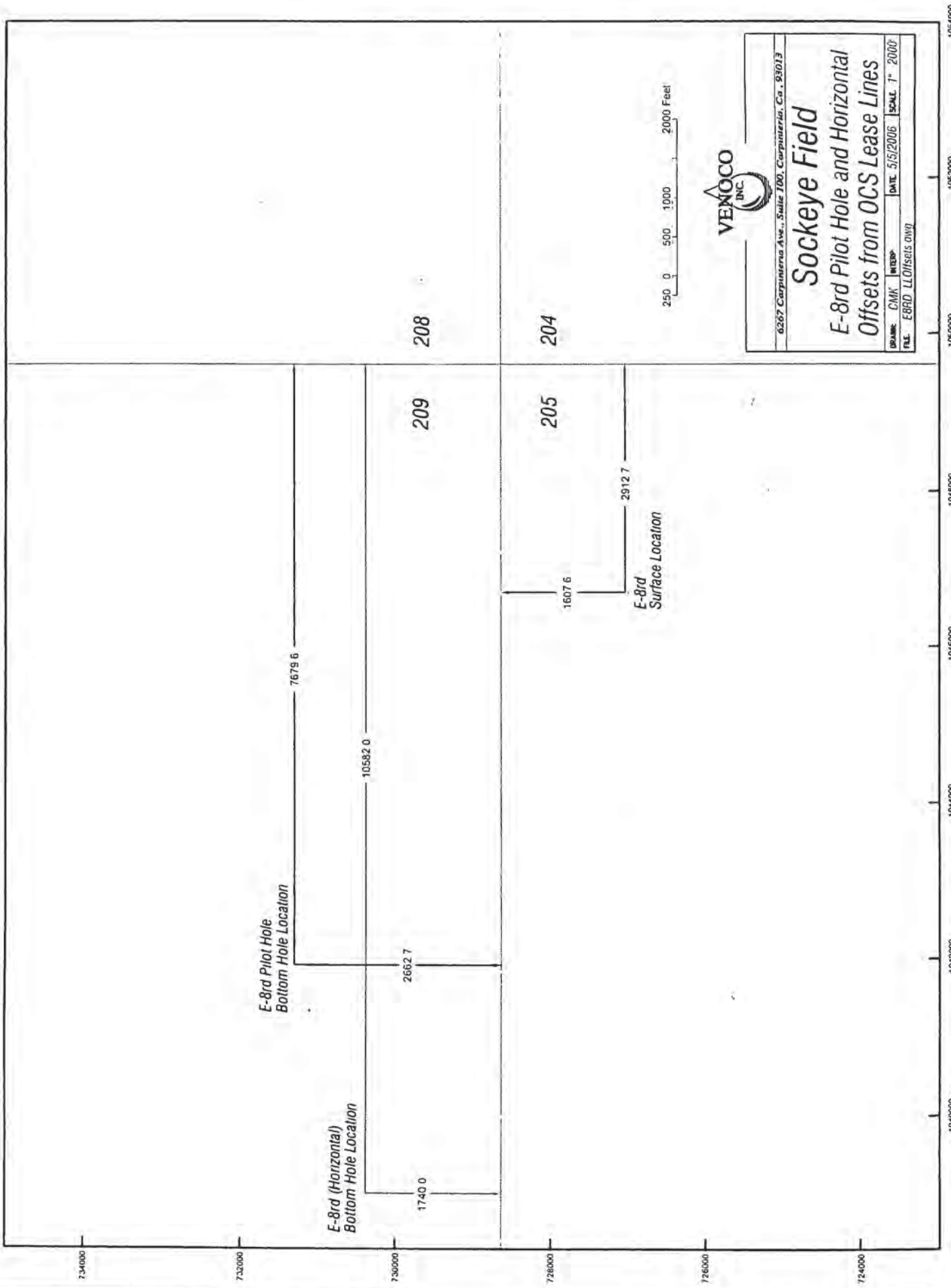
BLOWOUT
PREVENTION SYSTEM
PLATFORM GAIL



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD
PLATFORM GAIL



250 0 500 1000 2000 Feet

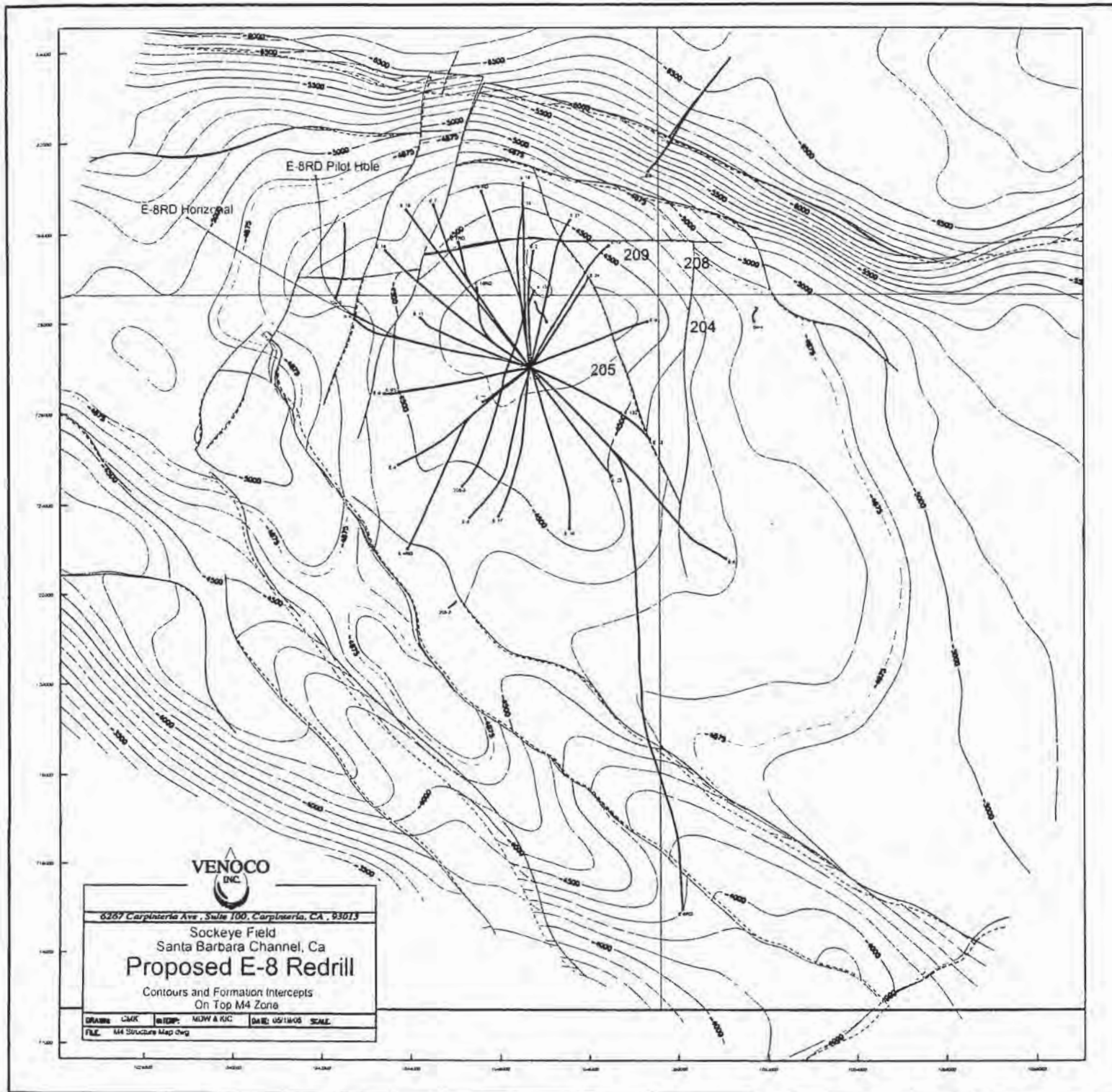


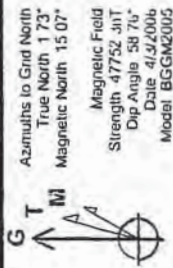
6267 Carpinteria Ave., Suite 100, Carpinteria, Ca. 93013

Sockeye Field

E-8rd Pilot Hole and Horizontal Offsets from OCS Lease Lines

DATE	5/5/2006	SCALE	1" = 2000'
PREPARED BY	CMK	INTERP.	
FILE	EBRD LLO/ISSIS.DWG		





Venoco Inc.

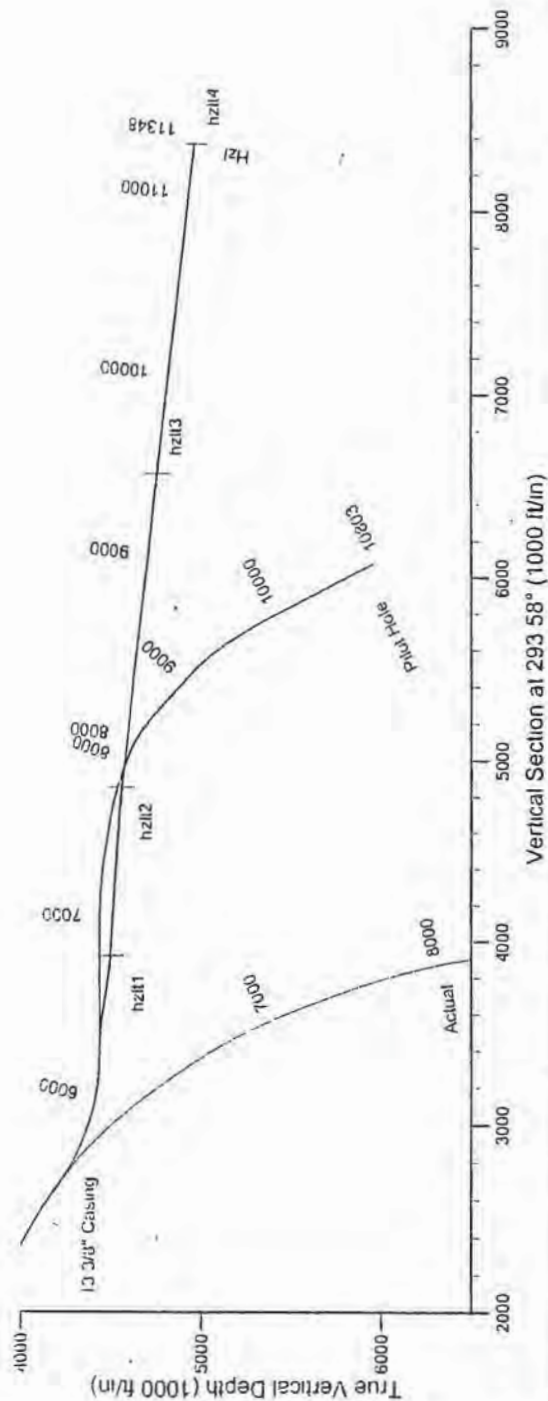
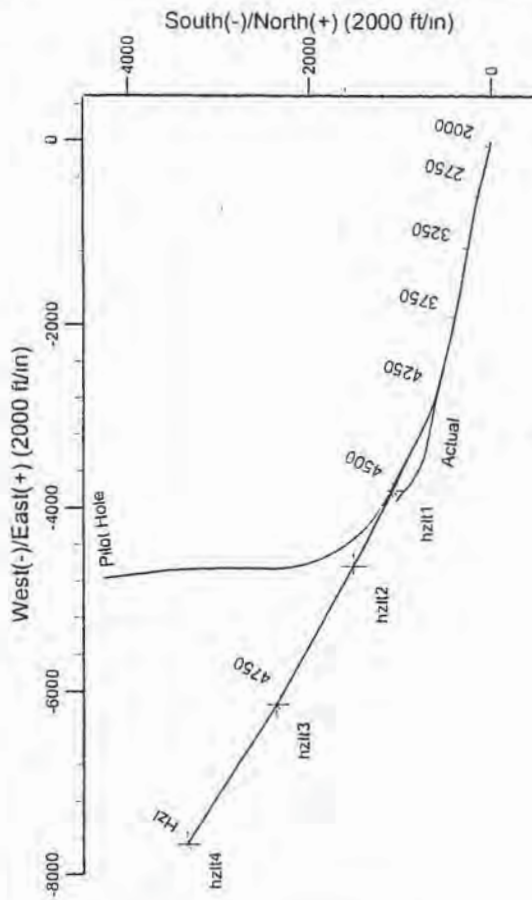
Project Platform Gail
 Site Platform Gail
 Well (Slot 17) E-8
 Wellbore #5
 Hzi Plan 4 (03-Apr-06)

(Slot 17) E-8
 NAD 1927 (NADCON CONUS)
 California VI 406
 Reference Grid
 Well @ 107 00ft (Original Well Elev)
 Northing 727032.46
 Easting 1046687.33

HALLIBURTON
 Sperry Drilling Services

SECTION DETAILS

MD	Inc	Azi	TVD	+N/S	+E/W	DLeg	TFace	VSec	Target
6325.00	90.00	298.39	4442.00	859.59	-3345.53	0.00	0.00	3410.04	
6549.45	79.88	293.51	4461.78	957.34	-3546.21	5.00	-154.50	3633.07	
6631.54	79.88	293.51	4476.20	989.57	-3620.32	0.00	0.00	3713.88	
6841.71	86.01	297.61	4502.00	1079.54	-3808.33	3.50	33.87	3922.19	hzi11
6847.03	86.16	297.50	4502.36	1081.99	-3813.03	3.50	-35.90	3927.48	
7668.65	86.16	297.50	4557.36	1460.53	-4540.18	0.00	0.00	4745.34	hzi12
7776.17	83.55	299.40	4567.00	1511.54	-4634.33	3.00	144.10	4852.03	hzi13
9512.39	83.55	299.40	4782.00	2358.54	-6137.33	0.00	0.00	6568.36	hzi14
9630.22	83.43	302.96	4775.37	2419.15	-6237.48	3.00	92.22	6684.39	
11348.01	83.43	302.96	4972.00	3347.54	-7669.33	0.00	0.00	8368.07	



Venoco Inc.

Platform Gail
Platform Gail
(Slot 17) E-8
Wellbore #5

Plan: Hzi Plan 4 (03-Apr-06)

Job No. Hzi Plan 4 (03-Apr-06)

Sperry Drilling Services Combo Report

03 April, 2006

Well Coordinates 727.032 46 N, 1,046,687.33 E (34° 07' 30.72" N, 119° 24' 00.36" W)
Water Depth 739.00 ft

Local Coordinate Origin
Viewing Datum
TVDs to System
North Reference
Unit System
Centered on Well (Slot 17) E-8
Well @ 107.00ft (Original Well Elev)
N
Grid
API - US Survey Feet

Version 2003.14 Build 65

HALLIBURTON

HALLIBURTON

Plan Report for (Slot 17) E-8 - Wellbore #5 - Hzl Plan 4 (03-Apr-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastng (ft)	Map Coordinates Northing (ft)	Eastng (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	107.00	0.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
100.00	0.00	0.00	7.00	100.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
200.00	0.00	0.00	-93.00	200.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
300.00	0.00	0.00	-193.00	300.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
400.00	0.00	0.00	-293.00	400.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
500.00	0.00	0.00	-393.00	500.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
600.00	0.00	0.00	-493.00	600.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
700.00	0.00	0.00	-593.00	700.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
800.00	0.00	0.00	-693.00	800.00	0.00 N	0.00 E	727,032.46	1,046,687.33	0.00	0.00	
900.00	0.19	121.53	-793.00	900.00	0.05 S	0.09 E	727,032.41	1,046,687.42	0.19	-0.10	
1,000.00	0.20	182.41	-893.00	1,000.00	0.33 S	0.22 E	727,032.13	1,046,687.55	0.20	-0.34	
1,100.00	0.09	296.48	-993.00	1,100.00	0.46 S	0.13 E	727,032.00	1,046,687.46	0.25	-0.31	
1,200.00	0.15	80.86	-1,093.00	1,200.00	0.41 S	0.21 E	727,032.05	1,046,687.54	0.22	-0.36	
1,300.00	0.14	30.32	-1,193.00	1,300.00	0.28 S	0.41 E	727,032.18	1,046,687.74	0.12	-0.49	
1,400.00	0.32	304.35	-1,293.00	1,400.00	0.01 S	0.31 E	727,032.45	1,046,687.64	0.34	-0.28	
1,500.00	1.80	273.33	-1,392.98	1,499.98	0.24 N	1.53 W	727,032.70	1,046,685.80	1.62	1.50	
1,600.00	4.06	270.70	-1,492.84	1,599.84	0.36 N	6.71 W	727,032.82	1,046,680.62	2.18	6.30	
1,700.00	6.25	273.96	-1,592.43	1,699.43	0.74 N	15.66 W	727,033.20	1,046,671.67	2.21	14.65	
1,800.00	9.17	279.89	-1,691.52	1,798.52	2.48 N	28.94 W	727,034.94	1,046,658.39	3.02	27.52	
1,900.00	12.35	283.08	-1,789.75	1,896.75	6.30 N	47.20 W	727,038.76	1,046,640.13	3.23	45.78	
2,000.00	15.67	283.21	-1,886.76	1,993.76	11.81 N	70.76 W	727,044.27	1,046,616.57	3.32	69.58	
2,100.00	19.05	282.91	-1,982.19	2,089.19	18.50 N	99.84 W	727,050.96	1,046,587.49	3.39	98.90	
2,200.00	22.48	284.99	-2,075.68	2,182.68	27.13 N	134.21 W	727,059.59	1,046,553.12	3.50	133.86	
2,300.00	25.94	284.77	-2,168.86	2,273.86	37.68 N	173.87 W	727,070.14	1,046,513.46	3.46	174.43	
2,400.00	28.61	283.94	-2,255.78	2,362.78	48.98 N	218.18 W	727,081.44	1,046,469.15	2.70	219.56	
2,500.00	33.24	284.16	-2,341.53	2,448.53	61.53 N	268.02 W	727,093.99	1,046,419.31	4.63	270.26	
2,600.00	37.50	282.36	-2,423.05	2,530.05	74.66 N	324.38 W	727,107.12	1,046,362.95	4.39	327.16	
2,700.00	41.65	284.00	-2,500.11	2,607.11	89.19 N	386.40 W	727,121.65	1,046,300.93	4.28	389.02	
2,800.00	45.52	285.87	-2,572.53	2,679.53	107.09 N	452.97 W	727,139.55	1,046,234.36	4.08	457.98	
2,900.00	49.19	285.18	-2,640.26	2,747.26	126.72 N	523.84 W	727,159.18	1,046,163.49	3.70	530.79	
3,000.00	52.77	285.09	-2,703.13	2,810.13	147.17 N	598.85 W	727,179.63	1,046,088.48	3.58	607.72	
3,100.00	54.11	281.50	-2,762.59	2,869.59	165.55 N	677.10 W	727,198.01	1,046,010.23	3.18	686.79	
3,200.00	53.05	279.85	-2,822.02	2,929.02	180.40 N	756.14 W	727,212.86	1,045,931.19	-1.70	765.17	
3,300.00	53.32	279.58	-2,881.92	2,988.92	193.89 N	835.07 W	727,226.35	1,045,852.26	0.34	842.90	
3,400.00	53.05	279.79	-2,941.86	3,048.86	207.36 N	913.98 W	727,239.82	1,045,773.35	0.32	920.61	
3,500.00	53.03	279.97	-3,002.02	3,109.02	221.06 N	992.67 W	727,253.52	1,045,694.66	0.14	998.21	
3,600.00	53.81	280.33	-3,061.59	3,168.59	235.21 N	1,071.74 W	727,267.67	1,045,615.59	0.83	1,076.34	
3,700.00	53.96	280.78	-3,120.54	3,227.54	250.09 N	1,151.13 W	727,282.55	1,045,536.20	0.39	1,155.05	
3,800.00	54.51	279.44	-3,179.01	3,286.01	264.30 N	1,231.00 W	727,296.76	1,045,456.33	1.22	1,233.94	
3,900.00	55.47	278.86	-3,236.36	3,343.36	277.25 N	1,311.88 W	727,309.71	1,045,375.45	1.07	1,313.25	

HALLIBURTON

Plan Report for (Slot 17) E-8 - Wellbore #5 - Hzi Plan 4 (03-Apr-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Doyley Rate (°/100ft)	Vertical Section (ft)	Comments
4,000.00	56.07	280.03	-3,292.62	3,399.62	290.90 N	1,393.42 W	727,323.36	1,045,293.91	1.14	1,393.44	
4,100.00	56.62	279.51	-3,348.03	3,455.03	305.01 N	1,475.46 W	727,337.47	1,045,211.87	0.70	1,474.27	
4,200.00	56.89	279.48	-3,402.86	3,509.86	318.70 N	1,557.96 W	727,351.16	1,045,129.37	0.28	1,555.36	
4,300.00	57.31	281.34	-3,457.18	3,564.18	334.02 N	1,640.51 W	727,366.48	1,045,046.82	1.62	1,637.14	
4,400.00	57.83	280.09	-3,510.79	3,617.79	349.56 N	1,723.48 W	727,382.02	1,044,963.85	1.17	1,719.40	
4,500.00	58.06	282.09	-3,563.86	3,670.86	366.16 N	1,806.59 W	727,398.62	1,044,880.74	1.06	1,802.21	
4,600.00	57.90	282.95	-3,616.84	3,723.84	384.78 N	1,889.33 W	727,417.24	1,044,798.00	0.48	1,885.49	
4,700.00	58.74	282.89	-3,669.29	3,776.29	403.86 N	1,972.31 W	727,436.32	1,044,715.02	0.74	1,969.17	
4,800.00	59.35	282.14	-3,720.74	3,827.74	422.33 N	2,056.04 W	727,454.79	1,044,631.29	0.89	2,053.31	
4,900.00	60.15	283.77	-3,771.08	3,878.08	441.81 N	2,140.21 W	727,474.27	1,044,547.12	1.62	2,138.24	
5,000.00	60.23	283.08	-3,820.82	3,927.82	461.89 N	2,224.61 W	727,494.35	1,044,462.72	0.60	2,223.62	
5,100.00	60.92	283.75	-3,869.92	3,976.92	482.16 N	2,309.33 W	727,514.62	1,044,378.00	0.91	2,309.38	
5,200.00	60.91	283.02	-3,918.45	4,025.45	502.33 N	2,394.41 W	727,534.79	1,044,292.92	0.63	2,395.42	
5,300.00	59.05	283.90	-3,968.45	4,075.45	522.56 N	2,478.61 W	727,555.02	1,044,208.72	2.01	2,480.68	
5,400.00	56.02	283.80	-4,021.81	4,128.81	542.44 N	2,560.80 W	727,574.90	1,044,126.53	3.03	2,563.96	
5,500.00	52.61	285.34	-4,080.79	4,187.79	563.01 N	2,638.86 W	727,595.47	1,044,048.47	3.64	2,643.74	
5,600.00	56.85	287.26	-4,138.82	4,245.82	585.77 N	2,717.02 W	727,618.23	1,043,970.31	4.52	2,724.48	
5,700.00	61.37	289.19	-4,190.00	4,297.00	612.67 N	2,798.57 W	727,645.13	1,043,888.76	5.00	2,809.98	
5,800.00	66.31	290.94	-4,233.92	4,340.92	643.50 N	2,882.92 W	727,675.96	1,043,804.41	5.00	2,899.61	
5,900.00	71.06	292.58	-4,270.25	4,377.25	678.05 N	2,969.41 W	727,710.51	1,043,717.92	5.00	2,992.70	
6,000.00	75.05	294.12	-4,298.70	4,405.70	716.04 N	3,057.39 W	727,748.50	1,043,629.94	5.00	3,088.53	
6,100.00	80.64	295.60	-4,319.07	4,426.07	757.20 N	3,146.18 W	727,789.66	1,043,541.15	5.00	3,186.38	
6,200.00	85.43	297.04	-4,331.20	4,438.20	801.20 N	3,235.13 W	727,833.66	1,043,452.20	5.00	3,285.50	
6,300.00	90.00	298.39	-4,335.00	4,442.00	847.71 N	3,323.53 W	727,880.17	1,043,363.80	4.77	3,385.13	
6,325.00	90.00	298.39	-4,335.00	4,442.00	859.59 N	3,345.53 W	727,892.05	1,043,341.80	0.00	3,410.04	Start Sidelrack 5 00 TFO -154 50
6,400.00	86.62	296.77	-4,337.21	4,444.21	894.30 N	3,411.96 W	727,926.76	1,043,275.37	5.00	3,484.81	
6,500.00	82.11	294.60	-4,347.04	4,454.04	937.43 N	3,501.61 W	727,969.89	1,043,185.72	5.00	3,584.23	
6,549.45	79.88	293.51	-4,354.78	4,461.78	957.34 N	3,546.21 W	727,989.80	1,043,141.12	5.00	3,633.07	Start 82 09 hold at 6549.45 MD
6,600.00	79.88	293.51	-4,363.66	4,470.66	977.19 N	3,591.84 W	728,009.65	1,043,095.49	0.00	3,682.83	
6,631.54	79.88	293.51	-4,369.20	4,476.20	989.57 N	3,620.32 W	728,022.03	1,043,067.01	0.00	3,713.88	Start DLS 3 50 TFO 33.87
6,700.00	81.88	294.86	-4,380.05	4,487.05	1,017.26 N	3,681.97 W	728,049.72	1,043,005.36	3.50	3,781.46	
6,800.00	84.79	296.80	-4,391.66	4,498.66	1,060.53 N	3,771.36 W	728,092.99	1,042,915.97	3.50	3,880.70	
6,841.71	86.01	297.61	-4,395.00	4,502.00	1,079.54 N	3,808.33 W	728,112.00	1,042,879.00	3.50	3,922.19	Start DLS 3 50 TFO -35.80 - hzlt1
6,847.03	86.16	297.50	-4,395.36	4,502.36	1,081.99 N	3,813.03 W	728,114.45	1,042,874.30	3.50	3,927.48	Start 821.62 hold at 6847.03 MD
6,900.00	86.16	297.50	-4,398.91	4,505.91	1,106.40 N	3,859.92 W	728,138.86	1,042,827.41	0.00	3,980.21	
7,000.00	86.16	297.50	-4,405.60	4,512.60	1,152.47 N	3,948.42 W	728,184.93	1,042,738.91	0.00	4,079.75	
7,100.00	86.16	297.50	-4,412.30	4,519.30	1,198.54 N	4,036.92 W	728,231.00	1,042,650.41	0.00	4,179.29	
7,200.00	86.16	297.50	-4,418.99	4,525.99	1,244.62 N	4,125.42 W	728,277.08	1,042,561.91	0.00	4,278.84	
7,300.00	86.16	297.50	-4,425.68	4,532.68	1,290.69 N	4,213.92 W	728,323.15	1,042,473.41	0.00	4,378.38	

HALLIBURTON

Plan Report for (Slot 17) E-8 - Wellbore #5 - Hzl Plan 4 (03-Apr-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
7,400.00	86.16	297.50	-4,432.38	4,539.38	1,336.76 N	4,302.43 W	728,369.22	1,042,384.90	0.00	4,477.92	
7,500.00	86.16	297.50	-4,439.07	4,546.07	1,382.83 N	4,390.93 W	728,415.29	1,042,296.40	0.00	4,577.46	
7,600.00	86.16	297.50	-4,445.77	4,552.77	1,428.90 N	4,479.43 W	728,461.36	1,042,207.90	0.00	4,677.01	
7,668.65	86.16	297.50	-4,450.36	4,557.36	1,460.53 N	4,540.18 W	728,492.99	1,042,147.15	0.00	4,745.34	Start DLS 3.00 TFO 144.10
7,700.00	85.40	298.05	-4,452.67	4,559.67	1,475.10 N	4,567.85 W	728,507.56	1,042,119.48	3.00	4,776.52	
7,776.17	83.55	299.40	-4,460.00	4,567.00	1,511.54 N	4,634.33 W	728,544.00	1,042,053.00	3.00	4,852.03	Start 1736.22 hold at 7776.17 MID - hzl2
7,800.00	83.55	299.40	-4,462.68	4,569.68	1,523.16 N	4,654.96 W	728,555.62	1,042,032.37	0.00	4,875.59	
7,900.00	83.55	299.40	-4,473.91	4,580.91	1,571.95 N	4,741.52 W	728,604.41	1,041,945.81	0.00	4,974.44	
8,000.00	83.55	299.40	-4,485.14	4,592.14	1,620.73 N	4,828.09 W	728,653.19	1,041,859.24	0.00	5,073.29	
8,100.00	83.55	299.40	-4,496.37	4,603.37	1,669.52 N	4,914.66 W	728,701.98	1,041,772.67	0.00	5,172.15	
8,200.00	83.55	299.40	-4,507.60	4,614.60	1,718.30 N	5,001.23 W	728,750.76	1,041,686.10	0.00	5,271.00	
8,300.00	83.55	299.40	-4,518.83	4,625.83	1,767.09 N	5,087.79 W	728,799.55	1,041,599.54	0.00	5,369.86	
8,400.00	83.55	299.40	-4,530.06	4,637.06	1,815.87 N	5,174.36 W	728,848.33	1,041,512.97	0.00	5,468.71	
8,500.00	83.55	299.40	-4,541.30	4,648.30	1,864.65 N	5,260.93 W	728,897.11	1,041,426.40	0.00	5,567.57	
8,600.00	83.55	299.40	-4,552.53	4,659.53	1,913.44 N	5,347.50 W	728,945.90	1,041,339.83	0.00	5,666.42	
8,700.00	83.55	299.40	-4,563.76	4,670.76	1,962.22 N	5,434.07 W	728,994.68	1,041,253.26	0.00	5,765.28	
8,800.00	83.55	299.40	-4,574.99	4,681.99	2,011.01 N	5,520.63 W	729,043.47	1,041,166.70	0.00	5,864.13	
8,900.00	83.55	299.40	-4,586.22	4,693.22	2,059.79 N	5,607.20 W	729,092.25	1,041,080.13	0.00	5,962.99	
9,000.00	83.55	299.40	-4,597.45	4,704.45	2,108.58 N	5,693.77 W	729,141.04	1,040,993.56	0.00	6,061.84	
9,100.00	83.55	299.40	-4,608.68	4,715.68	2,157.36 N	5,780.34 W	729,189.82	1,040,906.99	0.00	6,160.70	
9,200.00	83.55	299.40	-4,619.91	4,726.91	2,206.14 N	5,866.90 W	729,238.60	1,040,820.43	0.00	6,259.55	
9,300.00	83.55	299.40	-4,631.15	4,738.15	2,254.93 N	5,953.47 W	729,287.39	1,040,733.86	0.00	6,358.40	
9,400.00	83.55	299.40	-4,642.38	4,749.38	2,303.71 N	6,040.04 W	729,336.17	1,040,647.29	0.00	6,457.26	
9,500.00	83.55	299.40	-4,653.61	4,760.61	2,352.50 N	6,126.61 W	729,384.96	1,040,560.72	0.00	6,556.11	
9,512.39	83.55	299.40	-4,655.00	4,762.00	2,358.94 N	6,137.33 W	729,391.00	1,040,550.00	0.00	6,568.36	Start DLS 3.00 TFO 92.22 - hzl3
9,600.00	83.46	302.05	-4,664.91	4,771.91	2,403.01 N	6,212.15 W	729,435.47	1,040,475.18	3.00	6,654.73	
9,630.22	83.43	302.96	-4,668.37	4,775.37	2,419.15 N	6,237.48 W	729,451.61	1,040,449.85	3.00	6,684.39	Start 1717.78 hold at 9630.22 MLU
9,700.00	83.43	302.96	-4,676.35	4,783.35	2,456.86 N	6,295.64 W	729,489.32	1,040,391.69	0.00	6,752.78	
9,800.00	83.43	302.96	-4,687.80	4,794.80	2,510.90 N	6,378.99 W	729,543.36	1,040,308.34	0.00	6,850.79	
9,900.00	83.43	302.96	-4,699.25	4,806.25	2,564.95 N	6,462.35 W	729,597.41	1,040,224.98	0.00	6,948.81	
10,000.00	83.43	302.96	-4,710.69	4,817.69	2,618.99 N	6,545.70 W	729,651.45	1,040,141.63	0.00	7,046.82	
10,100.00	83.43	302.96	-4,722.14	4,829.14	2,673.04 N	6,629.06 W	729,705.50	1,040,058.27	0.00	7,144.84	
10,200.00	83.43	302.96	-4,733.59	4,840.59	2,727.09 N	6,712.41 W	729,759.55	1,039,974.92	0.00	7,242.85	
10,300.00	83.43	302.96	-4,745.03	4,852.03	2,781.13 N	6,795.77 W	729,813.59	1,039,891.56	0.00	7,340.87	
10,400.00	83.43	302.96	-4,756.48	4,863.48	2,835.18 N	6,879.12 W	729,867.64	1,039,808.21	0.00	7,438.88	
10,500.00	83.43	302.96	-4,767.93	4,874.93	2,889.22 N	6,962.48 W	729,921.68	1,039,724.85	0.00	7,536.90	
10,600.00	83.43	302.96	-4,779.38	4,886.38	2,943.27 N	7,045.83 W	729,975.73	1,039,641.50	0.00	7,634.91	
10,700.00	83.43	302.96	-4,790.82	4,897.82	2,997.32 N	7,129.18 W	730,029.78	1,039,558.15	0.00	7,732.93	
10,800.00	83.43	302.96	-4,802.27	4,909.27	3,051.36 N	7,212.54 W	730,083.82	1,039,474.79	0.00	7,830.94	

HALLIBURTON

Plan Report for (Slot 17) E-8 - Wellbore #5 - Hzi Plan 4 (03-Apr-06)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Easting (ft)	Map Coordinates Northing (ft)	Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
10,900.00	83.43	302.96	-4,813.72	4,920.72	3,105.41 N	7,295.89 W	730,137.87	1,039,391.44	0.00	7,928.96	
11,000.00	83.43	302.96	-4,825.16	4,932.16	3,159.45 N	7,379.25 W	730,191.91	1,039,308.08	0.00	8,026.97	
11,100.00	83.43	302.96	-4,836.61	4,943.61	3,213.50 N	7,462.60 W	730,245.96	1,039,224.73	0.00	8,124.99	
11,200.00	83.43	302.96	-4,848.06	4,955.06	3,267.55 N	7,545.96 W	730,300.01	1,039,141.37	0.00	8,223.00	
11,300.00	83.43	302.96	-4,859.50	4,966.50	3,321.59 N	7,629.31 W	730,354.05	1,039,058.02	0.00	8,321.02	
11,348.01	83.43	302.96	-4,865.00	4,972.00	3,347.54 N	7,669.33 W	730,380.00	1,039,018.00	0.00	8,368.07	TD at 11348.01 - hz14

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
6,325.00	4,442.00	859.59	-3,345.53	Start Siderack 5.00 TFO -154.50
6,549.45	4,461.78	957.34	-3,546.21	Start 82.09 hold at 6549.45 MD
6,631.54	4,476.20	989.57	-3,620.32	Start DLS 3.50 TFO 33.87
6,841.71	4,502.00	1,079.54	-3,808.33	Start DLS 3.50 TFO -35.90
6,847.03	4,502.36	1,081.99	-3,813.03	Start 82.162 hold at 6847.03 MD
7,668.65	4,557.36	1,460.53	-4,540.18	Start DLS 3.00 TFO 144.10
7,776.17	4,567.00	1,511.54	-4,634.33	Start 1736.22 hold at 7776.17 MD
9,512.39	4,762.00	2,358.54	-6,137.33	Start DLS 3.00 TFO 92.22
9,630.22	4,775.37	2,419.15	-6,237.48	Start 1717.78 hold at 9630.22 MD
11,348.01	4,972.00	3,347.54	-7,669.33	TD at 11348.01

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	+N/-S (ft)	+E/-W (ft)	Start TVD (ft)
ID	No Target (Freehand)	293.58	Slot	0.00	0.00	0.00

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
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HALLIBURTON

Plan Report for (Slot 17) E-8 - Wellbore #5 - Hzi Plan 4 (03-Apr-06)

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
hzi1 - plan hits target - Point	0.00	0.00	4,502.00	1,079.54	-3,808.33	728,112.00	1,042,879.00	34.128	-119.413
hzi2 - plan hits target - Point	0.00	0.00	4,567.00	1,511.54	-4,634.33	728,544.00	1,042,053.00	34.129	-119.416
hzi3 - plan hits target - Point	0.00	0.00	4,762.00	2,358.54	-6,137.33	729,391.00	1,040,550.00	34.131	-119.421
hzi4 - plan hits target - Point	0.00	0.00	4,972.00	3,347.54	-7,669.33	730,380.00	1,039,018.00	34.134	-119.426

HALLIBURTON

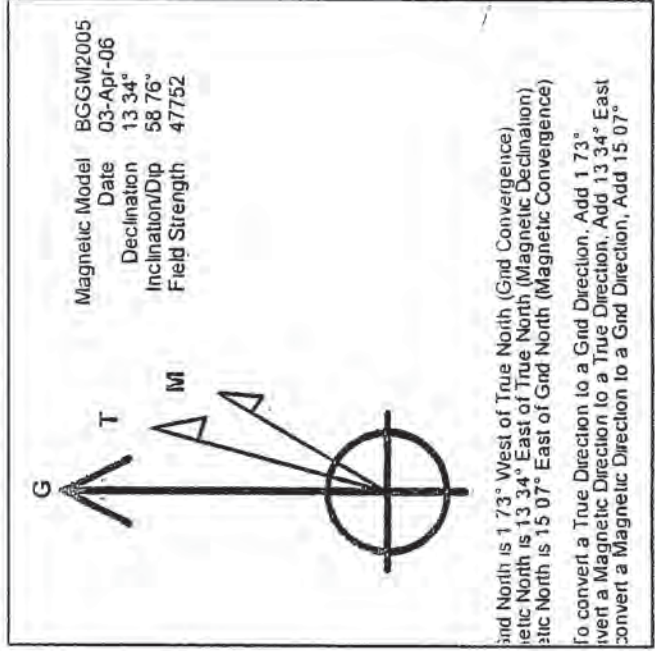
North Reference Sheet for Platform Gail - (Slot 17) E-8 - Wellbore #5

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.
Vertical Depths are relative to Well @ 107' 00ft (Original Well Elev) Northing and Easting are relative to (Slot 17) E-8.
Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866.
Projection method is Lambert Conformal Conic (2 parallel).
Central Meridian is -116 250°, Longitude Origin 0 000° Latitude Origin 33 883°.
False Easting 2,000,000 00ft, False Northing 0 00ft, Scale Reduction 1 00004935.

Grid Coordinates of Well 727 032 46 ft N, 1,046,687 33 ft E
Geographical Coordinates of Well 34° 07' 30 72" N, 119° 24' 00 36" W
Grid Convergence at Surface is -1 73°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,348 01ft,
the Bottom Hole Displacement is 8,368 07ft in the Direction of 293 58° (Grid)

Magnetic Convergence at surface is -15 07" (3 April 2006 BGGM2005)



Vertical to 1415'
 Inclination reaches 90° at 6350' MD/4,472' TVD
 Lateral Hole drilled at 83° 6,325' to 11,348' MD/4,972' TVD
 Pilot Hole drilled to 10,530' MD/5,771' TVD
 Inclination drops to 46° at 9,950' MD/5,380' TVD
 D.F. Elevation: 107'
 D.F. to Tubing Head: 50'
 Water Depth: 739'
 Tree: FMC 5000 PSI WP

SOCKEYE FIELD WELL E-8 RD

Drawing Revision 05/203/06 JLH

Completion Date:

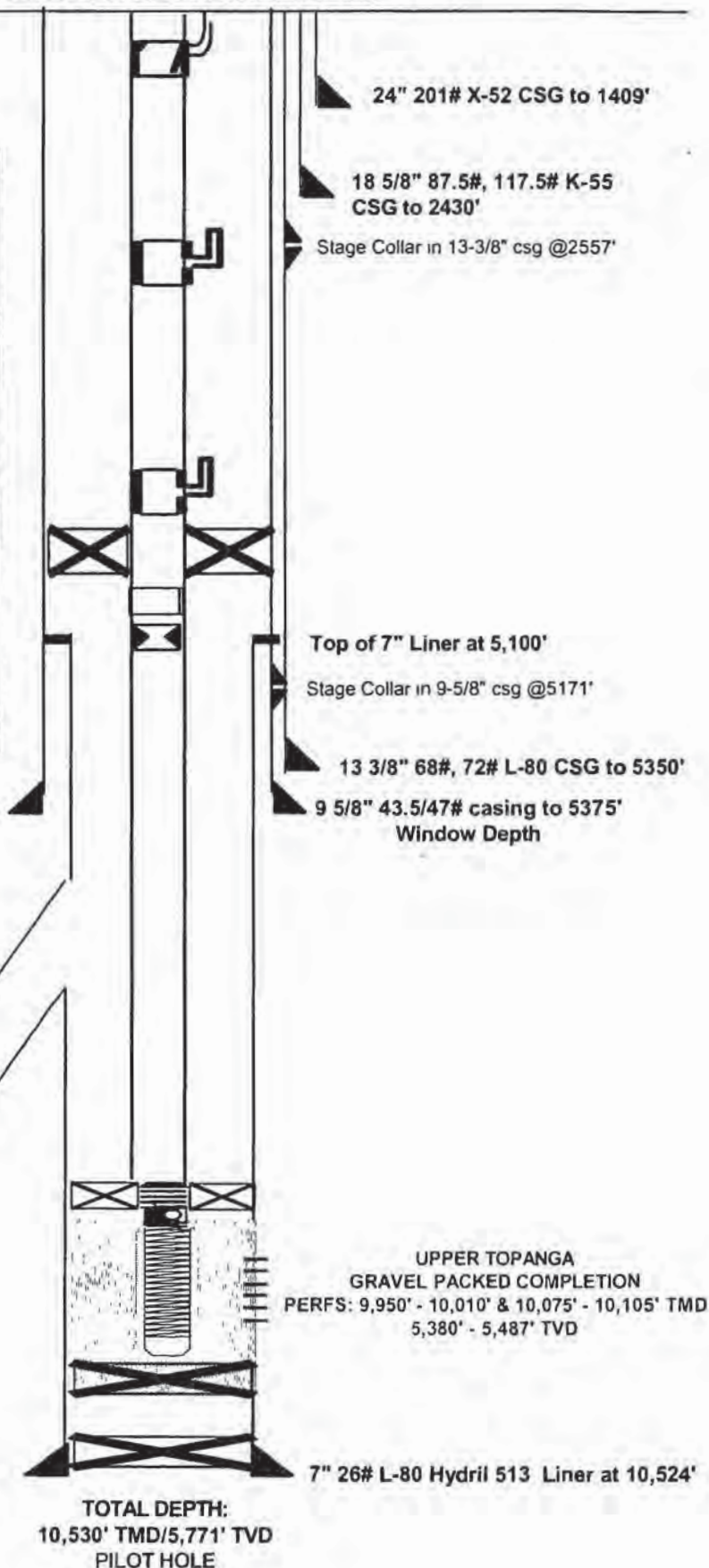
Lease: OCS-P-0209 PROPOSED REDRILL PILOT HOLE & LATERAL HOLE

Description	ID	LENGTH	DEPTH
KB		50.44	0
FMC tbg hanger		0.80	50
3-1/2" 9.3# L-80 8rd EUE pup jt	2.992"	2.64	51
31 jts 3 1/2" 9.3# L-80 8rd EUE tbg	2.992"	968.53	54
Baker 3 1/2" "TE-5" TRSSSV		14.97	1022
60 jts 3 1/2" 9.3# L-80 8rd EUE tbg	2.992"	1841.11	1037
Gas Lift Mandrel (Operating Valve)		12.73	2878
66 jts 3 1/2" tbg as above	2.992"	2080.00	2891
Gas Lift Mandrel (Operating Valve)		12.72	4971
1 jts 3 1/2" tbg as above	2.992"	31.00	4984
Baker 9-5/8" Twin Seal Hydraulic Packer		18.23	5015
1 jt 3 1/2" 9.3# L-80 8rd EUE tbg	2.992"	31.00	5033
3 1/2" Baker Hydraulic Operated Sleeve		2.00	5064
1 jts 3 1/2" 9.3# L-80 EUE 8RD	2.992"	31.00	5066
3 1/2" BXN Nipple		2.75"	5097
152 jts 3 1/2" tbg as above	2.992"	4800.00	5098
Seal Assembly Locator		1.00	9898
7" Baker SC-1 Gravel Pack Packer		5.30	9899
Sliding Sleeve requires 2 - 1/4" control lines to operate			
Will run Cannon clamps on collars & mid joint to protect lines			

7" Window Depth for Lateral +/-6,325'

MONTEREY M2-
 LATERAL OPEN HOLE COMPLETION

TOTAL DEPTH:
 11,348' TMD/4,972' TVD
 LATERAL OPEN HOLE



*operator is preparing downhole commingling of the Monterey (M2) & Upper Topanga Zones. Dual zones of interest will consist of UT Gravel pack (7" casing) & 6 1/8" OH-Monterey.
 [pilot] [lateral]
 ↳ 10,803' / 5964' ↳ 11,348' / 4972'

APPLICATION FOR PERMIT TO DRILL

CHECK LIST

OPERATOR Venoco, Inc. ENGRG. REVIEW BY ST Shams
 LEASE NO. P-02050 simi; P-0209 @ BHL DATE COMPLETED 5/30/06
 WELL NO. E-8 ST-01 & ST-02 *ST 01 is designated 0431120674 01
 COPIES RECEIVED 3 P.I. 1 ST 02 is designated 0431120674 02
 GEOLOGIC/GEOPHYSICAL REVIEW COMPLETED BY F. Victor DATE 5/11/06
 COPIES ON FILE WITH APD yes
 LEASE INSTRUMENT CHECKED NO
 DESIGNATION OF OPERATOR APPROVED yes
 SPECIAL LEASE STIPULATIONS NOTED Lease instrument not examined.

POE/POD APPROVED DATE _____
 SPECIAL CONDITIONS OF APPROVAL Standard COAs to Drill OCS well attached to all copies of APD.

MOBIL DRILLING UNIT NO TYPE Platform Rig-Kenai #2
 ABS & COASTGUARD DOCUMENTS ON FILE N/A
 FRONTIER AREA YES NO
 SEA FLOOR CONDITIONS EXAMINED, DOCUMENTED AND APPROVED N/A

RIG DESCRIPTION AND SPECIFICATIONS ON FILE? yes
 PLAT PROVIDED 2000 FEET/ONE INCH yes
 SURFACE LOCATION CHECKED yes
 SUBSURFACE LOCATION CHECKED yes

RKB TO WATER 107' asl WD 739' RKB TO ML 846'
 TVD 5964' & 4972' MD 10803' & 11348'

WELL DESIGN CRITERIA: ΔMASP values based on 100% gas to surface.

KOP₁ = 5375' MD
 KOP₂ = 6300' MD

→ TOL @ 5100' MD
 X

TAKEN FROM OFFSET WELL	133 1/2"	95 1/2"	CALCULATED	7" line (std) 6 1/8" OH (ST)
CASING SIZE <u>18 5/8"</u>	<u>133 1/2"</u>	<u>95 1/2"</u>	<u>7"</u>	<u>6 1/8"</u>
(MD) CASING DEPTH <u>2424'</u>	<u>5344'</u>	<u>8077'</u>	<u>10,803'</u>	<u>ON 40-11,348'</u>
PORE PRESS. <u>↑</u>	<u>↑</u>	<u>↑</u>	<u>8.4 ppq</u>	<u>7.10 ppq</u>
FRAC. PRESS. <u>↑</u>	<u>↑</u>	<u>↑</u>	<u>10.5 ppq</u>	<u>10.5 ppq</u>
ANTICIPATED <u>EXISTING</u>	<u>EXISTING</u>	<u>EXISTING</u>	<u>2307 psi</u>	<u>1584 psi</u>
SURFACE PRESS. <u>↓</u>	<u>↓</u>	<u>↓</u>	<u>9.2 OBM</u>	<u>0.56 seawater</u>
MUD WEIGHT				
LOST CIRCULATION ZONES <u>None anticipated - Perhaps in fractured Monterey.</u>				
SHALLOW HAZARDS FROM GEOLOGIC/GEOPHYSICAL REVIEW <u>Already behind existing casing.</u>				

BOPE

NO. AND TYPE	ANNULAR	PIPE RAMS	BLIND/SHEAR RAMS
<u>1-135/8"-5M-GK</u>	<u>3-135/8"-5M</u>	<u>1-137/8"-5M</u>	
	<u>-1-27/8" to 5" VBR</u>		
	<u>-1-5"</u>		
	<u>-1-23/8"</u>		



United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010-6064

7106

May 11, 2006

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation & Production *FW*

Subject: Geologic Hazards Analysis for Well P-0205 E-8RD

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Sockeye Oil Field
Lease: OCS-P 0205
Platform: Gail
Well/Slot: E-8RD in slot 7 (Dual Lateral)
Objective: Monterey, U. & L. Topanga, and Sespe Fm. reservoirs
API: 04-311-20674-01

Surface Location: X = 1,046,687 ft
Lambert Zone 6 Y = 727,032 ft

Estimated Top of X =
Productive Zone Y =

Estimated Bottom X = 1,039,018 ft & 1,041,920 ft
Hole Location Y = 730,380 ft & 731,303 ft

Elevation of KB: + 107 feet
Est. Total Depth (measured): - 11,348 feet (RKB) -10,803 feet (RKB)
Est. Total Depth (true vert.): - 4,865 feet (RKB) -5,857 feet (RKB)

Water Depth (Gail): 739 feet +/-

TAKE PRIDE[®]
IN AMERICA 

Overview of Proposal

Venoco, Inc., designated operator of the Sockeye Field within the Santa Clara Unit, proposes to drill well OCS-P 0205 #E-8RD into the Sespe Formation. The objectives of the well are to exploit potential reservoirs in the Miocene Monterey, Lower Miocene Upper Topanga, and/or Oligocene Sespe Formations. This well will be a dual lateral well. The Upper Topanga interval will be perforated and gravel packed and isolated with a plug. The Monterey lateral will be left as an open hole completion. The completion will be a single 3 ½" tubing string with production packers and sliding sleeve configured to allow for commingle production or shut-off selectively and allow for individual testing of each wellbore.

The proposed well will be drilled using Kenai Rig #2 on Platform Gail to a bottom hole location in Lease OCS-P 0209, northwest of the platform. E-8RD is a "new" well designed to explore the potential production on the undeveloped northwest anticlinal nose of the structure. The closest wells to this location are E11 and E9 an production wells north and south of E8.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Top Monterey M1	Miocene	5,364 feet	4,109 feet
Top Monterey M2	Miocene	5,773 feet	4,330 feet
Top Upper Topanga	L. Miocene	10,033 feet	5,420 feet
Top Sespe Fm.	Oligocene	10,500 feet	5,750 feet
Total Depth	Oligocene	10,803 feet	5,964 feet

2. Potential Oil and Gas Reservoirs (from OCS-P 0205 E-10)

Formation	Age	(TVD)	Thickness	HC Type
Monterey M4*	Miocene	4,603 feet	800 +/- feet	Oil/Gas
Upper Topanga*	L. Miocene	5,149 feet	350 +/- feet	Oil/Gas
Sespe*	Oligocene	5,446 feet	>1,700 feet	Oil/Gas

* Operator's stated objective. Thicknesses based on estimates.

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. This well is a side track from well E-8, therefore all the upper zones are already behind casing, and we expect normal salty or briny formation water while drilling.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of E8. The present operator and former operator of the Sockeye field have extensive drilling experience in this field. The proposed drilling program is similar to those utilized in drilling the production wells in the field.

In the event a new pool is discovered, unrelated to the Main zones of the field, the operator should be prepared for higher than expected formation pressure.

5. Faulting and Folding

Several important faults have been mapped by the Operator. Faulting is an important consideration for the success of the well. The well will cross two north-south trending faults that border the structure. These faults exhibit minor offset and should not present any significant risk to the well.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Gail, due to the drilling of this well. The E8 well did not find near surface gas, but did record gas shows in the Pliocene/Upper Miocene section.

7. Possible Over-pressured or Depleted Zones

Several ditch gas kicks are noted in the mud logs for OCS-P-205#2. However, as noted above, in the event of a new pool discovery the operator should be prepared for higher than expected formation pressures, similar to the original formation pressures noted at the discovery of the Sockeye field. The Operator has included a well control contingency plan with the Application.

8. Logging/Coring

The Operator plans a standard set of logs, as is the common practice with production wells in this area. A standard mud log will be taken to total depth. Collection of dry wall samples will be at 30' intervals. The E-logs will include gamma ray, density, neutron, and resistivity, taken on wire line surveys. An LWD starting right out of the casing with Sperry Gr-Res-Density-Neutron for both pilot and the horizontal well will be run.

9. Other Comments

The Monterey and Topanga Formations may contain hydrogen sulfide gas. Well E-8RD drill path is located between E-11 to the north and E-9 to the south. The path of E-8RD comes the closest to well E-11, however based on the current drilling plan there is sufficient spacing between the two wells.

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Manager.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, etc., shall be verbally reported immediately to the District Manager.
6. The District Manager shall be notified in advance in the event of production tests.
7. One copy of all logs, including the mud log to date, shall be furnished to the Office of Reservoir Evaluation and Production immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Manager shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.

U.S. Department of the Interior
Minerals Management Service (MMS)Submit original plus THREE copies, with ONE copy
marked "Public Information."OMB Control No. 1010-0141
OMB Approval Expires 11/30/2011

Application for Permit to Modify (APM)

1. WELL NAME (CURRENT) E-8	2. SIDETRACK NO. (CURRENT) 02	3. BYPASS NO. (CURRENT)	4. OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc. 6287 Carpinteria Ave. Ste 100 Carpinteria, CA 93013
5. API WELL NO. (12 digits) 04-311-20674-02	6. START DATE (Proposed) 1-29-10	7. ESTIMATED DURATION (DAYS) 3	
8. ☒ Revision	9. If revision, please list changes: Perform post fracture clean-out and add perfs		
WELL AT TOTAL DEPTH		WELL AT SURFACE	
10. LEASE NO. P-0209	13. LEASE NO. P0205	RECEIVED FEB 22 2010 California District MINERALS MANAGEMENT SERVICE OFFICE OF FIELD OPERATIONS	
11. AREA NAME 6B	14. AREA NAME 6B		
12. BLOCK NO. 4671	15. BLOCK NO. 4661		
Proposed or Completed Work			
16. PROPOSED OR COMPLETED WORK (Describe in Section 17) PLEASE SELECT ONLY ONE PRIMARY TYPE IN BOLD AND AS MANY SECONDARY TYPES AS NECESSARY: ☒ Enhance Production ☐ Acidize ☐ Artificial Lift ☒ Wash/Desand Well ☐ Jet Well ☐ Utility ☐ Initial Injection Well ☐ Additional Fluids for Injection ☐ Other Operations ☐ Describe Operation(s) ☐ Workover: ☐ Change Tubing ☐ Casing Pressure Repair ☐ Abandonment of Well Bore: ☐ Permanent Abandonment ☐ Temporary Abandonment ☐ Plugback to Sidetrack/Bypass ☐ Site Clearance ☒ Completion: ☐ Initial Completion ☐ Reperforation ☐ Change Zone ☒ Modify Perforations ☐ Information: ☐ Surface Location Plat ☐ Change Well Name			
17. BRIEFLY DESCRIBE PROPOSED OPERATIONS (Attach prognosis): Coiled Tubing clean-out fracture sand to 9540' and add perforations from 9525'-9528'			
18. LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250.513(a) through (d); 250.613(a) through (d); 250.1712(a) through (f); 250.1721(a) through (g); 250.1722(a) through (d); or 250.1743(a). Program, Coiled Tubing BOPE			
19. Rig Name or Primary Unit (e.g., Wireline Unit, Coiled Tubing, Snubbing Unit, etc.) Kenai Rig 2			
20. The greater of SITP or MASP (psi): 1800	21. Type of Safety Valve (SV): <u>SCSSV</u> ☒ <u>SSCSV</u> ☐ <u>N/A</u>	22. SV Depth BML (ft): <u>base + 100'</u>	
23. Rig BOP (Rams) Size: Working Pressure Test Pressure (Inches) (psi) (psi) Low/High: _____		24. Rig BOP (Annular) Working Pressure Test Pressure (psi) (psi) Low/High: _____	
25. Coiled Tubing BOP: Working Pressure BOP Test Pressure (psi) (psi) 15000 Low/High: 250/5000		26. Snubbing Unit BOP: Working Pressure Test Pressure (psi) (psi) Low/High: _____	
		27. Wireline Lubricator: Working Pressure Test Pressure (psi) (psi) Low/High: _____	
28. CONTACT NAME: Dana Billings		29. CONTACT TELEPHONE NO.: 805-745-2139	
30. CONTACT E-MAIL ADDRESS: dbillings@venocoinc.com			
31. AUTHORIZING OFFICIAL (Type or print name) GARY D. LOWE		32. TITLE OPERATIONS MANAGER	
33. AUTHORIZING SIGNATURE Gary D. Lowe		34. DATE 1/26/09/10	
THIS SPACE FOR MMS USE ONLY			
APPROVED BY: ORIG. SGD. BY: Dan Knowlson		TITLE for District Manager	
		DATE JAN 28 2010	

Application for Permit to Modify (APM) Information Sheet

35) Question Information		
Questions	Response	Remarks
a) Is H ₂ S present in the well? If yes, then comment on the inclusion of a Contingency Plan for this operation.	☒ YES ☐ NO ☐ N/A	
b) Is this proposed operation the only lease holding activity for the subject lease? If yes, then comment.	☐ YES ☒ NO ☐ N/A	
c) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☐ NO ☒ N/A	
d) If sands are to be commingled for this completion, has aproval been obtained?	☐ YES ☐ NO ☒ N/A	
e) Will the completed interval be within 500 feet of a block line? If yes, then comment.	☐ YES ☒ NO ☐ N/A	
f) For permanent abandonment, will casings be cut 15 feet below the mudline? If no, then comment.	☐ YES ☐ NO ☒ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT The PRA (44 U.S.C. 3501 et. seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-124, is estimated to average between 1-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 5438, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Venoco, Inc.

PPLATFORM GAIL-SOCKEYE FIELD

API# 04-311-2067402

LEASE OCS-P-0209

January 26, 2010

JOB PROCEDURE –Continued from APM approved Nov 23, 2009

1. Move in and rig up BJ Coiled Tubing, nitrogen generator and dual-choke reverse circulation manifold and all treatment flow-lines.
2. Fill and pressure test all iron, coiled tubing, riser to 250 psi low and 5000 psi high to the swab valve on the top of the tree. Set and test all pressure relief valves.
3. Pressure test coiled tubing BOPE to 250/5000 psi as per MMS regulations and BJ standard practice. NOTE: Pressure test the CT BOPE every 7 days and pressure test the connection every trip that the BOPE or riser system connection is unflanged or broken.
4. Run in hole with jetting /cleanout nozzle on 2" CT and clean out produced fracture sand to 9540'. Pull out CT.
5. Make up perforating gun on CT and RIH to perforate 9525'-9528'.
6. Pull out with perforating gun and return well to production.

Note: The additional perforations 9525'-9528' are below the bottom swell packer and will open the existing open hole section from 9540'-10,400' to produce into the 4.5" liner.

Vertical to 1415'

Inclination reaches 90' @ 6,350' MD/4,446' FVD M2
Lateral (max 91' from 6,324' to 10,400' MD/4,664' FVD)
Pilot Hole drilled to 10,530' MD/5,771' TVD
Inclination drops to 46' @ 9,950' MD/5,380' TVD
D.F. Elevation: 107'
D.F. to Tubing Head: 50'
Water Depth: 739'
Tree: FMC 5000 PSI WP

Lease: OCS-P-0209

Drawing Revision 1/22/10 MLO

SOCKEYE FIELD

WELL E-8RD

Single Producer M2 Lateral POST FRAC COMPLETION

Completion Date: 6/24/06
Recompletion: 8/14/06, 10/04/06,
12/20/09, 1/15/10

Perforation Detail

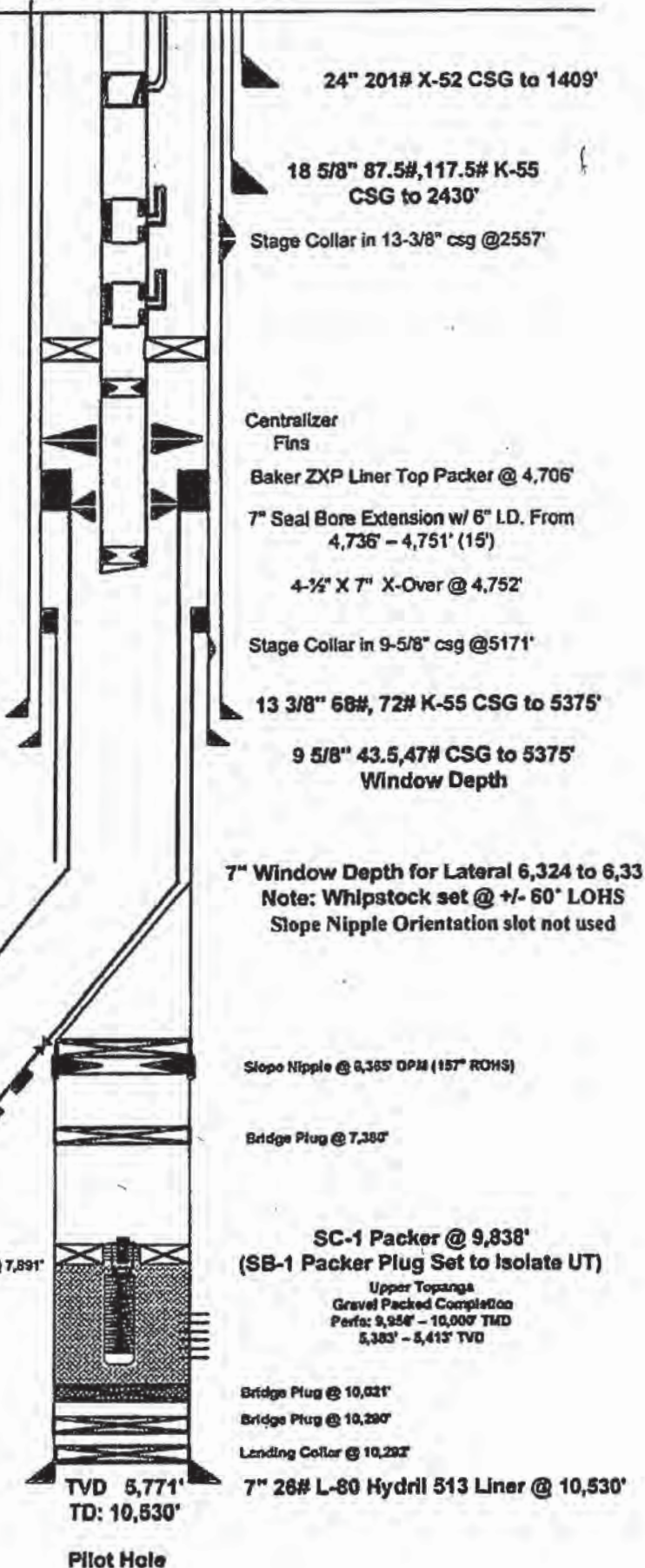
CTU abrasive cut holes, 3 holes @ 120° phasing Jan. 2010
9,380' (stage 1), 8,770' (stage 2), 8,000' (stage 3), 7,650', 7,500', & 7,495'
(stage 4), 7,350' (stage 5), 7,020' (stage 5a), 6,742' & 6,740' (stage 6)

TUBING DETAIL			
Joints	Description	LENGTH	DEPTH
	K.B	50.80	0.00
	FMC Tbg. Hanger 3-1/2" EUE Box X 3-1/2" EUE Box	0.75	50.60
	3 1/2" 9.3# L80 EUE 8RD PIN X PIN	3.68	51.35
	3 1/2" 9.3# L80 EUE 8RD Pup	4.12	55.03
	3 1/2" 9.3# L80 EUE 8RD Pup	6.14	59.15
	3 1/2" 9.3# L80 EUE 8RD Pup	10.12	65.29
30	3 1/2" 9.3# L80 EUE 8RD	932.73	75.41
	3 1/2" 9.3# L80 EUE 8RD Pup	6.32	1008.14
	3 1/2" TRSSSV	5.48	1014.48
	3 1/2" 9.3# L80 EUE 8RD Pup	4.07	1019.91
64	3 1/2" 9.3# L80 EUE 8RD	1998.38	1023.98
	3 1/2" 9.3# L80 EUE 8RD Pup	4.05	3020.38
	3 1/2" GLM	7.11	3024.41
	3 1/2" 9.3# L80 EUE 8RD Pup	4.07	3031.52
	3 1/2" 9.3# L80 EUE 8RD Pup	10.12	3035.59
43	3 1/2" 9.3# L80 EUE 8RD	1342.35	3045.71
	3 1/2" 9.3# L80 EUE 8RD Pup	4.11	4388.06
	3 1/2" GLM	7.02	4392.17
	3 1/2" 9.3# L80 EUE 8RD Pup	4.09	4399.19
4	3 1/2" 9.3# L80 EUE 8RD	123.64	4403.28
	3 1/2" 9.3# L80 EUE 8RD Pup	6.28	4526.92
	BAKER 9 5/8" HS Packer	6.59	4533.20
	3 1/2" 9.3# L80 EUE 8RD Pup	4.11	4539.79
1	3 1/2" 9.3# L80 EUE 8RD	31.33	4543.90
	2.813" BX Nipple	1.17	4575.23
4	31" of 3 1/2" 9.3# L80 EUE 8RD	125.10	4576.40
	3 1/2" 9.3# L80 EUE 8RD Pup w/ 7.860" OD NoGo Fins	2.08	4701.50
1	3 1/2" 9.3# L80 EUE 8RD	31.28	4703.58
	3 1/2" WLEG WITH BALL SEAT AND 5.5" OD FINS	0.67	4734.86
147			4735.53
Baker SS bands used = 87			
Baker protectors used = 31			
Up weight = 57K, Down weight = 55K			
Baker HS packer set @ 44K shear			

****Note - All Swell Packer Depths
Refer to the Center of a 20'
Element**



Monterey M2
Lateral Open Hole Completion
TVD 4,661'
TD: 10,400'



U.S. Department of the Interior
Minerals Management Service (MMS)

Submit original plus THREE copies, with ONE copy
marked "Public Information"

OMB Control No 1010-0141
OMB Approval Expires 11/30/2011

Application for Permit to Modify (APM)

1 WELL NAME (CURRENT) E-8		2 SIDETRACK NO (CURRENT) 02		3 BYPASS NO (CURRENT) 00		4 OPERATOR NAME and ADDRESS (Submitting office) Venoco, Inc 6267 Carpinteria Ave., Ste 100 Carpinteria, CA 93013	
5 API WELL NO (12 digits) 04-311-20674-02		6 START DATE (Proposed) 11-27-2009		7 ESTIMATED DURATION (DAYS) 60 days			
8 ☐ Revision		9 If revision, please list changes		RECEIVED			
10 LEASE NO P-0209				13 LEASE NO P-0205			
11 AREA NAME 6B				14 AREA NAME 6B			
12 BLOCK NO 4671				15 BLOCK NO 4661			
MINERALS MANAGEMENT SERVICE CALIFORNIA DISTRICT							
Proposed or Completed Work							
16 PROPOSED OR COMPLETED WORK (Describe in Section 17) PLEASE SELECT ONLY ONE PRIMARY TYPE IN BOLD AND AS MANY SECONDARY TYPES AS NECESSARY.							
☐ Enhance Production ☐ Acidize ☐ Artificial Lift ☐ Wash/Desand Well ☐ Jet Well ☐ Utility ☐ Initial Injection Well ☐ Additional Fluids for Injection ☐ Other Operations ☐ Describe Operation(s)							
☐ Workover ☐ Change Tubing ☐ Casing Pressure Repair ☐ Abandonment of Well Bore ☐ Permanent Abandonment ☐ Temporary Abandonment ☐ Plugback to Sidetrack/Bypass ☐ Site Clearance							
☒ Completion ☐ Initial Completion ☐ Reperforation ☐ Change Zone ☒ Modify Perforations ☐ Information: ☐ Surface Location Plat ☐ Change Well Name							
17 BRIEFLY DESCRIBE PROPOSED OPERATIONS (Attach prognosis) Abandon Upper Topanga Zone, re-enter and run liner into M2 open hole lateral, fracture stimulate.							
18 LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250 513(a) through (d), 250 613(a) through (d), 250 1712(a) through (f), 250 1721(a) through (g), 250 1722(a) through (d), or 250 1743(a) See attached program and schematics							
19 Rig Name or Primary Unit (e.g., Wireline Unit, Coil Tubing, Snubbing Unit, etc.) Kenai Rig 2							
20 The greater of SITP or MASP (psi) 1800		21 Type of Safety Valve (SV) <u>SCSSV</u> ☒ <u>SSCSV</u> ☐ <u>N/A</u>		22 SV Depth BML (ft) +100			
23 Rig BOP (Rams) Size (inches) 13 5/8 Working Pressure (psi) 5000 Test Pressure (psi) 250/2500 Low/High _____				24 Rig BOP (Annular) Working Pressure (psi) 5000 Test Pressure (psi) 250/2500 Low/High _____			
25 Coiled Tubing BOP: Working Pressure (psi) _____ BOP Test Pressure (psi) _____ Low/High _____		26 Snubbing Unit BOP: Working Pressure (psi) _____ Test Pressure (psi) _____ Low/High _____		27 Wireline Lubricator: Working Pressure (psi) _____ Test Pressure (psi) _____ Low/High _____			
28 CONTACT NAME Dana Billings		29 CONTACT TELEPHONE NO 805-745-2139		30 CONTACT E-MAIL ADDRESS dbillings@venoco.com			
31 AUTHORIZING OFFICIAL (Type or print name) Gary Lower				32 TITLE Operations Manager			
33 AUTHORIZING SIGNATURE <i>[Signature]</i>				34 DATE 11-19-2009			
THIS SPACE FOR MMS USE ONLY							
APPROVED BY ORIG. SGD. BY: Dan Knowlson		TITLE District Manager		DATE NOV 23 2009			

Application for Permit to Modify (APM) Information Sheet

35) Question Information		
Questions	Response	Remarks
a) Is H ₂ S present in the well? If yes, then comment on the inclusion of a Contingency Plan for this operation.	☒ YES ☐ NO ☐ N/A	
b) Is this proposed operation the only lease holding activity for the subject lease? If yes, then comment.	☐ YES ☒ NO ☐ N/A	
c) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	
d) If sands are to be commingled for this completion, has aproval been obtained?	☐ YES ☐ NO ☒ N/A	
e) Will the completed interval be within 500 feet of a block line? If yes, then comment.	☐ YES ☐ NO ☒ N/A	
f) For permanent abandonment, will casings be cut 15 feet below the mudline? If no, then comment.	☐ YES ☐ NO ☒ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT The PRA (44 U.S.C. 3501 et seq) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-124, is estimated to average between 1-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 5438, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-8 ST1 and ST2 (Multi Lateral Well)
Re-Completion Program
API# 04-311-2067402
LEASE OCS-P-0204
November 19, 2009 (attach to MMS APM)

Objective: To abandon the E-8 ST1 well bore currently an Upper Topanga perforated gravel packed completion and prepare for, re-enter and recomplete the existing E-8 ST2 Monterey lateral with a 4 1/2" liner prepared for multi-stage fracture, currently an open hole completion.

Surface Location: OCS-P-205, Slot No. 17 (X= 1,046,687.33' & Y= 727,032.46')

Elevation: 739' WD, 113' Above MLLW, 852' Ocean Floor to Rig Floor

Total Depth:

OCS-P-209 E-8 ST1 Upper Topanga cased hole; 10530' MD/ 5771' VD (to be abandoned)

OCS-P-209 E-8 ST2 Monterey M2 Open Hole Lateral 10400' MD/ 4661' VD (to be reentered)

Note: Both wellbores TD in 209 lease

Existing Casing: (USING NEW 107' DF)

24", 201#, X-52	1403'	1140 cf
18 5/8", 87.5, 117.5 K-55	2424'	1470 cf
13 3/8", 68, 72# K-55	5344'	2451 cf DV @ 2557'
9 5/8", 40, 43, 47 # L-80/SS-95	5375' (window)	2952 cf DV @ 5171'
7" 26# L-80 Hyd 513 Liner	5126'-10,530'	1100 cf (cmt'd on 5/25/06)
4" Wire Wrap Screen Liner	9838'-10021'	Gravel Pack, SC-1 packer at 9838'

NOTES:

- A packer plug was installed in the top of the SC-1 at 9838' and not pressure tested due to open hole lateral above. The Upper Topanga is isolated.
- Top 4 jts 9 5/8" reported as 47#, next 177 jts are 43.5# (btm of 43.5# estimated below 6800')
- The 7" X 9 5/8" liner top was tested to 3000 psi with 9.3 ppg OBM in the hole

Perforations

6324' - 10440 Open Hole Lateral in Monterey M2

9956'-10000' Upper Topanga gravel packed WWS Liner (To be abandoned)

Abandonment of Upper Topanga Interval

The Upper Topanga zone last produced August 2nd, 2006 40/466/0 (O/W/G), it was isolated with a plug in the top of the WWS liner in October 2006 to allow more efficient production from the M2 open hole lateral. In order to implement the proposed re-entry program it is necessary to permanently abandon the zone at this time.

Proposed Liner

4 1/2" 11.6# or 13.5# L-80 GEOCON (butress type thread) 6174' – 9200'

Not cement, installed with swell packer equipment for Multistage fracture stimulation

Current Completion Equipment

Description as run 8/14/06	ID	LENGTH	DEPTH
K.B		50.38	0.00
FMC tbg hanger w / Pup 3.55"		0.80	50.38
3 1/2" pin x pin 9.2# L-80 8rd EUE pup jt	2.992	3.55	51.18
3 1/2" 9.3# L-80 8rd EUE pup jt	2.992	10.16	54.73
3 1/2" 9.3# L-80 8rd EUE pup jt	2.992	10.08	64.89
31 jts 3 1/2" 9.3# L-80 8rd EUE tbg	2.812	967.84	74.97
3 1/2" 9.3# L-80 8rd EUE pup jt	2.992	6.09	1042.81
BAKER 3 1/2" " TE-5" SSSV	2.992	5.47	1048.90
3 1/2" 9.3# L-80 8rd EUE pup jt	2.992	4.13	1054.37
63 jts 3 1/2" 9.3# L-80 8rd EUE tbg	2.992	1962.71	1058.50
3 1/2" 9.3# L-80 8rd EUE pup jt	2.992	4.10	3021.21
GAS LIFT MANDREL - GLV-1.0R 3/16" 1700psi	2.992	7.07	3025.31
3 1/2" 9.3# L-80 8rd EUE pup jt	2.992	4.10	3032.38
62 jts 3 1/2" 9.3# L-80 8rd EUE tbg	2.992	1931.69	3036.48
3 1/2" 9.3# L-80 8rd EUE pup jt	2.992	4.09	4968.17
GAS LIFT MANDREL - CRO-1.0R 11/64" 1600psi	2.992	7.14	4972.26
3 1/2" 9.3# L-80 8rd EUE pup jt	2.992	4.08	4979.40
7 jt 3 1/2" 9.3# L-80 8rd EUE tbg	2.992	218.26	4983.48
3 1/2" 9.3# L-80 8rd EUE pup jt	2.992	6.17	5201.74
Baker HS production pkr w/ 50K'shear release	2.992	5.25	5207.91
3 1/2" 9.3# L-80 8rd EUE pup jt	2.992	4.10	5213.16
1 jt 3 1/2" 9.3# L-80 8rd EUE tbg	2.750	30.97	5217.26
3-1/2" BX Profile Nipple	2.992	1.18	5248.23
37 jts 3 1/2" 9.3# L-80 8rd EUE tbg	2.635	1156.39	5249.41
3-1/2" BXN Profile Nipple	2.992	1.26	6405.80
3 1/2" 9.3# L-80 8rd EUE pup jt	2.992	10.15	6407.06
Wireline re-entry guide 5.125" OD		0.80	6417.21
Tail			6418.01

BOPE Equipment and Testing

- BOPE will be tested every 7 days during proposed operations, except during the multi-stage fracture stimulation mobilization/operations/demobilization.
- BOP equipped with 4 ram preventers and an annular. Test the BOP to 250/2500 psi with 5" drill pipe and 3 1/2" drill pipe – NOTE: 2 3/8" rams and annular on 2 3/8" tubing to be tested immediately prior to picking up 2 3/8" tubing for running with liner – 2 3/8" will not be tested in BOPE testing operations prior to that. The well has 3 1/2" tubing installed. The 13 5/8" BOPE will be configured for drilling or re-completion operations, with 2 7/8" X 5" VBR pipe rams in the top gate and blind/shear rams in the second gate from top, the mud cross will be below the blind/shear rams, and double gate with 5" rams at top and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. All tests will be recorded on a chart for the MMS to review.
- Before commencing well work operations it will be necessary to insure that fluids can be pumped down the tubing and casing simultaneously through equipment tested to 3000 psi. A 2 1/16 5M casing valve will be installed below the tubing hanger with a 1502 tee and a pressure gauge, a check valve and high pressure hose. It will be tested to 250/3000 psi for 5 minutes as part of the initial and regular BOPE tests. This connection will allow seawater to be pumped into the annulus at 3 bpm below the tubing hanger landing profile to keep the well under control. It will also prevent visual obstruction when landing the oriented tubing hanger.
- Sufficient fluid will be pumped into the well to keep the well under control per the field rules. The minimum rate of continuous pumping shall be 3 bpm.

Hydrogen Sulfide Considerations:

The Monterey and the Upper Topanga have the potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

NOTE: Have H2S scavengers on onboard suitable for use in NaCl seawater in the event they are required.

Work over Fluids:

- It is proposed to use up to 9.2 ppg NaCl mixed with seawater for workover operations. A fluid weight of 9.1+ was reported used during the last workover in Shut-in tubing pressures to be confirmed when rig moves onto well.
- The Monterey M2 interval will most likely stand full and there were reports of oil circulated out during initial completion operations. The open hole interval has not been re-entered since original completion.
- There will be no discharge of workover/completion fluids during the well operations.

Re-Completion Procedure

1. Shut-in well E-8 (Slot No. 17) and move rig over the well. Kill the well with 9.2 ppg NaCl weighted seawater depending upon shut in pressures. Bleed pressure down on casing and tubing string through production system as needed. Fill casing and tubing with seawater. Check for pressure and make sure the well is dead.

2. Rig up slickline and lubricator and test to 2000 psi. Pressure test lubricator prior to each slickline run. Pull GLV from 4972'. Note: If unable to recover gas lift valve have equipment available to tubing punch either before or after BOPE nipple up and tested and if needed. Kill the well by circulating with 9.2 ppg NaCl weighted seawater and taking oil and oily returns to the production system. Bleed pressure down on casing and tubing string through production system as needed. Check for pressure and make sure the well is dead. Close SSSV, install BPV. Nipple down the production tree.
3. BOP equipped with 4 ram preventers and an annular. Test the BOP to 250/2500 psi with 5" drill pipe and 3 1/2" drill pipe pipe – NOTE: 2 3/8" rams and annular on 2 3/8" tubing to be tested immediately prior to picking up 2 3/8" tubing for running with liner – 2 3/8" will not be tested in BOPE testing operations prior to that. The well has 3 1/2" tubing installed. The 13 5/8" BOPE will be configured for drilling or re-completion operations, with 2 7/8" X 5" VBR pipe rams in the top gate and blind/shear rams in the second gate from top, the mud cross will be below the blind/shear rams, and double gate with 5" rams at top and 2 3/8" rams will be located in the bottom of the double gate below the mud cross. All tests will be recorded on a chart for the MMS to review. Additionally a 2 1/16" 5M casing valve below the tubing hanger with a 1502 tee and pressure gauge, a check valve and high pressure hose connection to it will be installed and tested to 250/3000 psi for 5 minutes. It will be used, if required, to continuously pump seawater into the well at 3 bpm below the hanger landing profile to keep the well under control and to prevent visual obstruction when landing the tubing hanger. The applicable BOPE will be tested every 7 days during the re-entry and completion phase of the operations, but not during the fracture stimulation operations.
4. Pull BPV, kill tubing and annulus by circulation, as needed through closed SSSV. Pull Baker Model HS packer loose and do not exceed 80% tensile pull on tubing.
5. Pull out of hole and lay down 3 1/2" tubing and send in for immediate inspection – tubing to be re-run after completion of fracture operations.
6. Make up 9 5/8" casing scraper and run in picking up 5" drill pipe, run in and tag liner top at +/- 5126' MD. Circulate hole clean. Pull out of hole.
7. Make up 7" fixed scraper or watermelon mill, with brush assembly for cleanup of the slope nipple. Do not run all-weight scraper through the 7" window or slope nipple. Pick up 3 1/2" drill pipe and HWdp and run in scraper on 3 1/2" / 5" drill pipe to +/- 9300'. Take extra care passing by milled window at 6324' and the slope nipple at 6365'. Brush and clean up slope nipple profile with brush assembly. Circulate hole clean. Pull out of hole. Note: if indicated combine this with the run in step #6.
8. Make up 7" Baker bridge plug and run in on drill pipe and set at +/- 9300' MD to permanently isolate and abandon the Upper Topanga perforations 9956'-10000'. Take extra care passing by milled window at 6324' and the slope nipple at 6365'. Pull out of hole with running tool.
9. Make up assembly with dummy locator and run in and confirm location and suitability of Slope Nipple for setting of whipstock. Do not run orientation key in the slope locator tool. Pull out with dummy run tools.

10. Make up assembly with retrievable whipstock, Halliburton MWD and Slope Nipple Tool, run in locate, orient and set whipstock at orientation to allow re-entry in existing hole. Plan to orient whipstock with locator above slope nipple and then set down into slope nipple profile. Do not run orientation key in the slope locator tool. Run "hole finder" bald mill with whipstock assembly to confirm whipstock orientation is close. This may take multiple steps, trips and attempts to properly orient the whipstock. Have whipstock retrieval tools available. Note: All equipment to be tapered top and bottom to allow exit and re-entry through window.
11. Once whipstock is confirmed correct orientation, run hole finder assembly with bullnose joint of 3 1/2" drillpipe and hole opener above, or similar agreed to assembly. Assess the suitability of whipstock placement for re-entry. Note: All equipment to be tapered top and bottom to allow exit and re-entry through window.
12. Pull out and pick up and run window mill assembly and mill-off whipstock to clean up casing exit window and attempt to re-enter old hole, ensure mills pass through window smoothly.
13. If mills have passed through window but clean out assembly is unable to locate in to the original hole and if indicated make up and run in with steerable assembly and directional drill +/- 100' and attempt to intersect existing hole. The well is not planned for additional full sidetrack at this time.
14. If existing hole is located clean out E-8 ST2 open hole with 6 1/8" bull nose hole opener clean out assembly to +/- 9400' with 9:1 ppg NaCl mixed in seawater, use pipe rotation and pump rate to clean out and use high viscosity polymer sweeps only if and as needed. Pull out of hole.

Note: if oily returns are encountered it may be advantage to run open end to +/- 9400' and circulate bottoms up with one circulation taking returns to production as needed.
15. Make up recommended drift clean out assembly to prepare hole for the liner/swell packer installation. (Drift assembly details to be provided by swell packer supplier).
16. Run in with a Weatherford pipe convey caliper log on drillpipe and log open hole interval to confirm hole size and assess where swell packers are to be located.
17. Make up retrievable 7" service packer. Run in hole and set at +/- 6250' and pressure test 9 5/8" casing, 7" liner and 7" X 9 5/8" liner lap to 2500 psi for 30 minutes. Pull out of hole with packer. (Tested casing and liner top to 3000 psi with 9.3 ppg OBM mud on 05/25/2006 after cement liner). If clean out operations are delayed waiting on equipment – make packer run to test casing at that time.
18. Make additional clean out run prior to running liner. Wipe the hole to the 7" casing shoe. Pull out of the hole. Drift drillpipe.

19. Rig up casing crew and run the 4 1/2", 11.6# (or heavier wall if indicated) L-80, GEOCON (buttruss look alike) +/- 3026' liner from +/- 6174' to +/- 9200' as follows (Estimated depths for packers, final spacing to be provided after open hole and caliper log is run).

4 1/2", 11.6#, L-80 Shoe

4 1/2" Oil Swell Packer #1

Ball seat for Pressure Sleeve

Pressure activated sleeve (for first fracture stage)

"O" ring sub with seals for 2 3/8" washpipe slick stinger

XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

4 1/2" Oil Swell Packer #2

XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

4 1/2" Oil Swell Packer #3

1 XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

4 1/2" Oil Swell Packer #4

XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

4 1/2" Oil Swell Packer #5

XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

4 1/2" Oil Swell Packer #6

XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

4 1/2" Oil Swell Packer #7

1 XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

4 1/2" Oil Swell Packer #8

XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

4 1/2" Oil Swell Packer #9

XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

4 1/2" Oil Swell Packer #10

1 XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

4 1/2" Oil Swell Packer #11

XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

4 1/2" Oil Swell Packer #12

XXX' (XX Joints) of 4 1/2", 11.6#, L-80 Casing

Note: Additional packers at other indicated depths may be run.

Liner Hanger or Liner Hanger Packer at +/- 6174' MD

Notes:

- 2 3/8" rams and annular will be tested on 2 3/8" tubing to be tested immediately prior to picking up 2 3/8" tubing for running with liner – 2 3/8" will not be tested in BOPE testing operations prior to that.
- Run on drill pipe and with HWdp spaced out as needed per torque and drag prediction program and if hole conditions dictate to push liner to bottom.
- Run 2 3/8" washpipe to the liner tail to facilitate washdown and changeover of open hole to base oil for swell packers.
- Run Centralizers above and below each swell packer
- Run in the hole slowly to avoid surging the formation.
- A circulating swage with a safety valve will be on the rig floor.

20. Run the liner in the hole to +/- 9200'. (NOTE: Liner will not be able to tag bottom for setting) Circulate the well until the returns are clean and then displace open hole volume with base oil and spacers or fluid as indicated. Base oil contact is required to activate the swell packers. Drop the setting ball and set the liner hanger. Release running tool from liner hanger. Pull up and if indicated changeover the liner volume. Pull out of hole with running tools and 2 3/8" washpipe.
21. After setting liner hanger packer, the hanger and casing will be pressure tested to 2500 psi for 30 minutes with weighted seawater in the hole.
22. Pull wear bushing.
23. Rig up to run 4 1/2" workstring tubing. Run in hole with 4 1/2" tubing with seal assembly on bottom. Pressure test tubing and seals to 5000 psi. Pressure test annulus to 2500 psi. Land tubing into liner top seal bore. If indicated land tubing with tubing hanger into tubing head and, if indicated install BPV barrier and install and pressure test fracture tree to 6000 psi.

NOTES:

- Sub Surface Safety Valve is NOT planned for installation during the fracture stimulation operations in the fracture string. During active pumping operations when the well is opened up it will be manned and monitored continuously.
 - Equipment to isolate the 4 1/2" tubing and allow for pressure test while landing is to be selected and procured.
 - A second mechanical barrier (to be determined) will be installed along with the BPV prior to removing BOPE and installing tree.
 - Wellhead equipment is API 5000 psi. Special qualification to 6000 psi will be provided by Cameron prior to 6000 psi test.
24. Rig down drilling equipment to provide deck space for Fracture Stimulation Equipment.
 25. Mobilize Fracture Stimulation equipment. All equipment to be:
 - clearly marked with Service Company name and weight of equipment
 - have proper spill control protection – containment and prevention
 - have the proper air permit for operating on Platform Gail
 - be pre-slung with inspected and Venoco approved slings
 - have center of gravity appropriate for mobilization workboat
 26. Place equipment as per Thomas and Beers provided drawing. Install and pressure test treating lines to 7000 psi and transfer lines to recommended pressure. Have the required BPM seawater hook-up available.
 27. Perform multistage fracture stimulation utilizing coil tubing deployed barriers and coil tubing supported perforations. Have contingency plan for coil tubing cleanout in the event it is required mid-job. If indicated make clean out run with coil tubing at completion of fracture stimulation operations.

NOTE: A detailed program for fracture stimulation will be provided under an additional APM to be submitted

28. Demobilize fracture stimulation equipment. Ensure Spill containment and slinging of equipment is appropriate and that center of gravity is appropriate for demobilizing boat.
29. Rig up and install BOPE, if removed to install tree. Pressure test BOPE as per step # of the program.
30. Pull out of hole with 4 1/2" fracture stimulation string and lay down.
31. Install wear bushing and make clean runs as needed. Pull wearbushing.
32. Production tubing to be yellow band or better 3 1/2" 9.3# L-80 EUE 8rd. Hydrotest tubing to 4000 psi while running in the hole.
33. Pick up the completion equipment in following order:
 - 3 1/2" Baker 'BXN' seating nipple with ball seat made up on pin of nipple
 - 1 joint of 3 1/2" EUE 8rd Tubing
 - 3 1/2" Baker 'BX' seating nipple
 - 1 joints of 3 1/2" EUE 8rd Tubing
 - Baker 9 5/8" HS Packer w/ 6' pup joints made up to the top and bottom of the packer
 - XX joints of 3 1/2" EUE 8rd Tubing
 - 3 1/2" GLM
 - XX joints of 3 1/2" EUE 8rd Tubing
 - 3 1/2" GLM
 - XX joints of 3 1/2" EUE 8rd Tubing
 - 3 1/2" Baker TE-5 TRSSSV
 - XX joints of 3 1/2" EUE 8rd Tubing
 - FMC Tubing Hanger

NOTE: In lieu of HS Packer a seal assembly may be installed in the top of the 4" liner and tested to 2500 psi.

34. After pick up TRSSSV, install control line and pressure test to 7000 psi. Run in hole with tubing and control line banding the line to the tubing with 2 bands per joint. Run in to landing depth, pick up and install FMC tubing hanger and install control line and pressure test to 7000 psi. Pump XX bbls packer fluid and place from packer set depth to above the bottom GLM. Get up and down weight prior to landing. Follow revised FMC procedure for landing tubing hanger: At no time will hanger hold down pin be removed. Pressure test tubing hanger void.
35. After tubing hanger is landed and tested, drop X.XX" OD, Kirksite setting ball down tubing. Pressure up tubing to 3000psi in 500 psi increments to set the HS packer and hold 3000 psi on tubing for 15 minutes, slowly bleed pressure off of tubing. Pressure test the packer and annulus to 2500 psi. Continue to pressure up to 3500 psi and blow the packer setting ball.
36. Bleed off control line pressure to close TRSSSV and install FMC BPV into tubing hanger. Nipple down BOPE and nipple up FMC 3 1/2" tree with adapter. Install blanking plug and pressure test bonnet void and tree to 3000 psi. Remove blanking plug.
37. Release rig and turn well over to production.

Vertical to 1415'
Inclination reaches 90° @ 6,350' MD/4,446' TVD M2
Lateral (max 91' from 6,324' to 10,400' MD/4,664' TVD
Pilot Hole drilled to 10,530' MD/5,771' TVD
Inclination drops to 46° @ 9,950' MD/5,380' TVD
D F Elevation: 107'
D F to Tubing Head: 50'
Water Depth 739'
Tree: FMC 5000 PSI WP

Lease: OCS-P-0209
SOCKEYE FIELD
WELL E-8RD

Single Producer M2 Lateral
Upper Topanga Isolated

Drawing Revision 5/2/07 CWH

Completion Date: 8/24/08
Recompletion: 8/14/08, 10/04/08

Description as run 8/14/08	ID	LENGTH	DEPTH
KB		50.38	0.00
FMC tbg hanger w / Pup 3 55"		0.80	50.38
3 1/2" pin x pin 9 2# L-80 8rd EUE pup jt	2.992	3.55	51.18
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992	10.16	54.73
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992	10.08	64.89
31 jts 3 1/2" 9 3# L-80 8rd EUE tbg	2.812	967.84	74.97
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992	8.08	1042.81
BAKER 3 1/2" * TE-6" 8SSV	2.992	5.47	1048.90
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992	4.13	1054.37
63 jts 3 1/2" 9 3# L-80 8rd EUE tbg	2.992	1962.71	1058.50
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992	4.10	3021.21
GAS LIFT MANOREL - GLV-1.0R 3/16" 1700psi	2.992	7.07	3025.31
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992	4.10	3032.38
62 jts 3 1/2" 9 3# L-80 8rd EUE tbg	2.992	1931.69	3038.48
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992	4.08	4968.17
GAS LIFT MANOREL - CRO-1.0R 11/16" 1600psi	2.992	7.14	4972.26
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992	4.08	4979.40
7 jts 3 1/2" 9 3# L-80 8rd EUE tbg	2.992	218.28	4983.48
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992	6.17	5201.74
Baker HS production plkr w/ 80K shear release	2.992	8.28	5207.91
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992	4.10	5213.16
1 jt 3 1/2" 9 3# L-80 8rd EUE tbg	2.750	30.97	5217.26
3-1/2" BXL Profile Nipple	2.992	1.18	5248.23
37 jts 3 1/2" 9 3# L-80 8rd EUE tbg	2.835	1156.39	5249.41
3-1/2" BXLN Profile Nipple	2.992	1.26	5405.60
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992	10.15	5407.08
Wireline re-entry guide 5 125" OD		0.80	5417.21
Tail			5418.01

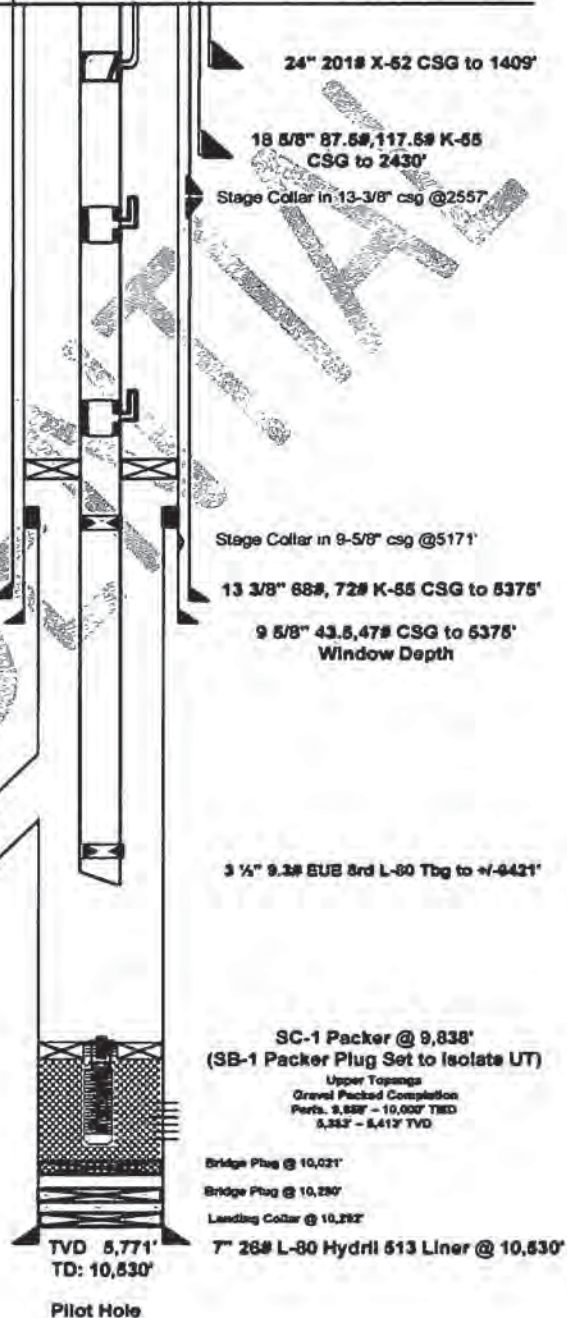
7" Window Depth for Lateral 6,324 to 6,337'
Note: Whipstock set @ +/- 60' LOHS
Slope Nipple Orientation slot not used

Slope Nipple @ 6,365' DPM (157' ROHS)

Monterey M2
Lateral Open Hole Completion

TVD 4,681'
TD: 10,400'

Lateral Open Hole



Vertical to 1415'
Inclination reaches 90° @ 6,350' MD/4,446' TVD M2
Lateral (max 91' from 6,324' to 10,400' MD/4,664' TVD
Pilot Hole drilled to 10,530' MD/5,771' TVD
Inclination drops to 46° @ 9,950' MD/5,380' TVD
D F Elevation 107'
D F to Tubing Head. 50'
Water Depth 739'
Tree FMC 5000 PSI WP

Lease: OCS-P-0209

Drawing Revision 11/17/09 DHB

**SOCKEYE FIELD
WELL E-8ST1 and ST2**

Completion Date 8/24/06
Recompletion 8/14/06, 10/04/06

**Single Producer M2 Lateral
Upper Topanga PROPOSED ABANDONMENT**

7" Window Depth for Lateral 6,324 to 6,337'
Note: Whipstock set @ +/- 60° LOHS
Slope Nipple Orientation slot not used
Slope Nipple @ 6,365' DPM (157° ROHS)

Monterey M2
Lateral Open Hole Completion

TVD 4,661'
TD: 10,400'

Lateral Open Hole

24" 201# X-52 CSG to 1409'

18 5/8" 87.5#, 117.5# K-55
CSG to 2430'

Stage Collar in 13-3/8" csg @2557'

Stage Collar in 9-5/8" csg @5171'

13 3/8" 68#, 72# K-55 CSG to 5375'

9 5/8" 43.5, 47# CSG to 5375'
Window Depth

Set Permanent bridge
plug at +/- 9300' to
permanently abandon
the Upper Topanga
Gravel Pack
Completion currently
named the E-8 ST1
well

SC-1 Packer @ 9,838'
(SB-1 Packer Plug Set to Isolate UT)

Upper Topanga
Gravel Packed Completion
Perfs: 9,958' - 10,000' TMD
8,323' - 8,413' TVD

Bridge Plug @ 10,021'

Bridge Plug @ 10,290'

Landing Collar @ 10,292'

7" 26# L-80 Hydril 513 Liner @ 10,530'

TVD 5,771'
TD: 10,530'

Pilot Hole

Vertical to 1415'
Inclination reaches 90° @ 6,350' MD/4,446' TVD M2
Lateral (max 91' from 6,324' to 10,400' MD/4,664' TVD
Pilot Hole drilled to 10,530' MD/5,771' TVD
Inclination drops to 48° @ 9,950' MD/5,380' TVD
D.F. Elevation: 107'
D F to Tubing Head: 50'
Water Depth: 739'
Tree: FMC 5000 PSI WP

Lease: OCS-P-0209
SOCKEYE FIELD
WELL E-8RD

Drawing Revision 11/11/09 DAKN

Completion Date: 6/24/08
Recompletion: 8/14/08, 10/04/08

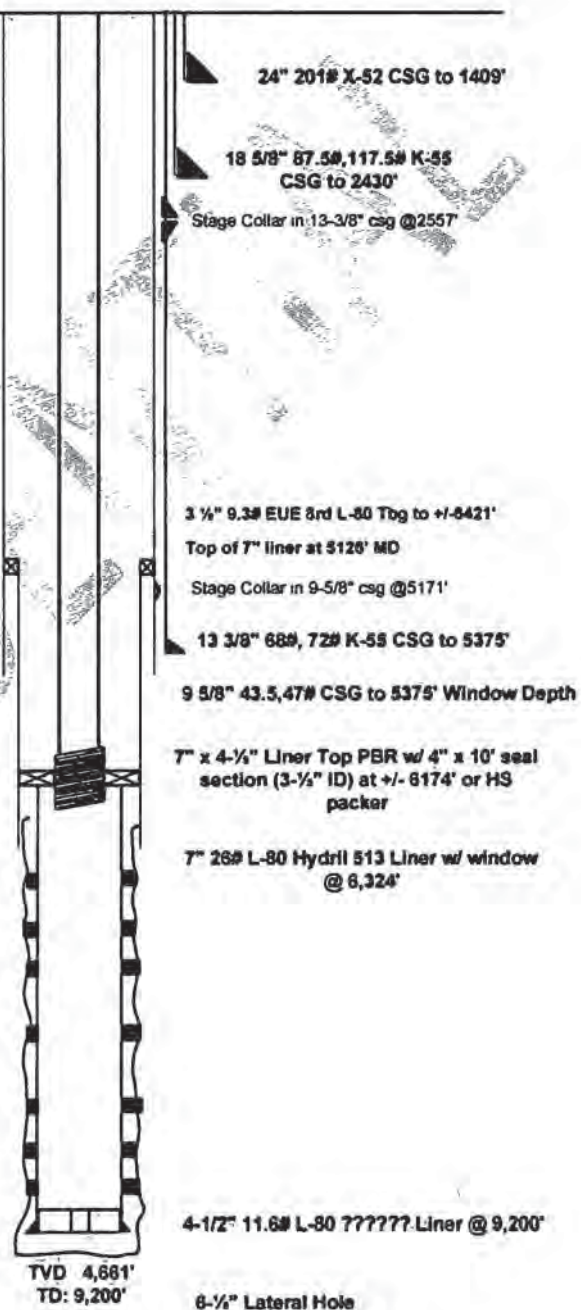
PROPOSED FRAC DESIGN

Description as run 8/14/06	ID	LENGTH	DEPTH
KB			0.00
FMC tbg hanger w / Pup 3 55"			0.00
3 1/2" pin x pin 9 2# L-80 8rd EUE pup jt	2.992		0.00
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992		0.00
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992		0.00
31 jts 3 1/2" 9 3# L-80 8rd EUE tbg	2.812		0.00
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992		0.00
BAKER 3 1/2" * TE-5" SSSV	2.992		0.00
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992		0.00
63 jts 3 1/2" 9 3# L-80 8rd EUE tbg	2.992		0.00
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992		0.00
GAS LIFT MANDREL - GLV-1 0R 3/16" 1700psi	2.992		0.00
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992		0.00
62 jts 3 1/2" 9 3# L-80 8rd EUE tbg	2.992		0.00
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992		0.00
GAS LIFT MANDREL - CRO-1 0R 11/64" 1600psi	2.992		0.00
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992		0.00
7 jt 3 1/2" 9 3# L-80 8rd EUE tbg	2.992		0.00
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992		0.00
Baker HS production pkr w/ 50K shear release	2.992		0.00
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992		0.00
1 jt 3 1/2" 9 3# L-80 8rd EUE tbg	2.750		0.00
3-1/2" BX Profile Nipple	2.992		0.00
37 jts 3 1/2" 9 3# L-80 8rd EUE tbg	2.635		0.00
3-1/2" BXN Profile Nipple	2.992		0.00
3 1/2" 9 3# L-80 8rd EUE pup jt	2.992		0.00
Wireline re-entry guide 5 125" OD			0.00
Tail			0.00

7" Window Depth for Lateral 6,324 to 6,337'
Note: Whipstock set @ +/- 60' LOHS
Slope Nipple Orientation slot not used
Slope Nipple @ 6,365' DPM (157' ROHS)

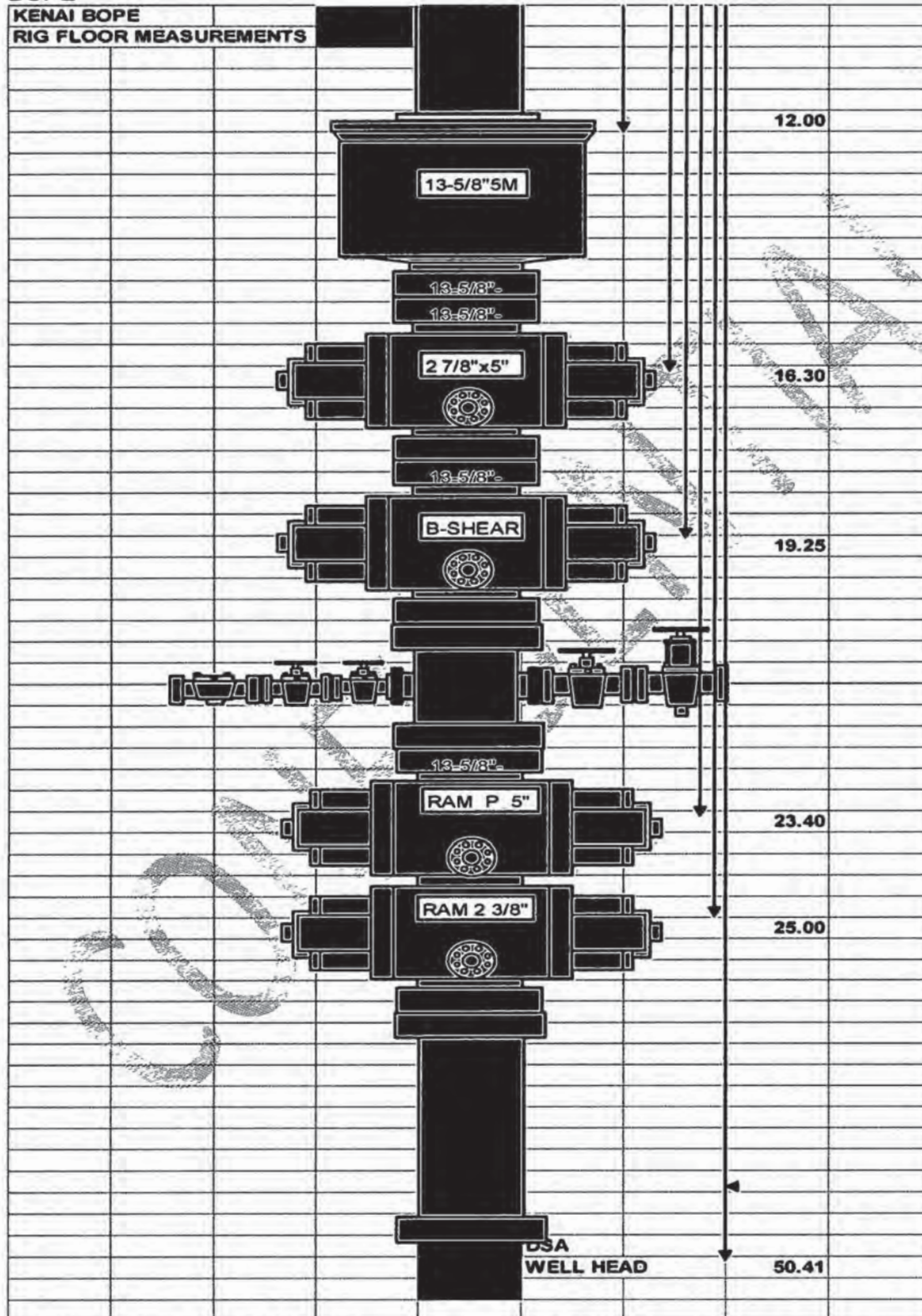
Completion Liner 4 1/2" 11.6# L80 Liner

- 12 Tam Swell Packers
- Perforate via coil tubing jetting between swell packers.



BOPE

KENAI BOPE
RIG FLOOR MEASUREMENTS



SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.
Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.
Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).
Read drill pipe pressure.
Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.
Shut down pump and close choke at the same time. SEE NOTE.
Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Both the Monterey and the Upper Topanga have potential for hydrogen sulfide gas. **Assume any gas circulated to surface to have hydrogen sulfide potential.** Operations will adhere to the "Platform Gail Hydrogen Sulfide and Sulfur Dioxide Contingency Plan" dated July 13, 2000.

Copy to Vault

COPY #1

U.S. Department of the Interior
Minerals Management Service (MMS)Submit original plus THREE copies with ONE copy
marked "Public Information"OMB Control No. 1010-0141
OMB Approval Expires 11/30/2011

Application for Permit to Modify (APM)

1 WELL NAME (CURRENT) E-8	2 SIDETRACK NO (CURRENT) 02	3 BYPASS NO (CURRENT)	4 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Ste100 Carpinteria CA 93013
5 API WELL NO (12 digits) 04-311-20674-02	6 START DATE (Proposed) 12-26-09	7 ESTIMATED DURATION (DAYS) 14	
8 ☒ Revision	9 If revision, please list changes		
Details on fracture stimulation			
WELL AT TOTAL DEPTH		WELL AT SURFACE	
10 LEASE NO P-0209		13 LEASE NO P-0205	
11 AREA NAME 6B		14 AREA NAME 6B	
12 BLOCK NO 4671		15 BLOCK NO 4661	
Proposed or Completed Work			
16 PROPOSED OR COMPLETED WORK (Describe in Section 17)			
PLEASE SELECT ONLY ONE PRIMARY TYPE IN BOLD AND AS MANY SECONDARY TYPES AS NECESSARY			
☐ Enhance Production ☐ Acidize ☐ Artificial Lift ☐ Wash/Desand Well ☐ Jet Well ☐ Utility ☐ Initial Injection Well ☐ Additional Fluids for Injection ☐ Other Operations ☒ Describe Operation(s)			
☐ Workover: ☐ Change Tubing ☐ Casing Pressure Repair ☐ Abandonment of Well Bore: ☐ Permanent Abandonment ☐ Temporary Abandonment ☐ Plugback to Sidetrack/Bypass ☐ Site Clearance			
☐ Completion: ☐ Initial Completion ☐ Reperforation ☐ Change Zone ☐ Modify Perforations ☐ Information: ☐ Surface Location Plat ☐ Change Well Name			
17 BRIEFLY DESCRIBE PROPOSED OPERATIONS (Attach prognosis) Program for coil tubing supported fracture stimulation attached			
18 LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250 513(a) through (d), 250 613(a) through (d), 250 1712(a) through (f), 250 1721(a) through (g), 250 1722(a) through (d), or 250 1743(a) Program, Coil Tubing BOPE			
19 Rig Name or Primary Unit (e.g., Wireline Unit, Coil Tubing, Snubbing Unit, etc.) Kenai Rig 2			
20 The greater of SITP or MASP (psi) 1800	21 Type of Safety Valve (SV) SCSSV SSCSV ☒ N/A	22 SV Depth BML (ft) NA	
23 Rig BOP (Rams)		24 Rig BOP (Annular)	
Size (inches)	Working Pressure (psi)	Working Pressure (psi)	Test Pressure (psi)
	Low/High		Low/High
25 Coiled Tubing BOP:		26 Snubbing Unit BOP:	
Working Pressure (psi)	BOP Test Pressure (psi)	Working Pressure (psi)	Test Pressure (psi)
15000	Low/High 250/5000	Low/High	Low/High
28 CONTACT NAME Dana Billings		29 CONTACT TELEPHONE NO 805-745-2139	
31 AUTHORIZING OFFICIAL (Type or print name) Ed O' Donnell		32 TITLE Senior Vice President	
33 AUTHORIZING SIGNATURE		34 DATE December 22, 2009	

RECEIVED

MAR 15 2010

MINERALS MANAGEMENT SERVICE
OFFICE OF FIELD OPERATIONS

THIS SPACE FOR MMS USE ONLY

APPROVED BY:

TITLE

DATE

OPIC SGD BY: Dan Knowlson

District Manager

DEC 23 2009

Releasable to public
Name: SRH Date: 5/9/13

Application for Permit to Modify (APM) Information Sheet

35) Question Information		
Questions	Response	Remarks
a) Is H ₂ S present in the well? If yes, then comment on the inclusion of a Contingency Plan for this operation.	☒ YES ☐ NO ☐ N/A	
b) Is this proposed operation the only lease holding activity for the subject lease? If yes, then comment.	☐ YES ☒ NO ☐ N/A	
c) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☐ NO ☒ N/A	
d) If sands are to be commingled for this completion, has aproval been obtained?	☐ YES ☐ NO ☒ N/A	
e) Will the completed interval be within 500 feet of a block line? If yes, then comment.	☐ YES ☐ NO ☒ N/A	
f) For permanent abandonment, will casings be cut 15 feet below the mudline? If no, then comment.	☐ YES ☐ NO ☒ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT. The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-124, is estimated to average between 1-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 5438, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

VENOCO, INC.
PLATFORM GAIL - SOCKEYE FIELD
E-8 ST2
Fracture Stimulation Program
API# 04-311-2067402
LEASE OCS-P-0209
December 22, 2009 (attach to MMS APM)

JOB PROCEDURE

1. The landing collar and/or RA Tags will be the depth reference for the coiled tubing depth on all stages.
2. Move in and rig up BJ Coil Tubing and Fracture Stimulation Equipment (as in Drawing) dual-choke reverse circulation manifold and all treatment and flow lines.
3. Rig up of coiled tubing to wellhead. Fill and pressure test Pump Iron, Coil Tubing, Riser, and flow iron to choke manifold to 250 psi low and 5,000 psi high to the swab valve on the top of the tree. Set and test all Pressure Relief Valves. Follow detailed Coil Tubing Mobilization and rig up Plan.
4. Pressure test Coil Tubing BOPE equipment to 250/5000 psi as per MMS regulations and BJ Standard Practice. NOTE: Pressure test the CT BOPE every 7 days and pressure test the connection every trip that the BOPE or riser system connection is unflanged or broken.
5. Make drift run with Coil Tubing (CT) Run in hole with CT to establish depth control and mark tubing to correlate depths. Pull out with CT.
6. Make up perforation tool on CT, run in and cut perforations as per table below for stage #1. Pull out with CT
7. Open Fracture Head valves. Pump injection test for first stage. Pump stage #1 (Typical stage estimated to be 50,000# 20/40 white sand with Spectra G fracture stimulation fluid)
8. Pressure test sand plug. If plug does not test make up and run in with composite bridge plug and set below next stage perforation depth.
9. Repeat steps # 6 – 8 for Fracture Stimulation stages listed below, packer depths are estimated, acid stimulation intervals to be completed later date. Be prepared to clean out sand as needed.

STAGE	TYPE	L.PACKER*	U.PACKER*	PERF's
1	FRAC	9500	9300	9384
BLANK			9290-8870	
2	FRAC	8860	8650	8768
BLANK			8640-8400	
3	ACID	8390	8230	8290
4	ACID	8230	8080	8170
5	FRAC	8080	7880	8000
BLANK			7870-7574	
6	FRAC	7564	7400	7470
7	FRAC	7400	6820	7020
8	FRAC	6820	6650	6740

6 STAGES

① Frac sand / Flex sand
then Flex sand - go to
next zone - then vac

② NU / Test BOP

③ pull Frac string

④ RIT completion

After completion of fracture stimulation stages make up clean out assembly on CT. Run in and clean out sand and composite bridge plugs as needed. Return to step #29 of original APM approved November 23, 2009.

Vertical to 1415'

Inclination reaches 90' @ 6,350' MD/4 446' TVD M2

Lateral (max 91' from 6,324' to 10,400' MD/4,664' TVD)

Pilot Hole drilled to 10,530' MD/5,771' TVD

Inclination drops to 46' @ 9,950' MD/5,380' TVD

D.F. Elevation 107'

D.F. to Tubing Head 50'

Water Depth 739'

Tree Fracture Tree - 4 1/2" Cameron 5000 PSI WP

Lease: OCS-P-0209

SOCKEYE FIELD

WELL E-8RD

Drawing Revision 12/22/09 DHB

Completion Date 6/24/06

Recompletion 8/14/06, 10/04/06

PROPOSED FRAC DESIGN

Completion Liner 4 1/2" 12.6# L80 Liner

- 12 Tam Swell Packers
- Perforate via coil tubing jetting between swell packers

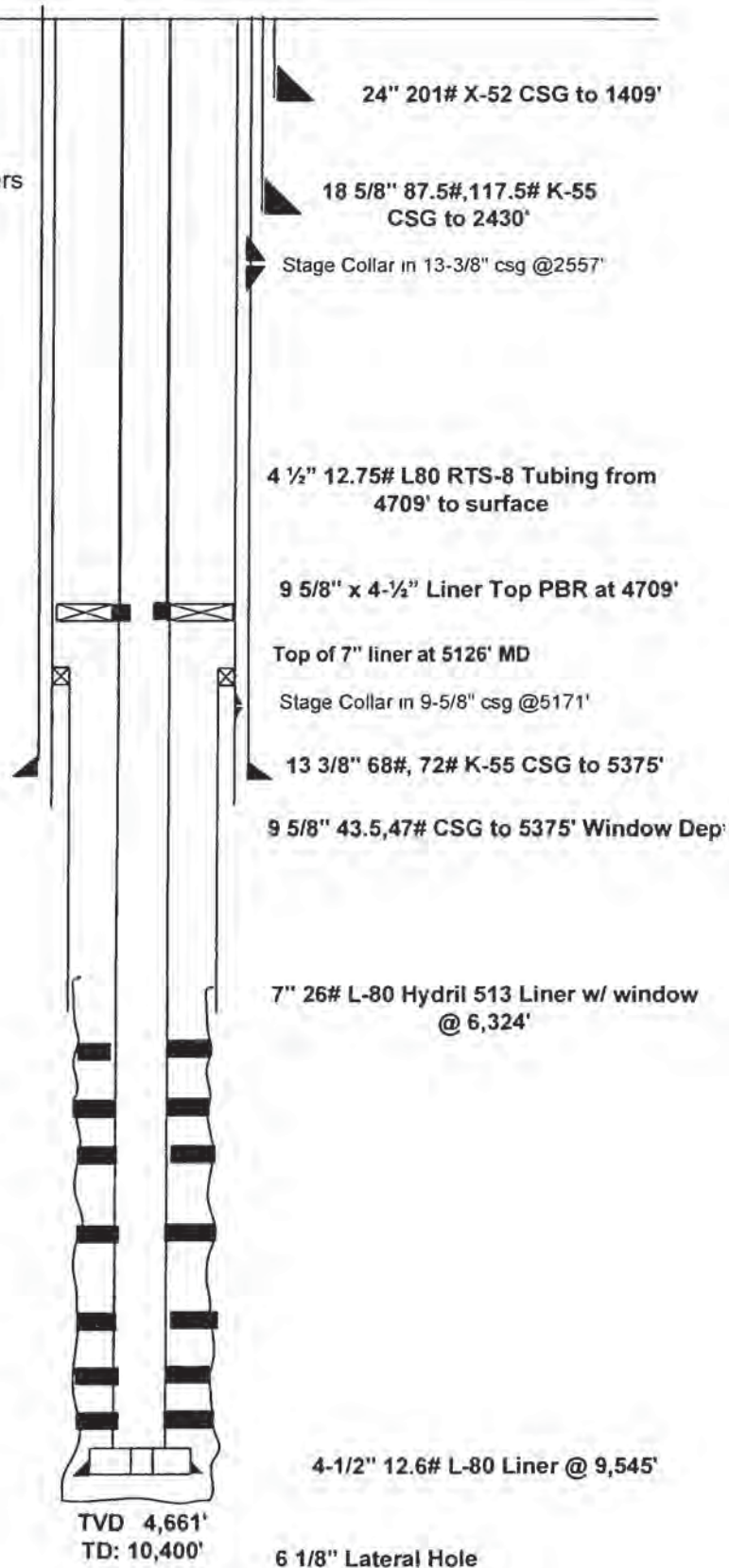
#		Actual Top Jt	Actual Mid Pkr
1	Swell Packer	9490	9505
2	Swell Packer	9286	9301
3	Swell Packer	8842	8857
4	Swell Packer	8638	8653
5	Swell Packer	8368	8383
6	Swell Packer	8215	8230
7	Swell Packer	8066	8081
8	Swell Packer	7860	7875
9	Swell Packer	7549	7564
10	Swell Packer	7398	7413
11	Swell Packer	6819	6834
12	Swell Packer	6628	6643

7" Window Depth for Lateral 6,324 to 6,337'

Note: Whipstock set @ +/- 60° LOHS

Slope Nipple Orientation slot not used

Slope Nipple @ 6,365' DPM (157° ROHS)



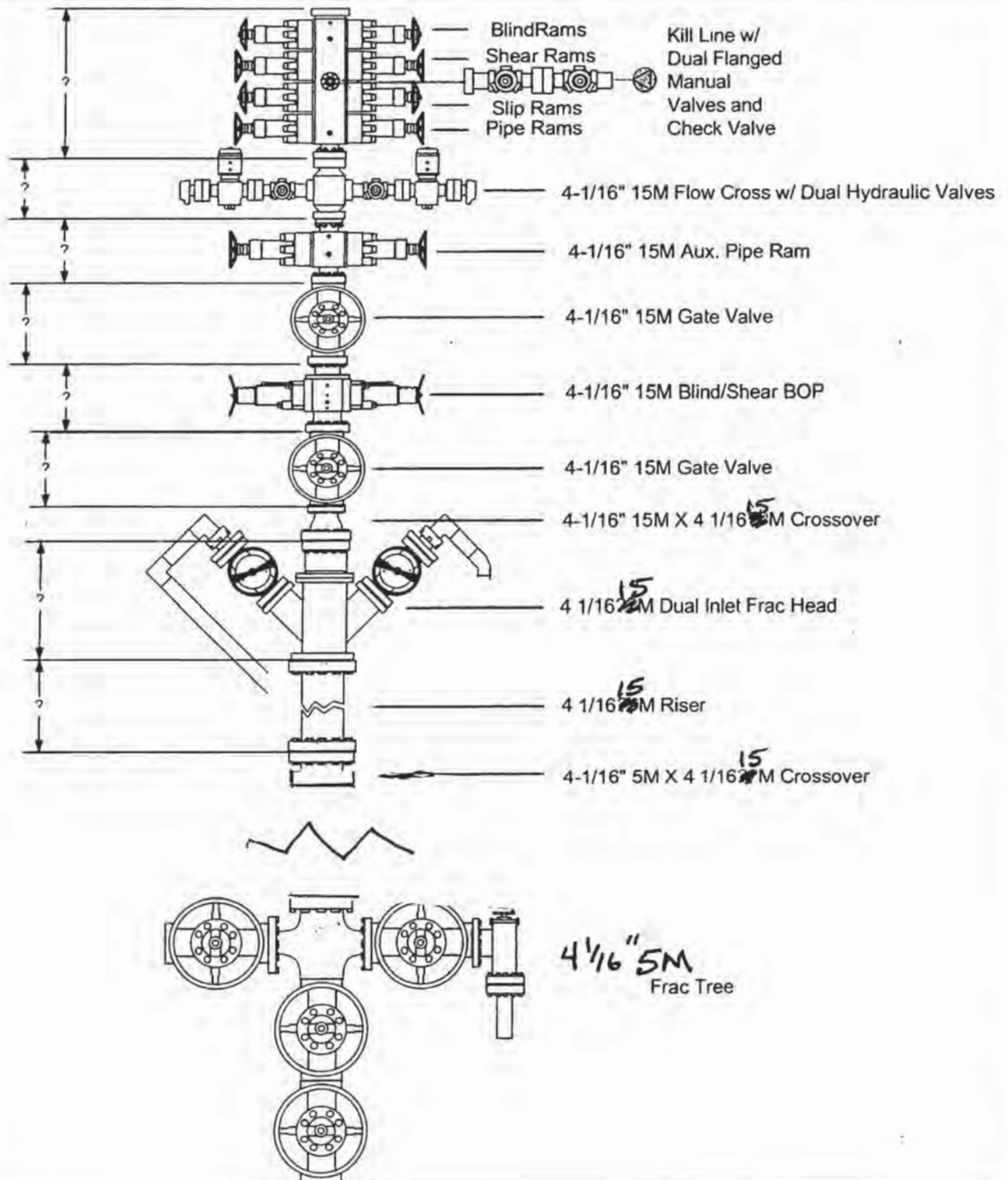


Proposed CT/Frac 4-1/16" Stack Configuration

Items in BLUE Provided by Lafayette CT Ops

Client: Venoco
Well:
Date: 12/04/09
Drawn by: Charles A. Liles

Note: Not to Scale



January 09, 2010

Don Schmohr
Sr. Completions Engineer

Treatment Summary

E-8ST2

E-8ST2 Stage 1 Frac Consisted of 2 injections, an over flush and the main job treatment.

The treatment began with a 16.7 bbl seawater injection. The surface treating pressure was 1773 psi at 11.3 bpm. Closure occurred at 459 psi surface, 2552 psi bottom hole giving a closure grad of 0.54 psi/ft and a fluid efficiency of 72.2%. Next, a second seawater injection containing 54.1 bbl was pumped. The surface treating pressure was 2827 psi at 17.8 bpm. A step-down test was performed at the end of the injection, giving an ISIP of 916 psi and a fracture gradient 0.64 psi/ft. Total friction consisted of 1020 psi perforation friction and 52 psi near-wellbore friction. During the first attempt at the main frac job, the proppant rate from the silo was not enough to keep up with pumping rate. The decision to over flush the well with seawater was made by the company man.

The second attempt at the main frac job had better results with the total treatment being pumped to completion. The treatment contained 649 slurry barrels, 587 fluid barrels, and 55,982 lbs of 20/40 White. The final treating pressure was 2886 psi at 18.8 bpm. The final ISIP was 858 psi with a gradient of 0.63 psi/ft. Approximately 54,150 lbs of proppant were placed in the formation with 1,832 lbs remaining in the casing to act as a plug. When the plug was tested, it was unable to hold pressure.

E-8ST2 Stage 2 Frac Consisted of an injection and the main job treatment.

The treatment began with a 64 bbl seawater injection. The surface treating pressure was 3,849 psi at 11.7 bpm. Closure occurred at 547 psi surface, 2,640 psi bottom hole giving a closure grad of 0.56 psi/ft and a fluid efficiency of 41.5%. A step-down test was performed at the end of the injection, giving an ISIP of 942 psi and a fracture gradient 0.65 psi/ft. Total friction consisted of 2237 psi perforation friction and 280 psi near-wellbore friction.

The main frac job screened out 71 bbls into the final displacement. The treatment contained 525 slurry barrels, 461 fluid barrels, and 57,210 lbs of 20/40 White. The final treating pressure was 5,893 psi at 15 bpm. Approximately 37,393 lbs of proppant were placed in the formation with 19,817 lbs remaining in the casing.

E-8ST2 Stage 3 Frac Consisted of an injection followed by the main job treatment.

The treatment began with a 127.8 bbl seawater injection. The surface treating pressure was 3146 psi at 10.8 bpm. A step-down test was performed at the end of the injection, giving an ISIP of 1164 psi and a fracture gradient 0.70 psi/ft. Total friction consisted of 982 psi perforation friction and 635 psi near-wellbore friction. Closure occurred at 467 psi surface, 2516 psi bottom hole giving a closure grad of 0.55 psi/ft and a fluid efficiency of 45.1%.

The total treatment was pumped to completion. The treatment contained 585 slurry barrels, 525 fluid barrels, and 53,084 lbs of 20/40 White. The final treating pressure was 3638 psi at 17.7 bpm. The final ISIP was 1800 psi with a gradient of 0.84 psi/ft. Approximately 50,181 lbs of proppant were placed in the formation with 2,903 lbs remaining in the casing to act as a plug. When the plug was tested, it held approximately 2000 psi. The plug was deemed good by the company man.



Proposal: 52085016D
Job: 1001544406

Post Treatment Report

**Venoco, Inc.
E-8ST2 Stage 1 - 6
Platform Gail
Santa Barbara County
API 04-311-20674**



POWERVISION™

E-8ST2 Stage 4 Consisted of 3 cuttings at different depths and 3 different attempts at injections.

The treatment began with cutting a set of holes at 7500'. After the cutting, a seawater injection was performed. During the injection, high treating pressure was encountered and a frac job could not be performed. The maximum surface treating pressure was 5671 at 10.6 bpm. The company man, therefore, decided to cut a second set of holes at 7495'. Once the holes had been cut, a seawater injection was again performed. Once again, due to high treating pressure, a frac job could not be performed. The maximum surface treating pressure was 4457 at 3.8 bpm. The company man decided to cut another set of holes at 7650'. However, due to high treating pressure during the cutting, the process was stopped. The coiled tubing cutting tool was brought out of the hole for inspection. Some trash was found in the tool. Once the tool was cleaned, holes were cut at 7650'. Once again, a seawater injection was performed but again high treating pressure prevented a frac job from being attempted. The max surface treating pressure was 4244 at 2.5 bpm. At this point, the company man abandoned the planned stage 4 frac.

The frac treatment could not be started due to high treating pressure encountered during the injections. The treatment contained 95 slurry barrels, 95 fluid barrels, and 0 lbs of 20/40 White. No stepdown data was taken.

E-8ST2 Stage 5 Frac Consisted of an injection followed by a treatment, then followed by a second injection and treatment.

The First Injection consisted of 27.2 bbls of seawater. The surface treating pressure was 3,606 psi at 11.5 bpm. A step-down test was performed at the end of the injection, giving an ISIP of 1,222 psi and a fracture gradient 0.714 psi/ft, the Perf friction 621 psi, and a Near-wellbore friction of 1,417 psi. Closure was determined at a Surface pressure of 507 psi Bottom Hold 2,536, that is a 0.56 Gradient.

The main treatment was screened out 25 bbls into displacement. The treatment contained 508 slurry barrels, 484 fluid barrels, and 21,216 lbs of 20/40 White. Approximately 7,999 lbs of proppant were placed in the formation. A second set of perforations were cut 330 measure feet above the original set of perforations.

The Second Injection consisted of 110.6 bbls of seawater. The surface treating pressure was 3,707 psi at 11 bpm. A step-down test was performed at the end of the injection, giving an ISIP of 1,073 psi and a fracture gradient 0.68 psi/ft, the Perf friction 1,641 psi, and a Near-wellbore friction of 649 psi. Closure was determined at a Surface pressure of 471 psi Bottom Hold 2,476, that is a 0.55 Gradient.

The main treatment was screened out 52.7 bbls into 5 ppg Hold Stage, the screenout came so quickly that no flush was possible. The treatment contained 499 slurry barrels, 461 fluid barrels, and 34,364 lbs of 20/40 White. Approximately 17,162 lbs of proppant were placed in the formation.

E-8ST2 Stage 6 Frac Consisted of Two injections no main treatment.

The First Injection consisted of 84.7 bbls of seawater. The surface treating pressure was 4,825 psi at 6.8 bpm. A step-down test was performed at the end of the injection, giving an ISIP of 1690 psi and a fracture gradient 0.82 psi/ft, the Perf friction 475 psi, and a Near-wellbore friction of 1,380 psi. No Closure was determined. No main treatment was performed.

After Cutting a second set of Perforations one measured foot below the original set, a second Injection test was performed.

The Second Injection consisted of 43.7 bbls of seawater. The surface treating pressure was 3667 psi at 6.4bpm. A step-down test was performed at the end of the injection, giving an ISIP of 1,982 psi and a fracture gradient 0.89 psi/ft, the Perf friction 290 psi, and a Near-wellbore friction of 982 psi. No Closure was determined.

Based on these poor results a modified treatment was designed and attempted. Once the treatment was started a treating pressure of 4,380 psi at 7.9 bpm was reached with only seawater on the formation. Based on this the treatment was canceled.



BJ Services appreciates the opportunity to perform pumping services for you in cost-effective manner that focuses on safety and quality.

Please Contact the Bakersfield Engineering Department if you have any questions.

Sincerely,

Depesh Patel
Area Engineer
Bakersfield District
Baker Hughes Incorporated

U.S. Department of the Interior
Minerals Management Service (MMS)

Submit original plus THREE copies,
with ONE copy marked "Public Information."

OMB Control No. 1010-0141
OMB Approval Expires 11/30/2011

END OF OPERATIONS REPORT (EOR)

1. ☒ COMPLETION ☐ ABANDONMENT ☐ CORRECTION		2. MMS OPERATOR NO. 02309		3. OPERATOR NAME and ADDRESS (Submitting office) Venoco, Inc 6267 Carpinteria Ave Carpinteria, CA 93013	
4. WELL NAME (CURRENT) E-8		5. SIDETRACK NO. (CURRENT) 2		6. BYPASS NO. (CURRENT)	
7. API WELL NO. (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04-311-2067402		8. PRODUCING INTERVAL CODE S01			
WELL AT TOTAL DEPTH					
9. LEASE NO. P-0209	10. AREA NAME 6B	11. BLOCK NO. 4761	12. LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)		13. LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)
WELL STATUS INFORMATION					
14. Well Status COM	15. Type Code GLO	16. Well Status Date January 18, 2010		17. MD 1400 TVD 4661 Total Depth Yes	
WELL AT PRODUCING ZONE					
18. LEASE NO. P-0209	19. AREA NAME 6B	20. BLOCK NO. 4761	21. LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)		22. LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)
23. COMPLETION DATE: January 18, 2010		24. DATE OF FIRST PRODUCTION: January 18, 2010		25. ISOLATED DATE:	
PERFORATED INTERVAL(S) THIS COMPLETION					
26. TOP (MD): 6610		27. BOTTOM (MD): 10400		28. TOP (TVD): 4459	
				29. BOTTOM (TVD): 4661	
30. RESERVOIR NAME(S). Monterey		31. NAME(S) OF PRODUCING FORMATION(S) THIS COMPLETION Monterey			
HYDROCARBON BEARING INTERVALS					
32. INTERVAL NAME: M2		33. TOP (MD) 5776	34. BOTTOM (MD) 10400	35. TYPE OF HYDROCARBON Oil	
SIGNIFICANT MARKERS Penetrated (account for all markers identified on APD)					
36. INTERVAL NAME: M2		37. TOP (MD) 5776	38. REASON IF MARKER NOT PENETRATED No Change		
SUBSEA COMPLETION					
39. SUBSEA COMPLETION? Yes/No	40. IF YES: PROTECTION PROVIDED? Yes/No		41. BUOY INSTALLED? Yes/No		42. TREE HEIGHT ABOVE ML(R): RECEIVED

E-8 ST2 Walker

END OF OPERATIONS REPORT (EOR)

ABANDONMENT HISTORY OF WELL			
43. CASING SIZE:	44. CASING CUT DATE:	45. CASING CUT METHOD:	46. CASING CUT DEPTH:
47. Type of Obstruction:	48. Protection Provided: Yes/No	49. Obstruction Height Above ML (ft):	50. Bury Installed? Yes/No
CONTACT NAME: Dana Billings	CONTACT TELEPHONE NO.: 805-745-2139		CONTACT E-MAIL ADDRESS: dbillings@venocoinc.com

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.197. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average between 1-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 5438, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

VENOCO, INC.

PLATFORM GAIL - SOCKEYE FIELD

E-8 ST1 and ST2 (Multi Lateral Well)

EOR for Permanent Abandonment of E-8 ST1 and Recomplete E-8 ST2

API# 04-311-2067401 and 04-311-2067402

LEASE OCS-P-0209

attach to MMS EOR

NOTE: E-8 ST1 Permanent Abandonment was 12/8/09

- 11-30-09 Commence operations on E-8. Rig up 3 1/2" riser and lubricator to tree, test to 2000 psi, fill tubing, and annulus with 250 bbls of filtered seawater, pumped 560 bbls of filtered seawater to circulate well to production. Check well, on vacuum, test lub to 2000 psi, make gauge run to 5270'. Cut tubing at 5197', rig down Schlumberger, close SSSV, install backpressure valve, nipple down tree, dress hanger and install blanking sub.
- 12-01-09 Set in DSA and riser, remove rotary table, and pull rotary beams, set in double gate with 2 3/8" rams on bottom and 5" rams on top. Set mud cross, nipple up choke and kill lines, set in blind shear ram single gate, set in VBR 2 7/8" x 5" ram single gate, set bag, install rotary beams, install new air boot in pitcher and lock screws, set in rotary table, set floor plates, make up flow line to pitcher, torque BOP, install rotary chain and guard, torque BOP, hook up kookey lines, function BOPE. Install mouse hole and 3 1/2" test joint, test BOPE.
- 12-02-09 Pressure test BOPE on 3-1/2" and 5" to 250/2500 psi, verify well is dead, un-land and pull tubing hanger to RF, check and remove BPV, lay down tubing hanger, pull out of hole laying down completion string.
- 12-03-09 Picked up 3-1/2" drill pipe. Latched onto fish (packer) at 5197', jarred packer loose.
- 12-04-09 Pulled two stands of 3-1/2" drill pipe to pull packer above top of liner, circulate oil from rathole to production. Pull out of hole with packer fish and tubing. Make up and run in hole with 8 1/2" bit and 9 5/8" casing scraper.
- 12-05-09 Continue to run in with 9 5/8" clean out assembly, tag liner top and circulate hole clean. Pull out, make up, and run in hole with 7" casing scraper and wire brush assembly, tagged down at 6169', unable to work into hole. Pull out of hole.

- 12-06-09 Continue to pull out with 7" scraper/brush assembly. Make up 6 1/8" bit and run in hole, clean out fill to 7421'. Rotated at 120 rpm, circulated bottoms up.
- 12-07-09 Continue to circulate bottoms up. Pull out with bit. Make up and run in hole with scraper/brush assembly. Circulate and work brush thru slope nipple at 6365'. Continued in hole to 7421', circulate clean. Pull out of hole, lay down scraper assembly. Make up Baker bridge plug and run in hole.
- 12-08-09 Run in hole with Baker 3BB 7" 26# permanent bridge plug, set at 7380' to permanently abandon Upper Topanga interval and the E-8 ST1 wellbore, pull out of hole with running tools. Run in hole with Baker 7" 47B2 Retrievmatic packer and set at 6250'. Attempt to test 7" and 9-5/8" casing – no good. Pull to 5150' and set packer and pressure test 7" casing, liner lap and 9 5/8" casing to 2500 psi for 15 minutes – good test. Run in to 6200 and attempt to test – no good.
- NOTE: Approval per telecom 12-06-09 Dana Billings and Phil Schroeder MMS to set Upper Topanga abandonment bridge plug at clean out depth above 9750' MD to reduce amount of cuttings circulated into the lateral hole. Plan to clean out to 7421' and set bridge plug at +/- 7370'.
- 12-09-09 Continue to pressure test casing and isolate top of leak in 7" 26# liner to between 5675' and 5412', pull out of hole with packer, pressure test BOPE to 250/2500 psi on 5" and 3 1/2" as per MMS. Prepare to install wireline lubricator.
- NOTE: Approval per telecom 12-09-09 Dana Billings and Phil Schroeder MMS to pressure test lubricator to 500 psi.
- 12-10-09 Rig up lubricator and pressure test to 500 psi. Run Schlumberger USIT/Casing Inspection log in 7" liner from 6082' to 5140' (top of 7" liner) and in 9-5/8" casing from 5110' to 150'. Rig down Schlumberger, install pitcher nipple.
- 12-11-09 Make up and run in with dummy slope nipple latch assembly. Latch on to and check slope nipple at 6365'. Pull out of hole. Make up MWD tools and whipstock assembly. Run in hole.
- 12-12-09 Continue to run in with orient and set whipstock 60 deg LHS with top of slide at 6324', pull out of hole. Run in hole with 3 1/2" EUE mule shoe and one joint tubing. Circulate thru window and 30' in to open hole wellbore to

6371'. Confirm whipstock oriented into original window. Pump sweep. Pull out of hole, make up 6 1/8" window mill assembly. Run in hole, dressed lug from top of slide and dressed window from 6324' to 6341'. Run in with bottom mill to depth of 6371'. Pumped sweep, pull out of hole.

- 12-13-09 Continue to pull out of hole, lay down mill assembly, make up 6 1/8" hole opener and roller reamer. Run in hole, tag at 6376'. Wash and ream from 6352' to 6580', unable to go deeper with bullnose hole opener. Pump sweep and circulate bottoms up. Pull out of hole. Make up MWD directional assembly and run in hole. Tag fill at 5736'. Wash to 5811'.
- 12-14-09 Washed and reamed cased and open hole from 5811' to 7506'. Pumped sweep and circulate bottoms up. Pull out of hole, lay down 33 singles of 5" drill pipe. Run in and continue to wash and ream open hole from 7506' to 8644'.
- 12-15-09 Circulate sweep at 8644'. Pull out and lay down 30 joints 5" drill pipe. Trip in hole from derrick and resumed reaming from 8644' to 9628'. Sweep, circulate, and work pipe 5 hrs to clean up hole. Pull out of hole from 9628'. Encountered tight hole at 7180'. Kelly up, circulate and clean up tight spot. Continue to pull out of hole.
- 12-16-09 Continue to pull out of hole. Make up and run in hole with 6 1/8" hole opener, reamer assembly to 9628'. Work pipe, rotate, sweep, and circulate hole clean. Pull out of hole.
- 12-17-09 Finish pulling out of hole. Make up Weatherford caliper and CML tool for pipe convey memory open hole logging. Trip in hole with tools, fill pipe and check tools during trip. With tools at 9622' fill pipe and circulate. Pump in dart, pressure up drill pipe deploy tools and open circulation bypass. Log out of hole at 15 ft per minute. Log to 6065'. Pull out of hole with tools.
- 12-18-09 Continue to pull out of hole with drill pipe and logging tools. Lay down logging tools. Pressure test BOPE as per MMS regulations with 250/2500 psi against 5" and 3 1/2" drill pipe.
- Note: Delay of BOPE test approved per telecom 12-18-09 Phil Schroeder-Dana Billings
- 12-19-09 Picked up and run in hole with 4-1/2" 12.6# L80 GEOCONN and RTS-8 liner and swell packers as per program, made up Baker 7" seal bore, Liner hanger, ZXP liner top packer. Circulated well, spotted oil across liner X open hole annulus. Set liner hanger and set packer and pressure test liner

and liner top packer to 2500 psi. Liner shoe at 9549' and liner top at 4706'. Swell packers for open hole isolation at 9505', 9301', 8857', 8653', 8383', 8230', 8081', 7875', 7564', 7413', 6834', 6643' (all depths are mid packer depth)

- 12-20-09 Pull out of hole with Baker liner hanger setting tools. Lay down tools. Pulled wear bushing. Landed tubing hanger, pressure test BOPE annular and VBR's against 4 1/2" tubing to 250 psi low and 2500 psi high for 5 minutes. Test Good.
- 12-21-09 Make up and run in hole with Baker seal assembly to 7" seal bore extension 4736' on 4 1/2" 12.75# L80 RTS-8 tubing. Spaced out 4 1/2" tubing. Observed 14' of seal entering seal bore. Landed on tubing hanger with 1' of compression on seal bore. Pressure tested backside to 2500 psi for 15 min with no bleed off. Bleed down annulus from 2500 psi to 1500 psi with 0 psi on tubing. Pressure up the tubing to 5000 psi, the annulus went up to 1750 psi. After 30 minutes, the tubing pressure dropped to 4000 psi and the annulus pressure dropped to 1700 psi. There was no communication observed through tubing or seal bore seals into annulus. Tubing pressure test was good. Nipple down BOPE. Installed 4 1/2" fracture tree. Test hanger and bonnet void to 5000 psi on chart for 15 minutes. Pressure test fracture stimulation tree to 5000 psi. Pull blanking plug. Prepare platform to mobilize fracture stimulation equipment.
- 12-22-09 Cleaned and organized drill deck to receive coil tubing and fracture stimulation equipment.
- 12-23-09 Cleaned and organized drill deck to receive coil tubing and fracture stimulation equipment.
- 12-24-09 Shutdown
- 12-25-09 Shutdown
- 12-26-09 Transport fracture stimulation equipment to platform and rig up for coil tubing assist fracture stimulation.
- 12-27-09 Transport fracture stimulation equipment to platform and rig up for coil tubing assist fracture stimulation.
- 12-28-09 Transport fracture stimulation equipment to platform and rig up for coil tubing assist fracture stimulation.

- 12-29-09 Transport fracture stimulation equipment to platform and rig up for coil tubing assist fracture stimulation. Nipple coil tubing BOPE.
- 12-30-09 Transport fracture stimulation equipment to platform and rig up for coil tubing assist fracture stimulation. Nipple coil tubing BOPE.
- 12-31-09 Nipple coil tubing BOPE. Rig up the BJ pump unit and pressure test coil tubing BOPE. Pumped the disconnect ball and pig coil tubing string.
- 01-01-10 Complete BOPE testing. Run in with 3.5" gauge and wash tool on coil tubing, tagged landing collar in 4 1/2" liner at 9544'. Confirmed set down and marked coil tubing. Pull out. Made up Baker 4-1/2" composite bridge plug.
- 01-02-10 Run in and set Baker 4-1/2" composite plug at 9,542'. Pull coil tubing up hole 300'. Trap 1,500 psi on 4-1/2" by 9-5/8" annulus. Pump down coil tubing and pressure test 4-1/2" fracture string and 4-1/2" liner to 5,000 psi. Held for 30 minutes on chart. Tubing bled off 1,500 psi in 30 minutes. No communication observed on 9-5/8" on annulus – tubing string tested OK. Bleed off all pressure. Pull out of hole with coil tubing. Break off Baker running tool and make up BJ EasyCut Abrasive Perforating assembly, install injector head. Continue to rig up fracture stimulation equipment.
- 01-03-10 Continue to rig up fracture stimulation equipment. Tested all lines and equipment. Abrasive jet cut 3 holes at 120 deg phase in 4-1/2" liner at 9380'. Attempted to establish formation break down rate and pressure. Mechanical problems with BJ fracture stimulation equipment motor. Pull out of hole with coil tubing. Repair equipment. BJ Repairing Blender on platform. Pump skid to be sent in at 06:00 hrs for repairs.
- 01-04-10 Continue to repair fracture stimulation equipment.
- 01-05-10 Repair equipment
- 01-06-10 Repair equipment
- 01-07-10 Pressure test Coil Tubing BOPE. Offload and hook up repaired fracture pump. Test lines and establish injectivity. Unable to complete stage 1 of frac due to sand feed problems from silo to blender. Empty silo to inspect same.
- 01-08-10 Modify sand silo.
- 01-09-10 Complete stage 1 fracture stimulation at 9380' (thru 3 abrasive jet cut holes) as per program. Make up composite bride plug on coiled tubing.

Run in hole and set plug at 8825'. Shear off and pull out of hole. Test plug to 4000 psi. Make up jet tool on coiled tubing. Run in hole and jet cut 3 holes at 8770'. Establish injection rate. Pull out of hole with coiled tubing. Pump stage 2 fracture stimulation at 8770' (3 holes) as per program. Screened out.

- 01-10-10 Run in hole with coiled tubing and clean out stage 2 fracture sand from 4550' to 8100'. Circulate well clean. Run in hole with coil tubing perforator and jet cut 3 holes at 8000'. Establish injection rate. Pull out of hole with coiled tubing. Pump stage 3 fracture stimulation at 8000. Sand plug ok for stage 4 – no composite plug run. Run in hole with coiled tubing perforator and jet cut 3 holes at 7650'. Unable to establish injection rate for stage 4 of stimulation program. Run in hole with coiled tubing perforator and cut 3 holes at 7500'. Unable to establish injection rate for stage 4 of stimulation program. Pulled coil tubing up and cut 3 holes at 7495' for stage 4 fracture stimulation. Unable to establish injection rate for stage 4 of stimulation program. Pull out of hole with coiled tubing to check jet tool.
- 01-11-10 Inspected jet tool and unplugged tool. Run in hole and cut 3 holes at 7350'. Establish injection rate. Pull out of hole with coiled tubing. Pumped stage 5 of fracture stimulation through holes at 7350'. Screen out early. Clean out with coiled tubing to 7100'. Run in hole and cut 3 holes at 7020'. Made second attempt at stage 5 fracture (5a). Screen out. Run in and clean out with coiled tubing
- 01-12-10 Clean out fracture sand to 6800'. Coil tubing perforate 3 holes at 6740' for stage 6 fracture stimulation. Did not get adequate injection rate. Coil tubing perforate 3 holes at 6742'. Pull out of hole with coiled tubing. Attempt to establish injection rate. Insufficient rate for fracture stimulation. Fracture stimulation program completed. Rig down pumping equipment. Run in hole with coiled tubing clean out assembly and motor. Clean out sand and mill up composite plug at 8825'.
- 01-13-10 Clean out sand to 9544' – 4 ½" liner landing collar. Open tornado tool, wash out of hole, and circulate hole clean. Rig down coil tubing equipment. Backload equipment and arrange deck to rig up wireline unit. Spot and rig up wireline equipment.
- 01-14-10 Continue to rig up Western Wireline equipment. Pressure test lubricator. Run in hole and set Baker model D permanent packer at 4035' wireline measurement. Pull out of hole; lay down wireline tools and equipment. Lay

down riser sections. Set back pressure valve in tubing hanger. Nipple down fracture tree, nipple up BOPE. Function test equipment.

- 01-15-10 Pressure test 13 5/8" BOPE 250 psi low to 2500 psi high on chart for 5 minutes. Pull out of hole, lay down all 4-1/2" fracture string and seal assembly.
- 01-16-10 Make up and run in hole with 3-1/2' tubing completion equipment. Hydro test to 5000 psi and drift to 2.876". Space out to leave tubing tall at 4735' - inside 4 1/2" liner.
- 01-17-10 Land tubing. Drop ball and pressure up tubing to set packer. Test annulus of 3-1/2" x 9-5/8". Blow ball seat with 3700 psi. Run in hole and install gas lift valve in lowest gas lift mandrel. Close SSSV, install BPV, nipple down BOPE and install production tree. Test void and production tree to 3000 psi. Release rig to skid to E-12.
- 01-29-10 Skid rig over E-8. Roll up skid hoses. Set in mouse hole. Set in walkway and mouse hole.
- 01-30-10 Skid rig over E-8. Secured rig. Spotted BJ equipment. Assisted welder as needed to secure BJ coil tubing equipment to drill deck. Rig up coil tubing riser. Rig up scaffolding around 4 1/16" BOP on drill deck. Make up coil tubing 4 1/16" BOP. Make up flow back manifold and lines. Make up injector head assembly. Conduct pull test on coil tubing. Test Good.
- 01-31-10 Test BOP's and related components to 250 psi low and 4500 psi high as per MMS regulations.
- 02-01-10 Complete BOP test of 4-1/16" coil tubing BOP stack. Made up coil tubing BHA. Run in hole with coil tubing tag at 6619'. Worked coil tubing down to 6970'. Pull out of hole to 3000'.
- 02-02-10 Continue to pull coil tubing to surface. Closed master valve. Flow well to production over night. Make up mud motor and mill assembly. Run in hole with coil tubing clean out to TD. Circulate well clean. Pull out of hole with coil tubing secure well.
- 02-03-10 Flow well to production. Make up Baker Atlas coil tubing convey perforating guns. Run in hole tag bottom at 9542'. Pick up and perforate well at 9532' to 9535'. Pull out of hole. Make up second 2" Baker Atlas coil tubing convey perforating gun. Run in hole tag bottom at 9542', pick up to 9021'. Perforate well 9018' - 9021'. Pull out of hole from 9021'. Break off used 2" coil tubing convey gun, lay down. All perforations shot.

- 02-04-10 Rig down and backload coil tubing equipment. Blow reel dry with nitrogen. Rig down scaffolding. Release rig at 18:00 hrs.
- 02-16-10 Skid rig from E-26 to E-8. Make up 4-1/16" coil tubing riser sections.
- 02-17-10 Continue to rig up coil tubing equipment.
- 02-18-10 Pressure test 4-1/16" BJ Coil tubing BOP stack to 250 psi low and 5000 psi high on chart for 5 minutes each.
- 02-19-10 Complete 4-1/16" coil tubing BOP stack test to 250 psi low and 5000 psi high on chart for 5 minutes each. Made coil tubing perforating runs with 2" 4-SPF guns. Perforate from 8290' to 8294', 6610' to 6614' and 8520' to 8524'.
- 02-20-10 Continue to perforate from 8170' to 8174'. Pull out of hole, cut BJ coil tubing connector off, and replace connector with Baker Oil tool connector. Pull test coil tubing. Pressure test coil tubing connector to 5000 psi. Make up Baker ISAP tool. Change out stripper rubber on injector head. Run in hole with Baker ISAP tool to 9500'. Test tool in blank.
- 02-21-10 Acidize stage #1 at 9380' with 5000 gals of HCl, #2 at 8290' to 8294', with 2000 gals of HCl and 4000 gals of HCl/HF and #3 at 7495 with 2000 gals of HCl and 4000 gals of HCl/HF. Wait on acid. Acidize stage #4 at 7020'.
- 02-22-10 Continue to acidize stage #4 at 7020' with 2000 gals of HCl and 4000 gals of HCl/HF, acidize stage #5 at 6740 to 6742' with 1000 gals of HCl and 2000 gals of HCl/HF. Had Baker ISAP tool failure. Pull out of hole, changed out Baker ISAP tool. Run in hole set tool in blank test to 3500 psi. Pull out of hole and acidize stage #6 at 8170' to 8174' with 4000 gals of HCl and 3000 gals of HCl/HF. Displaced with filtered seawater. Pull out of hole to surface, pump soda ash through coil tubing. Break off injector head. Break off Baker ISAP tool assembly. Make up nozzle to coil tubing. Make up injector head. Spot nitrogen tank onto pipe deck. Set up nitrogen to pump down coil tubing. Turned well over to production.
- NOTE:
Total Acid Pumped 16,000 gals 15% HCl and 17,000 gals 12%/3% HCl/HF
- 02-23-10 Rig down coil tubing equipment, load out same, move rig over to E-26, back load coil tubing equipment.

Vertical to 1415

Inclination reaches 90° @ 6,350' MD/4,444' D M2
Lateral (max 91' from 6,324' to 10,400' MD/4,664' TVD)
Pilot Hole drilled to 10,530' MD/5,771' TVD
Inclination drops to 46° @ 9,950' MD/5,380' TVD
D.F. Elevation: 107'
D.F. to Tubing Head: 50'
Water Depth: 739'
Tree: FMC 5000 PSI WP

Lease: OCS-P-0209

SOCKEYE FIELD

WELL E-8 ST2

Single Producer M2 Lateral

POST FRAC COMPLETION

Drawing Revision 2/23/10 MLO

Completion Date: 6/24/06
Recompletion: 8/14/06, 10/04/06,
12/20/09, 1/15/10

Perforation Detail

CTU abrasive cut holes, 3 holes @ 120° phasing Jan. 2010
9,380' (stage 1), 8,770' (stage 2), 8,000' (stage 3), 7,650', 7,500', & 7,495' (stage 4), 7,350' (stage 5), 7,020' (stage 5a), 6,742' & 6,740' (stage 6)

2" CTU Conveyed, 4 SPF @ 90° phasing Feb. 3, 2010
9,532' - 9,535' (toe), 9,018' - 9,021'

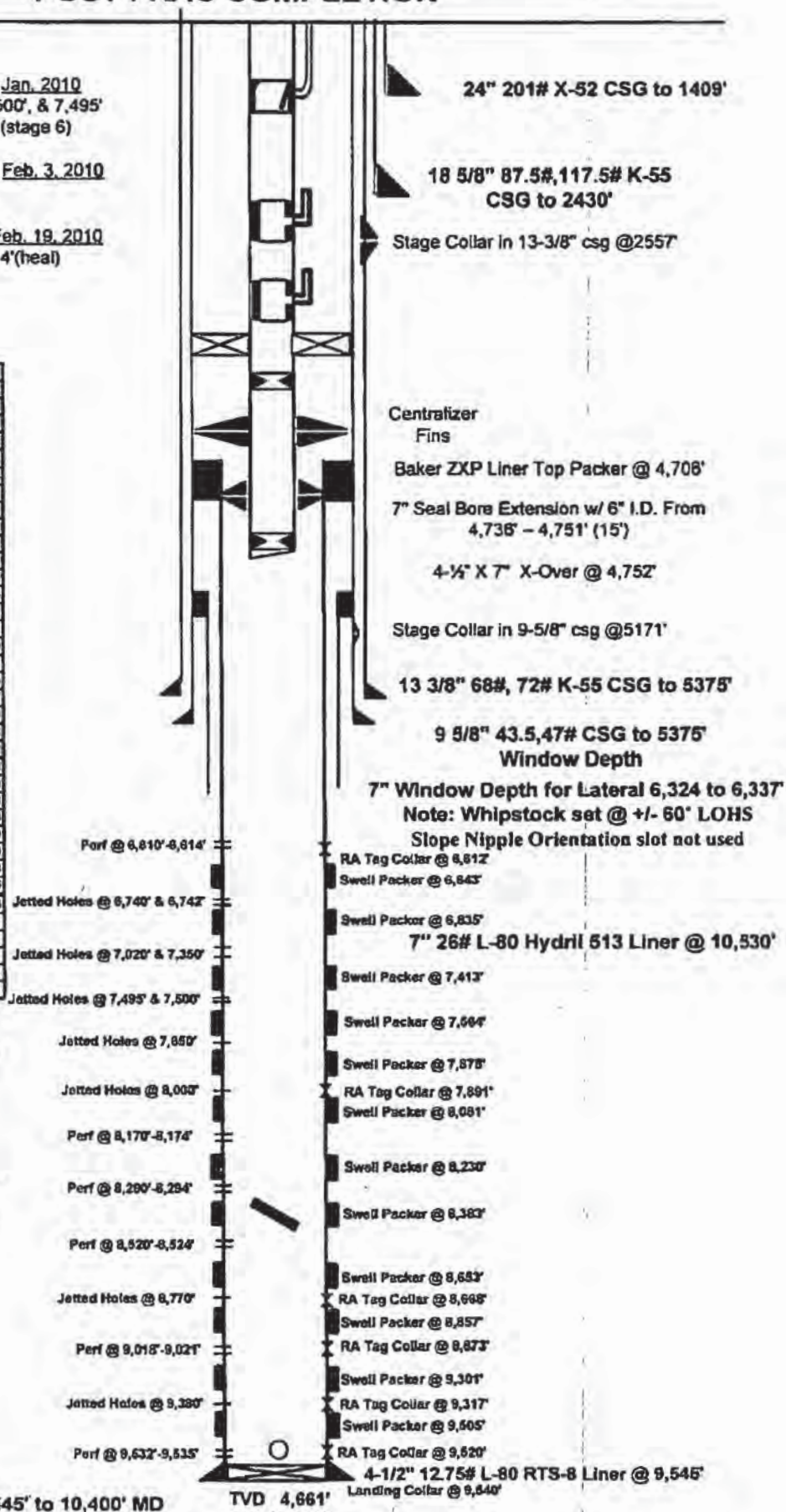
2" CTU Conveyed, 4 SPF @ 90° phasing Feb. 19, 2010
8,520' - 8,524', 8,290' - 8,294', 8,170' - 8,174', 6,610' - 6,614' (heel)

TUBING DETAIL			
JOINTS	Description	LENGTH	DEPTH
	K8	50.60	0.00
	FMC Tbg. Hanger 3-1/2" EUE Box X 3-1/2" EUE Box	0.75	50.60
	3 1/2" 9.3# L80 EUE BRD PIM X PIN	3.68	51.35
	3 1/2" 9.3# L80 EUE BRD Pup	4.12	55.03
	3 1/2" 9.3# L80 EUE BRD Pup	6.14	59.15
	3 1/2" 9.3# L80 EUE BRD Pup	10.12	65.29
30	3 1/2" 9.3# L80 EUE BRD	932.73	75.41
	3 1/2" 9.3# L80 EUE BRD Pup	6.32	1008.14
	3 1/2" TRSSSV	5.45	1014.46
	3 1/2" 9.3# L80 EUE BRD Pup	4.07	1018.91
64	3 1/2" 9.3# L80 EUE BRD	1996.38	1023.98
	3 1/2" 9.3# L80 EUE BRD Pup	4.05	3020.38
	3 1/2" GLJ	7.11	3024.41
	3 1/2" 9.3# L80 EUE BRD Pup	4.07	3031.52
	3 1/2" 9.3# L80 EUE BRD Pup	10.12	3035.59
43	3 1/2" 9.3# L80 EUE BRD	1342.35	3045.71
	3 1/2" 9.3# L80 EUE BRD Pup	4.11	4388.08
	3 1/2" GLJ	7.02	4392.17
	3 1/2" 9.3# L80 EUE BRD Pup	4.09	4399.19
4	3 1/2" 9.3# L80 EUE BRD	123.64	4403.28
	3 1/2" 9.3# L80 EUE BRD Pup	6.28	4526.92
	BAKER 9 5/8" HS Packer	8.59	4533.20
	3 1/2" 9.3# L80 EUE BRD Pup	4.11	4539.79
1	3 1/2" 9.3# L80 EUE BRD	31.33	4543.90
	2.813" BX Nipple	1.17	4575.23
4	31" of 3 1/2" 9.3# L80 EUE BRD	125.10	4576.40
	3 1/2" 9.3# L80 EUE BRD Pup w/ 7.883" OD NoGo Pins	2.08	4701.50
1	3 1/2" 9.3# L80 EUE BRD	31.28	4703.58
	3 1/2" WLEG WITH BALL SEAT AND 5.5" OD FINS	0.67	4734.86
147			4738.83
	Baker SS bands used = 67		
	Baker protectors used = 31		
	Up weight = 57K, Down weight = 59K		
	Baker HS packer set @ 44K shear		

Note
All Swell Packer Depths Refer to the Center of a 20' Element

JUNK IN HOLE

-2.6"H x 3"OD x 1.5" ID Steel Ball Seat (magnetic) & 2-1/8" steel ball (non magnetic). Pushed to bottom 2/2/10
-Inflatable Baker ISAP packer element @ 8,362' (2/22/10)



Well has open hole lateral from 9545' to 10,400' MD

TVD 4,661'



Proposal: 52085016D

Job: 1001544406

Post Treatment Report

**Venoco, Inc.
E-8ST2 Stage 1 - 6
Platform Gail
Santa Barbara County
API 04-311-20674**



POWER VISIONSM

January 09, 2010

Don Schmohr
Sr. Completions Engineer

Treatment Summary

E-8ST2

E-8ST2 Stage 1 Frac Consisted of 2 injections, an over flush and the main job treatment.

The treatment began with a 16.7 bbl seawater injection. The surface treating pressure was 1773 psi at 11.3 bpm. Closure occurred at 459 psi surface, 2552 psi bottom hole giving a closure grad of 0.54 psi/ft and a fluid efficiency of 72.2%. Next, a second seawater injection containing 54.1 bbl was pumped. The surface treating pressure was 2827 psi at 17.8 bpm. A step-down test was performed at the end of the injection, giving an ISIP of 916 psi and a fracture gradient 0.64 psi/ft. Total friction consisted of 1020 psi perforation friction and 52 psi near-wellbore friction. During the first attempt at the main frac job, the proppant rate from the silo was not enough to keep up with pumping rate. The decision to over flush the well with seawater was made by the company man.

The second attempt at the main frac job had better results with the total treatment being pumped to completion. The treatment contained 649 slurry barrels, 587 fluid barrels, and 55,982 lbs of 20/40 White. The final treating pressure was 2886 psi at 18.8 bpm. The final ISIP was 858 psi with a gradient of 0.63 psi/ft. Approximately 54,150 lbs of proppant were placed in the formation with 1,832 lbs remaining in the casing to act as a plug. When the plug was tested, it was unable to hold pressure.

E-8ST2 Stage 2 Frac Consisted of an injection and the main job treatment.

The treatment began with a 64 bbl seawater injection. The surface treating pressure was 3,849 psi at 11.7 bpm. Closure occurred at 547 psi surface, 2,640 psi bottom hole giving a closure grad of 0.56 psi/ft and a fluid efficiency of 41.5%. A step-down test was performed at the end of the injection, giving an ISIP of 942 psi and a fracture gradient 0.65 psi/ft. Total friction consisted of 2237 psi perforation friction and 280 psi near-wellbore friction.

The main frac job screened out 71 bbls into the final displacement. The treatment contained 525 slurry barrels, 461 fluid barrels, and 57,210 lbs of 20/40 White. The final treating pressure was 5,893 psi at 15 bpm. Approximately 37,393 lbs of proppant were placed in the formation with 19,817 lbs remaining in the casing.

E-8ST2 Stage 3 Frac Consisted of an injection followed by the main job treatment.

The treatment began with a 127.8 bbl seawater injection. The surface treating pressure was 3146 psi at 10.8 bpm. A step-down test was performed at the end of the injection, giving an ISIP of 1164 psi and a fracture gradient 0.70 psi/ft. Total friction consisted of 982 psi perforation friction and 635 psi near-wellbore friction. Closure occurred at 467 psi surface, 2516 psi bottom hole giving a closure grad of 0.55 psi/ft and a fluid efficiency of 45.1%.

The total treatment was pumped to completion. The treatment contained 585 slurry barrels, 525 fluid barrels, and 53,084 lbs of 20/40 White. The final treating pressure was 3638 psi at 17.7 bpm. The final ISIP was 1800 psi with a gradient of 0.84 psi/ft. Approximately 50,181 lbs of proppant were placed in the formation with 2,903 lbs remaining in the casing to act as a plug. When the plug was tested, it held approximately 2000 psi. The plug was deemed good by the company man.



E-8ST2 Stage 4 Consisted of 3 cuttings at different depths and 3 different attempts at injections.

The treatment began with cutting a set of holes at 7500'. After the cutting, a seawater injection was performed. During the injection, high treating pressure was encountered and a frac job could not be performed. The maximum surface treating pressure was 5671 at 10.6 bpm. The company man, therefore, decided to cut a second set of holes at 7495'. Once the holes had been cut, a seawater injection was again performed. Once again, due to high treating pressure, a frac job could not be performed. The maximum surface treating pressure was 4457 at 3.8 bpm. The company man decided to cut another set of holes at 7650'. However, due to high treating pressure during the cutting, the process was stopped. The coiled tubing cutting tool was brought out of the hole for inspection. Some trash was found in the tool. Once the tool was cleaned, holes were cut at 7650'. Once again, a seawater injection was performed but again high treating pressure prevented a frac job from being attempted. The max surface treating pressure was 4244 at 2.5 bpm. At this point, the company man abandoned the planned stage 4 frac.

The frac treatment could not be started due to high treating pressure encountered during the injections. The treatment contained 95 slurry barrels, 95 fluid barrels, and 0 lbs of 20/40 White. No stepdown data was taken.

E-8ST2 Stage 5 Frac Consisted of an injection followed by a treatment, then followed by a second injection and treatment.

The First Injection consisted of 27.2 bbls of seawater. The surface treating pressure was 3,606 psi at 11.5 bpm. A step-down test was performed at the end of the injection, giving an ISIP of 1,222 psi and a fracture gradient 0.714 psi/ft, the Perf friction 621 psi, and a Near-wellbore friction of 1,417 psi. Closure was determined at a Surface pressure of 507 psi Bottom Hold 2,536, that is a 0.56 Gradient.

The main treatment was screened out 25 bbls into displacement. The treatment contained 508 slurry barrels, 484 fluid barrels, and 21,216 lbs of 20/40 White. Approximately 7,999 lbs of proppant were placed in the formation. A second set of perforations were cut 330 measure feet above the original set of perforations.

The Second Injection consisted of 110.6 bbls of seawater. The surface treating pressure was 3,707 psi at 11 bpm. A step-down test was performed at the end of the injection, giving an ISIP of 1,073 psi and a fracture gradient 0.68 psi/ft, the Perf friction 1,641 psi, and a Near-wellbore friction of 649 psi. Closure was determined at a Surface pressure of 471 psi Bottom Hold 2,476, that is a 0.55 Gradient.

The main treatment was screened out 52.7 bbls into 5 ppg Hold Stage, the screenout came so quickly that no flush was possible. The treatment contained 499 slurry barrels, 461 fluid barrels, and 34,364 lbs of 20/40 White. Approximately 17,162 lbs of proppant were placed in the formation.

E-8ST2 Stage 6 Frac Consisted of Two injections no main treatment

The First Injection consisted of 84.7 bbls of seawater. The surface treating pressure was 4,825 psi at 6.8 bpm. A step-down test was performed at the end of the injection, giving an ISIP of 1690 psi and a fracture gradient 0.82 psi/ft, the Perf friction 475 psi, and a Near-wellbore friction of 1,380 psi. No Closure was determined. No main treatment was performed.

After Cutting a second set of Perforations one measured foot below the original set, a second Injection test was performed.

The Second Injection consisted of 43.7 bbls of seawater. The surface treating pressure was 3667 psi at 6.4 bpm. A step-down test was performed at the end of the injection, giving an ISIP of 1,982 psi and a fracture gradient 0.89 psi/ft, the Perf friction 290 psi, and a Near-wellbore friction of 982 psi. No Closure was determined.

Based on these poor results a modified treatment was designed and attempted. Once the treatment was started a treating pressure of 4,380 psi at 7.9 bpm was reached with only seawater on the formation. Based on this the treatment was canceled.



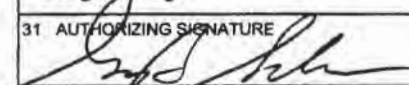
BJ Services appreciates the opportunity to perform pumping services for you in cost-effective manner that focuses on safety and quality.

Please Contact the Bakersfield Engineering Department if you have any questions.

Sincerely,

Depesh Patel
Area Engineer
Bakersfield District
Baker Hughes Incorporated

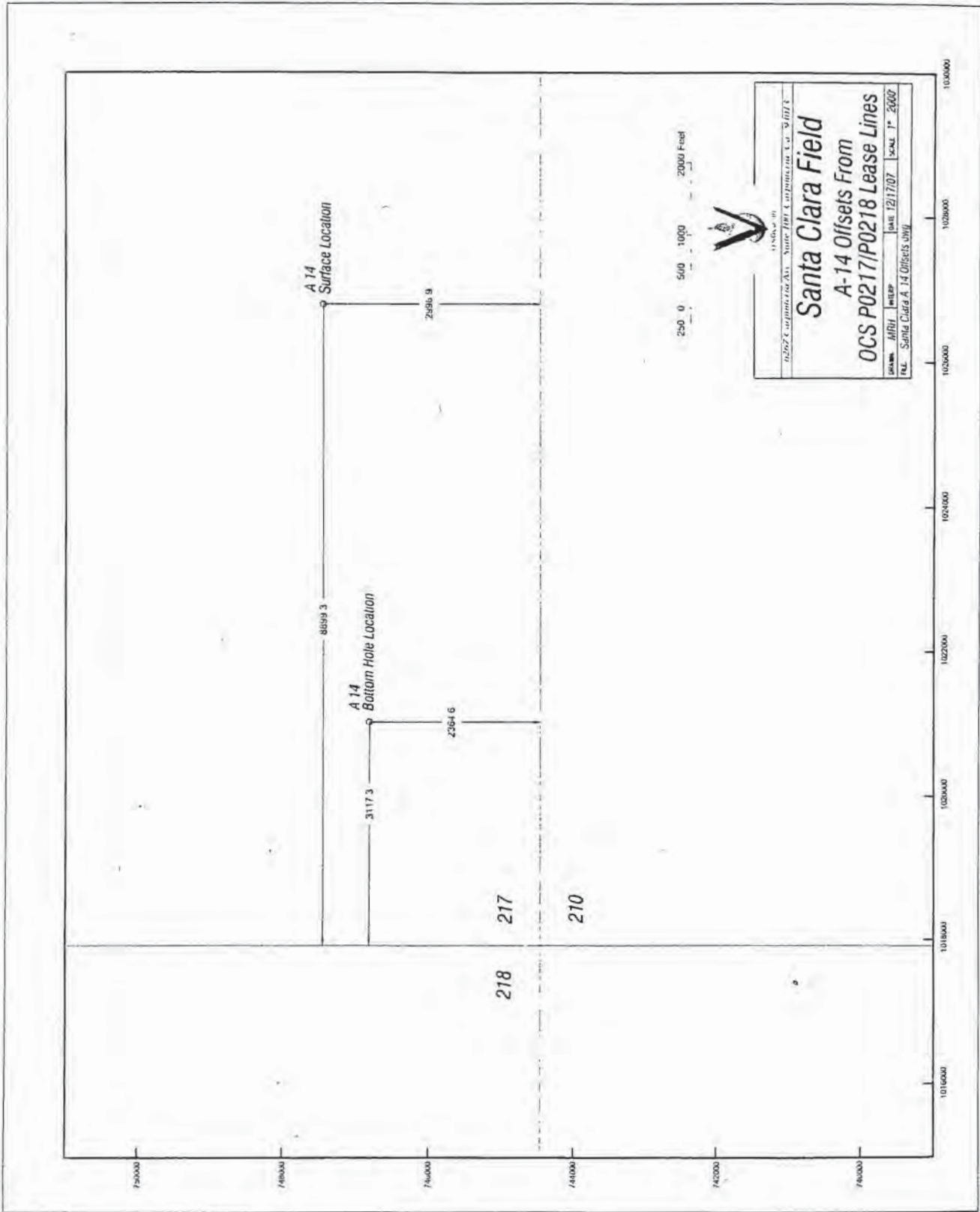
Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Suite 100 Carpinteria, CA 93013		
4 WELL NAME (CURRENT) A-14	5 SIDETRACK NO (CURRENT)	6 BYPASS NO (CURRENT)			
7 PROPOSED START DATE Dec 25 2007	8 PLAN CONTROL NO (NEW WELL ONLY)				
9 API WELL NO. (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112045300					
10 ☐ Revision	11 If revision, please list changes				
WELL AT TOTAL DEPTH (PROPOSED)			WELL AT SURFACE RECEIVED		
12 LEASE NO P-0217			17 LEASE NO P-0217		
13 AREA NAME 6B			18 AREA NAME 6B		
14 BLOCK NO 4862			19 BLOCK NO 4862		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27)			20 LATITUDE (☐ NAD 83 / ☒ NAD 27)		
16 LONGITUDE (☐ NAD 83 / ☒ NAD 27)			21 LONGITUDE (☐ NAD 83 / ☒ NAD 27)		
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22 NAME	23 TOP (MD)	24 TOP (TVD)	22 NAME	23 TOP (MD)	24 TOP (TVD)
M3	9892	7604			
M4	10648	8310			
25 LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250 414(b) through (g) or 30 CFR 250 1617 (c) and (d), as appropriate) well prognosis, schematic, surface plat, structure map, mud weight curve, directional plot and plan, BOPE diagram, mud program, Form 123S					
26 CONTACT NAME Dana Billings		27 CONTACT TELEPHONE NO 805-745-2139		28 CONTACT E-MAIL ADDRESS dbillings@venocoinc.com	
29 AUTHORIZING OFFICIAL (Type or print name) Greg Schrage		30. TITLE VP Asset Development			
31 AUTHORIZING SIGNATURE 		32. DATE December 17, 2007			
THIS SPACE FOR MMS USE ONLY					
APPROVED: ☐ With Attached Conditions ☐ Without Conditions		BY ORIG. SGD. BY: Dan Knowlson		TITLE District Manager	
API WELL NO ASSIGNED TO THIS WELL		04 311 2045301		DATE DEC 27 2007	

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings nserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is with in 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2-5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.



Supplemental APD Information Sheet

1 OPERATOR NAME Venoco, Inc		5. WELL NAME (Proposed) A-14 ST1		6 TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11. WATER DEPTH 318'		12 ELEVATION AT KB 100'	
2. API WELL NO (Proposed) (12 Digits) 0431120453		3 BOTTOM LEASE NO (Proposed) P-0217		7 SIDETRACK NO (Proposed) 01		8. BYPASS NO (Proposed) 00		13. H ₂ S DESIGNATION ☒ KNOWN ☐ UNKNOWN ☐ ABSENT	
4 TOTAL DEPTH (Proposed) MD 10751' TVD 8406'		9 RIG NAME Venoco Rig 11		10 RIG TYPE PF		14 H ₂ S ACTIVATION PLAN DEPTH FT (TVD) 9700' MD / 7421' TVD (Kick off Point)			

15. ENGINEERING DATA

10% ATTACHMENT DATA																								
Hole Size (in)	Casing (Indicate # Liner)	Casing Size (in)	Weight (lb/ft)	Burst Rating (psi)	Type of Connection	MASP (psi)	Safety Factor/s			Top of Liner	Casing Depth (Feet)			Casing Shoe (log)			Well-head Rating (psi)	BOP Size (in)	Test Pressures				Cement (Feet)	Drilling Fluid Type (Oil Base, Water Base, Synthetic)
							B	C	T		MD	TVD	PP	MW	FG	Annular/ Divertor (psi)			Casing Test (psi)	MW Used for Test (psi)	Annular/ Divertor (psi)	Casing Shoe (log)		
12.25	Drill/ Structural	24	125								840													
8.5	Conductor	18 5/8	105 8							2355														
			K-55																					
6.125	Surface	13 3/8	72							5168														
			N-80																					
12.25	Production	9 5/8	40.43 5.47	6820	BUTT	3000	2 27	95	2 52	Surf	6820						13 5/8	5000	3000/250				Existing	
			SS-85	3330														5000	3000/250			NA		
			28	7240	BUTT	3000	2 41	1 52	5 78	9508	9700						13 5/8"	5000	3000/250	3000		10 5		Water
			L-80	5410							7421							5000	3000/250	8 6				
6.125	Prod Liner	7	9 5								10751						13 5/8"	5000	3000/250	3000				Water
			L-80	slot	8 rd NU	3000	NA	NA	2 26	9470	8408						5000	3000/250	8 6		NA		Gravel Pack	Water

16. CONTACT NAME Dana Billings		17 CONTACT PHONE NO (805) 745-2139		18. CONTACT E-MAIL ADDRESS dbillings@venocoinc.com	
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19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?		YES ☒ NO ☐
20. REMARKS:		

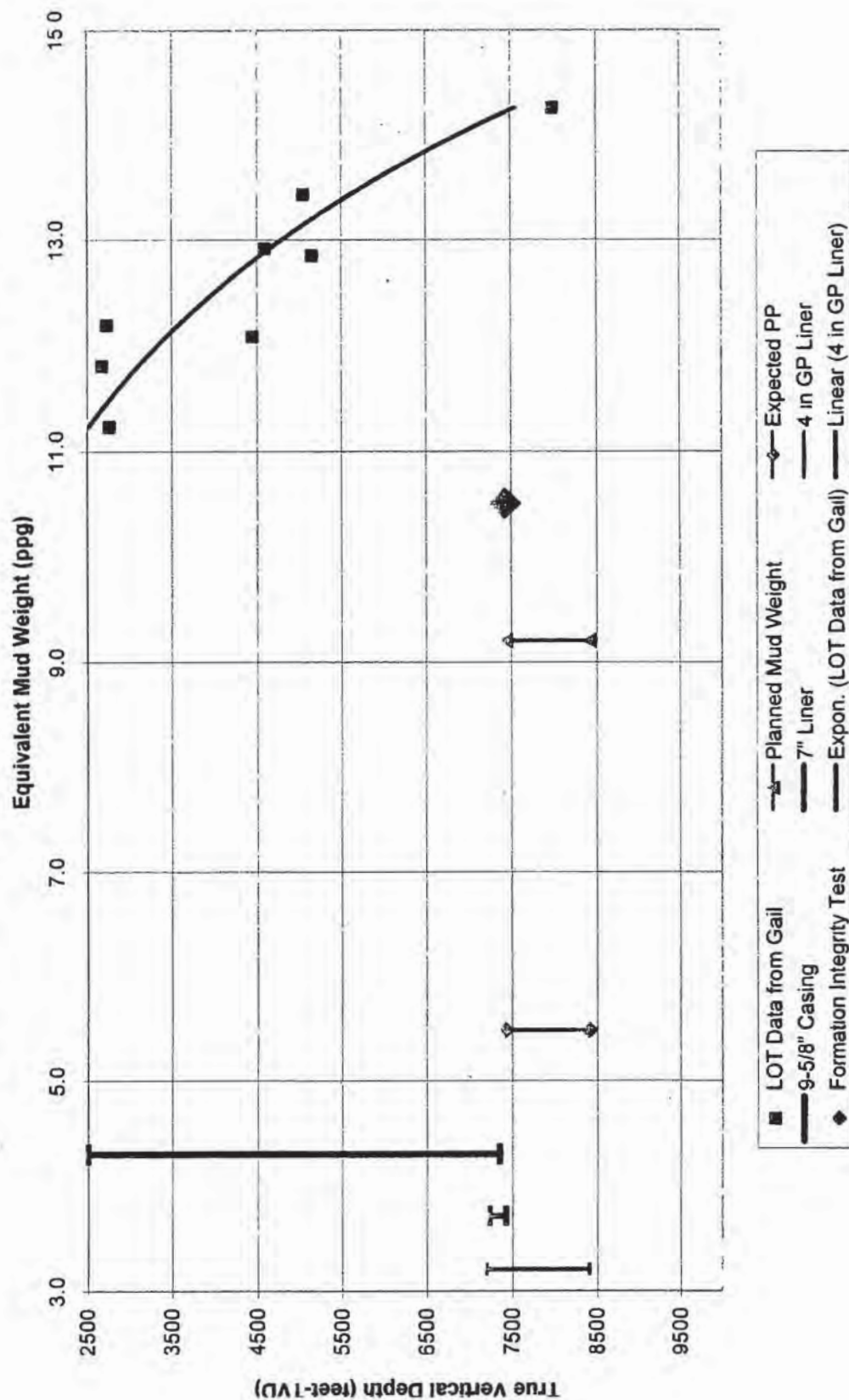
PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain well status, well and casing test, and well casing configuration data. MMS uses this information to have accurate data and information on all wells under its jurisdiction and to ensure compliance with approved plans. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.116. An agency may not collect or sponsor data or a person is not required to respond to a collection of information unless it displays a currently valid OMB Control Number. For more information regarding this collection of information, contact the Bureau of Land Management, Paperwork Reduction Project (L-2004-0001), Washington, DC 20246.

Supplemental APD Information Sheet

1 OPERATOR NAME Venoco, Inc.		5. WELL NAME (Proposed) A-14 ST 1		6. TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11 WATER DEPTH 318'		12 ELEVATION AT KB 100'															
2. API WELL NO (Proposed) (12 Digits) 0431120453		3 BOTTOM LEASE NO. (Proposed) P-0217		7 SIDETRACK NO (Proposed) 01		8 BYPASS NO. (Proposed) 00		13. H ₂ S DESIGNATION ☐ KNOWN ☐ UNKNOWN ☐ ABSENT															
4 TOTAL DEPTH (Proposed)		9 RIG NAME Venoco Rig 11		10. RIG TYPE PF		14 H ₂ S ACTIVATION PLAN DEPTH FT (TVD)																	
MD _____ TVD _____																							
15. ENGINEERING DATA																							
Hole Size (IN)	Casing (Indicate if Liner)	Casing Size (IN)	Weight (lb/ft)	Burst Rating (psi)	Type of Connection	MASP (psi)	Safety Factors			Top of Liner	Casing Depth (Feet)		Well-head Rating (psi)	BCP Size (in)	Related BOP Working Pressure Annular Divertor (psi)			Test Pressures			Cement (Feet)	Drilling Fluid Type (Oil Based, Water Based, Synthetic)	
							B	C	T		MD	TVS			PP	MW	FG	Annular Divertor (psi)	Ram (psi)	Casing Test (psi)			MW Used for Test (ppg)
	Dive/ Structural																						
	Conductor																						
	Surface																						
	Production																						
	Prod Liner																					134	
	Slot Liner																						
15. CONTACT NAME Dana Billings										17 CONTACT PHONE NO (805) 745-2139		18. CONTACT E-MAIL ADDRESS dbillings@venocoinc.com											
19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight ½ ppg or more? ☒ YES ☐ NO																							
20. REMARKS:																							

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT The PRA (42 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain well status, well and casing test, and well casing configuration data. MMS uses this information to have accurate data and information on all wells under its jurisdiction and to ensure the safety of the public. Responses are not mandatory (42 U.S.C. 3534). Preliminary data are considered under 30 CFR 250.110. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 15 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, reviewing and revising the form. Direct comments regarding this burden estimate or any other aspect of this form, including suggestions for reducing this burden, to Washington, DC 20543.

Platform Grace A-14 ST1 Estimated Pore Pressure, Mud Weight & Fracture Pressure (Note: Fracture Pressure Trendline from Platform Gail for Information Only)



VENOCO, INC.
PLATFORM GRACE – SANTA CLARA FIELD
A-14 ST1 PROGRAM
API# 04-311-20453
LEASE OCS-P-0217
December 4, 2007 (attach to MMS APD)

Objective: Redrill the A-14 well and complete as a production well.

Surface Location: OCS-P-217, Slot W6 (X= 1,026,804.63' & Y= 747,452.26')

Elevation: 318' WD, 106.4' (original DF) Above MLLW, 424' Ocean Floor to original DF

New Elevation: D.F. = 100'

Proposed TD: OCS-P-217; 10751' MD / 8406' TVD / -8300' SS

TD Location: 632' S and 5782' W or (X = 1,021,023' and Y = 746,820')

<u>Proposed</u> <u>Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. Fm Press PSI</u>
Santa Margarita	8207	6005	-5898	12 +
M2	9604	7347	-7221	
KOP	9700	7421	-7315	
M3	9892	7604	-7498	
M4	10648	8310	-8204	
Total Depth	10751	8406	-8300	<u>2400 psi at 8350' TVD</u>

Formation Pressure

Historical pressures from producing wells show a definitive downward trend versus cumulative production and there does not appear to be an active water drive or pressure support for the reservoir. The estimated BHP is 2400 psi at 8350' TVD. The Calculated MASP for shut-in tubing pressure for this well is 1937 psi.

Existing Casing: (Original Rig Floor depths)

24", 125#, Vetco L	840'	Cmtd w/ 1000 sx
18 5/8", 105.6 K-55 Butt	2355'	Cmtd w/ 2400 cf,
13 3/8", 72# N-80 Butt	6168'	Cmtd w/ 2708 cf
9 5/8", 40,43.5, 47# SS-95	9629'	Cmtd w/ 1309 cf
7", 26# L-80 (Liner)	9508'-10736'	Cmtd/Slotted/Gravel Pack
5", 18# SOO-95 Butt	10,407'-10,711'	Slotted

7" Liner Cement Details

7" cemented through collar at 9961' with 117 sx to above the liner top, bond log was run and comments were "bond log indicates cement in lap and segregation over 7" blank liner". The liner is reported as parted 10,480'

9 5/8" Casing Detail

Wt	Jts	Interval
40	99	55'-4483'
43.5	85	4483'-8191'
47	33	8191'-9629'

Note: The 9 5/8" casing cement was poor quality due to lost returns. The pipe appears to be uncemented above the 7" liner top.

Existing Perforations:

4030', 6132', 6188'	sqzd during workover
9563', 9568', 9595',	sqzd along with shoe when 9 5/8" set
10,019'-10,736' 2" Mesh Slots	cemented and abandoned

Plugs

9308'-9870'	cement
9870'-10711'	retainer with 152 cf sqz below

Pressure Test of Casing

The casing and final cement plug at 9308' (est) were pressure tested to 1000 psi on 1/19/97. The perforations at 4030' were pressure tested to 3000 psi on 4/29/85. The perforations at 6132' and 6188' were pressure tested to 2500 psi on 4/30/85. With a mud weight of 8.5 ppg the 9 5/8" casing, liner lap and 7" casing were pressure tested to 2000 psi from 9550' to surface on 5/7/85. During this program it is proposed to pressure test casing to 3000 psi (above the calculated MASP of 1937 psi) against bridge plug set above the old squeeze hole at +/- 3900' and pressure test the 9 5/8" casing, 7" X 9 5/8" liner lap and exposed 7" casing to 2000 psi.

Proposed Casing: (Not adjusted for New Rig Floor depths)

24", 125#, Vetco L	840'	Cmtd w/ 1000 sx (existing)
18 5/8", 105.6 K-55 Butt	2355'	Cmtd w/ 2400 cf, (existing)
13 3/8", 72# N-80 Butt	6168'	Cmtd w/ 2708 cf (existing)
9 5/8", 40, 43.5, 47# SS-95	9629'	Cmtd w/ 1309 cf (existing)
7", 26# L-80 (Liner)	9508'-9700' (KOP)	Cmtd w/ 166 cf through stage collar
4" 9.5# Base pipe	9600'-10911'	WWS/Open Hole Gravel Pack

Tubing Kill String:

The 2 7/8" kill string tubing landed at 1551'. Tested the casing and cement plug to 1000 psi and the tubing hanger to 3000 psi during temporary abandonment operations.

Note:

- This well is currently a temporary abandonment.
- Hold safety meetings, pit drills and H2S drills as required fully training and familiarizing crews with operating procedures.
- BOPE must be tested every 14 days for operations that occur under the approved APD. BOPE test will be for all pipe sizes intended for use (except tail pipe for gravel packing)
- Hydrogen Sulfide Considerations:
The Monterey has potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved Platform Grace Hydrogen Sulfide and Sulfur Dioxide Contingency Plan.

Drilling Procedure

1. Move rig to Well A-14 (slot W6). Note and report all pressures: tubing, tubing X casing annulus and all casing X casing annuli. Pressure test the 9 5/8" casing pack-off and the tubing hanger seals and the tubing bonnet void to 3000 psi per the Cameron procedure to confirm both hanger seals are good. If plastic injection into 9 5/8" casing pack off is required, pressure test to 3000 psi over the injection pressure but do not exceed 5000 psi. If the tubing hanger seals and bonnet tests are successful inspect the lock down pins and repair or replace as required. Pressure test the pins and bonnet void after working on or replacing the hold down pins. Pressure test and operate the tubing head valves per Cameron procedure and the casing head valve on the 9 5/8" X 13 3/8" annulus. Replace valves during installation of new tubing head adapter. Detailed program to be provided.
2. Rig up on the dry hole tree with a circulating head and full opening safety valve. Install manual choke on the casing head valve. Pressure test valves and lines to 3000 psi. Circulate the well clean with seawater from the kill string tail depth +/- 1550' down the tubing and taking returns through the tubing head valves. There may be residual amounts of oil or gas from the P&A operations. Circulate the well to the refurbished V-5 clean up tank as required. Co-ordinate with production to monitor pressures and rates. Take clean seawater returns back to the mud pits. Pressure test the casing to 1000 psi against the cement plug. (Note: Casing was pressure test to 1000 psi during the temporary abandonment in 1997.) There will be no discharge of fluids overboard during these operations. Isolate dirty fluids circulated from well into production tanks. NOTE: The production tanks should be emptied well in advance of starting these well circulation activities.
3. Rig up V-G lubricator, pressure test and set back pressure valve in tubing hanger. Nipple up BOP equipped with a minimum of 3- ram preventer and an annular. The BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing, 3 1/2" tubing and 5" drill pipe – the sizes to be used for operations under the APD. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 14 days during operations performed under the approved APD. H2S and LEL detection equipment to be installed and tested as per H2S Contingency Plan, MMS regulations and Venoco Policy. PVT equipment with pump stroke counters and ROP option to be installed. BOPE drills to be performed prior to commencement of operations and each tour using alternate remote stations. Record all drills and the MMS required tracking information in IADC book.

4. Remove BPV, unland hanger. Pull out of the hole and lay down 2 7/8" tubing kill string.
5. Run in hole with 8 1/2" bit and scraper on 5" drill pipe. RIH to top of cement plug, reported at 9308' theoretical. Circulate well clean with seawater. There may be residual amounts of oil or gas from the P&A operations. Circulate the well to the refurbished V-5 clean up tank as required. Co-ordinate with production to monitor pressures and rates. Take clean returns back the mud pits. There will be no discharge of fluids overboard during these operations. Isolate dirty fluids circulated from well into production tanks. NOTE: The production tanks should be emptied well in advance of starting these well circulation activities.
6. Pressure test the 9 5/8" casing to 2000 psi for 15 minutes.
7. Clean out cement in 9 5/8" casing from +/- 9308' to the liner top at 9508'. Use seawater and duovis sweeps to clean hole. Circulate the well clean. Document exact depth for top of liner and use to correlate drill out depth to 9700'.
8. With seawater in hole, pressure test casing to 2000 psi for 30 minutes and record on chart. Burst pressure for 9 5/8" 40# 95ksi casing is 6820 psi for new. Pull out of the hole with the clean out assembly.
9. Run in hole and set Baker Retrievmatic packer near 3950' psi and above squeeze holes at 4030'. With seawater in the hole, pressure test annulus/9 5/8" casing from 3950' to surface to 3000 psi for 30 minutes and record on chart. Burst pressure for 9 5/8" 40# 95ksi casing is 6820 psi for new. Pull out of hole with running tool. (Note: Hole maximum angle is > 56 degree at 3950' MD). Pull out with service packer.
10. Make up, run in and set retrievable bridge plug near 1500'. Pull out with running tools. Pressure test bridge plug to 3000 psi.
11. Nipple down and lift BOPE. Install Cameron 13 5/8" 5000 psi Gray-Loc Hub X 11" 3000 psi tubing head adapter and isolation sleeve. Pressure test the isolation sleeve to 250/3000 psi. If not previously done, replace both tubing head valves and the 9 5/8" X 13 3/8" casing head valve. Pressure test after installation. Nipple up BOPE and body pressure test the BOP and new adapter head to 250/3000 psi against the bridge plug. Run in hole and recover bridge plug from near 1500'.

12. Make up and RIH with 6 1/8" bit with clean out assembly. Clean out cement in 7" liner from top of 7" liner at +/- 9508' to 9700'. Use seawater and duovis sweeps to clean hole. Isolate dirty fluids circulated from well into production tanks. Pull out of hole. Cement cuttings to be sent in for onshore disposal. Document exact depth for top of liner and use to correlate drill out depth to 9700'.

7" Liner Detail from Liner Hanger to KOP :

Item	Length (from bond log)	Top
Liner Hanger	8'	9508' (pipe depth)
Joint #1	39.5'	
Joint #2	37.5'	
Joint #3	36'	
Joint #4	41'	
Joint #5	41'	
Joint #6	42'	9711'

13. Pressure test the 7" liner and liner lap to 2000 psi for 15 minutes with seawater in the hole. Note: Liner lap to be exposed during gravel pack operations.
14. Pick up 7" 26# positive casing scraper and tandem watermelon mill assembly with 6 1/8" bit and RIH. Scrape and drift the 7" casing to clean out depth of 9700'. Circulate, condition and build mud system for milling the window and carry the metal cuttings out of the hole. Pull out with scraper assembly.
15. M/U Baker 7" casing 1-trip whipstock with bottom trip anchor, window mill, lower watermelon mill and upper watermelon mill, bumper sub, MWD, and RIH to top of cement at 9700'.
16. Using MWD measurements orient whipstock to high side as per Directional Drillers. Set the whipstock and shear the tools off the whipstock face. Circulate, condition and build mud system for milling the window and carry the metal cuttings out of the hole.
17. Mill and open window drilling 15' – 18' below the bottom of ramp, as per whipstock service company and directional service company. Mill and dress the window as required obtaining good exit point for sidetrack. Drill enough rathole to pass all mills through the window. Mills must smoothly pass through the window before finalizing milling operations. Re-designate well as A-14 ST1. Notify MMS as required in the permit conditions. Perform a Formation Integrity Test to 10.5 ppg EMW. POH with window mill assembly. Prior to drilling out window have Epoch mud loggers rigged for samples as per Formation Evaluation Program.
18. Make up 6 1/8" PDC bit on a steerable directional drilling assembly including MWD/GR. Run in the hole and directional drill and survey a 6 1/8" hole from KOP of +/- 9700' to a total depth of 10751' MD / 8406' VD. The 6 1/8" hole will be drilled with MI Flo Thru System mixed with seawater. Maximum allowable chlorides are 80,000 PPM. Follow Directional plan - Halliburton Plan A-14 RD1-Plan 5 (21-May-07). Run solids control equipment, dilute and treat the MI FloThru System to maintain programmed specifications. Prior to drilling ahead have Epoch mud loggers rigged up and ready for samples as per Formation Evaluation Program. Follow requirements for NPDES compliance. Plan to catch and expedite mud sample for toxicity testing when 1/2 open hole interval is drilled and another sample at TD.

19. Circulate and condition the mud for open hole logs. Wipe the hole to the 7" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
20. Rig up wire line and run open hole logs (see attached logging program). Condition the hole if necessary between runs. During log run and as recommended by MI mud engineer condition mud in pits by running solids control equipment and lowering solids in preparation for hole opening operations.
Log Run #1 PEX/Spectral GR
Log Run #2 FMI/GR/Pressure Xpress
21. Make up Baker Oil Tools 6 1/8" X 8 1/2" hole opener with KM tool body and Bear Claw PDC cutters. Run and open 6 1/8" hole to 8 1/2" hole from below window at +/- 9700' to +/- 10751'. Run solids control equipment and dilute and treat the MI FloThru System to maintain programmed specifications.
22. Rig up Schlumberger and run 4-arm caliper log, if indicated by office. Depending on caliper results from A-4 ST1 this log may be eliminated.
23. Make additional under reamer run or make run with 6 1/8" hole opener to TD. Once hole opening is complete run in hole to TD. Make up a clean solids free FLO-THRU and spot in the open hole and 200 ft. up into the casing. Pick up 200 ft. into the casing and change the upper hole over to clean seawater. This change over is in preparation for running of wire wrap screen and open hole gravel pack. Circulate the well and filter seawater to below 100 NTU or as indicated. An assembly with brushes and scraper spaced out in casing may be used.
24. A detailed program to run Wire Wrap Screen and perform open hole gravel pack will be provided. A general completion procedure is provided.

Platform Grace

Well A-14 ST1

COMPLETION PROCEDURE

For completion operations the BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing, 3 1/2" DP and 5" dp all other pipe sizes to be used for completion operations, except 2 3/8" GP tail pipe. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 14 days during the completion phase of the operations and these operations will continue under the approved APD.

Completion Fluid:

Completion fluid to be filtered seawater unless Pressure Express data indicates need for higher density fluid. Per Steve Horner there should not be a need for fluid density above seawater gradient to control well.

NOTE: This program commences after hole opening operations and caliper log are completed.

1. If caliper log indicates, make additional under reamer run. Circulate hole clean and pull out with under reamer.
2. Make up 6 1/8" clean out assembly including a non-rotating 9 5/8" casing scraper and brush spaced out to be +/- 30' above the 7" liner top when bit is on bottom and run hole to TD.
3. Make up +/- 95 bbl solids free FLO-THRU mud mixed to equal or slightly higher density than fluid in the hole. Equalize clean mud into the open hole and 200 ft. up into the casing. Pick up bit 200 ft. into the casing.
4. During following changeover commence ocean discharge if the following conditions are met: 1) Additives and concentrations are within NPDES guidelines – confirm with MI Engineer 2) Mud passes NPDES required sheen test 3) Mud passes 96 hour NPDES shrimp test - Confirmed by Steve Lawry 4) MMS and/or EPA notified per NPDES permit.
5. Changeover well to seawater or to density necessary to provide adequate over-balance. Rotate pipe at 70 rpm and circulate at highest rate possible. Pump a recommended spacer suitable for ocean discharge between the mud and water. This change over is in preparation for running of wire wrap screen and open hole gravel pack. Fluids need to be clean but not filtered. Once returns are clean completion fluid shut down. Continue to mix completion fluid as needed to safely work on well and begin tracking and reporting losses. Clean pits.
6. Mobilize 500 bbl ECI Tank and locate per Rick Beers provided specifications. Have the pits cleaned and empty. Have production tanks empty in preparation for gravel pack. Have Baker DE filter in-line with high-rate seawater delivery system filling the ECI tank.
7. Pull out of the hole with 6 1/8" clean out assembly.

8. Make up liner assembly consisting of:

- ~4' 4" Circulating Shoe with open hole centralizer
- ~1060' 4" 9.5# Base pipe Wire Wrapped Screen 16 Gauge (WWS) (Weatherford)
- ~150' 5 joints 4" 9.5# Blank Pipe with 8R 16 Gauge slots (Weatherford to provide)
- ~30' 1 joint 4" 9.5# Blank Pipe (Baker to provide)
- ~18' Lower Extension
- ~2.5' Sleeve with Seal bore
- ~6' Upper Extension
- ~6' 9 5/8" Baker SC-2 Gravel Pack Packer with Sliding Sleeve, and crossover
- ~1300' 2 3/8" flush joint tail pipe and polished stinger for circulating shoe (to be run inside WWS – rental from Baker Gravel Pack)

- a. Liner top to be +/- 9470' which is 30' above the 7" liner top that was located at 10591' MD. Locate the gravel pack tools and extension assembly above the 7" liner top due to large OD.
 - b. Centralize with one Weatherford centralizer per joint over the coupling. The screen will have 12" per joint top and bottom for centralizers and the centralizers will require 20 3/4" for full collapse. Locate the set screw end of centralizer on bottom and directly above the screen on lower joint. Tighten set screws and do not allow centralizer to float. Centralize circulating shoe and WWS. The blank and slotted casing to have pre-fabricated welded lugs.
 - c. Minimize the use of pipe dope on the screen and on the drill pipe running string.
9. Run in with liner assembly as above on work string to desired depth. Note up and down weight of assembly.
10. Rig up pumping equipment and lines. Casing was pressure tested to 2000 psi. Note: Baker requested minimum of 2000 psi for reverse out of gravel. Conduct safety meeting. Test lines to 4000 psi. Drop ball. Set and test SC-2 packer and gravel pack tools per Baker Tool Specialist direction. Release tool and blow ball seat.
11. Note up and down weight of tools subsequent to release from packer.
12. Establish and record pump rate and pressure in reverse position. Establish and record pump rate and pressure in circulating positions.
13. Using filtered seawater from the ECI tank circulate the mud from open hole/WWS annulus into the work string casing annulus. Place the crossover tool into the upper circulating position.

14. Gravel Pack well with 16-30 Low-Fine Ottawa gravel using Baker Gravel Infuser System. Typical pump rates have been 7.5 BPM. Sand loading has varied between $\frac{3}{4}$ - 1 PPG. Continue pumping at recommended rate and concentration until wellhead pressure begins increasing. Pump rate should be reduced accordingly as well head pressure increases. Once pressure reaches 500 PSI over initial circulating pressure stop pumps. DO NOT RESTRESS PACK at this time.

Notes:

- a. Have 1500 bbls empty pit space to receive gravel pack returns.
 - b. Have 500 bbls filtered water in ECI tank and have platform seawater delivery system connected to filter and ECI tank.
 - c. Delivery system will need to keep up with 7.5 bbls/minute gravel pack rate. Well will be gravel packed with filtered seawater.
15. Close annular BOP and apply 500 PSI to the annulus. Place the crossover tool in the reverse position. Reverse out excess gravel until returns are clean. Monitor and determine the volume of gravel reversed out.
16. To test the gravel pack, lower crossover tool into the circulating position. Circulate at sand out rate and attempt to achieve sand out pressure established earlier. If same sand out pressure cannot be achieved, mix and pump additional amounts of gravel recommended by pump specialist. Repeat this step until final sand out occurs.
17. After gravel pack operations completed the fluid above the liner will be changed over to higher density fluid only as needed to safely trip in and out. It is expected that seawater is sufficient density. Circulate and get fluid in hole balanced, Pull out with service tools. Fill hole as needed with filtered seawater and ship gravel pack returns to production operations for handling.
18. Rig up hydrotest unit, Certex spoolers and run Electric Submersible Pump on 2 7/8" tubing as follows.

Rig up a cable spooler and two chemical line spoolers for running of ESP. Pick up the Centrilift ESP. Run ESP equipment, cable and two 3/8" stainless steel chemical lines (with 3/8" check valves).

- Hydrotest tubing to 4000 psi while running in hole with ESP.
- Install one cross coupling and one mid-joint Cannon Clamp per joint above the pump
- The ESP cable may be shipped in two spools – one with +/- 9000' of cable and one with +/- 600' cable.
- Certex will provide spooling units for the ESP cable and one for the Chemical Injection lines, sheaves for derrick.
- Certex will provide two spools of 3/8" chemical injection line +/- 10000' each.
- When running the ESP make sure all starts and stops when running the tubing are slow and smooth to prevent cable damage.
- Electrical checks will be measured every 1000' and at all connections and splices.
- Load the chemical lines with water to prevent plugging. Check valves will be installed at the top of each chemical injection line directly below hanger and at the

end of each line. Both chemical injection lines will terminate at the pump intake or gas separator section in a secure location that will protect the line and valves while running the completion.

- Certex will provide a service representative to assist the rig hands with the ESP cable and two 3/8" SS tubing clamping operations. The service representative has experience with the Cannon clamping equipment.
 - The Baker Twin Seal Packer to be set at +/- 570'.
 - The 2 7/8" T-5 TRSSSV will be set above the Baker Twinseal Packer and the control line will have manifold into the annulus safety valve and tubing safety valve
 - Function test the tubing and annular SSSV and pressure test the control line to 5000 psi.
 - Wellhead and packer electric cable connectors are from BIW and will be installed by Centrilift personnel.
 - Keep Centrilift personnel on board until pump is successfully started up unless otherwise directed due to delays in surface facilities or power availability.
19. Make up the Cameron tubing hanger and install the SSSV control line. Install check valves in chemical lines below the hanger. Function test both SSSV and pressure test the control line to 5000 psi. Leave the control line attached to the hanger to allow operation of the TRSSSV for setting the packer. Install the Bullet cap with O ring on the top of the ESP wellhead mandrel and plug/cap all lines. Secure the hanger with lock down pins. Pressure test the tubing hanger seal void to 3000 psi.
20. Rig up slickline with lubricator and BOPE and pressure test to 3000 psi. Pressure up control line and open the TRSSSV and annulus safety valve. Maintain a minimum of 1600 psi over the surface pressure on the control line to keep SSSV from closing on the slickline. Run in hole with tubing plug and set in X nipple below packer. Pressure up on tubing in increments to 3500 psi to set the packer. Pull out and rig down slickline.
21. Set back pressure valve. Remove BOPE and install the new 3 1/8" 3M tree. Test the bonnet void to 3000 psi. Remove backpressure valve. Install blanking plug. Test tree to 3000 psi. Remove blanking plug.
22. Turn well over to production. Hook up and test surface facilities including the ESP cable to the variable speed drive, the SSSV to the control panel, the SSV on the tree and the annulus, and the two chemical injection lines.
23. Start the ESP pump at a low rate as per Centrilift recommended practices and check for the proper pump rotation. Monitor the pump parameters using the surface monitoring system. Skid the rig and equipment to the next well.

EVALUATION PROGRAM

Mudlogging Program:

Begin Mudlogging upon exiting original A-14 casing, dry cuttings and wet.

Testing Program:

None expected.

Open Hole Logging program

LWD: GR/Res

Wireline Logs:

Log Run #1 PEX/Spectral GR

Log Run #2 FMI/GR/Pressure Xpress

Logging geologist: Dale Kunitomi 805-987-3026

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

Drilling Fluids Program

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Clean out casing and mill window	Seawater and Duovis Sweeps	8.6	NC	9-10	20-30	+9-10 K
9700'-10751'	Flo Thru	9.2	5-7	<u>8-9</u> <u>(see note below)</u>	14-28	29-32K

Clean out and Mill: Use Seawater with sweeps to clean out cement, viscosify and build system to mill as needed.

Drill and open hole: 9700' - 10751':

Condition FLO-THRU system. Reuse or ship the milling fluid to shore. Drill 6 1/8" hole to TD , run Logs, open hole from 6 1/8" to 8 1/2" and run WWS liner

Notes:

- Current field drilling rules allow for ph range of 9-10. Venoco proposes to run the drilling fluid system with ph 8-9. The natural alkalinity of the formations causes the pH to run in the 8-9 range. The mud system utilizes soda ash to combine with the calcium in the seawater to form caustic soda which raises the pH to 9.0-9.5. The pH falls to the 8.5 - 8.8 range while drilling. This method and the ph range of 8-9 have proven to successfully support drilling of wells offshore California.
- Operate solids control equipment as per MI recommendation to maintain drill solids as low as possible without stripping out the necessary components.
- Maintain supply of H2S scavenger onboard to treat out H2S.
- A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised a minimum of 0.5 ppg using +/-1450 bbl total circulating volume (850 bbls in hole at TD & 600 bbl active system).

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

Maximum Anticipated Surface Pressure

	<i>Grace Specific Form - Calculations have been customized</i>	Production Casing	7" Mill window	TD
1	Casing Size (in)	9-5/8	7" liner	4" liner
2	Setting Depth (feet - TVD)	7352	7421	8406
3	Expected Leak Off Test EMW at shoe (ppg)	11	11	11
4	Expected Mud Weight (ppg)	9.2	9.2	9.2
5	Depth of next Casing (feet - TVD) use TD for all	8406	8406	8406
6	Maximum Expected Formation Pressure (psi) @ 8350 TVD	2400	2400	2400
7	Expected gas gradient (psi/ft)	0.055	0.055	0.055
8	Formation Equivalent Mud Weight (ppg)	5.49	5.49	5.49
	Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	1938	1938	1938
10	Fracture Gradient at shoe (psi/ft)	0.57	0.57	0.57
11	Fracture Pressure at shoe (psi)	4205	4245	4808
12	Surface pressure to break down shoe (psi)	3801	3837	4346
13	Maximum Anticipated Surface Pressure (psi)	1938	1938	1938
	Max Pressures using 70% Gas & 30% Produced Fluids			
14	Maximum Anticipated Surface Pressure (psi) (SteveH Calc)	1413	1413	1413

Notes:

These are well specific inputs developed from detailed analysis by Reservoir Engineer. Producing GOR declined from 5000 scf/BO in early 1981 to less than 900 in 1996, when field was shut-in. Almost all produced gas is associated gas and it is very unlikely a well would have 100% gas column. Historical pressures from producing wells show a definitive downward trend versus cumulative production and there does not appear to be an active water drive or pressure support for the reservoir.

Mud Weight and Fracture Gradient

		9-5/8	7	4 slotted
1	Casing Size (in)	9-5/8	7	4 slotted
2	Setting Depth (feet - TVD)	7352	7421	8406
3	Programmed FIT EMW at shoe (ppg)	10.5	10.5	10.5
4	Depth of next Casing (feet - TVD)	8406	8406	8406
5	Maximum Expected Formation Pressure (psi)	2400	2400	2400
6	Expected Mud Weight (ppg)	9.2	9.2	9.2
7	Formation Equivalent Mud Weight (ppg)	5.49	5.49	5.49
8	Expected Hydrostatic Pressure at TD (psi)	4021	4021	4021
9	Amount of Overbalance at TD (psi)	1621	1621	1621
10	Fracture Gradient at shoe (psi/ft)	0.55	0.55	0.55
11	Fracture Pressure at shoe (psi)	4014	4052	4590
12	Hydrostatic Pressure at shoe (psi)	3517	3550	4021
13	Margin between Mud Weight and LOT (psi)	497	502	568

Casing Design

Hole Section	12.25	8.5	8.5
Mud Weight	9.2	9.2	9.2
Buoyancy Factor	0.860	0.860	0.860
MASP (psi) Based on wellhead rating	3000	3000	3000
Gas Lift Pressure (psi)	0	0	0
Casing Size (in)	9-5/8"	7	4
Setting Depth, MD (ft)	9629	9700	10751
Setting Depth, TVD (ft)	7352	7421	8406
Top of Casing, MD (ft)	0	9508	9470
Weight (lb/ft)	40	26	9.5
Grade	SS-95	L-80	L-80
Threads	BUTT	BUTT	NU8rd
ID (in)	8.835	6.276	3.548
Drift diameter (in)	8.599	6.151	3.423
Collapse (psi)	3330	5410	Slot Liner
Burst (psi)	6820	7240	Slot Liner
Joint Strength (kips)	1088	604	250
Body Strength (kips)	1088	604	NA
Collapse Safety Factor	0.95	1.52	NA
Burst Safety Factor	2.27	2.41	NA
Tensile Safety Factor	2.52	5.79	2.26

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydri") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydri") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

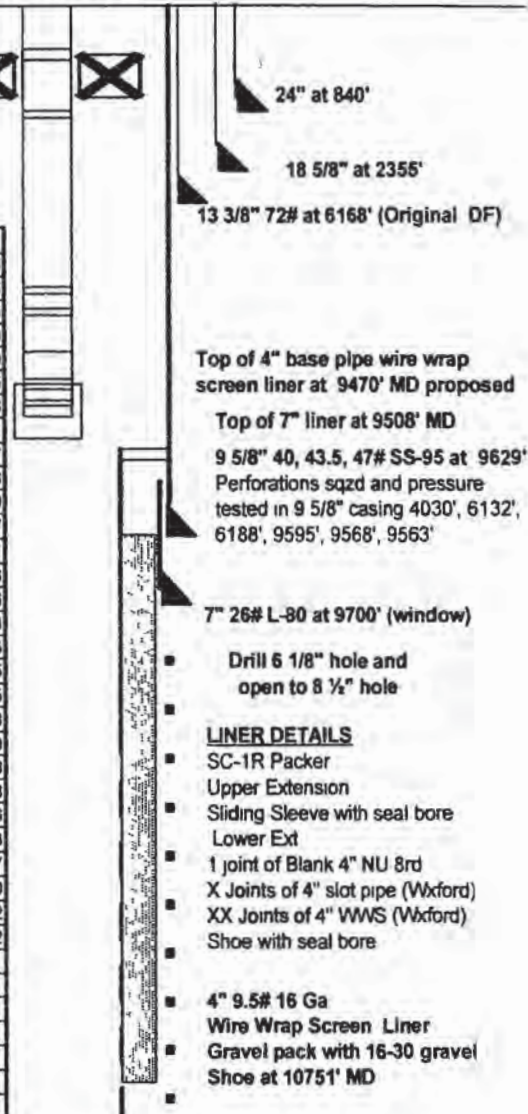
Vertical to +/- 1000'
 Max Angle: 56 deg @2065' MD (est)
 Original D.F. Elevation 108'
 New D.F. Elevation: 100'
 New D.F. to Tubing Head: 47 15' (est)
 Water Depth: 318'
 Wellhead: Original V-G head with Cameron Adapter on top
 Production Tree: 3 1/2" 3M psi Cameron

SANTA CLARA FIELD **WELL A-14 ST1** Lease: OCS-P-0217 Proposed Production Well

12/11/07 dhh

Completion Date.

Completion String Description	ID	LENGTH	DEPTH
DF to Top Tubing Hanger		47 15	0
Tbg Hanger		1 10	47 15
3 1/2" 9 3 # L-80 EUE 8rd double pin pup	2 992	3 35	48 25
3 1/2" B X 2 7/8" 6 5# L-80 EUE 8rd P XO	2 441	0 79	51 60
2 7/8" pup with full strength coupling as above	2 441	10 16	52 39
16 joints of 2 7/8" tubing as above	2 441	528 51	62 55
2 7/8" pup as above	2 441	6 05	591 08
2 7/8" TE-5 TRSSS Valve	2 312	4 76	597 11
2 7/8" pup as above	2 441	4 09	601 87
2 7/8" pup as above	2 441	6 04	605 98
Upper Extension	3 93	2 47	612 00
9 5/8" Baker Twin Seal Packer w/ 2 3/8" TE-5 ASSSV	2 441	10 84	614 47
Lower Extension	3 93	3 35	625 31
2 7/8" pup as above	2 441	4 10	628 68
1 joint of 2 7/8"	2 441	32 17	632 76
2 7/8" BX nipple	2 312	1 12	664 93
275 joints 2 7/8" tubing as above	2 441	8530 00	668 05
Baker CMU Sliding Sleeve	2 441	4 00	9198 05
2 joints 2 7/8" tubing as above	2 441	64 63	9200 05
2 7/8" BXN nipple	2 300	1 12	9264 68
1 joint 2 7/8" tubing as above	2 441	33 18	9265 80
2 7/8" pup as above	2 441	4 00	9298 98
XO	1 996	0 68	9302 98
Centrilift ESP Series 400 Pump		18 17	9303 66
Centrilift ESP Series 400 Pump		17 54	9321 83
Centrilift ESP Series 400 Pump		7 03	9339 37
Cent Series 400 Gas Separator		1 82	9346 40
5.5" OD/ 5" ID Shroud		40 00	9348 22
			9388 22
Following Equipment inside of shroud			
Centrilift ESP Series 400 Gas Separator		0 78	
Centrilift ESP Series 400 Seal		11 17	
Centrilift ESP Series 450 Motor		17 00	
Centrilift ESP Series 450 Sensor		4 09	
		33 04	



TD at 10751' MD/ 8,406 VD



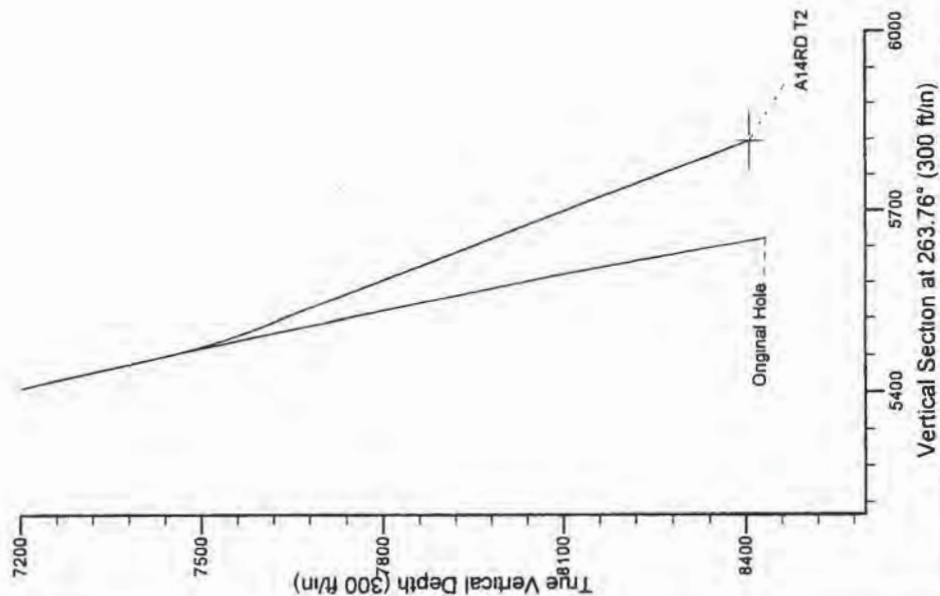
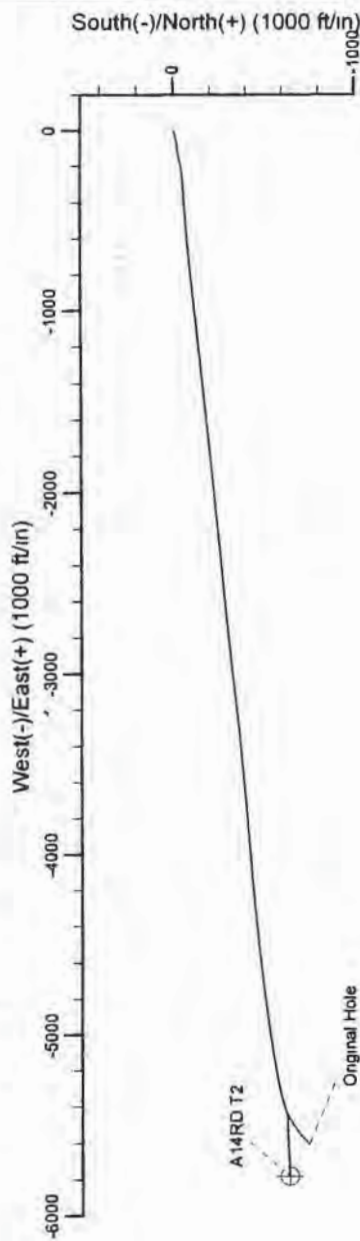
Azimuths to Grid North
 True North 1.77°
 Magnetic North 15.01°
 Magnetic Field
 Strength 47679.7nT
 Dip Angle 58.78°
 Date 3/21/2007
 Model BGGM2006

Venoco Inc.

Project Platform Grace
 Site Santa Clara Unit
 Well A14
 RD1
 Plan 5 (21-May-07)

A14
 NAD 1927 (NADCON CONUS)
 California VI 406
 Reference Gnd
 RKB @ 106.40ft (Original Well Elev)
 Northing 747452.00
 Easting 1026805.00

HALLIBURTON
 Sperry Drilling Services



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec	Target
1	9700.00	12.30	249.45	7420.83	-610.78	-5420.18	0.00	0.00	5454.46	
2	8802.63	21.08	267.66	7614.95	-619.88	-5476.98	5.00	38.74	5511.90	
3	10750.92	21.08	267.66	8406.40	-632.35	-5782.02	0.00	0.00	5816.50	A14RD T2

Venoco Inc.

Platform Grace
Santa Clara Unit
A14
RD1

Plan: Plan 5 (21-May-07)

Job No Plan 5 (21-May-07)

Sperry Drilling Services Combo Report

21 May, 2007

Well Coordinates 747,452.00 N, 1,026,805.00 E (34° 10' 46.50" N, 119° 28' 04.22" W)
Water Depth 318.00 ft

Local Coordinate Origin
Viewing Datum
TVDS to System
North Reference
Unit System
Centered on Well A14
RKB @ 106.40ft (Original Well Elev)
N
Gnd
API - US Survey Feet

Version 2003 14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for A14 - RD1 - Plan 5 (21-May-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00		106.40	0.00	0.00 N	0.00 E	747,452.00	1,026,805.00	0.00	0.00	
30.00	0.55	173.70	76.40	30.00	0.14 S	0.02 E	747,451.86	1,026,805.02	1.83	0.00	
60.00	0.50	113.40	46.40	60.00	0.34 S	0.15 E	747,451.66	1,026,805.15	1.76	-0.11	
90.00	0.25	111.40	16.40	90.00	0.41 S	0.33 E	747,451.59	1,026,805.33	0.83	-0.29	
120.00	0.50	129.00	-13.60	120.00	0.52 S	0.50 E	747,451.48	1,026,805.50	0.91	-0.44	
150.00	0.43	130.50	-43.60	150.00	0.68 S	0.68 E	747,451.32	1,026,805.68	0.24	-0.61	
180.00	0.62	139.00	-73.59	179.99	0.87 S	0.87 E	747,451.13	1,026,805.87	0.68	-0.77	
210.00	0.57	150.80	-103.59	209.99	1.12 S	1.05 E	747,450.88	1,026,806.05	0.44	-0.93	
240.00	0.72	147.60	-133.59	239.99	1.41 S	1.23 E	747,450.59	1,026,806.23	0.51	-1.07	
270.00	0.37	147.80	-163.59	269.99	1.65 S	1.38 E	747,450.35	1,026,806.38	1.17	-1.19	
300.00	0.65	156.50	-193.59	299.99	1.89 S	1.50 E	747,450.11	1,026,806.50	0.97	-1.29	
330.00	0.57	170.50	-223.59	329.99	2.20 S	1.59 E	747,449.80	1,026,806.59	0.56	-1.34	
360.00	0.52	171.80	-253.59	359.99	2.48 S	1.64 E	747,449.52	1,026,806.64	0.17	-1.36	
390.00	0.53	158.90	-283.58	389.98	2.74 S	1.71 E	747,449.26	1,026,806.71	0.39	-1.40	
420.00	0.48	200.50	-313.58	419.98	2.99 S	1.71 E	747,449.01	1,026,806.71	1.21	-1.38	
450.00	0.70	264.50	-343.58	449.98	3.12 S	1.49 E	747,448.88	1,026,806.49	2.18	-1.14	
480.00	0.57	246.40	-373.58	479.98	3.20 S	1.17 E	747,448.80	1,026,806.17	0.78	-0.81	
510.00	0.48	237.60	-403.58	509.98	3.33 S	0.92 E	747,448.67	1,026,805.92	0.40	-0.55	
540.00	0.63	228.60	-433.58	539.98	3.50 S	0.69 E	747,448.50	1,026,805.69	0.56	-0.31	
570.00	0.78	220.30	-463.58	569.98	3.77 S	0.43 E	747,448.23	1,026,805.43	0.63	-0.02	
600.00	0.78	238.40	-493.57	599.97	4.03 S	0.13 E	747,447.87	1,026,805.13	0.82	0.31	
630.00	0.78	237.80	-523.57	629.97	4.24 S	0.22 W	747,447.76	1,026,804.78	0.03	0.68	
660.00	0.68	217.30	-553.57	659.97	4.48 S	0.50 W	747,447.51	1,026,804.50	0.93	0.88	
690.00	0.73	213.20	-583.57	689.97	4.80 S	0.71 W	747,447.20	1,026,804.29	0.24	1.23	
720.00	0.52	231.10	-613.56	719.96	5.04 S	0.92 W	747,446.96	1,026,804.08	0.95	1.47	
750.00	0.53	211.80	-643.56	749.96	5.25 S	1.10 W	747,446.75	1,026,803.90	0.59	1.67	
780.00	0.47	233.60	-673.56	779.96	5.44 S	1.27 W	747,446.55	1,026,803.73	0.66	1.86	
810.00	0.32	278.60	-703.56	809.96	5.50 S	1.46 W	747,446.50	1,026,803.54	1.11	2.04	
840.00	0.27	279.00	-733.56	839.96	5.47 S	1.61 W	747,446.53	1,026,803.39	0.17	2.19	
856.00	0.25	279.00	-749.56	855.96	5.46 S	1.68 W	747,446.54	1,026,803.32	0.13	2.26	
887.00	0.25	188.50	-780.56	886.96	5.52 S	1.76 W	747,446.48	1,026,803.24	1.15	2.35	
918.00	0.25	190.00	-811.56	917.96	5.65 S	1.78 W	747,446.35	1,026,803.22	0.02	2.38	
949.00	0.25	201.50	-842.56	948.96	5.78 S	1.81 W	747,446.22	1,026,803.19	0.16	2.43	
980.00	2.75	227.00	-873.55	979.95	6.35 S	2.38 W	747,445.65	1,026,802.62	8.15	3.06	
1,011.00	4.00	251.00	-904.49	1,010.98	7.21 S	3.95 W	747,444.79	1,026,801.05	6.00	4.71	
1,042.00	5.25	255.00	-935.39	1,041.78	7.93 S	6.34 W	747,444.07	1,026,798.66	4.16	7.17	
1,073.00	7.00	258.50	-966.21	1,072.81	8.67 S	9.56 W	747,443.33	1,026,795.44	5.77	10.45	
1,104.00	9.25	258.50	-996.90	1,103.30	9.55 S	13.86 W	747,442.45	1,026,791.14	7.26	14.81	
1,135.00	10.00	259.00	-1,027.46	1,133.86	10.56 S	18.94 W	747,441.44	1,026,786.06	2.43	19.98	
1,166.00	12.00	258.00	-1,057.89	1,164.29	11.74 S	24.74 W	747,440.26	1,026,780.26	6.48	25.87	

HALLIBURTON

Plan Report for A14 - RD1 - Plan 5 (21-May-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
1,197.00	13.75	257.00	-1,088.11	1,194.51	13.24 S	31.48 W	747,438.76	1,026,773.52	5.69	32.73	
1,228.00	15.50	257.00	-1,118.11	1,224.51	15.00 S	39.10 W	747,437.00	1,026,765.90	5.65	40.50	
1,259.00	17.00	257.00	-1,147.87	1,254.27	16.95 S	47.58 W	747,435.05	1,026,757.44	4.84	49.12	
1,280.00	19.50	259.00	-1,177.31	1,283.71	18.96 S	57.05 W	747,433.04	1,026,747.95	8.31	58.78	
1,321.00	21.25	261.50	-1,206.37	1,312.77	20.78 S	67.69 W	747,431.22	1,026,737.31	6.30	68.55	
1,352.00	23.00	263.50	-1,235.08	1,341.48	22.29 S	79.26 W	747,429.71	1,026,725.74	6.15	81.22	
1,383.00	22.75	266.00	-1,263.65	1,370.05	23.40 S	91.26 W	747,428.60	1,026,713.74	3.24	93.26	
1,414.00	24.25	265.50	-1,292.07	1,398.47	24.31 S	103.59 W	747,427.69	1,026,701.41	4.88	105.62	
1,445.00	27.50	264.00	-1,319.96	1,426.36	25.56 S	117.05 W	747,426.44	1,026,687.95	10.69	118.14	
1,476.00	29.00	262.00	-1,347.27	1,453.67	27.36 S	131.62 W	747,424.64	1,026,673.38	5.72	133.81	
1,507.00	31.75	254.50	-1,374.02	1,480.42	30.58 S	146.92 W	747,421.42	1,026,658.08	15.10	149.38	
1,538.00	33.75	255.50	-1,400.09	1,506.49	34.92 S	163.12 W	747,417.08	1,026,641.88	6.68	165.95	
1,569.00	36.25	255.50	-1,425.48	1,531.88	39.37 S	180.34 W	747,412.83	1,026,624.66	8.06	183.55	
1,600.00	38.00	258.50	-1,450.20	1,556.60	43.57 S	198.56 W	747,408.43	1,026,606.44	8.12	202.12	
1,631.00	38.00	262.00	-1,474.63	1,581.03	46.80 S	217.37 W	747,405.20	1,026,587.63	6.95	221.17	
1,662.00	38.25	265.50	-1,499.02	1,605.42	48.88 S	236.38 W	747,403.12	1,026,568.61	7.02	240.30	
1,693.00	39.75	265.50	-1,523.11	1,629.51	50.41 S	255.83 W	747,401.59	1,026,549.17	4.84	258.80	
1,724.00	41.25	265.50	-1,546.69	1,653.08	51.99 S	275.90 W	747,400.01	1,026,529.10	4.84	278.82	
1,755.00	43.00	265.00	-1,569.68	1,676.08	53.71 S	296.63 W	747,398.28	1,026,508.37	5.75	300.71	
1,786.00	44.25	266.00	-1,592.12	1,698.52	55.39 S	317.95 W	747,396.61	1,026,487.05	4.61	322.08	
1,817.00	46.00	265.50	-1,613.99	1,720.39	57.02 S	339.85 W	747,394.98	1,026,465.15	5.76	344.04	
1,848.00	47.50	265.50	-1,635.23	1,741.63	58.78 S	362.36 W	747,393.21	1,026,442.64	4.84	366.61	
1,879.00	48.75	265.00	-1,655.92	1,762.32	60.70 S	385.36 W	747,391.30	1,026,419.64	4.21	389.68	
1,910.00	50.25	265.00	-1,676.05	1,782.45	62.76 S	408.85 W	747,389.24	1,026,396.15	4.84	413.25	
1,941.00	52.00	265.50	-1,695.51	1,801.91	64.76 S	432.90 W	747,387.24	1,026,372.10	5.78	437.37	
1,972.00	53.25	265.50	-1,714.33	1,820.73	66.89 S	457.46 W	747,385.31	1,026,347.54	4.03	461.99	
2,003.00	55.00	285.50	-1,732.49	1,838.89	68.66 S	482.50 W	747,383.34	1,026,322.50	5.65	487.10	
2,034.00	55.50	266.00	-1,750.16	1,856.56	70.55 S	507.90 W	747,381.45	1,026,297.10	2.09	512.56	
2,065.00	56.00	265.50	-1,767.61	1,874.01	72.45 S	533.45 W	747,379.55	1,026,271.55	2.09	538.17	
2,096.00	56.00	265.50	-1,784.94	1,891.34	74.46 S	559.07 W	747,377.54	1,026,245.93	0.00	563.85	
2,127.00	56.00	265.00	-1,802.28	1,908.68	76.59 S	584.68 W	747,375.41	1,026,220.32	1.34	589.55	
2,158.00	56.00	265.50	-1,819.61	1,926.01	78.72 S	610.30 W	747,373.28	1,026,194.70	1.34	615.24	
2,189.00	56.00	265.00	-1,836.95	1,943.35	80.85 S	635.81 W	747,371.15	1,026,168.09	1.34	640.93	
2,220.00	56.00	265.00	-1,854.28	1,960.68	83.09 S	661.51 W	747,368.91	1,026,143.49	0.00	668.62	
2,251.00	55.25	265.00	-1,871.78	1,979.19	85.32 S	687.00 W	747,366.68	1,026,118.00	2.42	692.20	
2,282.00	55.00	265.00	-1,889.51	1,995.91	87.53 S	712.33 W	747,364.47	1,026,092.67	0.81	717.63	
2,313.00	54.75	265.50	-1,907.35	2,013.75	89.63 S	737.60 W	747,362.37	1,026,067.40	1.55	742.97	
2,338.00	54.00	265.50	-1,921.81	2,028.31	91.23 S	757.86 W	747,360.77	1,026,047.14	3.00	763.29	
2,508.00	53.75	263.50	-2,022.14	2,128.64	104.38 S	894.53 W	747,347.62	1,025,910.47	0.96	900.58	

HALLIBURTON

Plan Report for A14 - RD1 - Plan 5 (21-May-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
2,694.00	53.25	263.50	-2,132.78	2,239.18	121.31 S	1,043.09 W	747,330.69	1,025,761.91	0.27	1,050.09	
2,865.00	52.50	264.50	-2,235.99	2,342.39	135.57 S	1,178.68 W	747,316.43	1,025,626.32	0.64	1,186.43	
3,080.00	51.75	264.50	-2,367.98	2,474.38	151.83 S	1,347.61 W	747,300.17	1,025,457.39	0.35	1,356.12	
3,294.00	51.00	263.50	-2,501.57	2,607.97	169.30 S	1,513.87 W	747,282.70	1,025,291.13	0.51	1,523.31	
3,510.00	50.50	263.50	-2,638.23	2,744.63	188.23 S	1,680.07 W	747,263.77	1,025,124.93	0.23	1,690.57	
3,760.00	50.00	264.50	-2,798.09	2,904.49	208.33 S	1,871.22 W	747,243.67	1,024,933.78	0.37	1,882.78	
4,001.00	49.75	263.50	-2,953.41	3,059.81	227.59 S	2,054.48 W	747,224.41	1,024,750.52	0.33	2,067.05	
4,185.00	50.25	265.00	-3,071.69	3,178.09	241.71 S	2,194.72 W	747,210.29	1,024,610.28	0.68	2,207.99	
4,430.00	50.25	264.00	-3,228.35	3,334.75	259.76 S	2,382.21 W	747,192.24	1,024,422.78	0.31	2,386.33	
4,645.00	50.50	264.50	-3,365.47	3,471.87	276.35 S	2,546.98 W	747,175.65	1,024,258.02	0.21	2,561.83	
4,861.00	50.00	265.50	-3,503.59	3,609.99	290.83 S	2,712.41 W	747,161.17	1,024,092.59	0.42	2,727.95	
5,074.00	50.00	263.50	-3,640.51	3,746.91	306.46 S	2,874.81 W	747,145.54	1,023,930.19	0.72	2,891.09	
5,291.00	50.25	264.00	-3,779.63	3,886.03	324.59 S	3,040.36 W	747,127.41	1,023,764.84	0.21	3,057.63	
5,506.00	49.75	262.50	-3,917.84	4,024.24	343.94 S	3,203.91 W	747,108.06	1,023,601.09	0.58	3,222.31	
5,722.00	50.50	264.50	-4,056.33	4,162.73	362.69 S	3,368.60 W	747,089.31	1,023,436.40	0.79	3,388.06	
5,936.00	51.25	264.50	-4,191.36	4,297.76	378.60 S	3,533.85 W	747,073.40	1,023,271.15	0.35	3,554.06	
6,111.00	51.25	264.50	-4,300.90	4,407.30	391.68 S	3,669.70 W	747,060.32	1,023,135.30	0.00	3,680.53	
6,327.00	50.00	265.50	-4,437.93	4,544.33	406.25 S	3,836.02 W	747,045.75	1,022,968.98	0.68	3,857.45	
6,546.00	50.50	265.50	-4,577.96	4,684.36	419.46 S	4,003.88 W	747,032.54	1,022,801.12	0.23	4,025.75	
6,758.00	51.25	265.50	-4,711.74	4,818.14	432.36 S	4,167.84 W	747,019.64	1,022,637.16	0.35	4,180.14	
6,943.00	46.00	264.50	-4,833.88	4,940.38	444.41 S	4,306.08 W	747,007.59	1,022,498.92	2.87	4,328.88	
7,126.00	41.00	264.50	-4,966.88	5,073.08	456.48 S	4,431.43 W	746,995.52	1,022,373.57	2.73	4,454.79	
7,310.00	36.00	263.50	-5,110.64	5,217.04	468.38 S	4,545.31 W	746,983.61	1,022,259.69	2.74	4,569.30	
7,494.00	32.00	263.00	-5,263.15	5,369.55	480.46 S	4,647.47 W	746,971.54	1,022,157.53	2.18	4,672.16	
7,677.00	27.50	262.50	-5,421.99	5,528.39	491.89 S	4,737.54 W	746,960.11	1,022,067.46	2.46	4,762.93	
7,855.00	26.50	262.50	-5,580.58	5,686.98	502.44 S	4,817.65 W	746,949.56	1,021,987.35	0.56	4,843.72	
8,030.00	25.75	262.50	-5,737.70	5,844.10	512.50 S	4,894.05 W	746,939.50	1,021,910.95	0.43	4,920.76	
8,252.00	24.50	262.50	-5,938.70	6,045.10	524.80 S	4,987.50 W	746,927.20	1,021,817.50	0.56	5,015.00	
8,466.00	22.25	260.50	-6,135.12	6,241.52	537.28 S	5,071.47 W	746,914.72	1,021,733.53	1.11	5,099.82	
8,681.00	20.25	260.50	-6,335.49	6,441.89	550.14 S	5,148.32 W	746,901.86	1,021,656.68	0.93	5,177.61	
8,893.00	18.50	259.50	-6,535.48	6,641.88	562.33 S	5,217.58 W	746,889.67	1,021,587.42	0.84	5,247.79	
9,109.00	16.75	258.50	-6,741.33	6,847.73	574.78 S	5,281.78 W	746,877.22	1,021,523.22	0.82	5,312.96	
9,325.00	14.75	256.50	-6,949.22	7,055.62	587.40 S	5,339.03 W	746,864.60	1,021,465.97	0.96	5,371.24	
9,518.00	12.50	254.50	-7,136.77	7,243.17	598.72 S	5,383.05 W	746,853.28	1,021,421.95	1.18	5,416.23	
9,700.00	12.30	249.45	-7,314.53	7,420.93	610.79 S	5,420.18 W	746,841.21	1,021,384.82	0.61	5,454.46	Start DLS 5.00 TFO 39.74
9,800.00	16.45	260.80	-7,411.40	7,517.80	616.80 S	5,444.15 W	746,835.20	1,021,360.85	5.00	5,478.84	
9,902.63	21.09	267.66	-7,508.55	7,614.95	619.88 S	5,476.98 W	746,832.12	1,021,328.02	5.00	5,511.90	Start 848.28 hold at 9902.63 MD
10,000.00	21.09	267.66	-7,599.40	7,705.80	621.31 S	5,511.99 W	746,830.69	1,021,293.01	0.00	5,546.87	
10,100.00	21.09	267.66	-7,692.70	7,799.10	622.78 S	5,547.95 W	746,829.22	1,021,257.05	0.00	5,582.77	

HALLIBURTON

Plan Report for A14 - RD1 - Plan 5 (21-May-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/1000ft)	Vertical Section (ft)	Comments
10,200.00	21.09	267.66	-7,786.00	7,892.40	624.25 S	5,563.91 W	746,827.75	1,021,221.09	0.00	5,618.68	
10,300.00	21.09	267.66	-7,879.30	7,985.70	625.72 S	5,618.87 W	746,826.28	1,021,185.13	0.00	5,654.59	
10,400.00	21.09	267.66	-7,972.59	8,078.99	627.19 S	5,555.83 W	746,824.81	1,021,149.17	0.00	5,690.49	
10,500.00	21.09	267.66	-8,065.89	8,172.29	628.67 S	5,591.79 W	746,823.33	1,021,113.21	0.00	5,726.40	
10,600.00	21.09	267.66	-8,159.19	8,265.59	630.14 S	5,727.75 W	746,821.86	1,021,077.25	0.00	5,762.31	
10,700.00	21.09	267.66	-8,252.49	8,358.89	631.61 S	5,763.71 W	746,820.39	1,021,041.29	0.00	5,798.22	
10,750.92	21.09	267.66	-8,300.00	8,406.40	632.35 S	5,782.02 W	746,819.65	1,021,022.98	0.00	5,816.50	TD at 10750.92 - A14RD T2

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
9,700.00	7,420.93	-610.79	-5,420.18	Start DLS 5.00 TFO 39.74
9,902.63	7,614.95	-619.88	-5,476.98	Start 848.29 hold at 9902.63 MD
10,750.92	8,406.40	-632.35	-5,782.02	TD at 10750.92

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	263.76	Spot	0.00	0.00	0.00

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Eastings (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
A14RD T2	0.00	0.00	8,406.40	-632.35	-5,782.02	746,819.65	1,021,022.98	34 177384	-119.466879
- plan hits target									
- Circle (radius 50.00)									

HALLIBURTON

North Reference Sheet for Santa Clara Unit - A14 - RD1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference
Vertical Depths are relative to RKB @ 106 40ft (Original Well Elev) Northing and Easting are relative to A14

Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -116.250000°, Longitude Origin 0 000000°, Latitude Origin 33.883333°

False Easting 2,000,000.00ft, False Northing 0 00ft, Scale Reduction 1 00006292

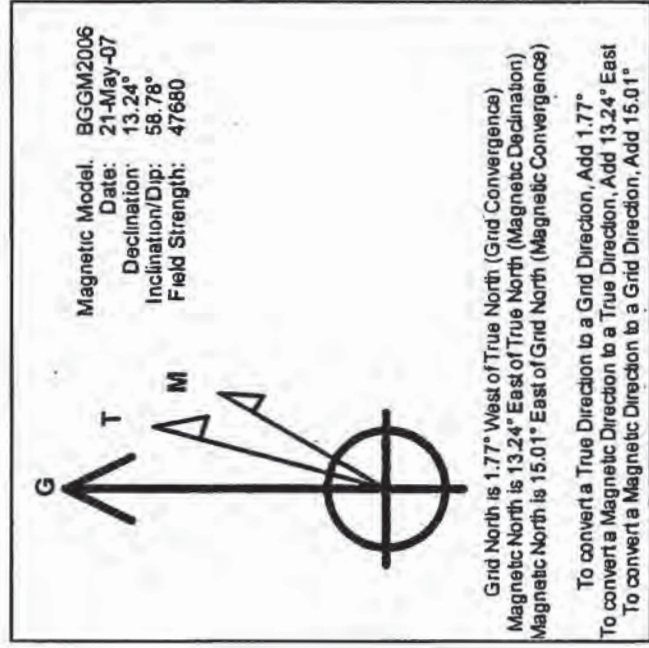
Grid Coordinates of Well 747,452 00 ft N, 1,026,805 00 ft E

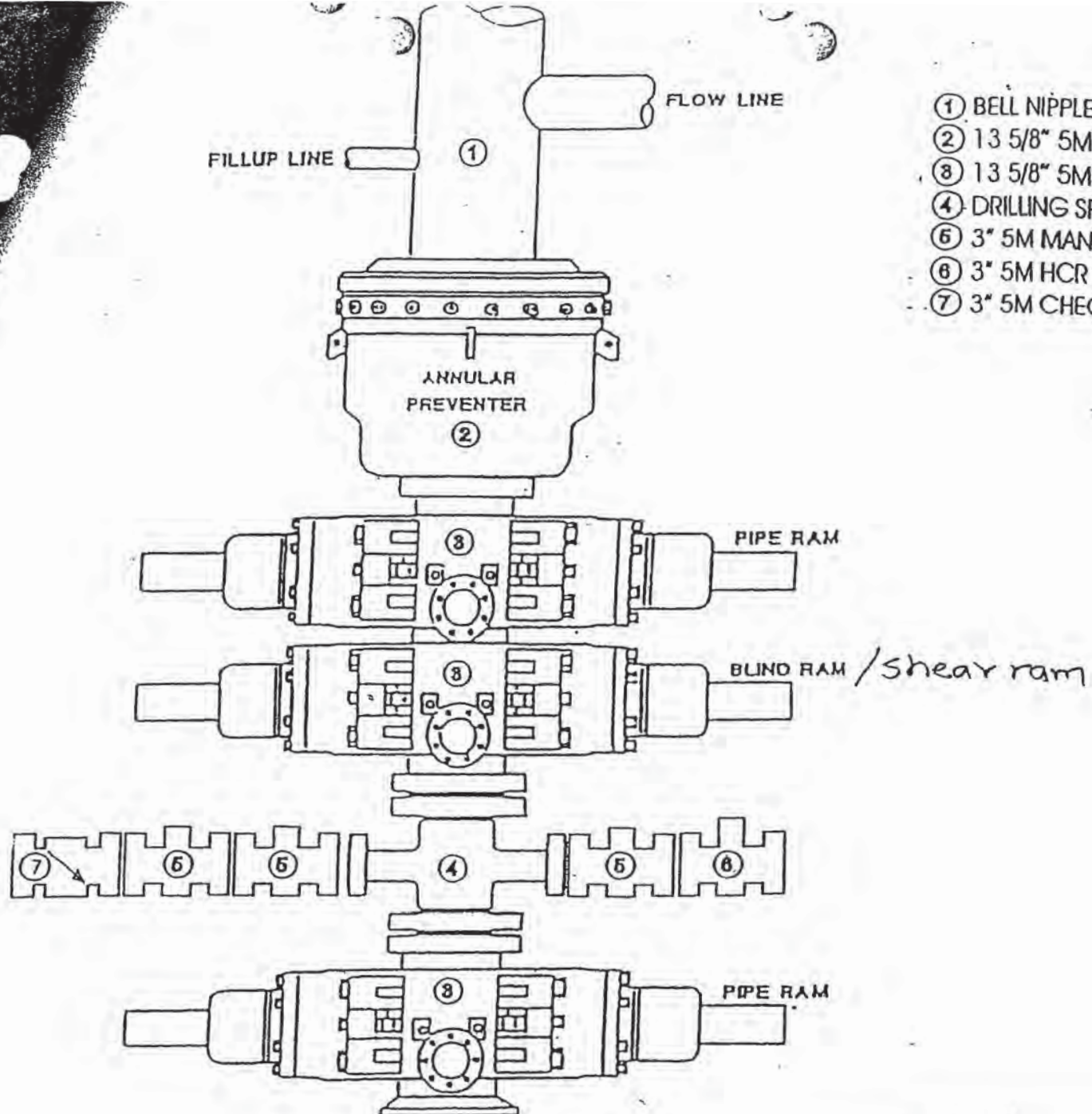
Geographical Coordinates of Well 34° 10' 46.60" N, 119° 28' 04.22" W

Grid Convergence at Surface is -1.77°

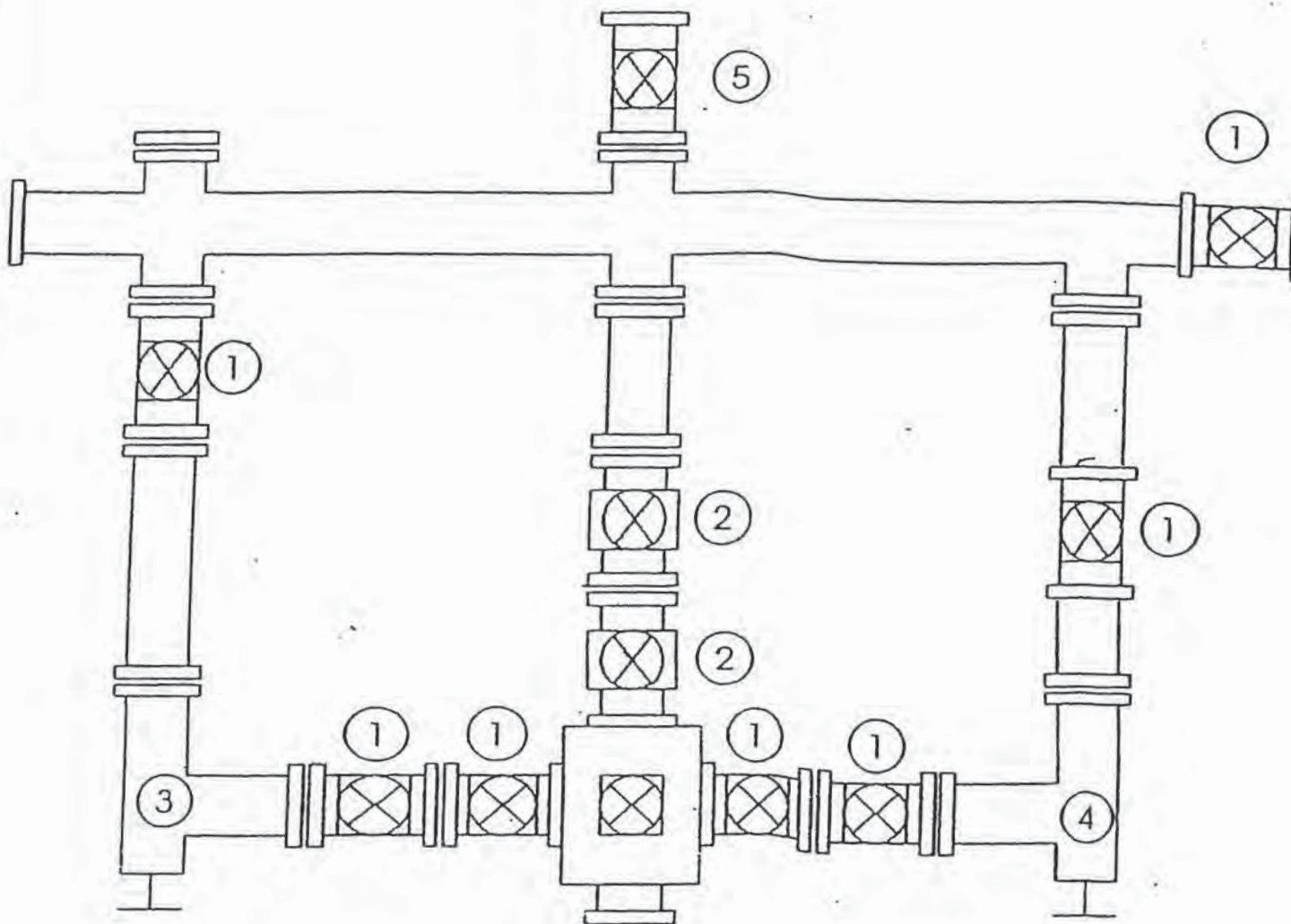
Based upon Minimum Curvature type calculations, at a Measured Depth of 10,750 92ft
the Bottom Hole Displacement is 5,816 50ft in the Direction of 263.76° (Grid)

Magnetic Convergence at surface is -15.01° (21 May 2007, BGGM2006)





BLOWOUT PREVENTION SYSTEM PLATFORM G. RACE (PROPOSED)

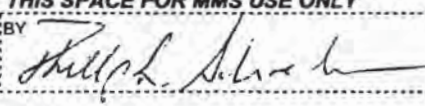


- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD
PLATFORM G.RACE
(PROPOSED)

Application for Permit to Drill (APD)

1 PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2 MMS OPERATOR NO 02309	3 OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc. 6267 Carpinteria Ave. Suite 100 Carpinteria CA 93013	
4 WELL NAME (CURRENT) A-18	5 SIDETRACK NO (CURRENT) 0	6 BYPASS NO (CURRENT)		
7 PROPOSED START DATE Sept 15, 2007	8 PLAN CONTROL NO (NEW WELL ONLY)			
9 API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112047000				
10 ☐ Revision	11 If revision, please list changes			
WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE		
12 LEASE NO P-0217		17 LEASE NO P0217		
13 AREA NAME 6B		18 AREA NAME 6B		
14 BLOCK NO 4862		19 BLOCK NO 4862		
15 LATITUDE (☐ NAD 83 / ☒ NAD 27) X=1019920		16 LONGITUDE (☐ NAD 83 / ☒ NAD 27) Y=747424		20 LATITUDE (☐ NAD 83 / ☒ NAD 27) X=1026812
				21 LONGITUDE (☐ NAD 83 / ☒ NAD 27) Y=747452
LIST OF SIGNIFICANT MARKERS ANTICIPATED				
22 NAME M2	23 TOP (MD) 10870	24 TOP (TVD) 7415	22 NAME	23 TOP (MD) 24 TOP (TVD)
M3	11245	7786		
25 LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250 414(b) through (g) or 30 CFR 250 1617 (c) and (d), as appropriate) well prognosis, schematic, surface plat, structure map, mud weight curve, directional plot and plan, BOP diagram, mud program, Form 123S				
26 CONTACT NAME DANA BILLINGS		27 CONTACT TELEPHONE NO 805-745-2134	28 CONTACT E-MAIL ADDRESS dbillings@venoco.com	
29 AUTHORIZING OFFICIAL (Type or print name) Greg Schrage		30 TITLE VP Asset Development		
31 AUTHORIZING SIGNATURE 		32 DATE July 24, 2007		
THIS SPACE FOR MMS USE ONLY				
APPROVED ☐ With Attached Conditions ☐ Without Conditions		BY 		TITLE District Manager
API WELL NO ASSIGNED TO THIS WELL 043112047001		DATE AUG 23 2007		

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain	☐ YES ☒ NO ☐ N/A	Follow Field Drilling Rules

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet

1. OPERATOR NAME Venoco, Inc.		5. WELL NAME (Proposed) A-18 ST1		6. TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11. WATER DEPTH 318'		12. ELEVATION AT KB 108 4' OKB	
2. API WELL NO (Proposed) (12 Digits) 0431120470-01		3. BOTTOM LEASE NO. (Proposed) P-0217		7. SIDETRACK NO. (Proposed) 01		8. BYPASS NO. (Proposed) 00		13. H ₂ S DESIGNATION ☒ KNOWN ☐ UNKNOWN ☐ ABSENT	
4. TOTAL DEPTH (Proposed) MD 11888' TVD 8408'		8. RIG NAME Venoco Rig No. 11		10. RIG TYPE PF		14. H ₂ S ACTIVATION PLAN DEPTH FT (TVD) 10798' MD / 7345' TVD (Kick off Point)			

15. ENGINEERING DATA

Hole Size (in)	Casing (Indicate if Liner)	Casing Size (in)	Weight (lb/ft)	Burst Rating (psi)	Type of Connection	MABP (psi)	Safety Factors			Top of Liner	Casing Depth (Feet)		Casing Shoe (ppg)				Well-head Rating (psi)	BOP Size (in)	Ratd BOP Working Pressure (psi)				Cement (Feet)	Drilling Fluid Type (Oil Base Water Base Synthetic)
							B	C	T		MD	TVD	PP	MM	FG	Annular Divertor (psi)			Ram (psi)	Casing Test (psi)	MW Used for Test (ppg)	Casing Shoe (ppg)		
exist	Drill Structural	24	125								1474	existing												
exist	Conductor	18 5/8	108 8								1632	Existing												
exist	Surface	13 3/8	72								4855	Existing												
exist	Production	9 5/8	40.43 & 47	8820	BUTT	3000	2.27	98	2.32	Surf	10722				7.71	9.2	NA	3000	13 5/8	5000	3000/250	NA	1978	Existing
exist	Prod Liner	7	28	7240	BUTT	3000	2.41	1.54	5.78	10594	10788				7.71	9.2	12	3000	13 5/8*	5000	3000/250	11	250	Existing
8 5	Std Liner	4	9 5	slot	8rd NU	3000	NA	NA	NA	10550	11888				7.71	9.2	NA	3000	13 5/8*	5000	3000/250	NA		Water

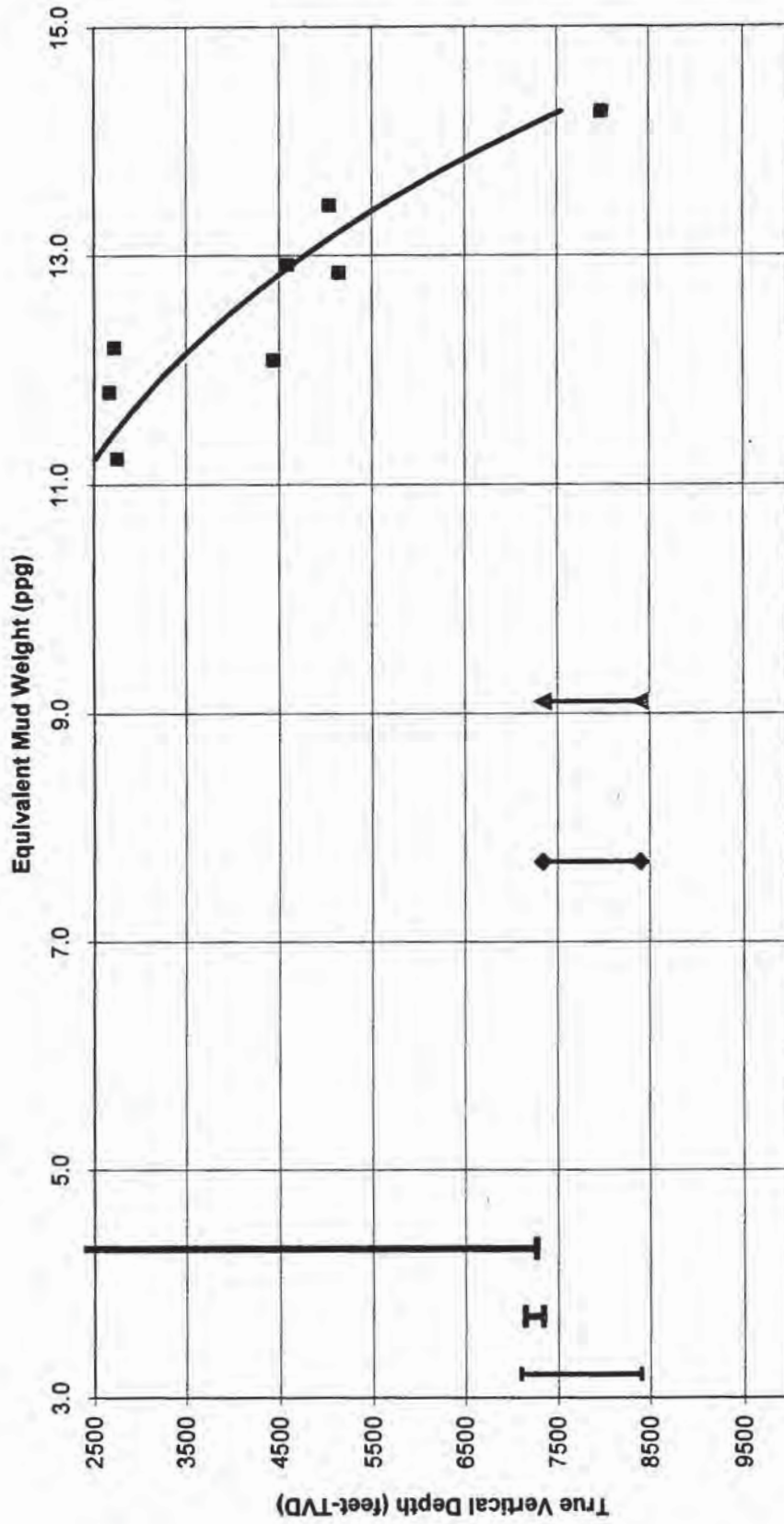
18. CONTACT NAME Dana Billings	17. CONTACT PHONE NO. (805) 745-2139	18. CONTACT E-MAIL ADDRESS dbillings@venoco.com
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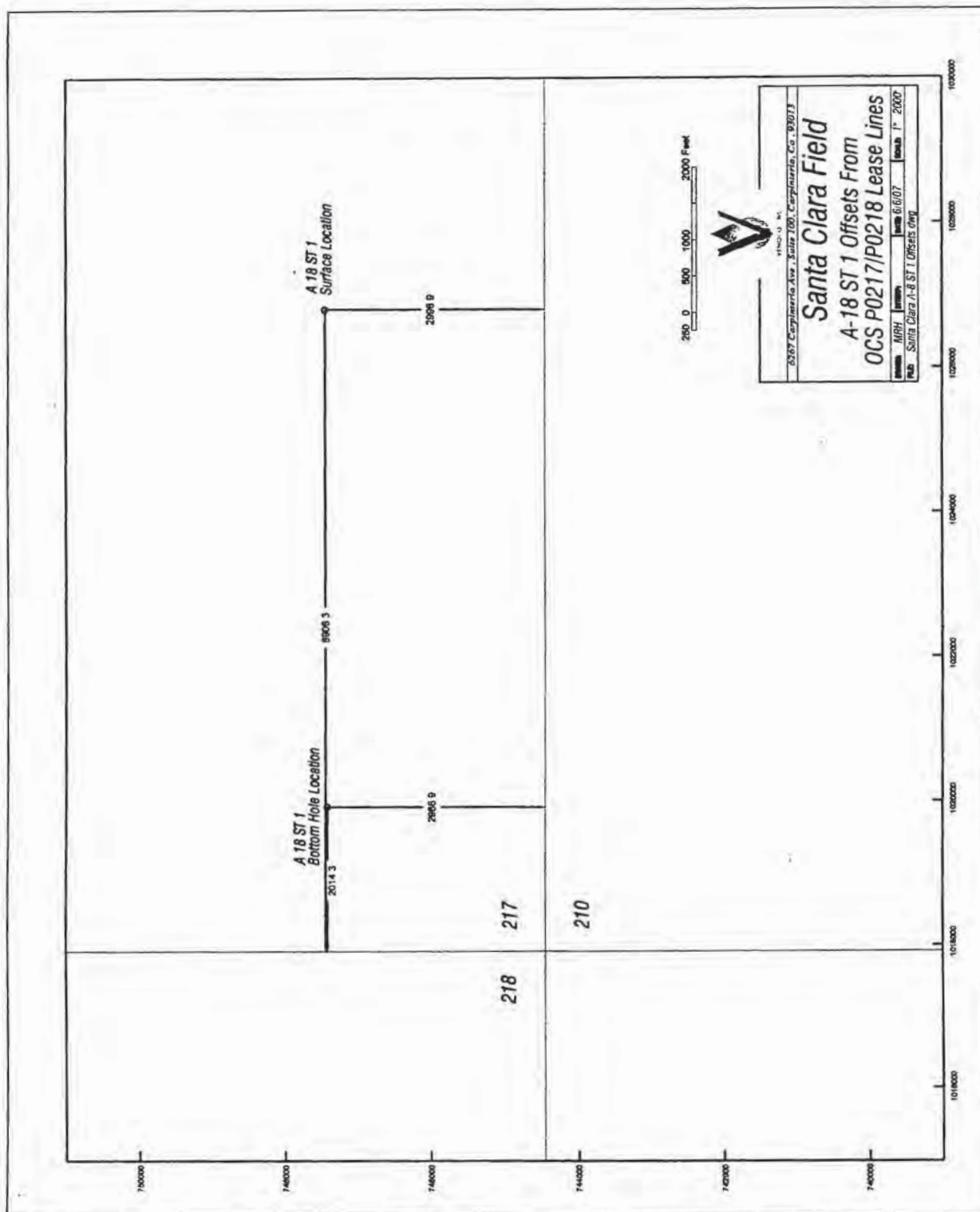
19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more? ☒ YES ☐ NO

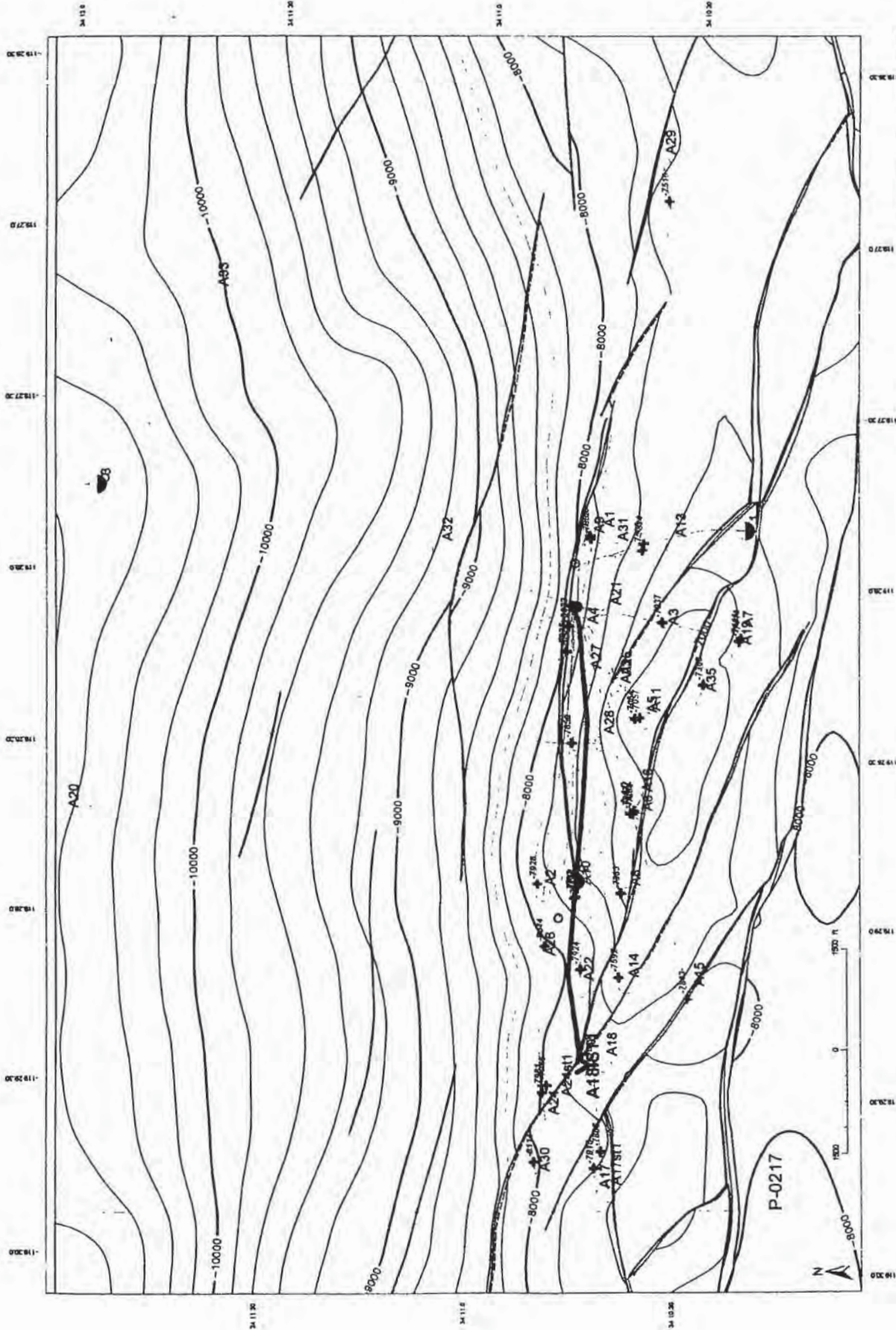
20. REMARKS:

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain well status, well and casing test, and well casing configuration data. MMS uses this information to have accurate data and information on all wells under its jurisdiction and to ensure compliance with approved plans. Responses are necessary (44 U.S.C. 3504). Proprietary data are covered under 30 CFR 250.161. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to be 15 minutes per response, including the time for reviewing instructions, gathering and maintaining the data needed, reviewing existing data, and completing and reviewing the form. Direct comments regarding this burden estimate or any other aspect of this form to the Information Collection Clearance Office, Mail Stop 1220, Bethesda Management Service, 1040 G Street, N.W., Washington, DC 20240.

Platform Grace A-18 ST1 Estimated Pore Pressure, Mud Weight & Fracture Pressure Note: Fracture Pressure data from Platform Gail







 VENOCO INC Grouped Entry Community	Planned A18 ST1 Platform Grace Monterey Zone M3
Date: 1/18/2018 User: [illegible]	Scale: 1 inch = 1000 feet

Title of Map: A18 ST1 Platform Grace	Legend: + A18 ST1 Platform Grace --- A18 ST1 Platform Grace --- A18 ST1 Platform Grace
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VENOCO, INC.
PLATFORM GRACE – SANTA CLARA FIELD
A-18 ST1 PROGRAM
API# 04-311-20470-01
LEASE OCS-P-0217
July 23, 2007 (attach to MMS APD)

Objective: Sidetrack the A-18 well and complete as a production well.

Surface Location: OCS-P-217, Slot M6 (X= 1,026,812' & Y= 747,452')

Elevation: 318' WD, 106.4' (original DF) Above MLLW, 424' Ocean Floor to original DF

Proposed TD: 11,886' MD / 8406' TVD / -8300' SS

TD Location: 28' S and 6892' W or (X = 1,019,920' and Y = 747,424')

Proposed

<u>Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. Fm Press PSI</u>
Santa Margarita	9392	6037	-5930	12 +
KOP	10798	7345	-7238	N/A
M2	10870	7415	-7309	
M3	11245	7786	-7680	<u>3350 psi at 8300' TVD</u>
Total Depth	11886	8406	-8300	

Formation Pressure

Historical pressures from producing wells show a definitive downward trend versus cumulative production and there does not appear to be an active water drive or pressure support for the reservoir. The estimated BHP is 3350 psi at 8300' TVD. The Calculated MASP for shut-in tubing pressure for this well is 2703 psi. The well abandonment in 1997 used seawater as kill fluid.

Existing Casing: (Original Rig Floor depths)

24", 125#, Vetco L	840'	Cmtd w/ 1000 sx
18 5/8", 105.6 K-55 Butt	2422'	Cmtd w/ 2327 cf,
13 3/8", 72# N-80 Butt	6873'	Cmtd w/ 3173 cf

9 5/8", 40,43.5, 47# SS-95 10722' Cmtd w/ 1976 cf through shoe and through holes at 10,705, squeezed shoe, squeezed holes at 10,703, 10,695, 10,693,. Estimate TOC at 10,652 per CBL. Cemented through holes a 6894' with 468 cf, unable to establish circulation to surface. Holes tested to 1500 psi with 12.2 ppg K-lig mud in hole.

7", 26# L-80 butt (Liner) 10594'-11910' Blank and 2" X 30M Slot. Cemented and gravel packed liner, Blank liner 10,594' to 11,163' with , Burns Lead Seal Hanger on top, ECP packer at 11,167, cement port collar 11,163, and gravel pack port collars at 11,200', 11,460', 11,685'. Cemented through cement port collar at 11,167' with 250 cf cement, had good cement returns and clean out cement above liner lap and test to 2000 psi .

9 5/8" Casing Detail

<u>Wt</u>	<u>Interval</u>
40	0'-5285'
43.5	5285'-8781'
47	8781'-10722'

Existing Perforations:

6894'	Squeeze holes
11215-11910'	Selective Milled Slots 2" X 30 Mesh

Plugs

Cement +/- 10481' – 10972' and retainer at 10972'

Pressure Test of Casing

The casing and final cement plug at 10481' (est) were pressure tested to 1000 psi on 1/28/97. The 9 5/8" casing was pressure tested to 1700 psi with 12 ppg mud on 12/3/1981 at initial installation and after remedial squeeze jobs. The 9 5/8" casing and 7" liner lap were tested to 2000 psi with 10.3 ppg mud in hole after remedial squeeze of lap on 12/21/81. The 9 5/8" casing was pressure tested to 1000 psi with 12.2 ppg mud on 6/17/1985 after remedial cement of 9 5/8" casing through holes at 6894'. During this program it is proposed to pressure test the 9 5/8" casing to 3000 psi from above the holes at 6894' and pressure test the casing to 2000 psi from surface to top of cement plug at +/- 10,481'. (The pressure test of squeeze holes at 6894' had equivalent pressure of 2374 psi per the following: holes at 6894'MD/4547' VD. $(12.2 - 8.5) \times .052 \times 4547' = 874 \text{ psi} + 1500 \text{ psi surface pressure} = 2374 \text{ psi}$)

Proposed Casing: (Not adjusted for New Rig Floor depths)

24", 125#, Vetco L	840'	Cmtd w/ 1000 sx
18 5/8", 105.6 K-55 Butt	2422'	Cmtd w/ 2327 cf,
13 3/8", 72# N-80 Butt	6873'	Cmtd w/ 3173 cf
9 5/8", 40, 43.5, 47# SS-95	10722'	Cmtd w/ 1976 cf
7" 26# L-80 Butt liner	10,594'-10798'	Cmtd, KOP @ 10798'
4" 9.5# L-80 Base pipe	10575'-11886'	Dura Grip 316L SS, No Shroud, .016
ga screen made on 4" 9.5# L-80 w/ NU 8rd /Open Hole Gravel Pack		

Junk:

TOF at 10985', consists of +/- 190' of completion equipment not recovered including production packer. Milled bridge plug at 11,885'.

Tubing Kill String Installed in Well:

The 2 7/8" kill string tubing landed at 1554'. Tested the casing and cement plug to 1000 psi and the tubing hanger seals to 3000 psi during temporary abandonment operations January 1997.

Note:

- This well is currently a temporary abandonment.
- Perform rig safety inspections with MMS inspectors as required.
- Hold safety meetings, pit drills and H2S drills as required fully training and familiarizing crews with operating procedures.
- BOPE must be tested every 14 days during the drilling phase and every 7 days during completion phase with all pipe sizes intended for use (except tail pipe)
- Hydrogen Sulfide Considerations:
The Monterey has potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved Platform Grace Hydrogen Sulfide and Sulfur Dioxide Contingency Plan.

Drilling Procedure

1. Move rig to Well A-18 (slot M6). Note and report all pressures: tubing, tubing X casing annulus and all casing X casing annuli. Pressure test the 9 5/8" casing pack-off and the tubing hanger void to 3000 psi per the Cameron procedure to confirm both hanger seals are good. Inspect the lock down pins and repair or replace as required. Follow lock down pin removal procedure developed for Platform Gail, as required. Replace the tubing head valves per Cameron procedure.
2. Rig up on the dry hole tree with a circulating head and full opening safety valve. Install manual choke on the casing head valve. Pressure test valves and lines to 3000 psi. Circulate the well clean with seawater from the kill string tail depth 1554' down the tubing and taking returns through the tubing head valves. There may be residual amounts of oil or gas from the P&A operations. Circulate the well to the refurbished V-5 clean up tank as required. Coordinate with production to monitor pressures and rates. Take clean seawater returns back to the mud pits. Pressure test the casing to 1000 psi against the cement plug. (Note: Casing was pressure test to 1000 psi during the temporary abandonment in 1997.) There will be no discharge of fluids overboard during these operations. Isolate dirty fluids circulated from well into production tanks.
3. Set back pressure valve in tubing hanger. Nipple up BOP equipped with a minimum of 3-ram preventer and an annular. The BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing, 3 1/2" tubing and 5" drill pipe – the sizes to be used for drilling, workover and completion operations. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 14 days during the drilling phase and every 7 days during the completion phase of the operations. H2S and LEL detection equipment to be installed and tested as per H2S Contingency Plan, MMS regulations and Venoco Policy. PVT equipment with pump stroke counters and ROP option to be installed. BOPE drills to be performed prior to commencement of operations and each tour using alternate remote stations. Record all drills and the MMS required tracking information in IADC book. Prior to rig commencing work, and if required, MMS and Venoco Inc. shall perform a rig and equipment inspection.
4. Remove BPV, unland hanger. Pull out of the hole and lay down 2 7/8" tubing kill string.
5. Run in hole with 8 1/2" bit and scraper while picking up and drifting the 5" drill pipe. RIH to top of cement plug, reported at 10481' theoretical. Circulate well clean with seawater. There may

be residual amounts of oil or gas from the P&A operations. Circulate the well to the refurbished V-5 clean up tank as required. Co-ordinate with production to monitor pressures and rates. Take clean returns back the mud pits. There will be no discharge of fluids overboard during these operations. Isolate dirty fluids circulated from well into production tanks.

6. Pressure test casing to 2000 psi for 30 minutes and record on chart. Burst pressure for 9 5/8" 40# 95ksi casing is 6820 psi for new. Pull out of the hole with the clean out assembly.
7. Run in hole and set retrievable bridge plug near 6800' and above squeeze holes at 6894'. With seawater in the hole, pressure test casing from 6800' to surface to 3000 psi for 15 minutes and record on chart. Burst pressure for 9 5/8" 40# 95ksi casing is 6820 psi for new. Pull out of hole with running tool.
8. Nipple down BOPE. Install Cameron 13 5/8" 5000 psi Gray-Loc Hub X 11" 3000 psi tubing head adapter. Install Cameron 13 5/8" 5000 psi Gray-Loc Hub X 11" 3000 psi tubing head adapter and isolation sleeve.. Nipple up BOPE and body pressure test the BOP and new adapter head to 250/3000 psi against the bridge plug. Run in hole and recover bridge plug from near 6800'.
9. M/U 8 1/2" bit with clean out assembly and RIH. Clean out cement in 9 5/8" casing from 10481' to TOL at 10594' with seawater and gel sweeps and circulate hole clean. Pull out of hole with 8 1/2" clean out assembly. Document exact depth for top of liner and use to correlate drill out depth to 10800'.
10. Make up and RIH with 6 1/8" bit with clean out assembly while pick up and drift the 3 1/2" drill pipe. Clean out cement in 7" liner from top of 7" liner' to 10800' MD with seawater and gel sweeps and circulate hole clean. Top of liner is reported at 10594' per driller depths. Reference off the tag of the liner top and clean out to 9' above the top of joint #7 as listed in table below. Plan is to clean out 224 lineal feet below the top of liner and use the cement plug to set the whipstock assembly. Circulate clean and make sure there is no fill. Circulate and condition fluid for milling operations to 9.2 ppg milling fluid. Isolate dirty fluids circulated from well into production tanks. Pull out of hole. Cement cuttings to be sent in for onshore disposal.

7" Liner Depths from Hanger to KOP from NL McCullough Bond Log dated 12/19&20/81:

Item	Length (from bond log)	Top (from bond log)
Liner Hanger	6'	10576.5
Joint #1	36.5'	
Joint #2	38.5'	
Joint #3	37.5'	
Joint #4	39'	
Joint #5	37'	
Joint #6	38'	10771'
Joint #7	38'	10809'

11. Pick up 7" 26# positive casing scraper and watermelon mill with 6 1/8" bit and RIH. Scrape and drift the 7" casing to estimated clean out depth of 10800'. Circulate clean and make sure

there is no fill. Circulate and condition fluid for milling operations to 9.2 ppg as needed. POH.

12. M/U Baker 7" casing 1-trip whipstock with bottom trip anchor, window mill, lower watermelon mill and upper watermelon mill, bumper sub, MWD, and RIH to above cement drill out depth estimated to be 10800'.
13. Using MWD measurements orient whipstock to high side as per Directional Drillers. Set the whipstock on the cement plug at 10800', so the window is not milled across a casing collar, and shear the tools off the whipstock face. Condition the mud in the hole to higher viscosity for milling the window and carry the metal cuttings out of the hole.
14. Mill and open window drilling 15' – 18' below the bottom of ramp, as per whipstock service company and directional service company. Mill and dress the window as required obtaining good exit point for sidetrack. Drill enough rathole to pass all mills through the window. Mills must smoothly pass through the window before finalizing milling operations. Re-designate well as A-18 ST1. Notify MMS as required in the permit conditions. POH with window mill assembly. Prior to drilling out window have Epoch mud loggers rigged for samples as per Formation Evaluation Program.
15. Change over well to MI FloThru mud system. Use spacers as recommended by MI. Isolate returns for dumping or onshore disposal. Pull out of hole.
16. Make up 6 1/8" bit on a steerable directional drilling assembly including MWD/GR. Run in the hole to and sidetrack the well. Directional drill and survey a 8 1/2" hole from KOP of 10,798' to 10848'. Perform a Formation Integrity Test to 11.0 ppg EMW.
17. Directional drill 6 1/8" hole from 10,848' to the total depth of 11886' MD / 8406' TVD. The 6 1/8" hole will be drilled with MI Flo Thru System mixed with seawater. Follow Directional plan - Halliburton Plan A18-ST1-Plan 3 (19-Mar-07). Run solids control equipment and dilute and treat the MI FloThru System to maintain programmed specifications. Prior to drilling ahead have Epoch mud loggers rigged up and ready for samples as per Formation Evaluation Program. Follow requirements set out for NPDES compliance. Plan to catch and expedite mud sample for toxicity testing at 80% depth
18. Circulate and condition the mud for open hole logs. Wipe the hole to the 7" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
19. Rig up wire line and run open hole logs (see attached logging program). Condition the hole if necessary between runs. During log run and as recommended by MI mud engineer condition mud in pits by running solids control equipment and lowering solids in preparation for changeover of well.

Log Run #1 PEX/Spectral GR/CMR
Log Run #2 FMI/GR/Pressure Xpress

20. Make up Baker Oil Tools 6 1/8" X 8 1/2" hole opener with KM tool body and Bear Claw PDC cutters. Run and open 6 1/8" hole to 8 1/2" hole from 10798' to 11886'. Run solids control equipment and dilute and treat the MI FloThru System to maintain programmed

specifications.

21. Rig up Schlumberger and run 4-arm caliper log.
22. Make additional under reamer run or make run with 6 1/8" hole opener to TD. Once hole opening is complete run in hole to TD. Make up a clean solids free FLO-THRU and spot in the open hole and 200 ft. up into the casing. Pick up 200 ft. into the casing and change the upper hole over to clean seawater. This change over is in preparation for running of wire wrap screen and open hole gravel pack.
23. A detailed program to run Wire Wrap Screen and perform open hole gravel pack will be provided. A general completion procedure is listed below.

GENERAL COMPLETION PROCEDURE

For completion operations the BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing, 3 1/2" DP and 5" dp all other pipe sizes to be used for completion operations, except 2 3/8" GP tail pipe. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 7 days during the completion phase of the operations.

1. Make up liner assembly consisting of:
 - ~4' 4" Circulating Shoe with open hole centralizer
 - ~1100' 4" Dura Grip 316L SS, No Shroud, .016 ga screen made on 4" 9.5# L-80 w/ NU 8rd
 - ~150' 4" Slot Pipe
 - ~40' 4" Blank Pipe
 - ~35 9 5/8" Baker SC-2 Gravel Pack Packer with Sliding Sleeve, and crossover tool
 - ~1280' 2 3/8" flush joint tail pipe and polished stinger for circulating shoe (to be run inside WWS – rental from Baker Gravel Pack)

Note: Centralize with one Weatherford centralizer per joint over the coupling. Centralize circulating shoe, WWS and blank pipe. Minimize the use of pipe dope. Apply to pin end only.
2. Run in with liner assembly as above on work string to desired depth.
3. Rig up pumping equipment and lines. Casing was pressure tested to 3000 psi. Conduct safety meeting. Test lines to 4000 psi. Drop ball. Set and test gravel pack tools per Baker Tool Specialist direction. Blow ball seat and release crossover tool.
4. Using clean filtered brine, establish and record pump rate and pressure in reverse position. Establish and record pump rate and pressure in circulating positions. Using clean brine circulate the viscous pill from open hole/WWS annulus into the work string casing annulus. Release tail pipe from the circulating shoe and place the crossover tool into the upper circulating position.
5. Gravel Pack well with 16-30 Low-Fine Ottawa gravel using Baker Gravel Infuser System. Typical pump rates are 4-5 bpm. Once ~10-20 barrels of slurry have cleared the crossover tool you may increase sand loading to maximum of 2 PPG as conditions allow. Continue pumping at this rate and concentration until wellhead pressure begins increasing. Pump rate should be reduced accordingly as well head pressure increases. Once pressure reaches 500 PSI over initial circulating pressure is achieved stop pumps. DO NOT RESTRESS PACK at this time.
6. Close annular BOP and apply 500 PSI to the annulus. Place the crossover tool in the reverse position. Reverse out excess gravel until returns are clean. Monitor and determine the volume of gravel reversed out.
7. To test the gravel pack, lower crossover tool into the circulating position. Circulate at sand out rate and attempt to achieve sand out pressure established earlier. If same sand out pressure cannot be achieved, mix and pump additional amounts of gravel recommended by pump specialist. Repeat this step until final sand out occurs. POOH with service tools.
8. Rig up spoolers and run Electric Submersible Pump on 2 7/8" tubing.
9. Install BPV, nipple down BOP and install production tree. Test void and tree to 3000 psi. Install flow lines.

EVALUATION PROGRAM

Mudlogging Program:

Begin Mudlogging upon exiting original A-18 7" casing window, dry cuttings only.

Testing Program:

None expected.

Open Hole Logging program

LWD: None (**MWD/GR only**)

Wireline Logs:

- PEX (high res mode) w/ Spectral GR
- FMI/GR/Pressure Xpress

Logging geologist: Dale Kunitomi 805-987-3026

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

Drilling Fluids Program

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Clean out casing and mill window	Gel - water	9.0-9.2	NC	9-10	20-30	+9-10 K
10798'-11886'	Flo Thru	9.0- 9.2	5-7	<u>8-9</u> <u>(see note below)</u>	14-28	29-32K

Clean out and Mill: The fluid system used for the clean out operations will be gel based. The products used for this interval are approved for offshore Region 9. The mud system and cuttings can be dumped overboard if all the environmental tests are negative. The low shear rate viscosity will be raised as necessary to transport metal cuttings out of the. Add soda ash to control total hardness and caustic soda to control the pH.

10798' - 11886': Change over the hole to a FLO-THRU system as outlined below. Ship the milling fluid to shore or dump as instructed. It is recommended that enough mud has been mixed prior to drilling this section in order to perform the dump and dilute process while drilling. Drill 6 1/8" hole to TD , run Logs, open hole from 6 1/8" to 8 1/2" and run WWS liner

Notes:

- Current field drilling rules allow for ph range of 9-10. Venoco proposes to run the drilling fluid system with ph 8-9. The natural alkalinity of the formations causes the pH to run in the 8-9 range. The mud system utilizes soda ash to combine with the calcium in the seawater to form caustic soda which raises the pH to 9.0-9.5. The pH falls to the 8.5 - 8.8 range while drilling. This method and the ph range of 8-9 have proven to successfully support drilling of wells offshore California.
- Operate solids control equipment as per MI recommendation to maintain drill solids as low as possible without stripping out the necessary components.
- Maintain supply of H2S scavenger onboard to treat out H2S.
- A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised a minimum of 0.5 ppg using +/-1450 bbl total circulating volume (850 bbls in hole at TD & 600 bbl active system).

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

Maximum Anticipated Surface Pressure

	<i>Grace Specific Form - Calculations have been customized</i>	Production Casing	7" Mill window	TD
1	Casing Size (in)	9-5/8	7" liner	4" liner
2	Setting Depth (feet - TVD)	7269	7345	8406
3	Expected Leak Off Test EMW at shoe (ppg)	12	12	12
4	Expected Mud Weight (ppg)	9.2	9.2	9.2
5	Depth of next Casing (feet - TVD) use TD for all	8406	8406	8406
6	Maximum Expected Formation Pressure (psi) @8350' TVD	3350	3350	3350
7	Expected gas gradient (psi/ft)	0.077	0.077	0.077
8	Formation Equivalent Mud Weight (ppg)	7.71	7.71	7.71
	Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	2703	2703	2703
10	Fracture Gradient at shoe (psi/ft)	0.62	0.62	0.62
11	Fracture Pressure at shoe (psi)	4536	4583	5245
12	Surface pressure to break down shoe (psi)	3976	4018	4598
13	Maximum Anticipated Surface Pressure (psi)	2703	2703	2703
	Max Pressures using 70% Gas & 30% Produced Fluids			
14	Maximum Anticipated Surface Pressure (psi) (SteveH Calc)	2236	2236	2236

Notes:

- These are well specific inputs developed from detailed analysis by Reservoir Engineer
- Producing GOR declined from 5000 scf/BO in early 1981 to less than 900 in 1996, when field was shut in
- Almost all produced gas is associated gas and it is very unlikely a well would have 100% gas column
- Historical pressures from producing wells show a definitive downward trend versus cumulative production and there does not appear to be an active water drive or pressure support for the reservoir
- Formation Gradient based upon 3350 psi at 8300 ft TVD

Mud Weight and Fracture Gradient

1	Casing Size (in)	9-5/8	7	5
2	Setting Depth (feet - TVD)	7269	7345	8406
3	Programmed FIT EMW at shoe (ppg)	11	11	11
4	Depth of next Casing (feet - TVD)	8406	8406	8406
5	Maximum Expected Formation Pressure (psi)	3350	3350	3350
6	Expected Mud Weight (ppg)	9.2	9.2	9.2
7	Formation Equivalent Mud Weight (ppg)	7.71	7.71	7.71
8	Expected Hydrostatic Pressure at TD (psi)	4021	4021	4021
9	Amount of Overbalance at TD (psi)	671	671	671
10	Fracture Gradient at shoe (psi/ft)	0.57	0.57	0.57
11	Fracture Pressure at shoe (psi)	4158	4201	4808
12	Hydrostatic Pressure at shoe (psi)	3477	3514	4021
13	Margin between Mud Weight and LOT (psi)	680	687	787

Casing Design

	Production Casing	Exist Liner	Slotted Wire Wrap Screen
Hole Section	12.25	8.5	8.5
Mud Weight	9.2	9.2	9.2
Buoyancy Factor	0.860	0.860	0.860
MASP (psi) Based on wellhead rating	3000	3000	3000
Gas Lift Pressure (psi)	0	0	0
Casing Size (in)	9-5/8*	7	4
Setting Depth, MD (ft)	10722	10798	11886
Setting Depth, TVD (ft)	7269	7345	8406
Top of Casing, MD (ft)	0	10594	10550
Weight (lb/ft)	40	26	9.5
Grade	SS-95	L-80	L-80
Threads	BUTT	BUTT	10rd NU
ID (in)	8.835	6.276	3.548
Drift diameter (in)	8.599	6.151	3.423
Collapse (psi)	3330	5410	Slot Liner
Burst (psi)	6820	7240	Slot Liner
Joint Strength (kips)	1088	604	Slot Liner
Body Strength (kips)	1088	604	Slot Liner
Collapse Safety Factor	0.96	1.54	NA
Burst Safety Factor	2.27	2.41	NA
Tensile Safety Factor	2.32	5.78	NA

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

Vertical to 1140'
 Max Angle 64 deg @ 6200' MD
 Original D F Elevation 106'
 D F. to Tubing Head
 Water Depth 318'
 Tree 3 1/2" 3M psi Cameron

SANTA CLARA FIELD **WELL A-18 ST1** Lease: OCS-P-0217 Proposed Production Well

07/10/07

Completion Date

Short String Description	ID	LENGTH	DEPTH
KB		50.00	0
Tbg Hanger		1.00	50.00
3 1/2" Pin X 2 7/8" 6 5# L-80 EUE 8rd XO		1.00	51.00
2 7/8" pup with full strength coupling as above		4.00	52.00
2 7/8" tubing as above		500.00	56.00
2 7/8" pup as above		4.00	556.00
2 7/8" TE-5 TRSSS Valve		6.00	560.00
2 7/8" pup as above		4.00	566.00
2 7/8" pup as above		4.00	570.00
9 5/8" Baker Twin Seal Hydraulic Packer		10.00	574.00
2 7/8" pup as above		4.00	584.00
2 7/8" tubing as above		9800.00	588.00
2 7/8" BXXN nipple		1.00	10388.00
2 7/8" tubing as above		31.00	10389.00
2 7/8" pup as above		4.00	10420.00
ESP Pump		12.00	10424.00
ESP Intake		6.00	10436.00
ESP Seal		15.00	10442.00
ESP Motor		22.00	10457.00
ESP Sensor		5.00	10479.00
			10484.00

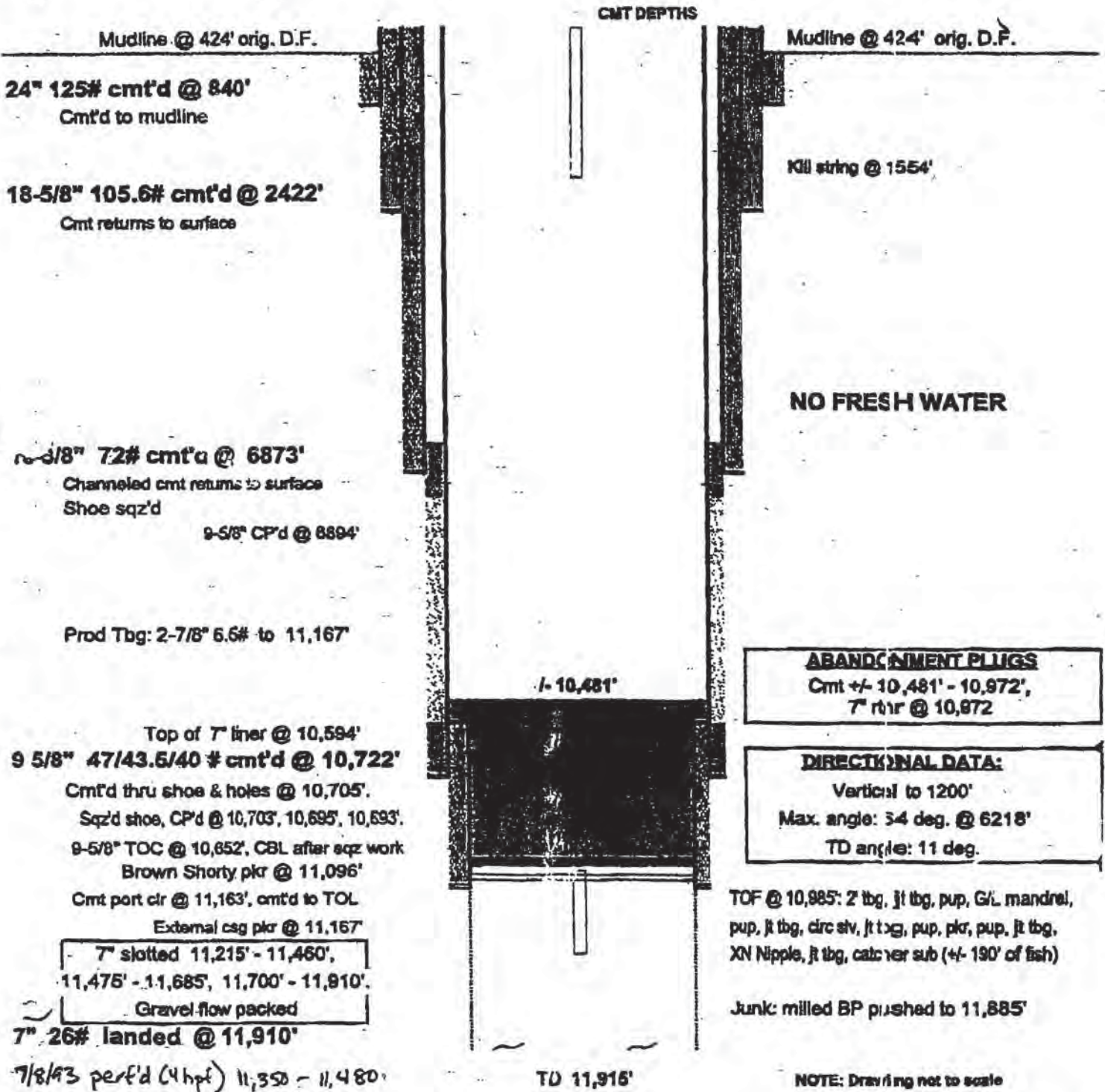
TD at
 11886' MD/ 8406 VD

24" at 840'
 18 5/8" at 2422'
 13 3/8" 72# at 6873'
 Squeeze holes in 9 5/8" casing at 6894'
 Top of 4" liner at 10550' MD
 Top of 7" liner at 10594' MD
 9 5/8" 40, 43.5, 47# SS-95 at 10722' MD
 7" 26# L-80 at 10798' (milled window)
 Drill 6 1/8" and open hole to 8 1/2" from 10798' to 11886'
 4" 9.5# 16 Ga Wire Wrap Screen Liner
 Gravel pack with 16-30 gravel

Santa Clara Field
OCS-P-0217 Platform Gract

A-18

Elev. 106.4' D.F.	T.D. 11,915'	IBTD 10,481'
W.D. 318'	API # 04-311-20470	



Azimuths to Grid North
 True North 1.77°
 Magnetic North 15.17°
 Magnetic Field
 Strength 47808 OnT
 Dip Angle: 58.78°
 Date: 8/31/2005
 Model: BCGM2004



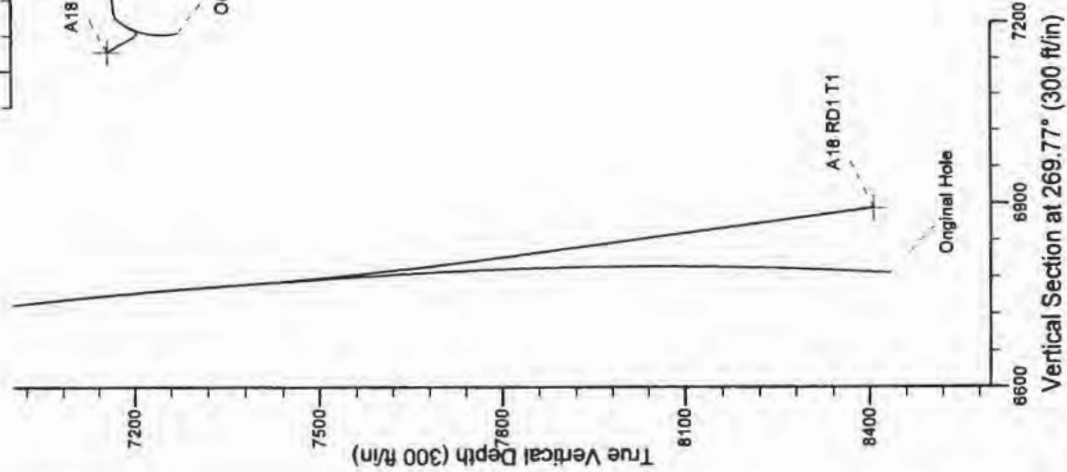
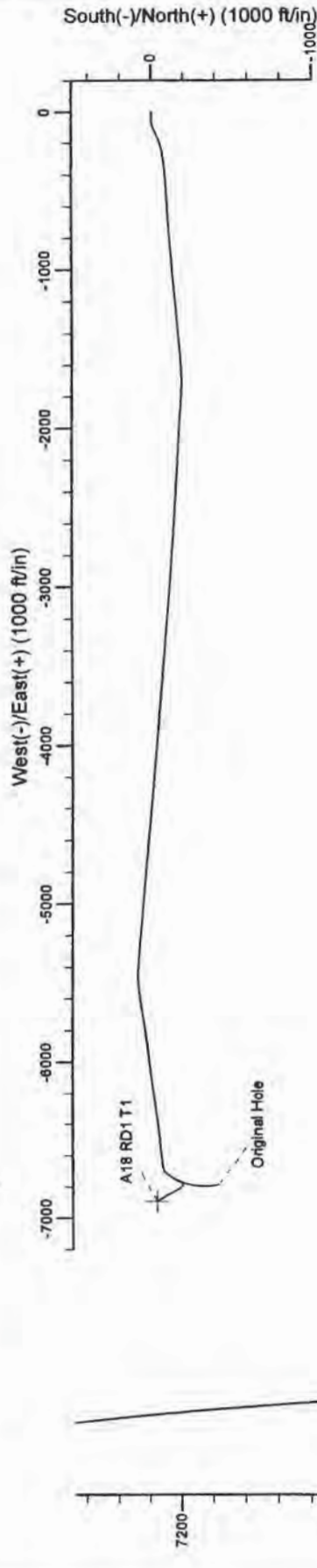
Venoco Inc.

Project: Platform Grace
 Site: Santa Clara Unit
 Well: A18 RD1

Plan 3 (19-Mar-07)

A18
 NAD 1927 (NADCON CONUS)
 California VI 406
 Reference: Grid
 RKB @ 106 40ft (Original Well Elev)
 Northing: 747452.00
 Easting: 1026812.00

HALLIBURTON
 Sperry Drilling Services



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec	Target
1	10798.00	11.56	200.99	7344.77	-173.34	-8764.53	0.00	0.00	6785.18	
2	11278.22	15.00	330.01	7618.89	-164.37	-8813.31	5.00	150.52	6813.82	
3	11886.45	15.00	330.01	8408.40	-28.00	-8892.00	0.00	0.00	6892.06	A18 RD1 T1

Venoco Inc.

Platform Grace
Santa Clara Unit
A18
RD1

Plan: Plan 3 (19-Mar-07)

Job No Plan 3 (19-Mar-07)

Sperry Drilling Services Combo Report

21 May, 2007

Well Coordinates: 747,452.00 N, 1,026,812.00 E (34° 10' 46.61" N, 119° 28' 04.13" W)
Water Depth 318.00 ft

Local Coordinate Origin
Viewing Datum: Centered on Well A18
TVDs to System RKB @ 106.40ft (Original Well Elev)
North Reference N
Unit System Grid
API - US Survey Feet

Version 2003 14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for A18 - RD1 - Plan 3 (19-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100m)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
0.00	0.00	0.00	108.40	0.00	0.00 N	0.00 E	747,452.00	1,026,812.00	0.00	0.00	
30.00	0.88	97.30	78.40	30.00	0.02 S	0.18 E	747,451.98	1,026,812.18	2.27	-0.18	
60.00	0.73	98.70	48.40	80.00	0.07 S	0.54 E	747,451.93	1,026,812.54	0.16	-0.54	
90.00	0.42	128.70	18.40	90.00	0.17 S	0.82 E	747,451.83	1,026,812.82	1.37	-0.82	
120.00	0.37	109.80	-13.59	119.99	0.27 S	1.00 E	747,451.73	1,026,813.00	0.42	-1.00	
150.00	0.17	135.70	-43.59	149.99	0.33 S	1.12 E	747,451.87	1,026,813.12	0.78	-1.12	
180.00	0.23	127.80	-73.59	179.99	0.40 S	1.20 E	747,451.80	1,026,813.20	0.22	-1.20	
210.00	0.23	135.90	-103.59	209.99	0.48 S	1.28 E	747,451.52	1,026,813.29	0.11	-1.29	
240.00	0.12	169.60	-133.59	239.99	0.58 S	1.34 E	747,451.45	1,026,813.34	0.49	-1.33	
270.00	0.13	148.70	-163.59	289.99	0.81 S	1.36 E	747,451.39	1,026,813.38	0.15	-1.38	
300.00	0.18	174.00	-193.59	299.99	0.69 S	1.38 E	747,451.31	1,026,813.38	0.28	-1.38	
330.00	0.18	141.10	-223.59	329.99	0.77 S	1.42 E	747,451.23	1,026,813.42	0.34	-1.41	
360.00	0.17	119.00	-253.59	359.99	0.83 S	1.48 E	747,451.17	1,026,813.48	0.23	-1.48	
390.00	0.17	135.90	-283.59	389.99	0.88 S	1.58 E	747,451.11	1,026,813.58	0.17	-1.55	
420.00	0.28	139.50	-313.59	419.99	0.97 S	1.63 E	747,451.03	1,026,813.83	0.37	-1.83	
450.00	0.33	131.00	-343.59	449.99	1.08 S	1.75 E	747,450.91	1,026,813.75	0.22	-1.74	
480.00	0.27	154.30	-373.59	479.99	1.21 S	1.84 E	747,450.79	1,026,813.84	0.45	-1.84	
510.00	0.36	198.90	-403.59	509.99	1.37 S	1.88 E	747,450.83	1,026,813.88	0.73	-1.85	
540.00	0.37	205.00	-433.59	539.99	1.55 S	1.80 E	747,450.45	1,026,813.80	0.35	-1.80	
570.00	0.17	172.80	-463.59	569.99	1.89 S	1.77 E	747,450.31	1,026,813.77	0.81	-1.78	
600.00	0.30	152.20	-493.59	599.99	1.60 S	1.81 E	747,450.20	1,026,813.81	0.51	-1.80	
630.00	0.18	150.50	-523.59	629.99	1.91 S	1.97 E	747,450.08	1,026,813.87	0.40	-1.88	
660.00	0.08	105.10	-553.59	659.99	1.98 S	1.91 E	747,450.04	1,026,813.91	0.45	-1.80	
690.00	0.13	136.30	-583.59	689.99	1.99 S	1.98 E	747,450.01	1,026,813.98	0.25	-1.95	
720.00	0.23	181.40	-613.59	719.99	2.07 S	1.98 E	747,449.93	1,026,813.98	0.55	-1.97	
750.00	0.27	178.10	-643.59	749.99	2.20 S	1.98 E	747,449.80	1,026,813.98	0.15	-1.97	
780.00	0.22	154.00	-673.59	779.99	2.33 S	2.01 E	747,449.87	1,026,814.01	0.35	-2.00	
810.00	0.42	178.00	-703.59	809.99	2.49 S	2.04 E	747,449.51	1,026,814.04	0.79	-2.03	
840.00	0.83	159.70	-733.59	839.99	2.80 S	2.12 E	747,449.20	1,026,814.12	1.50	-2.11	
870.00	1.13	173.20	-763.59	869.99	3.30 S	2.23 E	747,448.70	1,026,814.23	1.26	-2.22	
900.00	0.92	210.80	-793.59	899.99	3.80 S	2.14 E	747,448.20	1,026,814.14	2.30	-2.13	
930.00	0.53	148.60	-823.59	929.99	4.12 S	2.09 E	747,447.88	1,026,814.09	2.73	-2.07	
960.00	0.48	243.90	-853.57	959.97	4.41 S	1.81 E	747,447.59	1,026,813.81	5.38	-1.80	
990.00	1.47	78.60	-883.57	989.97	4.55 S	1.59 E	747,447.45	1,026,813.59	8.47	-1.57	
1,020.00	0.83	215.70	-913.57	1,019.97	4.70 S	1.58 E	747,447.30	1,026,813.58	4.08	-1.58	
1,050.00	1.27	230.50	-943.58	1,049.98	5.09 S	1.20 E	747,448.91	1,026,813.20	1.71	-1.18	
1,080.00	0.68	65.80	-973.58	1,079.98	5.23 S	1.10 E	747,448.77	1,026,813.10	6.45	-1.08	
1,110.00	0.95	187.00	-1,003.56	1,109.98	5.40 S	1.23 E	747,448.60	1,026,813.23	4.75	-1.21	
1,140.00	0.55	227.20	-1,033.56	1,139.98	5.75 S	1.10 E	747,448.25	1,026,813.10	2.13	-1.07	
1,160.00	2.00	246.00	-1,053.55	1,159.95	5.95 S	0.71 E	747,446.05	1,026,812.71	7.45	-0.88	

HALLIBURTON

Plan Report for A18 - RD1 - Plan 3 (19-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
1,220.00	4.75	289.50	-1,113.45	1,219.85	6.40 S	2.73 W	747,445.80	1,028,809.27	5.04	2.76	
1,260.00	8.00	276.00	-1,173.07	1,279.47	5.89 S	9.37 W	747,448.01	1,028,802.83	5.54	9.40	
1,340.00	11.25	277.00	-1,232.21	1,339.61	4.84 S	19.34 W	747,447.16	1,028,792.88	5.42	19.35	
1,400.00	14.50	272.00	-1,280.70	1,397.10	3.86 S	32.88 W	747,448.14	1,028,779.34	5.72	32.67	
1,460.00	17.25	275.00	-1,348.41	1,454.81	2.82 S	49.03 W	747,449.18	1,028,762.97	4.78	49.04	
1,520.00	20.00	280.00	-1,405.28	1,511.69	3.83 S	88.01 W	747,448.17	1,028,743.99	9.17	88.02	
1,580.00	24.00	253.00	-1,480.92	1,587.32	9.18 S	89.80 W	747,442.82	1,028,722.20	7.96	89.83	
1,640.00	25.50	248.00	-1,515.41	1,621.81	17.59 S	113.44 W	747,434.41	1,028,698.56	4.29	113.51	
1,700.00	29.25	244.50	-1,588.89	1,675.09	26.74 S	138.89 W	747,423.28	1,028,673.34	6.80	138.78	
1,760.00	32.00	245.00	-1,620.32	1,726.72	41.78 S	168.30 W	747,410.22	1,028,645.70	4.60	168.47	
1,820.00	33.75	251.00	-1,670.72	1,777.12	53.33 S	196.48 W	747,398.07	1,028,615.52	6.16	196.70	
1,860.00	35.25	255.00	-1,720.17	1,826.57	83.83 S	228.97 W	747,386.17	1,028,583.03	4.53	228.23	
1,940.00	38.25	258.00	-1,768.25	1,874.85	71.86 S	263.94 W	747,380.14	1,028,548.08	6.39	264.23	
2,000.00	41.00	262.50	-1,814.48	1,920.88	77.86 S	301.70 W	747,374.02	1,028,510.30	5.90	302.01	
2,060.00	43.00	263.00	-1,859.05	1,965.45	83.04 S	341.52 W	747,368.98	1,028,470.48	3.38	341.86	
2,120.00	45.50	264.50	-1,902.03	2,008.43	87.59 S	383.14 W	747,364.41	1,028,428.88	4.52	383.49	
2,180.00	48.50	265.00	-1,942.84	2,048.34	91.80 S	426.83 W	747,360.40	1,028,385.17	5.04	427.20	
2,240.00	52.00	267.00	-1,981.30	2,087.70	94.78 S	472.84 W	747,357.21	1,028,339.18	6.37	473.22	
2,279.00	53.50	265.00	-2,004.91	2,111.31	98.96 S	503.80 W	747,355.04	1,028,308.20	5.61	504.19	
2,340.00	57.25	267.50	-2,039.57	2,145.97	100.22 S	553.88 W	747,351.78	1,028,258.12	7.01	554.28	
2,371.00	59.00	267.50	-2,055.94	2,162.34	101.37 S	580.18 W	747,350.63	1,028,231.82	5.65	580.58	
2,401.00	60.75	268.50	-2,071.00	2,177.40	102.73 S	606.09 W	747,349.27	1,028,205.91	6.51	608.50	
2,415.00	61.25	267.00	-2,077.78	2,184.18	103.42 S	618.31 W	747,348.58	1,028,193.89	4.74	618.73	
2,458.00	56.25	265.50	-2,098.44	2,204.84	105.73 S	653.85 W	747,346.27	1,028,158.35	7.97	654.07	
2,487.00	59.00	268.50	-2,114.56	2,220.98	107.58 S	680.05 W	747,344.42	1,028,131.95	3.67	680.48	
2,518.00	59.75	268.50	-2,130.37	2,236.77	109.21 S	708.88 W	747,342.78	1,028,105.32	2.42	707.11	
2,549.00	58.50	265.50	-2,146.28	2,252.88	111.08 S	733.22 W	747,340.94	1,028,078.78	4.89	733.86	
2,580.00	57.25	266.00	-2,162.78	2,268.18	113.01 S	759.40 W	747,338.99	1,028,052.80	4.28	759.85	
2,611.00	57.00	265.50	-2,179.59	2,285.99	114.94 S	785.94 W	747,337.08	1,028,028.84	1.58	785.82	
2,642.00	57.25	265.00	-2,196.41	2,302.81	117.09 S	811.31 W	747,334.91	1,028,000.89	1.58	811.78	
2,673.00	56.25	265.00	-2,213.41	2,319.81	119.35 S	837.13 W	747,332.65	1,025,974.87	3.23	837.61	
2,703.00	56.00	265.50	-2,230.13	2,336.53	121.41 S	861.88 W	747,330.59	1,025,950.04	1.62	862.44	
2,734.00	56.75	265.50	-2,247.30	2,353.70	123.44 S	887.89 W	747,328.56	1,025,924.31	2.42	888.18	
2,765.00	56.00	265.00	-2,264.47	2,370.87	125.58 S	913.41 W	747,326.42	1,025,898.59	2.77	913.92	
2,795.00	56.25	265.00	-2,281.19	2,387.59	127.75 S	938.23 W	747,324.25	1,025,873.77	0.83	938.74	
2,826.00	56.00	265.00	-2,298.47	2,404.87	129.88 S	963.87 W	747,322.01	1,025,848.13	0.81	964.39	
2,857.00	56.00	265.00	-2,315.60	2,422.20	132.23 S	989.47 W	747,319.77	1,025,822.53	0.00	990.00	
2,888.00	56.25	265.00	-2,331.98	2,438.38	134.33 S	1,013.45 W	747,317.67	1,025,798.55	0.88	1,013.99	
2,916.00	56.75	264.50	-2,348.52	2,454.92	136.62 S	1,038.36 W	747,315.38	1,025,773.64	2.17	1,038.81	

HALLIBURTON

Plan Report for A18 - RD1 - Plan 3 (19-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
2,947.00	56.50	265.00	-2,365.58	2,471.98	138.98 S	1,064.14 W	747,313.01	1,025,747.88	1.57	1,084.70	
2,978.00	56.25	265.00	-2,362.74	2,488.14	141.24 S	1,089.86 W	747,310.78	1,025,722.14	0.81	1,080.42	
3,008.00	57.00	263.50	-2,399.25	2,505.65	143.75 S	1,114.78 W	747,308.25	1,025,687.22	4.87	1,115.36	
3,038.00	57.00	264.50	-2,415.58	2,521.98	146.38 S	1,139.81 W	747,305.82	1,025,672.18	2.60	1,140.39	
3,068.00	56.25	264.50	-2,432.08	2,538.49	148.78 S	1,164.74 W	747,303.22	1,025,647.28	2.50	1,165.34	
3,099.00	56.75	264.50	-2,449.20	2,555.80	151.28 S	1,180.47 W	747,300.74	1,025,621.53	1.81	1,181.08	
3,130.00	56.25	264.50	-2,468.31	2,572.71	153.73 S	1,216.21 W	747,298.27	1,025,595.79	1.81	1,216.82	
3,160.00	56.50	265.00	-2,482.92	2,589.32	156.02 S	1,241.08 W	747,295.98	1,025,570.92	1.82	1,241.70	
3,191.00	56.75	264.50	-2,499.98	2,606.38	158.38 S	1,266.86 W	747,293.81	1,025,545.14	1.57	1,267.49	
3,221.00	57.00	264.50	-2,516.37	2,622.77	160.80 S	1,291.87 W	747,291.20	1,025,520.13	0.83	1,292.51	
3,251.00	56.75	265.00	-2,532.78	2,638.18	163.10 S	1,316.89 W	747,288.90	1,025,495.11	1.83	1,317.54	
3,281.00	57.00	265.00	-2,548.16	2,655.58	165.29 S	1,341.92 W	747,286.71	1,025,470.08	0.83	1,342.58	
3,311.00	57.00	264.50	-2,565.50	2,671.90	167.59 S	1,366.97 W	747,284.41	1,025,445.03	1.40	1,367.84	
3,341.00	56.75	264.50	-2,581.89	2,688.28	170.00 S	1,391.98 W	747,282.00	1,025,420.02	0.83	1,392.88	
3,372.00	57.00	265.00	-2,598.83	2,705.23	172.37 S	1,417.83 W	747,279.83	1,025,394.17	1.57	1,418.52	
3,403.00	57.25	265.00	-2,615.68	2,722.08	174.64 S	1,443.77 W	747,277.38	1,025,368.23	0.81	1,444.47	
3,434.00	56.75	264.50	-2,632.54	2,738.94	177.02 S	1,469.88 W	747,274.98	1,025,342.34	2.11	1,470.37	
3,465.00	57.25	264.50	-2,649.43	2,755.83	179.51 S	1,495.54 W	747,272.48	1,025,318.48	1.61	1,496.25	
3,495.00	57.50	265.00	-2,665.80	2,772.00	181.82 S	1,520.70 W	747,270.18	1,025,291.30	1.83	1,521.42	
3,526.00	57.00	265.00	-2,682.37	2,788.77	184.10 S	1,546.87 W	747,267.90	1,025,265.33	1.81	1,547.41	
3,557.00	56.75	265.00	-2,699.31	2,805.71	186.38 S	1,572.53 W	747,265.64	1,025,239.47	0.81	1,573.28	
3,588.00	57.00	265.00	-2,716.25	2,822.65	188.62 S	1,598.40 W	747,263.38	1,025,213.80	0.81	1,598.15	
3,618.00	57.25	265.00	-2,732.54	2,839.94	190.82 S	1,623.50 W	747,261.18	1,025,188.50	0.63	1,624.28	
3,647.00	57.25	265.00	-2,748.22	2,854.62	192.84 S	1,647.80 W	747,259.16	1,025,164.20	1.45	1,648.57	
3,678.00	56.25	268.00	-2,765.22	2,871.82	194.31 S	1,673.68 W	747,257.99	1,025,138.32	7.48	1,674.46	
3,708.00	55.00	270.00	-2,782.18	2,888.56	194.74 S	1,698.44 W	747,257.26	1,025,113.56	6.90	1,699.21	
3,739.00	55.75	270.50	-2,799.78	2,906.18	194.83 S	1,723.95 W	747,257.37	1,025,088.05	2.78	1,724.72	
3,770.00	56.75	272.00	-2,817.00	2,923.40	194.07 S	1,749.71 W	747,257.93	1,025,062.29	5.18	1,750.46	
3,801.00	56.75	273.50	-2,834.00	2,940.40	192.82 S	1,775.81 W	747,259.18	1,025,036.39	4.05	1,778.38	
3,832.00	57.50	274.00	-2,850.82	2,957.22	191.12 S	1,801.59 W	747,260.68	1,025,010.41	2.77	1,802.35	
3,862.00	57.50	274.00	-2,868.94	2,973.34	189.36 S	1,828.83 W	747,262.84	1,024,985.17	0.00	1,827.58	
3,893.00	57.00	274.00	-2,883.71	2,990.11	187.54 S	1,852.84 W	747,264.46	1,024,959.18	1.61	1,853.58	
3,923.00	56.25	273.50	-2,900.22	3,006.82	185.90 S	1,877.83 W	747,266.10	1,024,934.17	2.86	1,878.57	
3,954.00	56.50	273.50	-2,917.38	3,023.78	184.32 S	1,903.60 W	747,267.68	1,024,908.40	0.81	1,904.33	
3,984.00	56.50	274.50	-2,933.84	3,040.34	182.56 S	1,928.55 W	747,269.42	1,024,883.45	2.78	1,928.28	
4,014.00	56.50	274.00	-2,950.50	3,056.80	180.72 S	1,953.50 W	747,271.28	1,024,858.50	1.39	1,954.22	
4,044.00	56.25	274.00	-2,967.11	3,073.51	178.98 S	1,978.42 W	747,273.02	1,024,833.58	0.83	1,978.13	
4,074.00	56.25	273.50	-2,983.78	3,090.18	177.35 S	2,003.31 W	747,274.65	1,024,808.69	1.38	2,004.02	
4,105.00	56.50	273.00	-3,000.95	3,107.35	175.89 S	2,028.08 W	747,276.11	1,024,782.92	1.57	2,028.78	

HALLIBURTON

Plan Report for A18 - RD1 - Plan 3 (19-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
4,136.00	58.00	272.50	-3,018.17	3,124.57	174.85 S	2,054.83 W	747,277.35	1,024,757.17	2.10	2,055.52	
4,167.00	58.25	272.50	-3,035.45	3,141.85	173.53 S	2,060.54 W	747,278.47	1,024,731.46	0.81	2,081.23	
4,197.00	58.00	272.50	-3,052.17	3,158.57	172.44 S	2,105.43 W	747,279.58	1,024,706.57	0.83	2,106.11	
4,228.00	58.00	272.50	-3,068.50	3,175.90	171.32 S	2,131.10 W	747,280.88	1,024,860.90	0.00	2,131.78	
4,259.00	55.75	272.50	-3,086.90	3,193.30	170.20 S	2,156.74 W	747,281.80	1,024,855.26	0.81	2,157.41	
4,290.00	58.00	273.00	-3,104.29	3,210.69	168.97 S	2,182.37 W	747,283.03	1,024,829.63	1.56	2,183.04	
4,321.00	58.75	273.50	-3,121.45	3,227.85	167.50 S	2,208.14 W	747,284.50	1,024,803.86	2.77	2,208.81	
4,352.00	58.75	273.50	-3,138.45	3,244.85	165.92 S	2,234.02 W	747,286.08	1,024,577.98	0.00	2,234.68	
4,382.00	57.00	273.00	-3,154.84	3,261.24	164.50 S	2,259.10 W	747,287.50	1,024,552.90	1.63	2,259.75	
4,413.00	57.00	273.00	-3,171.73	3,278.13	163.14 S	2,285.07 W	747,288.86	1,024,528.93	0.00	2,285.71	
4,444.00	58.75	273.50	-3,188.87	3,295.07	161.87 S	2,310.99 W	747,290.33	1,024,501.01	1.57	2,311.82	
4,475.00	58.50	273.00	-3,205.72	3,312.12	160.20 S	2,336.63 W	747,291.80	1,024,475.17	1.57	2,337.48	
4,506.00	58.50	273.00	-3,222.83	3,329.23	158.84 S	2,362.85 W	747,293.16	1,024,449.35	0.00	2,363.27	
4,537.00	58.50	273.00	-3,239.84	3,346.34	157.48 S	2,388.46 W	747,294.51	1,024,423.54	0.00	2,388.08	
4,568.00	58.50	274.50	-3,257.05	3,363.45	155.80 S	2,414.28 W	747,296.20	1,024,397.74	4.03	2,414.87	
4,598.00	58.50	273.50	-3,273.81	3,380.01	154.08 S	2,439.21 W	747,297.94	1,024,372.79	2.78	2,439.82	
4,629.00	58.50	273.50	-3,290.72	3,397.12	152.48 S	2,465.01 W	747,299.52	1,024,348.89	0.00	2,465.61	
4,660.00	58.50	274.00	-3,307.83	3,414.23	150.78 S	2,490.81 W	747,301.21	1,024,321.19	1.34	2,491.40	
4,691.00	58.50	274.00	-3,324.94	3,431.34	148.88 S	2,516.60 W	747,303.02	1,024,295.40	0.00	2,517.18	
4,721.00	58.00	274.00	-3,341.61	3,448.01	147.24 S	2,541.48 W	747,304.76	1,024,270.52	1.67	2,542.08	
4,752.00	58.00	273.50	-3,358.94	3,465.34	145.56 S	2,567.13 W	747,306.44	1,024,244.87	1.34	2,567.70	
4,783.00	58.50	273.00	-3,376.17	3,482.57	144.10 S	2,592.86 W	747,307.90	1,024,219.14	2.10	2,593.42	
4,813.00	58.25	273.00	-3,392.78	3,499.18	142.78 S	2,617.81 W	747,309.21	1,024,194.19	0.63	2,618.38	
4,843.00	58.50	273.00	-3,408.39	3,515.79	141.48 S	2,642.75 W	747,310.51	1,024,169.25	0.83	2,643.30	
4,873.00	58.50	273.50	-3,425.95	3,532.35	140.07 S	2,667.73 W	747,311.83	1,024,144.27	1.38	2,668.27	
4,904.00	58.00	273.50	-3,443.17	3,549.57	138.50 S	2,693.45 W	747,313.50	1,024,118.55	1.81	2,694.00	
4,935.00	58.00	273.50	-3,460.51	3,566.91	136.93 S	2,718.11 W	747,315.07	1,024,092.89	0.00	2,719.84	
4,966.00	58.00	273.50	-3,477.84	3,584.24	135.38 S	2,744.78 W	747,316.84	1,024,067.24	0.00	2,745.28	
4,995.00	55.75	273.50	-3,494.11	3,600.51	133.89 S	2,768.72 W	747,318.11	1,024,043.28	0.88	2,789.24	
5,025.00	55.75	274.00	-3,511.00	3,617.40	132.27 S	2,793.47 W	747,319.73	1,024,018.53	1.38	2,793.88	
5,055.00	55.75	274.50	-3,527.86	3,634.28	130.43 S	2,818.20 W	747,321.57	1,023,993.80	1.38	2,818.70	
5,085.00	55.75	274.50	-3,544.76	3,651.18	128.49 S	2,842.92 W	747,323.51	1,023,968.08	0.00	2,843.41	
5,116.00	55.50	274.50	-3,562.27	3,668.67	126.48 S	2,868.42 W	747,325.52	1,023,943.58	0.81	2,868.91	
5,146.00	55.50	274.00	-3,579.26	3,685.88	124.65 S	2,893.08 W	747,327.35	1,023,918.82	1.37	2,893.58	
5,176.00	55.50	274.50	-3,596.25	3,702.85	122.92 S	2,917.73 W	747,329.18	1,023,894.27	1.37	2,918.21	
5,207.00	55.00	274.50	-3,613.92	3,720.32	120.82 S	2,943.13 W	747,331.18	1,023,868.87	1.81	2,943.59	
5,238.00	55.25	274.50	-3,631.65	3,738.05	118.82 S	2,968.48 W	747,333.18	1,023,843.52	0.81	2,968.94	
5,268.00	55.00	274.50	-3,649.37	3,755.77	116.83 S	2,993.84 W	747,335.17	1,023,818.16	0.81	2,994.29	
5,300.00	54.50	274.50	-3,667.28	3,773.86	114.84 S	3,019.07 W	747,337.16	1,023,792.93	1.81	3,019.51	

Plan Report for A18 - RD1 - Plan 3 (19-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section Rate (ft)	Comments
5,331.00	55.00	274.50	-3,685.15	3,781.55	112.85 S	3,044.31 W	747,338.15	1,023,767.69	1.81	3,044.74	
5,362.00	54.50	274.50	-3,703.05	3,809.45	110.87 S	3,089.55 W	747,341.13	1,023,742.45	1.81	3,068.97	
5,393.00	55.25	274.50	-3,720.88	3,827.28	108.88 S	3,094.83 W	747,343.12	1,023,717.17	2.42	3,095.24	
5,423.00	55.00	275.00	-3,738.04	3,844.44	108.84 S	3,119.35 W	747,345.18	1,023,892.65	1.60	3,118.78	
5,454.00	54.50	274.50	-3,755.83	3,862.33	104.74 S	3,144.58 W	747,347.28	1,023,887.42	2.08	3,144.98	
5,485.00	54.75	275.00	-3,773.87	3,880.27	102.65 S	3,169.77 W	747,349.35	1,023,842.23	1.54	3,170.18	
5,515.00	54.50	275.00	-3,791.24	3,897.94	100.41 S	3,194.13 W	747,351.59	1,023,817.87	1.59	3,184.51	
5,545.00	54.75	275.00	-3,808.61	3,915.01	98.17 S	3,218.48 W	747,353.83	1,023,593.51	1.59	3,218.88	
5,575.00	55.00	275.00	-3,825.87	3,932.27	96.04 S	3,242.83 W	747,355.96	1,023,569.07	0.83	3,243.30	
5,604.00	55.50	274.50	-3,842.40	3,948.80	94.06 S	3,268.68 W	747,357.94	1,023,545.32	2.23	3,267.03	
5,835.00	58.00	275.00	-3,859.85	3,968.25	91.94 S	3,292.21 W	747,360.08	1,023,516.79	2.08	3,292.58	
5,865.00	57.50	275.00	-3,878.30	3,982.70	89.64 S	3,317.20 W	747,362.38	1,023,494.60	5.19	3,317.53	
5,898.00	59.00	275.00	-3,892.61	3,999.01	87.23 S	3,343.45 W	747,364.77	1,023,468.55	5.03	3,343.77	
5,728.00	60.00	275.00	-3,907.83	4,014.23	84.98 S	3,369.20 W	747,367.02	1,023,442.80	3.33	3,369.51	
5,757.00	60.25	275.50	-3,923.28	4,029.68	82.52 S	3,395.98 W	747,369.48	1,023,418.04	1.81	3,388.27	
5,788.00	61.00	275.50	-3,938.48	4,044.98	79.93 S	3,422.85 W	747,372.07	1,023,389.15	2.42	3,423.15	
5,818.00	61.75	274.50	-3,953.33	4,059.73	77.58 S	3,449.98 W	747,374.44	1,023,362.04	3.72	3,450.25	
5,850.00	61.25	274.50	-3,966.13	4,074.33	75.42 S	3,477.12 W	747,376.58	1,023,334.88	1.81	3,477.40	
5,880.00	62.00	275.50	-3,982.38	4,088.78	73.12 S	3,503.41 W	747,378.88	1,023,308.59	3.85	3,503.88	
5,910.00	63.00	274.50	-3,996.24	4,102.64	70.80 S	3,529.82 W	747,381.20	1,023,282.08	4.46	3,530.18	
5,941.00	62.50	275.00	-4,010.43	4,116.83	68.52 S	3,557.39 W	747,383.48	1,023,254.81	2.18	3,557.64	
5,972.00	63.25	275.00	-4,024.58	4,130.98	66.12 S	3,584.87 W	747,385.88	1,023,227.13	2.42	3,585.11	
6,003.00	63.50	274.50	-4,038.48	4,144.86	63.82 S	3,612.48 W	747,388.18	1,023,199.51	1.85	3,612.72	
6,033.00	63.50	275.00	-4,051.84	4,158.24	61.60 S	3,639.25 W	747,390.40	1,023,172.75	1.48	3,638.47	
6,062.00	63.50	274.50	-4,064.78	4,171.18	59.45 S	3,665.11 W	747,392.55	1,023,146.69	1.54	3,665.32	
6,093.00	63.50	275.00	-4,078.61	4,185.01	57.15 S	3,692.76 W	747,394.85	1,023,119.24	1.44	3,692.88	
6,124.00	63.25	275.00	-4,092.51	4,198.91	54.74 S	3,720.36 W	747,397.28	1,023,091.64	0.81	3,720.58	
6,156.00	63.25	275.50	-4,108.91	4,213.31	52.12 S	3,748.82 W	747,399.88	1,023,063.18	1.40	3,749.00	
6,187.00	63.75	274.50	-4,120.74	4,227.14	49.71 S	3,776.46 W	747,402.28	1,023,035.54	3.31	3,776.83	
6,218.00	64.00	275.00	-4,134.39	4,240.79	47.40 S	3,804.19 W	747,404.80	1,023,007.81	1.88	3,804.35	
6,248.00	64.00	274.50	-4,147.88	4,254.38	45.08 S	3,831.98 W	747,406.91	1,022,980.04	1.45	3,832.11	
6,280.00	63.75	274.50	-4,161.83	4,268.03	42.91 S	3,859.71 W	747,409.09	1,022,952.29	0.81	3,859.85	
6,311.00	63.00	274.50	-4,175.52	4,281.92	40.73 S	3,887.33 W	747,411.27	1,022,924.67	2.42	3,887.47	
6,342.00	63.00	274.50	-4,189.80	4,296.00	38.57 S	3,914.87 W	747,413.43	1,022,897.13	0.00	3,914.99	
6,373.00	63.50	274.50	-4,203.55	4,309.95	36.40 S	3,942.47 W	747,415.60	1,022,869.53	1.81	3,942.58	
6,404.00	63.25	275.00	-4,217.44	4,323.84	34.10 S	3,970.08 W	747,417.80	1,022,841.82	1.65	3,970.19	
6,435.00	63.25	274.50	-4,231.40	4,337.80	31.81 S	3,997.67 W	747,420.19	1,022,814.33	1.44	3,997.77	
6,466.00	62.75	274.50	-4,245.47	4,351.87	29.64 S	4,025.21 W	747,422.36	1,022,786.79	1.81	4,025.28	
6,497.00	63.25	274.50	-4,259.54	4,365.94	27.47 S	4,052.74 W	747,424.53	1,022,759.26	1.61	4,052.82	

HALLIBURTON

Plan Report for A18 - RD1 - Plan 3 (19-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
6,527.00	82.75	274.50	-4,273.16	4,379.58	25.38 S	4,079.39 W	747,426.82	1,022,732.61	1.67	4,079.48	
6,557.00	83.00	274.50	-4,288.84	4,393.24	23.28 S	4,108.01 W	747,428.72	1,022,705.98	0.83	4,106.07	
6,586.00	62.00	274.50	-4,301.16	4,407.58	21.13 S	4,133.42 W	747,430.87	1,022,678.58	3.23	4,133.47	
6,619.00	61.75	274.50	-4,315.77	4,422.17	18.98 S	4,160.88 W	747,433.02	1,022,651.32	0.81	4,160.72	
6,650.00	62.25	275.00	-4,330.32	4,436.72	18.71 S	4,187.95 W	747,435.29	1,022,624.05	2.15	4,187.99	
6,681.00	82.25	275.50	-4,344.78	4,451.18	14.20 S	4,215.27 W	747,437.80	1,022,598.73	1.43	4,215.30	
6,712.00	63.50	275.00	-4,358.89	4,465.29	11.88 S	4,242.75 W	747,440.32	1,022,569.25	4.28	4,242.78	
6,743.00	63.00	275.50	-4,372.84	4,479.24	9.15 S	4,270.31 W	747,442.85	1,022,541.89	2.18	4,270.32	
6,774.00	62.50	275.50	-4,387.04	4,493.44	8.50 S	4,297.75 W	747,445.50	1,022,514.25	1.81	4,297.74	
6,804.00	63.00	274.50	-4,400.77	4,507.17	4.18 S	4,324.31 W	747,447.82	1,022,487.89	3.40	4,324.30	
6,835.00	63.50	274.50	-4,414.73	4,521.13	2.01 S	4,351.91 W	747,449.99	1,022,460.09	1.61	4,351.88	
6,862.00	63.50	275.00	-4,428.78	4,535.18	0.01 S	4,375.89 W	747,451.99	1,022,436.01	1.66	4,375.86	
6,892.00	63.10	276.30	-4,471.71	4,578.11	8.79 N	4,484.89 W	747,480.79	1,022,347.11	1.23	4,464.82	
7,053.00	62.40	273.50	-4,513.38	4,619.78	15.70 N	4,545.48 W	747,467.70	1,022,266.52	2.84	4,545.38	
7,207.00	61.80	276.00	-4,585.45	4,691.85	26.98 N	4,691.10 W	747,478.88	1,022,130.90	1.49	4,680.95	
7,398.00	61.00	273.50	-4,677.37	4,783.77	40.93 N	4,848.07 W	747,492.93	1,021,982.93	1.22	4,848.87	
7,531.00	59.90	276.00	-4,742.48	4,848.98	50.43 N	4,963.50 W	747,502.43	1,021,848.50	1.85	4,963.25	
7,885.00	56.50	274.50	-4,821.33	4,927.73	62.54 N	5,095.21 W	747,514.54	1,021,718.79	1.24	5,094.91	
7,897.00	57.00	275.50	-4,934.48	5,040.86	78.16 N	5,273.81 W	747,530.18	1,021,538.19	0.61	5,273.45	
8,073.00	52.10	272.80	-5,036.52	5,142.92	88.63 N	5,416.74 W	747,540.83	1,021,395.26	3.05	5,418.33	
8,185.00	49.80	265.10	-5,107.29	5,213.98	87.14 N	5,503.48 W	747,539.14	1,021,308.54	5.76	5,503.08	
8,322.00	50.30	260.80	-5,195.47	5,301.97	74.26 N	5,607.49 W	747,528.28	1,021,204.51	2.48	5,607.14	
8,413.00	49.60	260.80	-5,254.02	5,360.42	63.12 N	5,676.25 W	747,515.12	1,021,135.75	0.77	5,675.95	
8,556.00	48.70	260.80	-5,347.55	5,453.85	45.83 N	5,783.03 W	747,497.83	1,021,028.97	0.83	5,782.79	
8,709.00	47.90	263.80	-5,448.34	5,555.74	30.31 N	5,898.18 W	747,482.31	1,020,915.82	1.46	5,898.01	
8,801.00	47.50	263.30	-5,511.28	5,617.98	22.55 N	5,983.78 W	747,474.55	1,020,848.22	0.50	5,983.84	
8,922.00	48.80	263.30	-5,593.55	5,699.95	12.20 N	6,051.89 W	747,464.20	1,020,760.11	0.58	6,051.79	
9,053.00	45.70	261.20	-5,684.14	5,790.54	0.55 S	6,145.84 W	747,451.45	1,020,666.36	1.43	6,145.59	
9,134.00	45.00	261.20	-5,741.07	5,847.47	9.36 S	6,202.59 W	747,442.84	1,020,609.41	0.86	6,202.57	
9,251.00	43.00	263.80	-5,825.23	5,931.93	20.14 S	6,283.13 W	747,431.86	1,020,528.87	2.23	6,283.16	
9,312.00	42.10	262.20	-5,870.17	5,976.57	25.23 S	6,324.08 W	747,426.77	1,020,497.94	2.14	6,324.11	
9,372.00	40.80	263.50	-5,915.11	6,021.51	30.19 S	6,363.80 W	747,421.81	1,020,448.50	2.48	6,363.57	
9,442.00	39.80	262.00	-5,966.41	6,074.81	35.91 S	6,408.51 W	747,416.09	1,020,403.49	1.99	6,408.80	
9,571.00	38.40	264.70	-6,068.85	6,176.25	45.20 S	6,487.82 W	747,406.80	1,020,324.38	3.00	6,487.75	
9,662.00	31.50	265.12	-6,145.31	6,251.71	48.72 S	6,538.22 W	747,402.26	1,020,273.78	5.39	6,538.37	
9,763.00	28.90	263.30	-6,224.73	6,331.13	54.15 S	6,592.38 W	747,397.85	1,020,229.82	5.15	6,582.55	
9,844.00	22.10	263.10	-6,307.51	6,413.91	58.81 S	6,619.84 W	747,393.39	1,020,192.16	5.26	6,620.03	
9,937.00	17.70	263.60	-6,394.94	6,501.34	62.29 S	6,651.28 W	747,388.71	1,020,160.72	4.73	6,651.47	
10,026.00	13.60	262.80	-6,482.51	6,586.81	65.17 S	6,675.80 W	747,386.83	1,020,136.20	4.29	6,676.01	

HALLIBURTON

Plan Report for A18 - RD1 - Plan 3 (19-Mar-07)

Measured Depth (ft)	Inclination (°)	Vertical Depth (ft)	System	Local Coordinates	Map Coordinates	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
				Northing (ft)	Easting (ft)			
10,164.00	10.67	6,721.89	-6,815.48	73.95 S	8,702.54 W	4.52	6,702.79	
10,218.00	10.70	6,774.97	-6,866.57	80.45 S	8,710.02 W	5.78	6,710.29	
10,308.00	10.15	6,863.49	-6,757.09	93.11 S	8,720.25 W	0.92	6,720.58	
10,391.00	10.90	6,945.09	-6,838.89	105.40 S	8,729.12 W	1.08	6,729.49	
10,490.00	10.80	7,042.32	-6,935.92	121.04 S	8,739.24 W	0.82	6,739.68	
10,554.00	10.80	7,105.21	-6,998.81	131.31 S	8,745.22 W	0.72	6,745.70	
10,705.00	10.90	7,253.56	-7,147.16	156.50 S	8,757.75 W	0.67	6,758.33	
10,767.00	11.40	7,314.39	-7,207.99	187.57 S	8,762.33 W	1.19	6,762.98	
10,798.00	11.56	7,344.77	-7,238.37	173.34 S	8,764.53 W	0.57	6,765.18	Start DLS 5.00 TFO 150.52
10,800.00	11.47	7,348.73	-7,240.33	173.71 S	8,764.88 W	5.00	6,765.33	
10,800.00	7.54	7,445.38	-7,338.98	186.02 S	8,772.46 W	5.00	6,773.17	
11,000.00	5.86	7,544.75	-7,438.35	193.74 S	8,781.58 W	5.00	6,782.31	
11,100.00	7.55	7,644.14	-7,537.74	190.84 S	8,791.85 W	5.00	6,792.87	
11,200.00	11.48	7,742.78	-7,638.38	179.32 S	8,803.51 W	5.00	6,804.18	
11,278.22	15.00	7,818.89	-7,712.49	164.37 S	8,813.31 W	5.00	8,813.82	Start 608.24 hold at 11278.22 MD
11,300.00	15.00	7,839.94	-7,733.54	159.49 S	8,818.13 W	0.00	8,816.72	
11,400.00	15.00	7,836.53	-7,830.13	137.07 S	8,826.06 W	0.00	8,829.58	
11,500.00	15.00	7,928.72	-7,928.72	114.85 S	8,842.00 W	0.00	8,842.41	
11,600.00	15.00	8,023.31	-8,023.31	92.23 S	8,854.84 W	0.00	8,855.28	
11,700.00	15.00	8,226.30	-8,119.90	89.80 S	8,867.88 W	0.00	8,868.10	
11,800.00	15.00	8,322.89	-8,218.48	47.38 S	8,880.81 W	0.00	8,880.95	
11,886.45	15.00	8,408.40	-8,300.00	28.00 S	8,892.00 W	0.00	8,892.08	TD at 11886.45 - T1

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates	Comment
		+N/-S (ft)	+E/-W (ft)
10,798.00	7,344.77	-173.34	-8,764.53
11,278.22	7,818.89	-184.37	-8,813.31
11,886.45	8,408.40	-26.00	-8,892.00

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	289.77	Slot	0.00	0.00	0.00

HALLIBURTON

Venoco, Inc.
Platform Grace

Plan Report for A18 - RD1 - Plan 3 (19-Mar-07)

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/mis target									
- Shape									
T1	0.00	0.00	8,406.40	-28.00	-8,892.00	747,424.00	1,019,820.00	34.178849	-118.490586
- plan hits target									
- Point									

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North Reference Sheet for Santa Clara Unit - A18 - RD1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB @ 106.40ft (Original Well Elev) Northing and Easting are relative to A18

Coordinate System is US State Plane 1827 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1886

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -118.250000°, Longitude Origin 0 000000°, Latitude Origin 33 863333°

False Easting: 2,000,000 00ft, False Northing 0 00ft, Scale Reduction 1 00006292

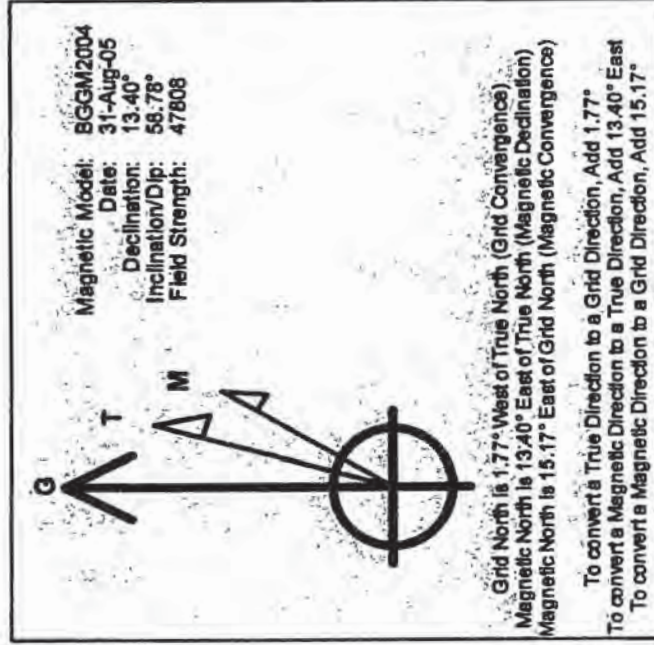
Grid Coordinates of Well 747,452 00 ft N, 1,026,812 00 ft E

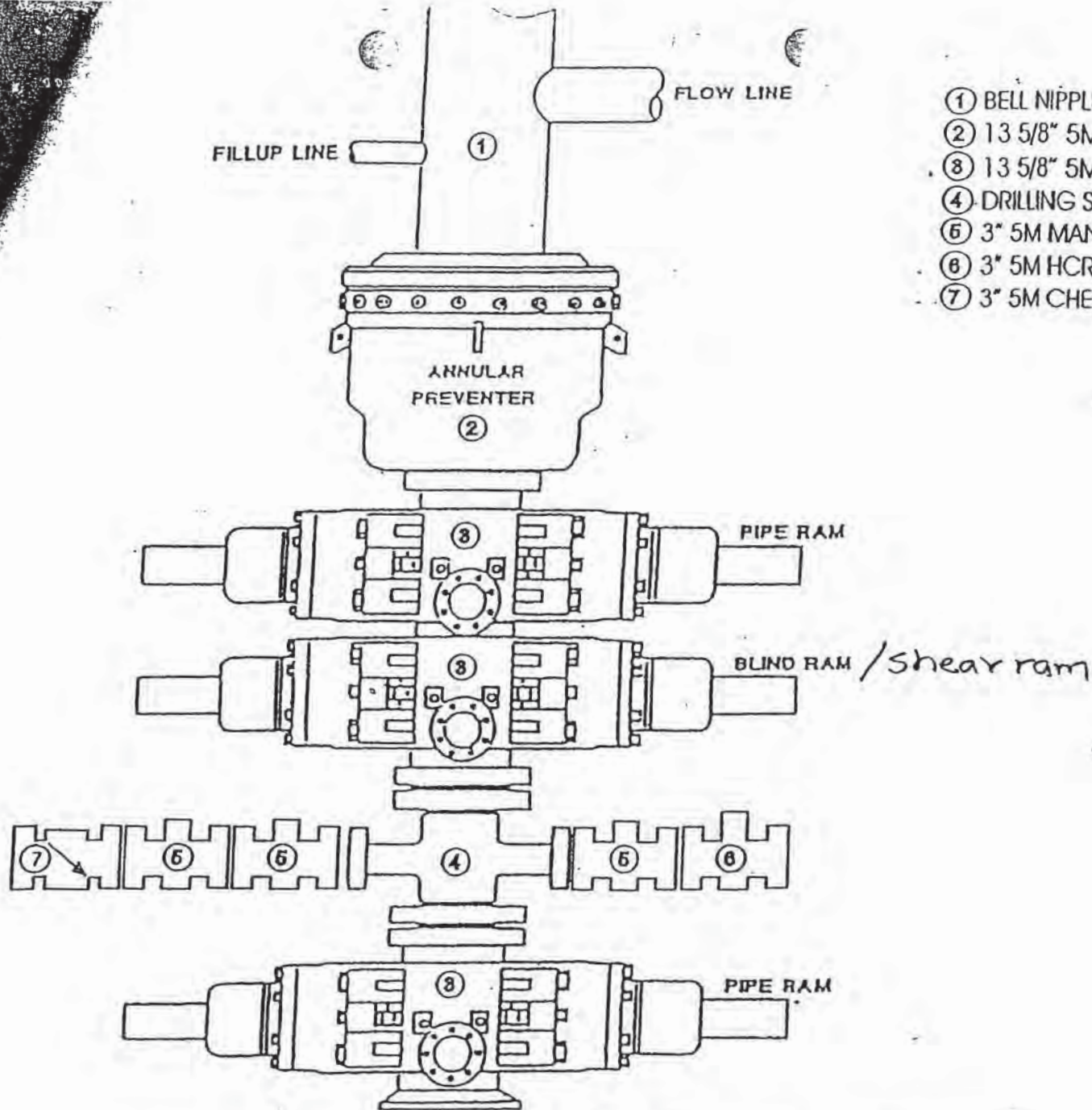
Geographical Coordinates of Well, 34° 10' 48.61" N, 119° 28' 04.13" W

Grid Convergence at Surface is: -1.77°

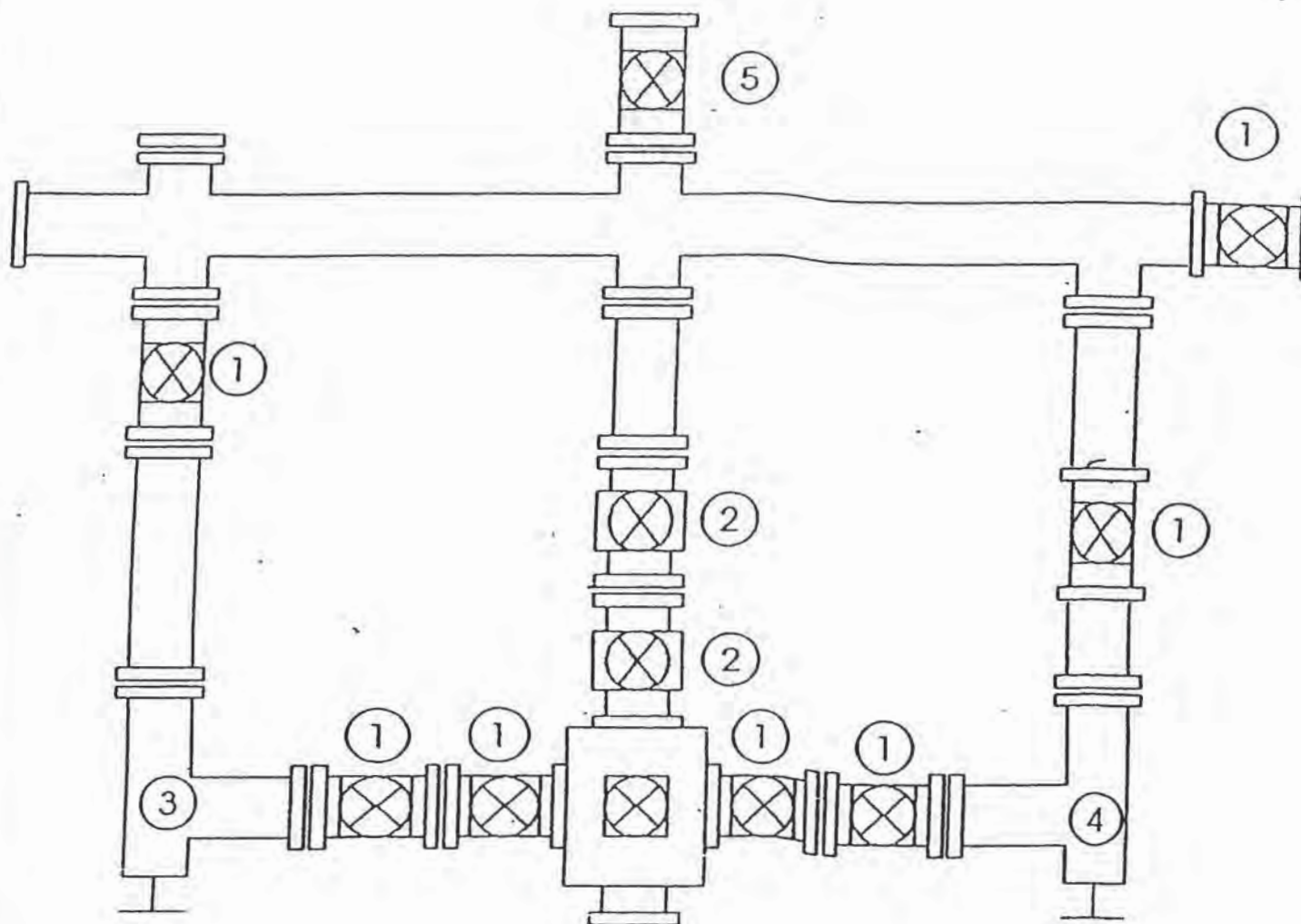
Based upon Minimum Curvature type calculations, at a Measured Depth of 11,888 45ft
the Bottom Hole Displacement is 6,692.06ft in the Direction of 289 77° (Grid)

Magnetic Convergence at surface is -15 17° (31 August 2005, , BGGM2004)





BLOWOUT PREVENTION SYSTEM PLATFORM G, RACE (PROPOSED)



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD
PLATFORM G-RACE
(PROPOSED)

Application for Permit to Drill (APD)

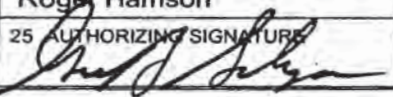
1. PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2. MMS OPERATOR NO 02309	3. OPERATOR NAME and ADDRESS (Submitting Office) Venoco, Inc. 6267 Carpinteria Ave. Suite 100 Carpinteria, CA 93013-1423
4. WELL NAME (Current) A-4	5. SIDETRACK NO. (Current) 00	6. BYPASS NO. (Current) 00	
7. PROPOSED START DATE 20060701	8. PLAN CONTROL NO. (New Well Only)		
9. API WELL NO. (Current Sidetrack / Bypass) (12 Digits) 043112042200			

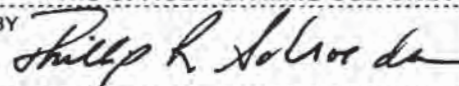
WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE	
10. LEASE NO. P-0217	RECEIVED MAR 22 2006 MINERALS MANAGEMENT SERVICE CAMARILLO DISTRICT	15. LEASE NO. P-0217	RECEIVED MAR 22 2006 MINERALS MANAGEMENT SERVICE CAMARILLO DISTRICT
11. AREA NAME 6B		16. AREA NAME 6B	
12. BLOCK NO. 4862		17. BLOCK NO. 4862	
13. LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)		18. LATITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)	
14. LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)		19. LONGITUDE ☒ NAD 27 (GOM & Pacific) ☐ NAD 83 (Alaska)	

LIST OF SIGNIFICANT MARKERS ANTICIPATED			
20. NAME Santa Margarita	21. TOP (MD) 6236'	20. NAME Monterey M4	21. TOP (MD) 9023'
Monterey M2	7781'		
Monterey M3	8244'		

22. LIST ALL ATTACHMENTS (Attach Complete Well Prognosis and Attachments Required by 30 CFR 250.414(B) through (G) or 30 CFR 250 1617(C) and (D), As Appropriate)

Redrill Program (includes: design criteria for well, BOPE, casing program, drilling prognosis), cementing program, drilling mud program, directional program and surface/subsurface well location plat map, Supplemental APD Information Sheet

23. AUTHORIZING OFFICIAL (Type or Print Name) Roger Hamson	24. TITLE V. P. Southern Assets
25. AUTHORIZING SIGNATURE 	26. DATE 20060309

THIS SPACE FOR MMS USE ONLY		
APPROVED: ☒ With Attached Conditions ☐ Without Conditions	BY 	TITLE District Manager
API WELL NO. ASSIGNED TO THIS WELL 04 311 20422 01		DATE JUN 19 2006

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT The PRA (44 U.S.C. 3501 *et seq.*) Requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.198. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 2 1/4 hours per response including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, N.W., Washington, DC 20240.

Supplemental APD Information Sheet

1 OPERATOR NAME Veroco, Inc.		5 WELL NAME (Proposed) A-4 RD		6 TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11 WATER DEPTH 318'		12 ELEVATION AT KB 106'	
2 API WELL NO (Proposed) (12 Digits) 043112042201		3 BOTTOM LEASE NO (Proposed) P-0217		7 SIDETRACK NO (Proposed) 01		8 BYPASS NO (Proposed) 00		13 H ₂ S DESIGNATION ☒ KNOWN ☐ UNKNOWN ☐ ABSENT	
4 TOTAL DEPTH (Proposed) MD 9817 TVD 9656		9 RIG NAME Rig 11		10 RIG TYPE PF		14 H ₂ S ACTIVATION PLAN DEPTH FT (TVD) 6850/MD/6817VD (Kick-off point)			

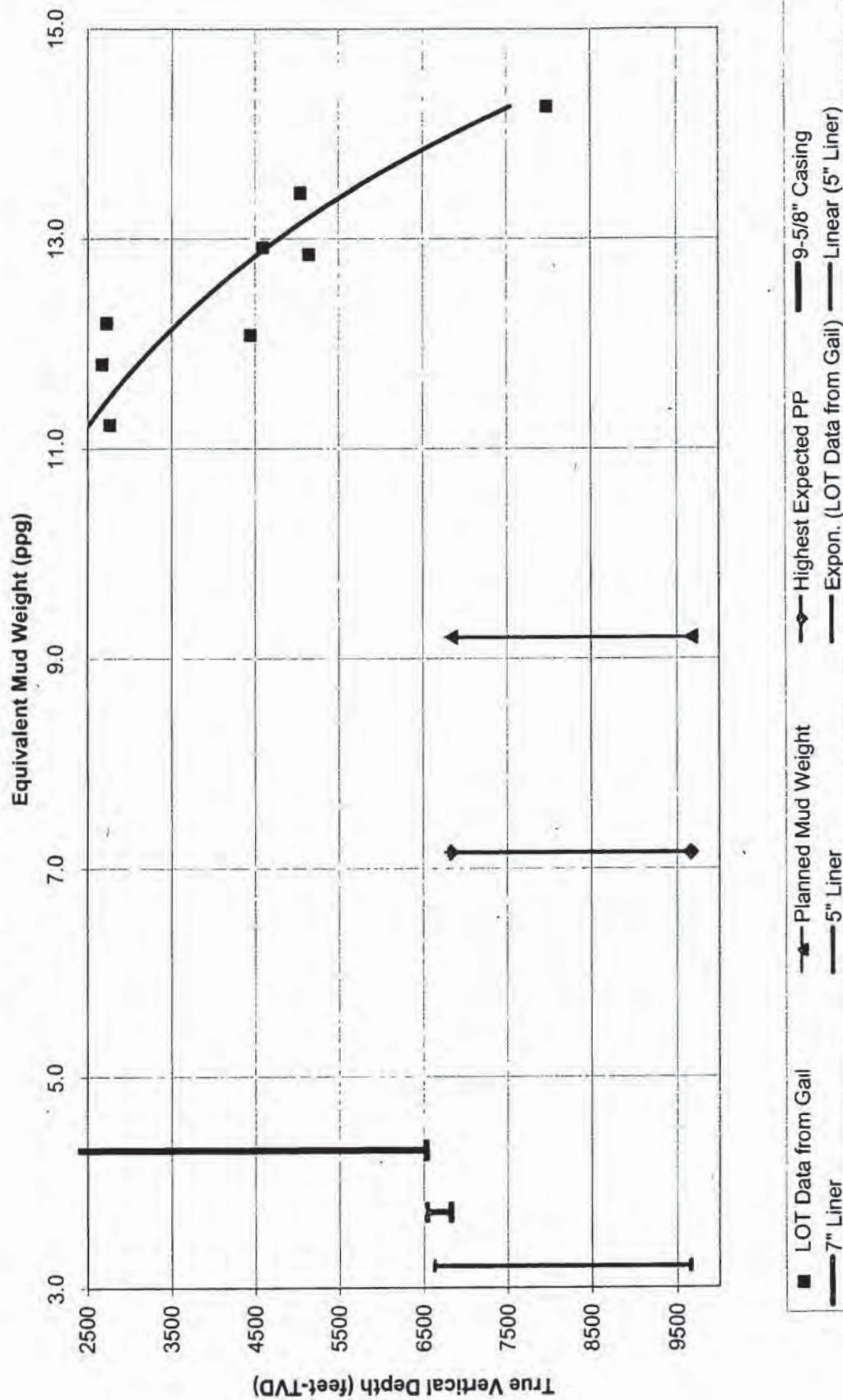
15. ENGINEERING DATA

Hole Size (in)	Casing (Indicate if Liner)	Casing Size (in)	Weight (lb/ft)	Burst Rating (psi)	Collapse Rating (psi)	Type of Connection	MAGP (psi)	Safety Factors			Top of Liner	Casing Depth (Feet)		Walk-head Raising (psi)	BOP Size (in)	Ratios BOP			Cement (Feet)	Drilling Fluid Type (Oil Base Water Based Synthetic)
								B	C	T		MD	TVD							
30	Drill Structural	24	125								MD									
22	Conductor	18 5/8	105.6									1991							1650	
17	Surface	13 3/8	72									4597	existing					2160		
12 1/4	Production	9 5/8	40.43 S.47	6820		butt	2308	2.95	1.07	3.34				7.15	9.2	NA	5000	1000	Exist	
8 1/2	Long String	7	23.26	7240		butt	2308	3.14	1.66	5.67	6562			7.15	9.2	13.5	3000	560	Exist	
6 1/8	Prod Liner	5	15	8090		Hyd 513	2308	3.59	1.57	1.78	6650			7.15	9.2	TD	3000	313	WB	

16 CONTACT NAME Dana Billings		17 CONTACT PHONE NO 805-745-2139		18 CONTACT E-MAIL ADDRESS dhh@kecorp.us	
19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more? ☒ YES ☐ NO					
20. REMARKS: Revised and submitted June 6, 2006. MASP calculations are for the production case and are based upon 70% gas and 30% well fluid.					

WARRANTY/REDUCTION ACT OF 1993 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain well status, well and casing configuration data. MMS uses this information to have accurate data and information on all wells under its jurisdiction and to ensure compliance with regulatory requirements. Responses to this form are not subject to public release under the Freedom of Information Act (5 U.S.C. 552). Proprietary data covered under 30 CFR 250.196. Any agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 1 1/2 hour per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1649 C Street, N.W., Washington, DC 20240.

Platform Grace A-4 RD Pore Pressure, Mud Weight & Fracture Pressure Note: Fracture Pressure data from Platform Gail



VENOCO, INC.
PLATFORM GRACE – SANTA CLARA FIELD
A-4 REDRILL PROGRAM
API# 04-311-20422-01
LEASE OCS-P-0217
June 5, 2006 (attach to MMS APD)

Objective: Redrill the A-4 well and complete as a water injection well.

Surface Location: OCS-P-217, Slot M7 (X= 1,026,811.22' & Y= 747,446.73')

Elevation: 318' WD, 106.4' (original DF) Above MLLW, 424' Ocean Floor to original DF

Proposed TD: OCS-P-217; 9817' MD / 9656' TVD / -9550' SS

TD Location: 144' N and 796' W or (X = 1,026,015' and Y = 747,591')

<u>Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. Fm Press PSI/ PPG</u>
Santa Margarita	6236	6205	-6099	12 +
KOP	6850	6817	-6711	N/A
M2	7781	7693	-7587	2860 psi / 7.15 ppg
M3	8244	8098	-7992	3010 psi / 7.15 ppg
M4	9023	8862	-8755	3294 psi / 7.15 ppg
M5	9619	9458	-9351	3531 psi / 7.15 ppg
Total Depth	9817	9656	-9550	3590 psi / 7.15 ppg

Formation Pressure

Historical pressures from producing wells show a definitive downward trend versus cumulative production and there does not appear to be an active water drive or pressure support for the reservoir A4 will be completed below the OWC as a water injector and is expected to have a partial column of water and zero surface pressure under static conditions

Existing Casing: (Original Rig Floor depths)

24", 125#, Vetco L	840'	Cmtd w/ 1000 sx
18 5/8", 105.6 K-55	1991'	Cmtd w/ 1650 cf,
13 3/8", 72# N-80	4597'	Cmtd w/ 2160 cf
9 5/8", 40,43.5, 47# SS-95	6698'	Cmtd w/ 1000 cf
7", 23, 26# SS-95, L-80 (Liner)	8905'	Cmtd w/ 560 cf
(TOL at 6562')		

Existing Perforations:

7960' – 8820' selectively perforated – isolated or plugged with cement

Plugs

6449' – 7660' cement
7660' retainer
8500' – 9207' cement

Proposed Casing (Not adjusted for new Rig Floor elevation):

24", 125#, Vetco L	840'	Cmtd w/ 1000 sx (existing)
18 5/8", 105.6 K-55	1991'	Cmtd w/ 1650 cf (existing)
13 3/8", 72# N-80	4597'	Cmtd w/ 2160 cf (existing)
9 5/8", 40,43.5, 47# SS-95	6698'	Cmtd w/ 1000 cf (existing)
7", 23,26# (Liner/TOL at 6562')	6850' (window)	Cmtd w/ 560 cf (existing)
5" 15# L-80 (Liner/TOL at 6650')	9817'	

Note: This well is currently a temporary abandonment. Prior to moving rig on the wellhead is to be inspected and pressure tested. Tubing head valves to be repaired or replaced as required.

Drilling Procedure

1. Move rig to Well A-4 (slot M7). Pressure test the hanger void and confirm the hanger seals are good. Inspect the lock down pins and repair or replace as required. Remove VR plugs as necessary. Set back pressure valve in tubing hanger. Nipple up BOP equipped with a minimum of 3- ram preventer and an annular. The BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing and all drill pipe sizes to be used for drilling operation. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 14 days during the drilling phase of the operations. PVT equipment with pump stroke counters and ROP option to be installed. BOPE drills to be performed prior to commencement of operations and each tour using alternate remote stations. Record all drills and the MMS required tracking information in IADC book. Prior to rig commencing work, and if required, MMS and Venoco Inc. shall perform a rig and equipment inspection.
2. Remove BPV, unland hanger. Pull out of the hole and lay down 2 7/8" tubing kill string.
3. Pressure test casing to 3000 psi for 15 minutes and record on chart. Nipple down BOPE. Install Cameron 13 5/8" 5000 psi Gray-Loc Hub X-11" 3000 psi adapter head. Pressure test new adapter head to 3000 psi for 15 minutes. Nipple and body test BOP to 250/3000 psi.
4. M/U 8 1/2" bit with clean out assembly and RIH while drifting the 3 1/2" HWDP and 3 1/2" drill pipe. RIH to TOC at 6449'. Circulate well clean with seawater.
5. Clean out cement in 9 5/8" casing from 6449' to TOL at 6562' with water. Pull out of hole with 8 1/2" clean out assembly. Make up and RIH with 6 1/8" bit with clean out assembly. Clean out cement in 7" liner from 6562' to 6900' MD. Pressure test 9 5/8" casing and 7" liner and lap to 3000 psi. Pull out of hole and pick up casing scraper with 6 1/8" bit and RIH and scrape 7" casing to 6900'.
6. Change over well to 9.2 ppg mud and circulate and condition mud.
7. M/U bridge plug on electric line and RIH and set bridge plug near 6850' +/- 5 above collar so that window will be cut between casing collars. Use collar depths from cased hole logs.
8. M/U 7" casing 1-trip whipstock with bottom trip anchor, window mill, lower watermelon mill

and upper watermelon mill, bumper sub, MWD, and RIH to above bridge plug. Whipstock equipped with 25M# shear down lug – ensure there is adequate drill string weight to shear the lug.

9. Using MWD measurements orient whipstock to high side as per Directional Drillers. Set the whipstock on the bridge plug and shear the tools off the whipstock face. Condition the mud in the hole to higher viscosity for milling the window and carry the metal cuttings out of the hole.
10. Mill and open window drilling 15' – 18' below the bottom of ramp, as per whipstock service company and directional service company. Mill and dress the window as required to obtain good exit point for sidetrack. Drill enough rathole to pass all mills through the window. Mills must smoothly pass through the window before finalizing milling operations. Re-designate well as A-4 RD. Notify MMS as required in the permit conditions. POH with window mill assembly.
11. Perform a Formation Integrity Test to 12.0 ppg EMW. Reduce the viscosity of the mud to desired drilling parameters. Pull out hole and lay down the milling tools.
12. Pick up 6 1/8" bit on a steerable directional drilling assembly including MWD. Run in the hole and sidetrack the well. Directional drill and survey a 6 1/8" hole from KOP to the total depth of 9,817' MD / 9,656' TVD. The 6 1/8" hole will be drilled with a seawater Cypan drilling fluid system. Follow Directional plan - Halliburton Plan A04-Plan 3 (03-Mar-06)
13. Circulate and condition the mud for logging. Wipe the hole to the 7" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
14. Rig up wire line and run open hole logs (see attached logging program). Condition the hole if necessary between runs.
15. After open hole logs are complete, make clean out run with an 6 1/8" clean out assembly and circulate and condition the hole for the 5" liner. Wipe the hole to the 7" casing shoe. Pull out of the hole and stand the 3 1/2" drill pipe back.
16. Rig up casing crew and run the 5", 15#, L-80, Hydril 513 liner from +/- 6,650' to 9,817' as follows:
 - 5", 15#, L-80 Float Shoe
 - 1 Joints of 5", 15#, L-80 Casing
 - 5", 15#, L-80 Float Collar
 - +/- 3100' of 5", 15#, L-80 Casing
 - 5", 15#, Hydraulic Liner Hanger
 - RS Nipple with 4.25" Profile (measure and verify ID)
 - Liner Top Packer,
 - 7" x 9 5/8", HR Profile w/ 10' tie-back extension

Note: The following is a general procedure and may be modified dependent on specific equipment utilized.

Running procedure as follows:

- a) Visually inspect, clean threads, drift and strap on location.

- b) Have 3 Hydril handling plugs/ lifters on location to pick up single liner joints –
- c) **NOTE:** handling plugs not rated for full string weight and are for single joint lifting only.
- d) Have elevators and handling equipment for Hydril flush joint casing on location. Have crossover to Hydril 513 to a circulating swage with a safety valve will be on the rig floor.
- e) Have cement head made up on joint prior to going into open hole with liner.
- f) Centralize the 5" liner inside the 6 1/8" open hole using positive stand-off centralizers with stop rings. Centralizer spacing will be determined after the directional work is completed. Consider running one centralizer in the middle of each joint through the production intervals Ensure running string and all xo have been drifted for liner setting ball and dart.
- g) Run Liner with double valve float shoe on bottom, one joint, float collar, One joint and Landing Collar. Bakerlok no more than can be stood back in derrick. The configuration may be modified dependent upon bottom perforation and the amount of rathole required.
- h) Fill up liner every 10 joints or as necessary to prevent floating.
- i) Pick up Hydraulic Liner Hanger with Liner Top Packer assembly with setting tools previously stabbed up. Install Liner Wiper Plug if not previously done. Ensure blocks are locked.
- j) Fill liner setting sleeve with clean mud and snug up setting tool to the left as far as possible.
- k) Run in hole on drill pipe. Drift DP to ensure cementing dart will pass. Run in the hole slowly to avoid surging the formation.
- l) Do not allow running string or liner to rotate while RIH. Rotary table to be locked to prevent pipe rotation. Run at slow rate 30 ft/min. Liner can be circulated if required, keep circulating pressures less than 600 psi. Fill drill pipe as needed.
- m) Near bottom, P/U liner cement head, fill pipe and break circulation. Slowly wash liner to bottom.
- n) Circulate and condition mud while reciprocating liner +/- 10' at least 1 1/2 open hole volumes. Maximize circulation rate while keeping circulating pressure below hanger manufacturer recommended pressure.
- o) Pick up and space out 2-4 ft off bottom. Drop setting ball. Continue to circulate at 1 1/2 BPM and reciprocate the liner and closely monitor pressure and for the ball to land.
- p) Position liner, set hanger as follows: Pressure up to hanger setting pressure and hold pressure. Slack off liner weight plus 20000# to confirm hanger is set. Finish pressuring up to shear ball and seat out of landing collar. Check for returns after shear.
- q) Set slips on drill pipe leaving 10,000 - 20,000 lbs of drill pipe weight on liner top. Rotate drill pipe to right TBD rounds and release any torque in the pipe. Record the amount of rounds that remain in the pipe. Repeat this step using 5 rounds at least 3 more times.
- r) Release any torque, pick up on drill pipe and note the loss of the liner weight. After free travel, do not pick up more than 3'-4'. This will insure that the liner pack-off will remain in the liner assembly.
- s) Resume circulating until ready for cementing.
- t) Pump spacer, mix and pump cement as programmed.
- u) Cement liner per Liner Cement Program. Cement volumes to be 35% OHE from the caliper log plus include 100 lineal feet above the liner top.
- v) After spacer and cement have been pumped, drop the pump-down plug as required, following pump-down plug with a spacer and/or drilling mud. Displacement rate should be maintained at same rate as that which was used to pump the cement.
- w) Displace drill pipe to within 5 bbls of the calculated displacement. Slow pump rate to 3 bbl./min. A slight increase in pressure should be noted as the pump-down plug latches

- into the liner wiper plug. After the liner wiper plug shears, note the actual displacement and increase the pumping rate back to that which was used prior to slowing down.
- x) Continue to displace the liner casing as above. Slow down displacement to 2 BPM 10 bbls before plug calculated to bump. As the liner wiper plug reaches the landing collar, pressure up to 500 psi above pump rate and hold for approximately 1 minute. Bleed pressure back into the tanks to ensure that the plugs and floats are holding. If not holding, pressure up on the liner again, increase pressure slightly and bleed back once again.
 - y) Pick up slowly on the drill pipe to remove the packer dogs from the liner tieback sleeve. After picking up the designated distance, slack back down and locate higher to indicate that the dogs are out of the sleeve. Continue to slack off approximately 15,000 - 20,000 lbs. and set the packer. Packer should be fully set. Repeat the process if necessary.
 - z) Do not pressure test liner top or circulate at the top of the liner prior to pulling out of the hole. Rig out cementer lines. Lay cement manifold out of the way. Pull out of hole with drill pipe and setting tool.
17. Pick up an 6 1/8" bit and run in the hole. Clean out to the top of the liner. Pressure test the liner top to 3000 psi. Pull out of the hole.
 18. Pick up a 4 1/4" bit with 3 1/2" and 2 7/8" PH6 drill pipe and run in the hole. Clean out the 5" liner to the landing collar. Pressure test the 5" liner to **3000** psi. Displace the drilling fluid out of the hole with clean filtered seawater completion fluid weighted with NaCl. Completion fluid density to be determined by drilling and logging results. Circulate the well until return fluids are clean. Pull out of the hole.
 19. Rig up wireline and run a cement bond log (USIT/GR) across the 5" liner. Squeeze the liner if necessary. Be prepared to perforate and cement squeeze 5" liner, if required for isolation. Have 2' loaded perforation guns and cement retainers with setting tools on board.
 20. After successfully completing the previous steps including pressure test of the liner, close the blind rams and change pipe rams as required in preparation for completion activities.

GENERAL COMPLETION PROCEDURE

For completion operations the BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing and 3 1/2" DP all other pipe sizes to be used for completion operations. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 7 days during the completion phase of the operations.

1. Perforate well with TCP guns through indicated intervals..
2. Run 3 1/2" completion equipment.
3. Land Hanger, run in hold downs, drop packer setting ball. Pressure up to set packer.
4. Install BPV, nipple down BOP and install injection tree. Test tree to 3000 psi.

EVALUATION PROGRAM

Mudlogging Program:

Begin Mudlogging upon exiting original A-4 casing, dry cuttings and wet.

Testing Program

None expected.

Open Hole Logging program

LWD: None

Wireline Logs:

PEX-HALS-NGT

FMI-GR (across Monterey)

Logging geologist: Dale Kunitomi 805-987-3026

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8	7	5
2	Setting Depth (feet - TVD)	6530	6817	9656
3	Programmed FIT EMW at shoe (ppg)	12	12	12
4	Depth of next Casing (feet - TVD)	6817	9656	9656
5	Maximum Expected Formation Pressure (psi)	2535	3590	3590
6	Expected Mud Weight (ppg)	9.2	9.2	9.2
7	Formation Equivalent Mud Weight (ppg)	7.15	7.15	7.15
8	Expected Hydrostatic Pressure at TD (psi)	3261	4619	4619
9	Amount of Overbalance at TD (psi)	727	1029	1029
10	Fracture Gradient at shoe (psi/ft)	0.62	0.62	0.62
11	Fracture Pressure at shoe (psi)	4075	4254	6025
12	Hydrostatic Pressure at shoe (psi)	3124	3261	4619
13	Margin between Mud Weight and LOT (psi)	951	993	1406

1. Collapse is based on mud outside of an evacuated casing string.
2. Tension is based on buoyed weight of casing string + 100 kips over pull.

Maximum Anticipated Surface Pressure

		Prod Casing (liner top)	7" Mill window	TD
1	Casing Size (in)	9-5/8	7"	5"
2	Setting Depth (feet - TVD)	6530	6817	9656
3	Expected Leak Off Test EMW at shoe (ppg)	13	13	14
4	Expected Produced Fluids/Mud Weight (ppg)	5.77	5.77	5.77
5	Depth of next Casing (feet - TVD) use TD for all	9656	9656	9656
6	Maximum Expected Formation Pressure (psi)	3590	3590	3590
7	Expected gas gradient (psi/ft)	0.077	0.077	0.077
8	Formation Equivalent Mud Weight (ppg)	7.15	7.15	7.15
	Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	2847	2847	2847
10	Fracture Gradient at shoe (psi/ft)	0.68	0.68	0.73
11	Fracture Pressure at shoe (psi)	4414	4608	7030
12	Surface pressure to break down shoe (psi)	3911	4083	6286
13	Maximum Anticipated Surface Pressure (psi)	2847	2847	2847
	Max Pressures using 70% Gas & 30% Produced Fluids			
14	Maximum Anticipated Surface Pressure (psi) (BobZ Calculation)	2308	2308	2308

Notes:

1. These are well specific inputs developed from detailed analysis by Reservoir Engineer.
2. Producing GOR declined from 5000 scf/BO in early 1981 to less than 900 in 1996, when field was shut-in
3. Almost all produced gas is associated gas and it is very unlikely a well would have 100% gas column
4. Historical pressures from producing wells show a definitive downward trend versus cumulative production and there does not appear to be an active water drive or pressure support for the reservoir.
5. A4 will be completed below the OWC as a water injector and is expected to have a partial column of water and zero surface pressure under static conditions.

Casing Design

Hole Section	12.25*	8.5	6.125
Mud Weight	9.2	9.2	9.2
Buoyancy Factor	0.860	0.860	0.860
70/30% Gas/Fluid MASP (psi)	2308	2308	2308
Gas Lift Pressure (psi)	0	0	0
Casing Size (in)	9-5/8*	7	5
Setting Depth, MD (ft)	6562	6850	9817
Setting Depth, TVD (ft)	6530	6817	9656
Top of Casing, MD (ft)	0	6562	6700
Weight (lb/ft)	40	26	15
Grade	SS-95	L-80	L-80
Threads	BUTT	BUTT	513
ID (in)	8.835	6.366	4.327
Drift diameter (in)	8.599	6.241	4.283
Collapse (psi)	3330	5410	7250
Burst (psi)	6820	7240	8290
Joint Strength (kips)	1088	604	250
Body Strength (kips)	1088	604	350
Collapse Safety Factor	1.07	1.66	1.57
Burst Safety Factor	2.95	3.14	3.59
Tensile Safety Factor	3.34	5.67	1.78

CEMENTING PROGRAM

5" Production Liner

Objective: Cement 5" liner set across the 6 1/8" open hole interval. Liner will extend 200' back into the 7" casing and cement will be brought back to 100' above the top of the liner hanger. A liner top packer will be used to support pressure integrity of the lap.

General Information:

9 5/8" 40, 43.5, 47# casing set at 6698'
7", 23, 26#, Liner set at 6850' MD (window) with TOL at 6562'
5", 15#, L-80 Liner (4.408" ID) Shoe at 9817' & TOL at 6650'
Lap Volume Factor is 0.0785 CF/FT
Open Hole Volume Factor is 0.0683 CF/FT
Shoe Joint Volume Factor is 0.1060 CF/FT
Open Hole Excess 35% over theoretical
Static Temperature is estimated 204 deg F (@ 9656' TVD)
(In A-4 Temperature from open hole log = 198 deg F at 9300' TVD)

Cement Slurry Details:

Pre-flush: 20 bbls of Ultra Flush II

Cement: 313 CF (272 sx) of Class "G" + additives to be determined.

Yield: 1.15 CF/sx
Water: 4.80 gal/sx
Weight: 15.8 ppg
Mix Water: Fresh Water
Height: 3217'

Note: Lab tests will be performed prior to cementing to verify slurry properties.
Actual materials that will be used on location will be used to perform tests.

Drilling Fluids Program**MUD PROGRAM**

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Whipstock	Gel - water	9.0-9.6	NC	+/-10.5	40-50	+9-10 K
6850' – 9817'	SP 101	9.0-9.6	<6	+/-8.5	15-20	+19-20K

Whipstock:

The fluid system used for the milling operations will be gel based. The products used for this interval are approved for offshore Region 9. The mud system and cuttings can be dumped overboard if all the environmental tests are negative. The low shear rate viscosity will be raised as necessary to transport metal cuttings out of the. Add soda ash to control total hardness and caustic soda to control the pH.

6850'-9817':

Convert over to SP 101 by adding 1.5 to 2.5 ppb of SP 101 to the system. Continue with the additions of SP 101 for fluid loss reductions (<6.0 cc). Add dry NaCl to maintain the chloride content between 19,000 and 25,000. Stop additions of Durogel and build up the surface system with MI Gel pre-hydrated in fresh water at a concentration of 12 to 15 ppb. Maintain the mud weight as required with the solids control equipment. Condition the mud with water to keep the MBT below 30 ppb and treat out calcium with Soda Ash to below 200 ppm. Reduce the mud weight and add calcium carbonate if mud losses are encountered while drilling this section.

Notes:

- Operate solids control equipment to maintain drill solids as low as possible.
- Maintain supply of H₂S scavenger onboard to treat out H₂S.
- A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised a minimum of 0.5 ppg using +/-1100 bbl total circulating volume (615 bbls in hole at TD & 400 bbl active system).
- If required add Calcium Carbonate to the mud system while drilling through the Monterey interval.

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

MINERALS MANAGEMENT SERVICE
SUNDRY NOTICES AND REPORTS ON WELL

Submit original plus three copies with
 one copy marked "Public Information"

OMB No. 1010-0045
 Expiration Date: September 30, 1999

1. ORIGINAL ☒ CORRECTION ☐	2. API WELL NUMBER/PRODUCING INTERVAL CODE 04-311-20422	3. WELL NO. A - 4	11. OPERATOR NAME AND ADDRESS (Submitting office) Chevron U.S.A. Inc.
8. FIELD NAME SANTA CLARA	9. UNIT NUMBER	10. MMS OPERATOR NUMBER 00078	646 County Square Drive Ventura, CA 93003

WELL AT TOTAL DEPTH

4. LEASE NUMBER OCS-P-0217	5. AREA NAME 6B	6. BLOCK NUMBER 4862	7. OPD NUMBER 6B
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32. TYPE OF SUBMITTAL REQUEST APPROVAL ☐ SUBSEQUENT REPORT ☒	33. PROPOSED OR COMPLETED WORK ACIDIZE ☐ FRACTURE ☐ PLUG BACK ☐ WORKOVER ☐ ALTER CASING ☐ INITIAL COMPLETION ☐ PULL CASING ☐ OTHER ☐ ARTIFICIAL LIFT ☐ MULTI-COMPLETION ☐ RECOMPLETION ☐ CHANGE ZONE ☐ PERFORATE ☐ SIDETRACK ☐ DEEPEN ☐ PERM ABANDONMENT ☐ TEMPORARY ABANDONMENT ☒	34. WELL STATUS/TYPE CODE TA
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WELL AT SURFACE

12. WELL LOCATION AT SURFACE (Surveyed) Slot M7 6948.78 FEL 2966.73 FSL X = 1,026,811.22' Y = 747,446.73'	13. LEASE NUMBER OCS-P-0217	14. AREA NAME 6B	15. BLOCK NO. 4862	16. OPD NUMBER 6B
35. SURVEY BASE NAD 27 ☒ NAD 83 ☐	18. WATER DEPTH (Surveyed) 318'	19. ELEVATION AT KB (Surveyed) 106.4'	20. RIG NAME GRACE	21. RIG TYPE PF

36. DESCRIBE PROPOSED OR COMPLETED OPERATIONS (Attach prognosis or summary of completed work, as appropriate)

Completed Work: 11/24/96 - 12/04/96: Plugged back and abandoned producing interval and 7" liner.

**Attached: PRO 319
Operations Summary
Current schematic**

JAN 6 1997

JAN 3

CONFIDENTIAL *

26. CONTACT NAME L. L. Phillips	27. TELEPHONE NUMBER 805-658-4493
28. AUTHORIZING OFFICIAL (Type Name) R. A. PICCIOTTI for A. CORNELIUS	29. TITLE VENTURA PROFIT CENTER MANAGER
30. AUTHORIZING SIGNATURE <i>R. A. Picciotti</i>	31. DATE 12/30/96

THIS SPACE FOR MMS USE ONLY

APPROVED BY *[Signature]* TITLE District Supervisor
 DATE 1/13/97

PAPERWORK REDUCTION ACT STATEMENT: The Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) requires us to inform you that this information is being collected to obtain knowledge of equipment and procedures to be used during well-completion, workover, and production operations. This information will be used by the District Supervisor to evaluate and approve or disapprove the adequacy of the equipment and procedures to safely perform the proposed operations. Response to this request is mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.18. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control No. Public reporting burden for this form is estimated to average 1 hour per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 2053, Minerals Management Service, 381 Elden Street, Herndon, VA 20170-4817; and to the Office of Management and Budget, Paperwork Reduction Project (OMB No. 1010-0045), Washington, DC 20503

FORM MMS-124 (September 1996) (Replaces all previous editions of Form MMS-124 which may not be used)

DISTRIBUTED

MMS-124-OUT-GG-D
 Ong L.L. Phillips, Vta Well Files
 MMS Camanilo (3 + 1 P1)

Re-completion or
Abandonment Report PRO-319



Page 31

Field Santa Clara

Property: OCS-P-0217, Platform Grace
Block 48-N 62-W

Well No. A-4

Sec. T. R. B. & M.

Following is complete and correct record of all work done on the well since the previous record dated January 8, 1988.

Purpose of work: Plug back well with cement.

Date of report: December 30, 1996

by Chevron U.S.A. Inc.

A. A. Picinotti
(for A. Cornelius, Ventura Profit Center Manager)

Work Done By: Pool #92

Commenced Operations: 11-24-96

Completed Operations: 12-04-96

Date Well Last Produced: Shut-in

Date Returned to Production: Temp. Abnd.

Summary Total Depth: 9540' PBTD: ± 6449'

CASING:

24" 125# Vetco-L conductor cmt'd @ 840'. Cement to mudline.
18-5/8" 105.6# K-55 buttress cmt'd @ 1991'. Cmt top job in 18-5/8" x 24" annulus from 340' to surface.
13-3/8" 72#, N-80 cmt'd @ 4597'. Cement channels to surface.
9-5/8" 47#, 43.5#, and 40# SS-95 buttress cmt'd @ 6698'. Poor bonding on CBL. CP'd @ 4608' - 4620', 6605'.
2343' of 7" 23 & 26# SS-95 & L-80 liner cmt'd @ 8905 w/ top @ 6562'. WSO on lap & @ 7953'. CP'd @ 8441', 8686', 8740', 8836'. Abandoned.

PERFORATIONS: 7" perf'd w/ eight 1/2" hpf: 7960' - 8400', abandoned.
Abandoned DST perfs 8620' - 8670', 8750' - 8820', sqz'd w/ cmt.

CONDITION OF CASING: No record of bad casings.

JUNK: None

Plugs:	± 6449' - 7660'	Class "G" cement	284 c/f w/retainer @ 7660'.
	8500' - 8672'	Class "G" cement	Previously existing
	8675' - 8880'	Class "G" cement	Previously existing.
	8883' - 8907'	Class "G" cement	Previously existing.
	8910' - 9207'	Class "G" cement	Previously existing.

L. L. Phillips

Field: Santa Clara
Platform: Grace

Well: OCS-P-0217 # A-4

Rig: Pool # 92
API #: 04-311-20422 Category: Temporary Abandonment

Prior operations: Kill well.

11-24-96 Day 1: 13 hr summary: R/U.

MIRU. Install BPV. Secure well & rig.

11-25-96 Day 2: 12.5 hr summary: N/D TREE.

N/D prod tree. N/U riser. Secure well & rig.

11-26-96 Day 3: 12.5 hr summary: CONT R/U.

R/U to annulus & fill w/54 bbls seawater. Pump 15 bbls, well pressured to 500 psi. Pump 8 bbls, well pressured to 1000 psi. Secure well & rig.

11-27-96 Day 4: 13.5 hr summary: N/U BOPE.

N/U BOPE's & skid rig over hole. Secure well & rig.

11-28-96 Day 5: 12 hr summary: TEST BOPE.

Test CIs IV 13-5/8" BOPE 1/300 psi lo & 3000 psi hi. Secure well & rig.

11-29-96 Day 6: 14.5 hr summary: REMOVE BPV. CUT & FISH TBG.

Remove BPV. Cut & recover bad tbg f/642'. Cut tbg @7792'. Secure well & rig.

11-30-96 Day 7: 12.5 hr summary: CUT & FISH TBG.

Jet cut & work stuck pipe from 7736'. Unable to cut deeper. Circ well to prod. Secure well & rig.

12-01-96 Day 8: 12.5 hr summary: PULL TBG. RUN SCRAPER.

POOH w/bad tbg. RIH w/7" csg scraper, tag @ 7672'. Unable to get deeper. Secure well & rig.

** *Received permission from D. Roberts with MMS to set retainer above bad pipe @7672', & equalize cement to above 6462'.*

12-02-96 Day 9: 12.5 hr summary: SET RETAINER. CEMENT.

Set Baker Model K-1 cement retainer at 7660'. Unable to establish injection rate @ 2000 psi. Equalize 130 cf (111 sx) Class "G" cmt @ 15.9 ppg to ETOC 7055'. Equalize 154 cf (131 sx) "G" to ETOC 6449'. Secure well & rig.

12-03-96 Day 10: 12.5 hr summary: TEST PLUG. LAND TBG HANGER.

Test csg and plug to 1000 psi for 15 min, OK. Land tbg hanger w/kill string @ 1556'. Skid rig to access BOPE. Remove annular. Secure well & rig.

12-04-96 Day 11: 2.5 hr summary: RELEASE RIG.

N/D BOPE. Set on & clamp up dry hole tree. Test bonnet 1/3000 psi. Release rig at 0800 hrs. Move to well A-26.

Santa Clara Field
OCS-P-0217 Platform Grace

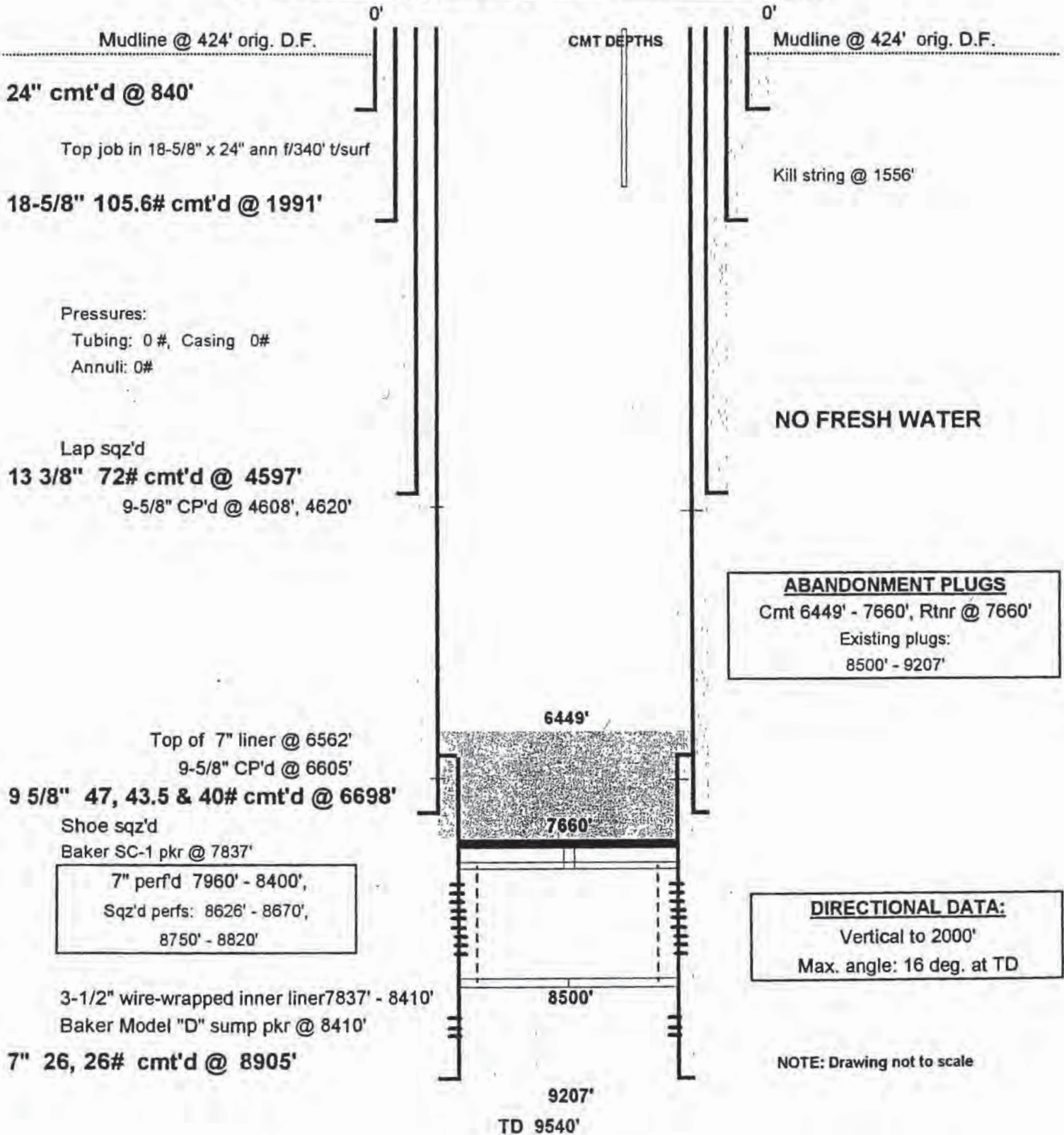
A-4

Elev. 106.4' D.F. T.D. 9540' PBTD: 6449'

W.D. 318'

API # 04-311-20422

CURRENT CONDITION - TEMPORARY ABANDONMENT



NOTE: Drawing not to scale

A-4

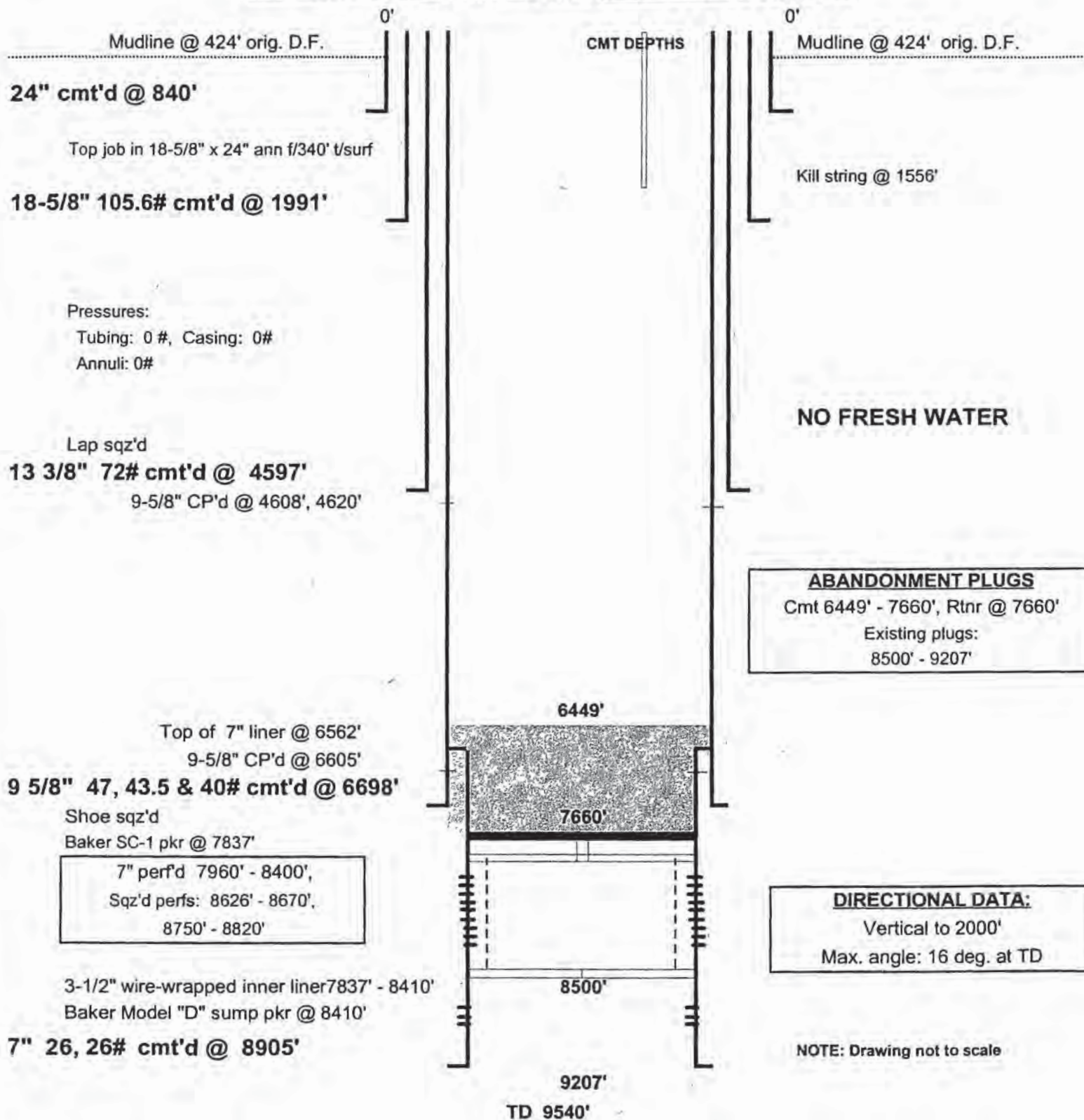
Santa Clara Field
OCS-P-0217 Platform Grace

Elev. 106.4' D.F. T.D. 9540' PBTD: 6449'

W.D. 318'

API # 04-311-20422

CURRENT CONDITION - TEMPORARY ABANDONMENT



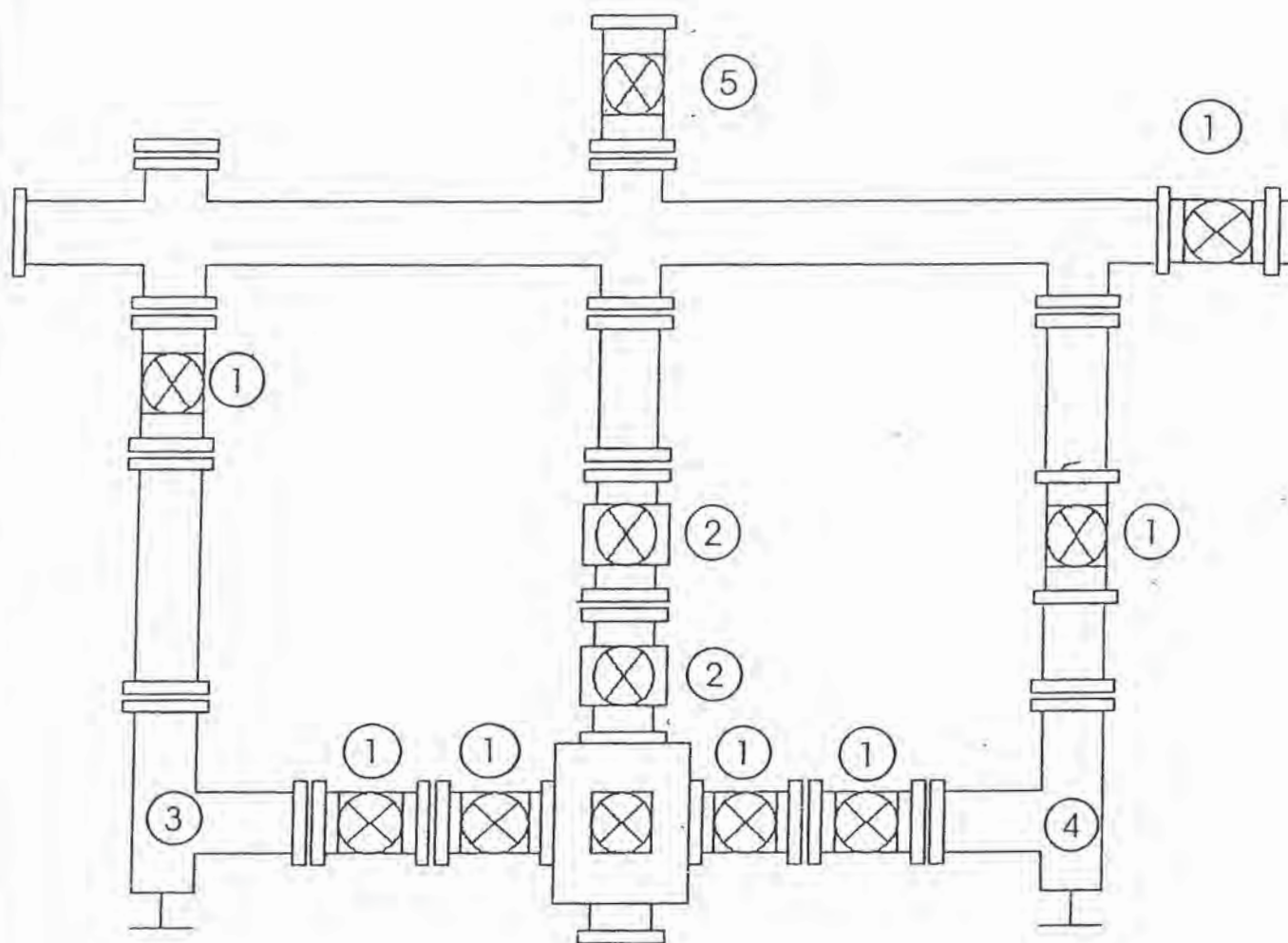


Proposed Rig #11 Specifications

Venoco Platform Grace

(Expected Completion Date: 7/06)

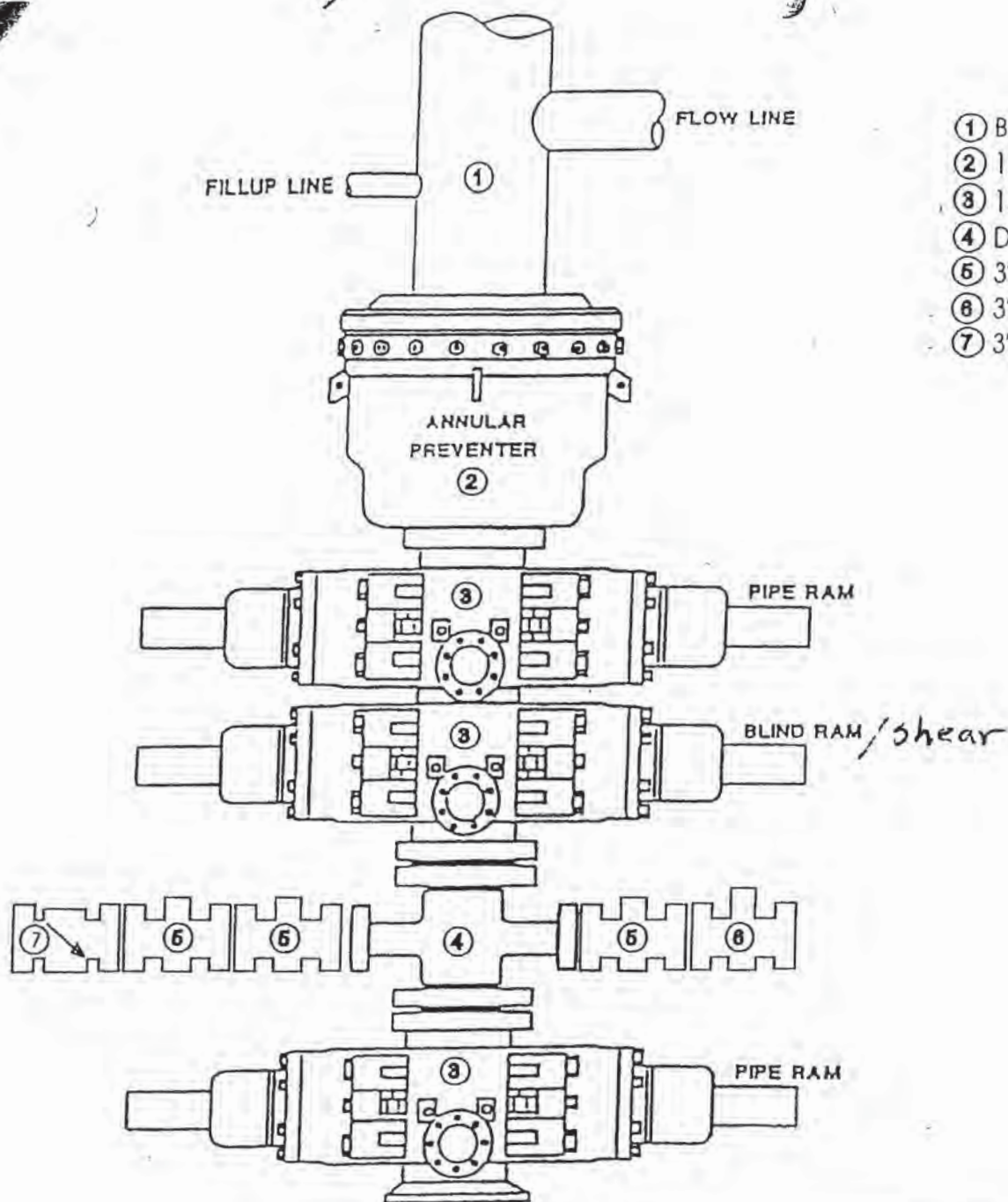
Drilling Range:	16,000' with 5" Drillpipe.
Drawworks:	Oilwell 960 / 1,400 H.P., Powered by (2)-General Electric 752 D.C. Series Traction Motors, 1,000 H.P. Each. With a Parmac 60" Hydromatic Brake and Electronic Control Panel.
Mast:	Dreco 142' High, Rated at 500,000# Static Hook Capacity.
Substructure:	5' High Offshore Box With 500,000# Static Hook & Rotary Load and 500,000# Setback Capacity.
Mud Pump #1:	Bomco F-1600 Triplex, 7"x12", 1,600 H.P., Powered by (2)-General Electric 752 D.C. Series Traction Motors, 1,000 H.P. Each, Charged by (1)-5x6 Centrifugal Pump.
Mud Pump #2:	Bomco F-1600 Triplex, 7"x12", 1,600 H.P., Powered by (2)-General Electric 752 D.C. Series Traction Motors, 1,000 H.P. Each, Charged by (1)-5x6 Centrifugal Pump.
Rotary Table:	Ideco 27" With Split Master Bushings.
Traveling Assembly:	Continental Emsco 5 Sheave, 350 Ton Block/Hook Combination.
SCR System:	IPS 3 Bridge, 3 Input SCR Unit and Allen Bradley MCC Unit.
Mud System:	(2)-Pit System, 700 Total Barrels, With Trip, Shaker, Mud Cleaning and Pill Mixing Compartments, (4)-Lightning Mud Agitators, Submerged Guns, (2)-5x6 Centrifugal Pumps and (2)-Flowline Cleaners.
B.O.P.E.:	Hydril GK 13-5/8", 5,000# Annular, Shaffer SL 13-5/8", 5,000# D-Ram, Hydril Type V 5,000# S-Ram, 180 Gallon Accumulator and 5,000# Choke Manifold.
Auxiliary Equipment:	(2)-Air Winches, International Tool Kelly Spinner, Varco SSW-30 Pipe Spinner, (2)-Air compressors, Lower Doghouse and Satellite Automatic Drilling System.



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD
PLATFORM GRACE
(PROPOSED)



- ① BELL NIPPLE
- ② 13 5/8" 5M GK HYDRILL
- ③ 13 5/8" 5M DOUBLE GA
- ④ DRILLING SPOOL
- ⑤ 3" 5M MANUAL VALVE
- ⑥ 3" 5M HCR VALVE
- ⑦ 3" 5M CHECK VALVE

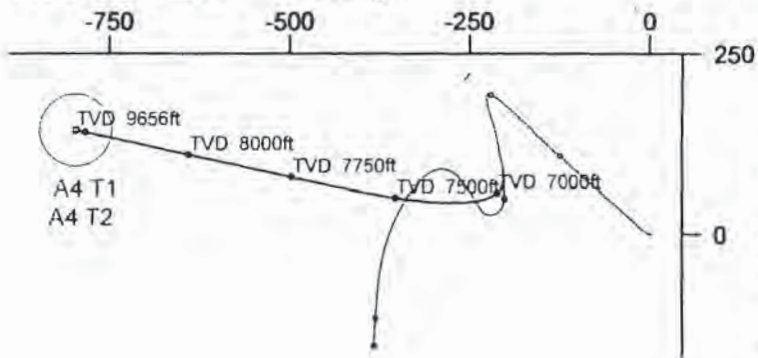


BLOWOUT PREVENTION SYSTEM PLATFORM G. RACE (PROPOSED)

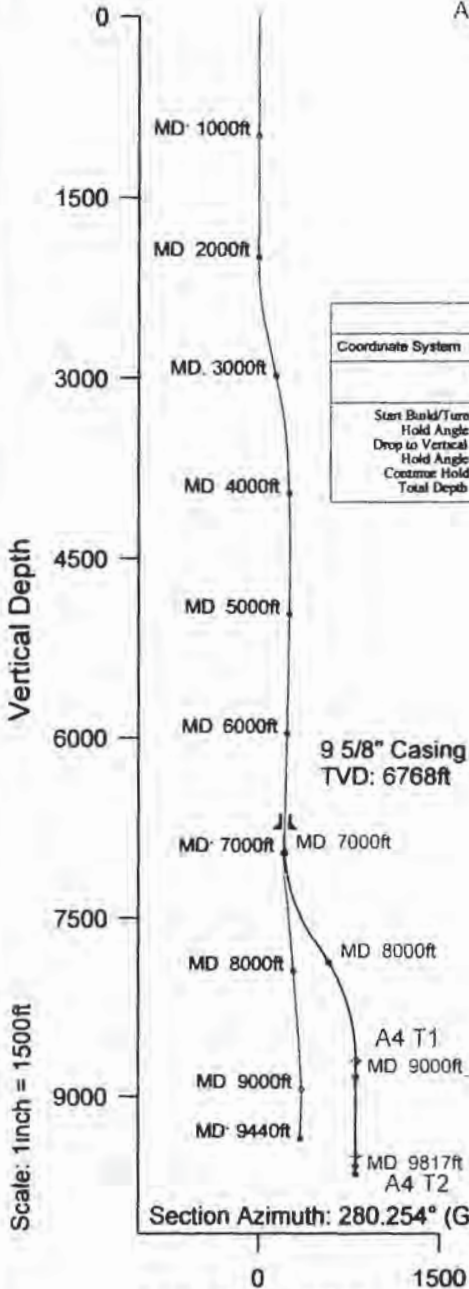
Santa Clara Unit
Platform Grace
Santa Clara Unit
A04

Scale: 1 inch = 250ft

Eastings



Scale: 1 inch = 250ft
Northings



Scale: 1 inch = 1500ft
Vertical Section

Plan 3 (03-Mar-03) Proposal Data

Coordinate System: NAD27 California State Planes, Zone VI							
	Measured Depth	Incl.	Azim.	Vertical Depth	Northings	Eastings	Dogleg Rate
Start Build/Turn	6850.00	8.061	176.658	6817.40	77.15 N	201.74 W	212.26
Hold Angle	7744.43	32.835	282.408	7663.63	66.29 N	442.80 W	447.53
Drop to Vertical	7929.07	32.835	282.408	7818.78	87.81 N	540.57 W	547.57
Hold Angle	8867.21	0.000	0.000	8706.40	144.00 N	796.00 W	808.92
Costman Hold	9667.21	0.000	0.000	9506.40	144.00 N	796.00 W	808.92
Total Depth	9817.20	0.000	0.000	9656.40	144.00 N	796.00 W	808.92

Current Well Properties

Well	A04
Horizontal Coordinates	
Ref. Global Coordinates	747447.00 N, 1026811.00 E
Ref. Structure	10.00 N, 4.00 E
Ref. Geographical Coordinates	34 17959890° N, 119 46781786° W
RKB Elevation	106.40ft above Mean Sea Level
Grid North Convergence	106.40ft above Structure
North Reference	-1.768°
Units	Grd North Feet (US)

Prepared by Admin

Date/Time
3 March, 2006 - 11:57

Checked

Approved

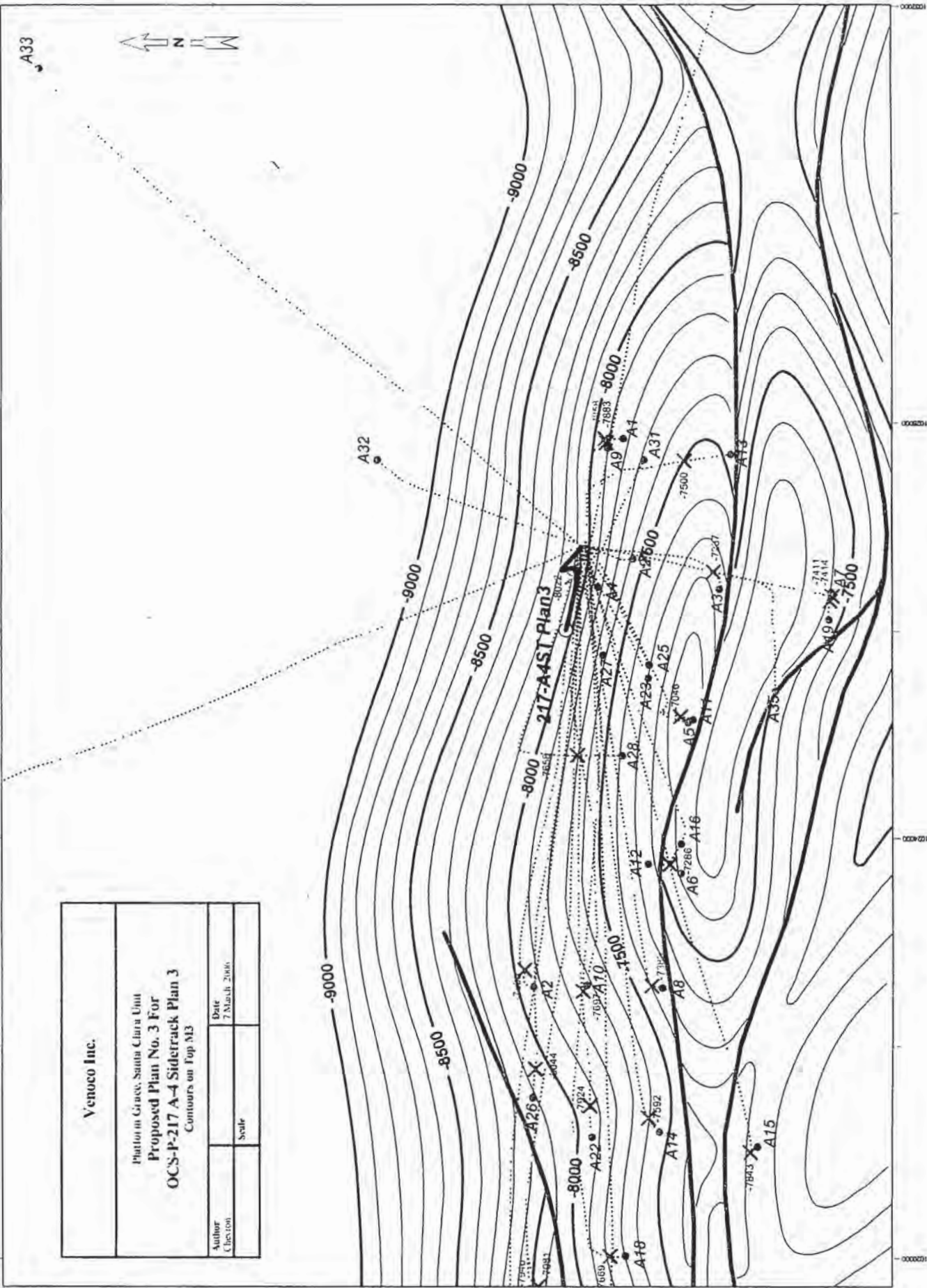
Venoco Inc.

Platform Grace, Santa Clara Unit
Proposed Plan No. 3 For
OCS-P-217 A-4 Sidetrack Plan 3
Contours on Top M3

Author
Chenon

Scale

Date
7 March 2006





**Venoco Inc.
Santa Clara Unit
Platform Grace
Santa Clara Unit
A04 - Plan 3 (03-Mar-03)**

Haliburton Sperry-Sun Proposal Report

3 March, 2006

Surface Coordinates: 747447.00 N, 1026811.00 E (34.17959890° N, 119.46781786° W)
Grid Coordinate System: NAD27 California State Planes, Zone VI

RKB Elevation: 106.40ft above Mean Sea Level

Proposal Ref: pro151701

HALLIBURTON

HALLIBURTON

Venoco Inc.
Santa Clara Unit
Platform Grace

Proposal Report for Santa Clara Unit - A04

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
A04 Original Hole											
0.00	0.000	0.000	106.40	0.00	0.00 N	0.00 E	747447.00 N	1026811.00 E		0.00	
30.00	0.450	171.000	76.40	30.00	0.12 S	0.02 E	747446.88 N	1026811.02 E	1.500	-0.04	
60.00	0.170	320.500	46.40	60.00	0.20 S	0.01 E	747446.80 N	1026811.01 E	2.009	-0.04	
90.00	0.150	152.700	16.40	90.00	0.20 S	0.00 E	747446.80 N	1026811.00 E	1.061	-0.03	
120.00	0.350	135.500	-13.60	120.00	0.30 S	0.08 E	747446.70 N	1026811.08 E	0.705	-0.13	
150.00	0.450	168.400	-43.60	150.00	0.48 S	0.17 E	747446.52 N	1026811.17 E	0.820	-0.25	
180.00	0.450	152.300	-73.60	180.00	0.70 S	0.25 E	747446.30 N	1026811.25 E	0.420	-0.37	
210.00	0.300	171.200	-103.60	210.00	0.88 S	0.31 E	747446.12 N	1026811.31 E	0.642	-0.47	
240.00	0.400	178.000	-133.60	240.00	1.06 S	0.33 E	747445.94 N	1026811.33 E	0.360	-0.51	
270.00	0.220	162.400	-163.60	270.00	1.22 S	0.35 E	747445.78 N	1026811.35 E	0.657	-0.56	
300.00	0.150	316.300	-193.60	300.00	1.25 S	0.34 E	747445.75 N	1026811.34 E	1.203	-0.56	
330.00	0.370	148.400	-223.60	330.00	1.30 S	0.36 E	747445.70 N	1026811.36 E	1.725	-0.59	
360.00	0.220	168.980	-253.60	360.00	1.44 S	0.43 E	747445.56 N	1026811.43 E	0.605	-0.68	
390.00	0.470	309.800	-283.59	389.99	1.42 S	0.34 E	747445.58 N	1026811.34 E	2.185	-0.59	
420.00	0.420	312.400	-313.59	419.99	1.27 S	0.17 E	747445.73 N	1026811.17 E	0.180	-0.39	
450.00	0.270	342.800	-343.59	449.99	1.13 S	0.06 E	747445.87 N	1026811.06 E	0.772	-0.26	
480.00	0.300	74.600	-373.59	479.99	1.04 S	0.12 E	747445.96 N	1026811.12 E	1.366	-0.30	
510.00	0.300	325.700	-403.59	509.99	0.95 S	0.15 E	747446.05 N	1026811.15 E	1.627	-0.32	
540.00	0.080	17.000	-433.59	539.99	0.87 S	0.11 E	747446.13 N	1026811.11 E	0.859	-0.27	
570.00	0.170	151.800	-463.59	569.99	0.89 S	0.14 E	747446.11 N	1026811.14 E	0.778	-0.30	
600.00	0.020	182.900	-493.59	599.99	0.93 S	0.16 E	747446.07 N	1026811.16 E	0.511	-0.32	
630.00	0.180	228.200	-523.59	629.99	0.97 S	0.13 E	747446.03 N	1026811.13 E	0.555	-0.30	
660.00	0.050	93.000	-553.59	659.99	1.00 S	0.10 E	747446.00 N	1026811.10 E	0.728	-0.28	
690.00	0.400	295.900	-583.59	689.99	0.95 S	0.02 E	747446.05 N	1026811.02 E	1.488	-0.19	
720.00	0.120	215.700	-613.59	719.99	0.93 S	0.09 W	747446.07 N	1026810.91 E	1.325	-0.08	
750.00	0.120	208.020	-643.59	749.99	0.99 S	0.12 W	747446.01 N	1026810.88 E	0.054	-0.05	
780.00	0.470	206.200	-673.59	779.99	1.13 S	0.19 W	747445.87 N	1026810.81 E	1.167	-0.01	
800.00	0.200	3.130	-693.59	799.99	1.16 S	0.23 W	747445.84 N	1026810.77 E	3.293	0.02	
820.00	0.270	74.300	-713.59	819.99	1.12 S	0.18 W	747445.88 N	1026810.82 E	1.397	-0.02	
866.00	0.420	77.500	-759.59	865.99	1.05 S	0.09 E	747445.95 N	1026811.09 E	0.329	-0.28	

Proposal Report for Santa Clara Unit - A04

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates		Global Coordinates		Dogleg Rate (°/100ft)	Vertical Section	Comment
					Northings (ft)	Eastings (ft)	Northings (ft)	Eastings (ft)			
895.00	0.580	70.500	-789.59	895.99	0.98 S	0.34 E	747446.02 N	1026811.34 E	0.570	-0.51	
926.00	0.250	128.500	-819.59	925.99	0.97 S	0.53 E	747446.03 N	1026811.53 E	1.651	-0.70	
956.00	0.330	80.000	-849.59	955.99	0.99 S	0.67 E	747446.01 N	1026811.57 E	0.830	-0.84	
986.00	0.500	20.500	-879.59	985.99	0.85 S	0.80 E	747446.15 N	1026811.80 E	1.458	-0.94	
1016.00	0.330	22.500	-909.59	1015.99	0.65 S	0.88 E	747446.35 N	1026811.88 E	0.569	-0.98	
1046.00	0.330	82.500	-939.59	1045.99	0.56 S	1.00 E	747446.44 N	1026812.00 E	1.100	-1.08	
1076.00	0.250	82.500	-969.59	1075.99	0.54 S	1.15 E	747446.46 N	1026812.15 E	0.267	-1.23	
1106.00	0.330	45.500	-999.59	1105.99	0.47 S	1.28 E	747446.53 N	1026812.28 E	0.664	-1.34	
1136.00	0.170	3.500	-1029.59	1135.99	0.37 S	1.34 E	747446.63 N	1026812.34 E	0.778	-1.38	
1166.00	0.330	146.500	-1059.59	1165.99	0.39 S	1.39 E	747446.61 N	1026812.39 E	1.590	-1.44	
1196.00	0.580	1.500	-1089.58	1195.98	0.32 S	1.44 E	747446.68 N	1026812.44 E	2.904	-1.48	
1226.00	0.500	342.500	-1119.58	1225.98	0.04 S	1.41 E	747446.96 N	1026812.41 E	0.650	-1.39	
1256.00	0.500	48.500	-1149.58	1255.98	0.17 N	1.47 E	747447.17 N	1026812.47 E	1.815	-1.41	
1286.00	0.330	60.500	-1179.58	1285.98	0.30 N	1.64 E	747447.30 N	1026812.64 E	0.633	-1.56	
1316.00	0.000	0.000	-1209.58	1315.98	0.34 N	1.71 E	747447.34 N	1026812.71 E	1.100	-1.63	
1346.00	0.170	298.500	-1239.58	1345.98	0.37 N	1.68 E	747447.37 N	1026812.68 E	0.567	-1.58	
1376.00	0.250	68.000	-1269.58	1375.98	0.41 N	1.70 E	747447.41 N	1026812.70 E	1.271	-1.60	
1406.00	0.330	76.500	-1299.58	1405.98	0.46 N	1.84 E	747447.46 N	1026812.84 E	0.302	-1.73	
1436.00	0.030	177.500	-1329.58	1435.98	0.47 N	1.93 E	747447.47 N	1026812.93 E	1.123	-1.81	
1466.00	0.330	140.500	-1359.58	1465.98	0.39 N	1.98 E	747447.39 N	1026812.98 E	1.022	-1.88	
1496.00	0.330	144.500	-1389.58	1495.98	0.26 N	2.09 E	747447.26 N	1026813.09 E	0.077	-2.01	
1526.00	0.080	78.500	-1419.58	1525.98	0.19 N	2.16 E	747447.19 N	1026813.16 E	1.021	-2.09	
1556.00	0.250	95.500	-1449.58	1555.98	0.19 N	2.24 E	747447.19 N	1026813.24 E	0.584	-2.17	
1586.00	0.170	96.500	-1479.58	1585.98	0.18 N	2.35 E	747447.18 N	1026813.35 E	0.267	-2.28	
1616.00	0.370	152.500	-1509.58	1615.98	0.09 N	2.44 E	747447.09 N	1026813.44 E	1.030	-2.39	
1646.00	0.330	98.500	-1539.58	1645.98	0.01 S	2.57 E	747446.99 N	1026813.57 E	1.066	-2.53	
1676.00	0.170	344.500	-1569.58	1675.98	0.02 N	2.64 E	747447.02 N	1026813.64 E	1.428	-2.60	
1706.00	0.170	144.500	-1599.58	1705.98	0.02 N	2.66 E	747447.02 N	1026813.66 E	1.116	-2.61	
1736.00	0.330	72.000	-1629.58	1735.98	0.02 N	2.77 E	747447.02 N	1026813.77 E	1.075	-2.72	
1766.00	0.070	38.500	-1659.58	1765.98	0.06 N	2.86 E	747447.06 N	1026813.86 E	0.915	-2.80	

Proposal Report for Santa Clara Unit - A04

Measured Depth (ft)	Incl.	Grd Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
1796.00	0.750	154.500	-1689.58	1795.98	0.11 S	2.96 E	747446.89 N	1026813.96 E	2.611	-2.93	
1826.00	0.630	130.500	-1719.58	1825.98	0.39 S	3.17 E	747446.61 N	1026814.17 E	1.033	-3.18	
1856.00	0.370	139.500	-1749.57	1855.97	0.57 S	3.35 E	747446.43 N	1026814.35 E	0.903	-3.40	
1886.00	0.630	147.500	-1779.57	1885.97	0.78 S	3.51 E	747446.22 N	1026814.51 E	0.895	-3.59	
1916.00	0.500	121.500	-1809.57	1915.97	0.99 S	3.71 E	747446.01 N	1026814.71 E	0.947	-3.82	
1946.00	0.170	80.500	-1839.57	1945.97	1.05 S	3.86 E	747445.95 N	1026814.86 E	1.294	-3.99	
1976.00	0.170	227.500	-1869.57	1975.97	1.08 S	3.87 E	747445.92 N	1026814.87 E	1.087	-4.00	
1991.00	0.330	251.500	-1884.57	1990.97	1.10 S	3.82 E	747445.90 N	1026814.82 E	1.253	-3.95	
2124.00	1.500	280.000	-2017.55	2123.95	0.92 S	1.74 E	747446.08 N	1026812.74 E	0.917	-1.87	
2185.00	3.000	300.000	-2078.50	2184.90	0.01 N	0.43 W	747447.01 N	1026810.57 E	2.739	0.43	
2245.00	4.750	296.500	-2138.36	2244.76	1.91 N	4.01 W	747448.91 N	1026806.99 E	2.942	4.29	
2308.00	6.500	306.500	-2201.06	2307.46	5.19 N	9.22 W	747452.19 N	1026801.78 E	3.174	9.99	
2368.00	8.000	315.000	-2260.58	2366.98	10.17 N	14.90 W	747457.17 N	1026796.10 E	3.067	16.47	
2428.00	9.750	315.000	-2319.86	2426.26	16.71 N	21.44 W	747463.71 N	1026789.56 E	2.917	24.08	
2457.00	11.000	312.500	-2348.39	2454.79	20.32 N	25.22 W	747467.32 N	1026785.78 E	4.580	28.43	
2542.00	13.750	311.000	-2431.40	2537.80	32.42 N	38.83 W	747479.42 N	1026772.17 E	3.257	43.98	
2817.00	13.750	312.000	-2698.52	2804.92	75.73 N	87.78 W	747522.73 N	1026723.22 E	0.086	99.86	
3064.00	13.500	311.500	-2838.57	3044.97	114.48 N	131.19 W	747561.48 N	1026679.81 E	0.112	149.47	
3214.00	13.750	315.000	-3084.35	3190.75	138.69 N	156.90 W	747585.69 N	1026654.10 E	0.574	179.09	
3363.00	9.750	313.000	-3230.20	3336.60	159.82 N	178.66 W	747606.82 N	1026632.34 E	2.698	204.26	
3520.00	6.250	311.500	-3385.65	3492.05	174.55 N	194.79 W	747621.55 N	1026616.21 E	2.233	222.75	
3675.00	4.000	305.000	-3540.02	3646.42	183.25 N	205.54 W	747630.25 N	1026605.46 E	1.497	234.88	
3859.00	2.500	305.000	-3723.72	3830.12	189.23 N	214.08 W	747636.23 N	1026596.92 E	0.815	244.35	
4072.00	1.750	283.000	-3936.58	4042.98	192.63 N	221.06 W	747638.63 N	1026589.94 E	0.514	251.82	
4224.00	0.750	260.000	-4088.54	4194.94	192.98 N	224.30 W	747639.98 N	1026586.70 E	0.723	255.07	
4496.00	1.000	186.500	-4360.51	4466.91	180.31 N	226.32 W	747637.31 N	1026584.68 E	0.392	256.58	
4589.00	1.500	167.000	-4453.49	4559.89	188.32 N	226.14 W	747635.32 N	1026584.86 E	0.699	256.05	
4742.00	1.500	171.500	-4606.44	4712.84	184.38 N	225.39 W	747631.38 N	1026585.61 E	0.077	254.62	
4871.00	1.500	172.500	-4735.39	4841.79	181.04 N	224.92 W	747628.04 N	1026586.08 E	0.020	253.56	
5155.00	2.000	164.500	-5019.26	5125.66	172.58 N	223.11 W	747619.58 N	1026587.89 E	0.196	250.27	

Proposal Report for Santa Clara Unit - A04

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Eastings (ft)	Global Coordinates Northings (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
5405.00	2.250	162.000	-5269.09	5375.49	163.71 N	220.43 W	747610.71 N	1026590.57 E	0.107	246.05	
5711.00	2.500	162.000	-5574.83	5681.23	151.65 N	216.51 W	747598.65 N	1026594.49 E	0.082	240.05	
6017.00	3.000	166.500	-5880.47	5986.87	137.52 N	212.58 W	747584.52 N	1026598.42 E	0.178	233.67	
6322.00	3.500	170.000	-6184.98	6291.38	120.59 N	209.10 W	747567.59 N	1026601.90 E	0.176	227.23	
6479.00	3.750	167.500	-6341.67	6448.07	110.85 N	207.16 W	747557.85 N	1026603.84 E	0.188	223.58	
6670.00	4.750	167.500	-6532.14	6638.54	97.03 N	204.09 W	747544.03 N	1026606.91 E	0.524	218.11	9 5/8" Casing
6800.00	7.128	174.967	-6661.44	6767.84	83.74 N	202.22 W	747530.74 N	1026608.78 E	1.919	213.90	Tied on at 6850.00ft
6850.00	8.061	176.658	-6711.00	6817.40	77.15 N	201.74 W	747524.15 N	1026609.26 E	1.919	212.26	
Plan 3 (03-Mar-03)											
6900.00	7.377	190.699	-6760.56	6866.95	70.50 N	202.14 W	747517.50 N	1026608.86 E	4.000	211.46	
7000.00	7.562	221.812	-6859.74	6966.14	59.28 N	207.72 W	747506.28 N	1026603.28 E	4.000	214.95	
7100.00	9.580	245.307	-6958.65	7065.05	50.90 N	219.67 W	747487.80 N	1026591.33 E	4.000	225.22	
7200.00	12.578	259.248	-7056.79	7163.19	45.39 N	237.93 W	747492.39 N	1026573.07 E	4.000	242.21	
7300.00	16.014	267.605	-7153.69	7260.09	42.78 N	262.42 W	747488.78 N	1026548.58 E	4.000	265.85	
7400.00	19.661	273.003	-7248.87	7355.27	43.08 N	293.02 W	747490.08 N	1026517.98 E	4.000	296.01	End of Build/Turn at 7744
7500.00	23.419	276.747	-7341.88	7448.28	46.30 N	329.57 W	747493.30 N	1026481.43 E	4.000	332.54	
7600.00	27.243	279.498	-7432.25	7538.65	52.41 N	371.89 W	747499.41 N	1026439.11 E	4.000	375.28	
7700.00	31.108	281.614	-7519.55	7625.95	61.40 N	419.79 W	747508.40 N	1026391.21 E	4.000	424.01	
7744.43	32.835	282.408	-7557.23	7663.63	66.29 N	442.80 W	747513.28 N	1026368.20 E	4.000	447.53	
7800.00	32.835	282.408	-7603.83	7710.33	72.77 N	472.22 W	747519.77 N	1026338.78 E	0.000	477.64	
7900.00	32.835	282.408	-7687.95	7794.35	84.42 N	525.18 W	747531.42 N	1026285.82 E	0.000	531.82	
7929.07	32.835	282.408	-7712.38	7818.78	87.81 N	540.57 W	747534.81 N	1026270.43 E	0.000	547.57	Drop to Vertical at 7929.07ft
8000.00	30.352	282.408	-7772.79	7879.19	95.79 N	576.86 W	747542.79 N	1026234.14 E	3.500	584.70	
8100.00	26.852	282.408	-7860.57	7966.97	106.07 N	623.61 W	747553.07 N	1026187.39 E	3.500	632.53	
8200.00	23.352	282.408	-7951.11	8057.51	115.19 N	665.04 W	747562.19 N	1026145.96 E	3.500	674.92	
8300.00	19.852	282.408	-8044.08	8150.48	123.10 N	700.98 W	747570.10 N	1026110.01 E	3.500	711.70	
8400.00	16.352	282.408	-8139.11	8245.51	129.77 N	731.33 W	747576.77 N	1026079.67 E	3.500	742.75	
8500.00	12.852	282.408	-8235.87	8342.27	135.19 N	755.95 W	747582.19 N	1026055.05 E	3.500	767.94	
8600.00	9.352	282.408	-8333.98	8440.38	139.32 N	774.75 W	747586.32 N	1026036.25 E	3.500	787.18	

Proposal Report for Santa Clara Unit - A04

Measured Depth (ft)	Incl.	Grid Azim.	Sub-Sea Depth (ft)	Vertical Depth (ft)	Local Coordinates Northings (ft)	Local Coordinates Eastings (ft)	Global Coordinates Northings (ft)	Global Coordinates Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section	Comment
8700.00	5.852	282.408	-8433.08	8539.49	142.17 N	787.67 W	747589.17 N	1026023.33 E	3.500	800.39	
8800.00	2.352	282.408	-8532.81	8639.21	143.70 N	794.65 W	747590.70 N	1026016.35 E	3.500	807.54	
8867.21	0.000	0.000	-8600.00	8706.40	144.00 N	796.00 W	747591.00 N	1026015.00 E	3.500	808.92	End of Drop at 8867.21ft Target - A4 T1, 50.00 Radius, Current Target
8900.00	0.000	0.000	-8632.79	8739.19	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	
9000.00	0.000	0.000	-8732.79	8839.19	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	
9100.00	0.000	0.000	-8832.79	8939.19	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	
9200.00	0.000	0.000	-8932.79	9039.19	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	
9300.00	0.000	0.000	-9032.79	9139.19	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	
9400.00	0.000	0.000	-9132.79	9239.19	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	
9500.00	0.000	0.000	-9232.79	9339.19	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	
9600.00	0.000	0.000	-9332.79	9439.19	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	
9667.21	0.000	0.000	-9400.00	9506.40	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	Target - A4 T2, 50.00 Radius, Current Target
9700.00	0.000	0.000	-9432.79	9539.19	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	
9800.00	0.000	0.000	-9532.79	9639.19	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	
9817.20	0.000	0.000	-9550.00	9656.40	144.00 N	796.00 W	747591.00 N	1026015.00 E	0.000	808.92	Total Depth at 9817.20ft

All data is in Feet (US) unless otherwise stated. Directions and coordinates are relative to Grd North
Vertical depths are relative to RKB. Northings and Eastings are relative to Well.

Global Northings and Eastings are relative to NAD27 California State Planes, Zone VI.

The Dogleg Severity is in Degrees per 100 feet (US).

Vertical Section is from Well and calculated along an Azimuth of 280.254° (Grid).

Based upon Minimum Curvature type calculations, at a Measured Depth of 9817.20ft.,
The Bottom Hole Displacement is 808.92ft., in the Direction of 280.254° (Grid).

HALLIBURTON

Proposal Report for Santa Clara Unit - A04

Comments

Measured Depth (ft)	Station Coordinates			Comment
	TVD (ft)	Northings (ft)	Eastings (ft)	
6850.00	6817.40	77.15 N	201.74 W	Tied on at 6850.00ft
7744.43	7663.63	66.29 N	442.80 W	End of Build/Turn at 7744.43ft
7929.07	7818.78	87.81 N	540.57 W	Drop to Vertical at 7929.07ft
8867.21	8706.40	144.00 N	796.00 W	End of Drop at 8867.21ft
9817.20	9656.40	144.00 N	796.00 W	Total Depth at 9817.20ft

Casing details

Measured Depth (ft)	From		To	
	Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)
<Surface>	<Surface>	6800.00	6767.84	9 5/8" Casing

Proposal Report for Santa Clara Unit - A04

Targets associated with this wellpath

Target Name	TVD (ft)	Target Entry Northings (ft)	Target Entry Eastings (ft)	Target Entry Distance (ft)	Direction (°Grid)
A4 T1 (Circle)	8706.40 -8600.00 50.00ft	144.00 N 747591.00 N 34.17992687° N	796.00 W 1026015.00 E 119.47046284° W	808.92	280.254
Mean Sea Level/Global Coordinates: Geographical Coordinates: Target Radius:					
A4 T2 (Circle)	9506.40 -9400.00 50.00ft	144.00 N 747591.00 N 34.17992687° N	796.00 W 1026015.00 E 119.47046284° W	808.92	280.254
Mean Sea Level/Global Coordinates: Geographical Coordinates: Target Radius:					

North Reference Sheet for Santa Clara Unit - A04

Coordinate System is NAD27 California State Planes, Zone VI, US Foot
Source: Snyder, J.P., 1987, Map Projections - A Working Manual

Datum is North American Datum of 1927 (US48, AK, HI, and Canada)

Spheroid is Clarke - 1866

Equatorial Radius: 6378206.400m.

Polar Radius: 6356583.800m.

Inverse Flattening: 294.978698213901

Projection method is Lambert Conformal Conic Projection

Central Meridian is -116.250°

Longitude Origin: -116.250°

Latitude Origin: 32.167°

False Easting: 609600.00m

False Northing: 0.00m

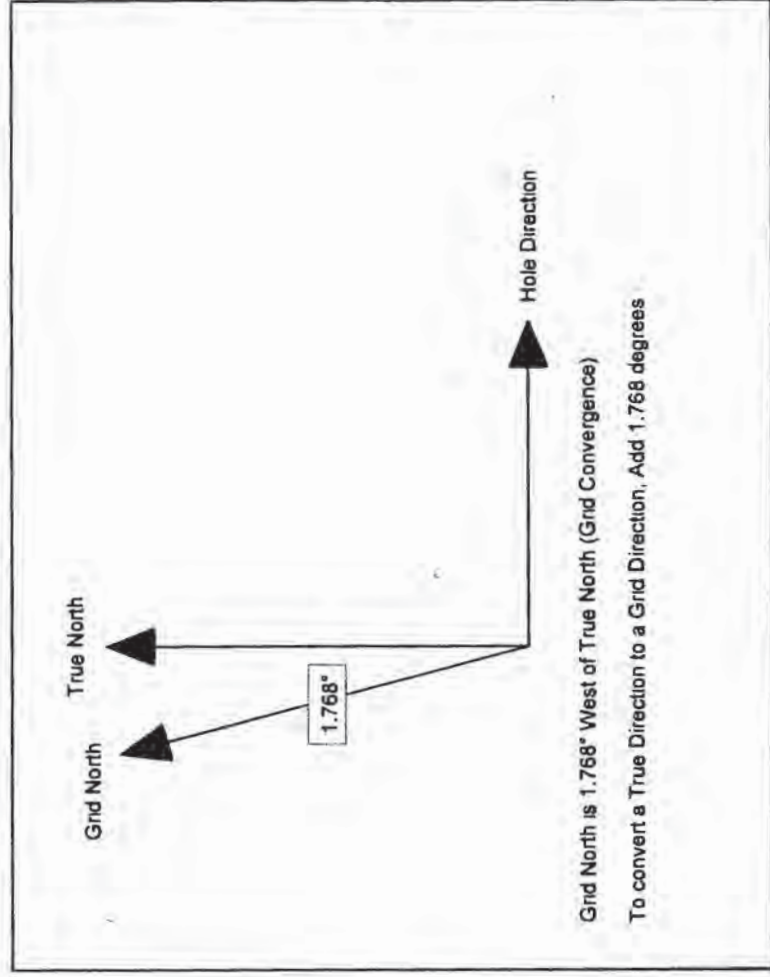
Scale Reduction 1.000000000

Grid Coordinates of Well: 747447 00 N, 1026811.00 E

Geographical Coordinates of Well: 34.17959890° N, 119.46781786° W

Surface Elevation of Well: 106.40ft

Grid Convergence at Surface is -1.768°





United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Pacific OCS Region

770 Paseo Camarillo

Camarillo, California 93010-6064

IN REPLY REFER TO

7106

March 29, 2006

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation & Production *frv*

Subject: Geologic Hazards Analysis for Well P-0217 A-4RD

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Santa Clara Oil Field
Lease: OCS-P 0217
Platform: Grace
Well/Slot: A-4RD in slot M7
Objective: Water Disposal
API: 04-311-20422-01

Surface Location: X = 1,026,811 ft
Lambert Zone 6 Y = 747,446 ft

Estimated Top of X =
Productive Zone Y =

Estimated Bottom X = 1,026,015 ft
Hole Location Y = 747,591 ft

Elevation of KB: + 106 feet
Est. Total Depth (measured): - 9,817 feet (RKB)
Est. Total Depth (true vert.): - 9,656 feet (RKB)

Water Depth (Grace): 318 feet +/-

Overview of Proposal

Venoco, Inc., operator of the Santa Clara Field within the Santa Clara Unit, proposes to drill well OCS-P 0217 A4-RD into the Monterey Formation. The objective of the well is for water disposal and is the first well for the return to production for Platform Grace.

The proposed well will be drilled using a Kenai Rig on Platform Grace to a bottom hole location in Lease OCS-P 0217, just north of the platform. This side track will drill out the existing cement plugs and the existing perforations will be isolated and plugged with cement. Maximum pressure is not expected to exceed the pressures recorded in 1989 at TD (Monterey Fm) of 3023 psi.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Santa Margarita	Pliocene	6,236 feet	6,205 feet
KOP	Pliocene	6,850 feet	6,817 feet
Top Monterey M2	Miocene	7,781 feet	7,693 feet
Top Monterey M5	Miocene	9,619 feet	9,458 feet
Total Depth	Miocene	9,817 feet	9,656 feet

2. Potential Oil and Gas Reservoirs

Formation	Age	(TVD)	Thickness	HC Type
----- NONE ----- Water Disposal Well -----				

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. This well is a side track from well A-4, therefore all the upper zones are already behind casing, and we expect normal salty or briny formation water while drilling.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of P-0217 A4. The present operator and former operator of the Santa Clara field have extensive drilling experience within this area. The proposed drilling program is similar to those utilized in drilling the production wells in the field.

5. Faulting and Folding

The water disposal well is located approximately 900 feet structurally lower and down dip from the crest of the anticline. There are no major faults mapped in the area of the sidetrack.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Grace, due to the drilling of this well.

7. Possible Over-pressured or Depleted Zones

Based on the existing mudlog for the original A4 well drilled by Chevron in 1980, there are no over pressured or high pressure zones expected in the sidetrack of the water disposal well.

8. Logging/Coring

Mud logging upon exiting original A-4 casing. Wire line logs to be run are PEX-HALS-NGT FMI-GR.

9. Other Comments

None.

Rig Description:
 New 123-S
 WD 318' is standard
 MW & PP curves backwards on plot

APPLICATION FOR PERMIT TO DRILL

CHECK LIST

OPERATOR Venoco, Inc. ENGRG. REVIEW BY S.J. Shaw
 LEASE NO. P-0217 DATE COMPLETED 6/16/06
 WELL NO. A-4 ST-01
 COPIES RECEIVED 3 P.I. I
 GEOLOGIC/GEOPHYSICAL REVIEW COMPLETED BY F. Victor DATE 3/29/06
 COPIES ON FILE WITH APD Yes
 LEASE INSTRUMENT CHECKED Yes
 DESIGNATION OF OPERATOR APPROVED Yes
 SPECIAL LEASE STIPULATIONS NOTED Yes

Additional
 COAS
 attached
 covering
 structural,
 OSRP, &
 pre-drilg.
 &
 pre-prod.
 inspections
 by MMS.

POE/POD APPROVED DATE _____
 SPECIAL CONDITIONS OF APPROVAL Standard COAS to drill OCS well attached to all
copies of APD. Additionally, MMS will inspect entire rig package and approve
same before operations approved under APD can commence.
 MOBIL DRILLING UNIT NO TYPE _____
 ABS & COASTGUARD DOCUMENTS ON FILE _____
 FRONTIER AREA YES/NO NO
 SEA FLOOR CONDITIONS EXAMINED, DOCUMENTED AND APPROVED _____
 RIG DESCRIPTION AND SPECIFICATIONS ON FILE? Yes - Included in APD - subject
 PLAT PROVIDED 2000 FEET/ONE INCH OK to MMS inspection, (Kenai #11)
 SURFACE LOCATION CHECKED Yes
 SUBSURFACE LOCATION CHECKED Yes
 RKB TO WATER 106' (ASL) WWD 318' RKB TO ML 424'
 TVD 9656' MD 9817'

WELL DESIGN CRITERIA:

	X			& CALCULATED TOL@6562' MD X	TOL@6650' MD X
TAKEN FROM OFFSET WELL					
CASING SIZE	<u>18 7/8"</u>	<u>13 3/8"</u>	<u>9 5/8"</u>	<u>7" liner</u>	<u>5" liner</u>
CASING DEPTH	<u>1991' MD</u>	<u>4597' MD</u>	<u>6698' MD</u>	<u>8905' MD</u>	<u>9817' MD</u>
PORE PRESS.				<u>7.2 ppg</u>	<u>7.2 ppg</u>
FRAC. PRESS.				<u>0.62 psi/ft</u>	<u>0.62 psi/ft</u>
ANTICIPATED SURFACE PRESS.	<u>EXISTING</u>	<u>EXISTING</u>	<u>EXISTING</u>	<u>2847 psi *</u>	<u>2847 psi</u>
MUD WEIGHT				<u>9.2 ppg</u>	<u>9.2 ppg</u>
LOST CIRCULATION ZONES <u>All such zones are already behind existing casing.</u>					
SHALLOW HAZARDS FROM GEOLOGIC/GEOPHYSICAL REVIEW <u>None anticipated that are not already protected behind multiple existing casing strings.</u>					

BOPE

NO. AND TYPE 1-13 7/8"-5M-GK ANNULAR
2-13 7/8"-5M (4) 2 7/8" +bg PIPE RAMS
(4) 3 1/2" dp
1-13 7/8"-5M BLIND/SHEAR RAMS

* MASP assumes max. BHP & 100% gas to surface.

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Manager.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, etc., shall be verbally reported immediately to the District Manager.
6. The District Manager shall be notified in advance in the event of production tests.
7. One copy of all logs, including the mud log to date, shall be furnished to the Office of Reservoir Evaluation and Production immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Manager shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.

ADDITIONAL CONDITIONS OF APPROVAL FOR WELL A-4

Prior to commencing re-drill operations on well A-4, the following conditions must be met:

- Rig load and structural changes must be submitted to the Chief, Office of Facilities, Safety and Enforcement (C/OFSE), for structural evaluation and approval per 30 CFR Part 250 Subpart I. (For additional details, see 3/8/06 letter from C/OFSE to Venoco, Re: Platform Grace Resumption of Production, item no. 3. Venoco should also review the other listed items in the letter, to help ensure timely compliance.)
- The Oil Spill Response Plan covering Platforms Gail and Grace must be updated to incorporate planned equipment and renewed production activities on Platform Grace. This updated plan must be submitted to and approved by the C/OFSE. (See 3/8/06 letter referenced above, item no. 8.)
- Please contact the California District Office (CD) when the drilling rig is ready for inspection. The CD must complete a comprehensive inspection of the drilling rig package and associated platform components.

Additionally, before returning Platform Grace to production, the CD must review and approve the detailed production process equipment and safety system designs, including SAFE charts and piping and instrumentation diagrams (P&IDs). These items must be submitted to the California District Manager. The CD will also perform a thorough pre-production inspection.

Any Incidents of Noncompliance and action items identified during the pre-drilling and pre-production inspections must be corrected or resolved prior to commencing the respective operation.

June 19, 2006

Mr. Roger Hamson
Vice President-Southern Assets
Venoco, Inc.
6267 Carpinteria Ave.
Carpinteria, CA 93013

Re: Platform Grace
Well A-4 ST-01
APD Approval

Dear Mr. Hamson:

Please find enclosed the approved Application for Permit to Drill (APD) for Venoco's proposed well A-4 ST-01 t Platform Grace.

Please note that both Standard and Additional Conditions of Approval (COA) for this well are included with the APD. These COA's must be met prior to commencement of drilling operations or before returning the platform to production, as specified in the COA's.

Should you have any questions please contact Mr. Schroeder at (805) 389-7775.

Sincerely,

ORG. SGP. BY: Phil Schroeder

Phillip R. Schroeder
District Manager
California District

Enclosure

Application for Permit to Drill (APD)

1. PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2. MMS OPERATOR NO 02309	3. OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave Suite 100 Carpinteria CA 93013
4. WELL NAME (CURRENT) A-4	5. SIDETRACK NO. (CURRENT)	6. BYPASS NO (CURRENT)	
7. PROPOSED START DATE November 27	8. PLAN CONTROL NO (NEW WELL ONLY)		
9. API WELL NO. (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112042200			
10. ☐ Revision	11. If revision, please list changes:		

WELL AT TOTAL DEPTH (PROPOSED)	WELL AT SURFACE
12. LEASE NO P-0217	17. LEASE NO P=0217
13. AREA NAME 6B	18. AREA NAME 6B
14. BLOCK NO 4862	19. BLOCK NO 4862

15. LATITUDE (☐ NAD 83 / ☒ NAD 27)	16. LONGITUDE (☐ NAD 83 / ☒ NAD 27)	20. LATITUDE (☐ NAD 83 / ☒ NAD 27)	21. LONGITUDE (☐ NAD 83 / ☒ NAD 27)
X = 1025610	Y = 747420	X = 1026611	Y = 747447

LIST OF SIGNIFICANT MARKERS ANTICIPATED

22. NAME	23. TOP (MD)	24. TOP (TVD)	22. NAME	23. TOP (MD)	24. TOP (TVD)
M2	7693	7626			
M3	8109	7937			

25. LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250.414(b) through (g) or 30 CFR 250.1617 (c) and (d), as appropriate.)

well prognosis, schematic, surface plat, structure map, mud weight curve, directional plan, BOP diagram, mud program, form 123S

26. CONTACT NAME Dana Billings	27. CONTACT TELEPHONE NO. 805-745-2139	28. CONTACT E-MAIL ADDRESS dbillings@venocoinc.com
29. AUTHORIZING OFFICIAL (Type or print name) Greg Schrage	30. TITLE VP Asset Development	
31. AUTHORIZING SIGNATURE 	32. DATE November 15, 2007	

THIS SPACE FOR MMS USE ONLY		
APPROVED: ☐ With Attached Conditions ☐ Without Conditions	BY ORIG. SGD. BY: Dan Knowlson	TITLE District Manager
API WELL NO ASSIGNED TO THIS WELL 043112042201	DATE NOV 29 2007	

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et. seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet

1. OPERATOR NAME Venoco, Inc.		5. WELL NAME (Proposed) A-4 ST1		6. TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11. WATER DEPTH 318'		12. ELEVATION AT KB 106.4' Org DF / 100' New DF	
2. API WELL NO (Proposed) (12 Digits) 043112042201		3. BOTTOM LEASE NO (Proposed) P-0217		7. SIDETRACK NO (Proposed) 01		8. BYPASS NO (Proposed) 00		13. H-S DESIGNATION ☒ KNOWN ☐ UNKNOWN ☐ ABSENT	
4. TOTAL DEPTH (Proposed) MD 8839'		TVN 8406'		9. RIG NAME Venoco Rig No 11		10. RIG TYPE PF		14. H-S ACTIVATION PLAN DEPTH FT (TVD) 7214' MD / 7177' TVD (Kick off Point)	

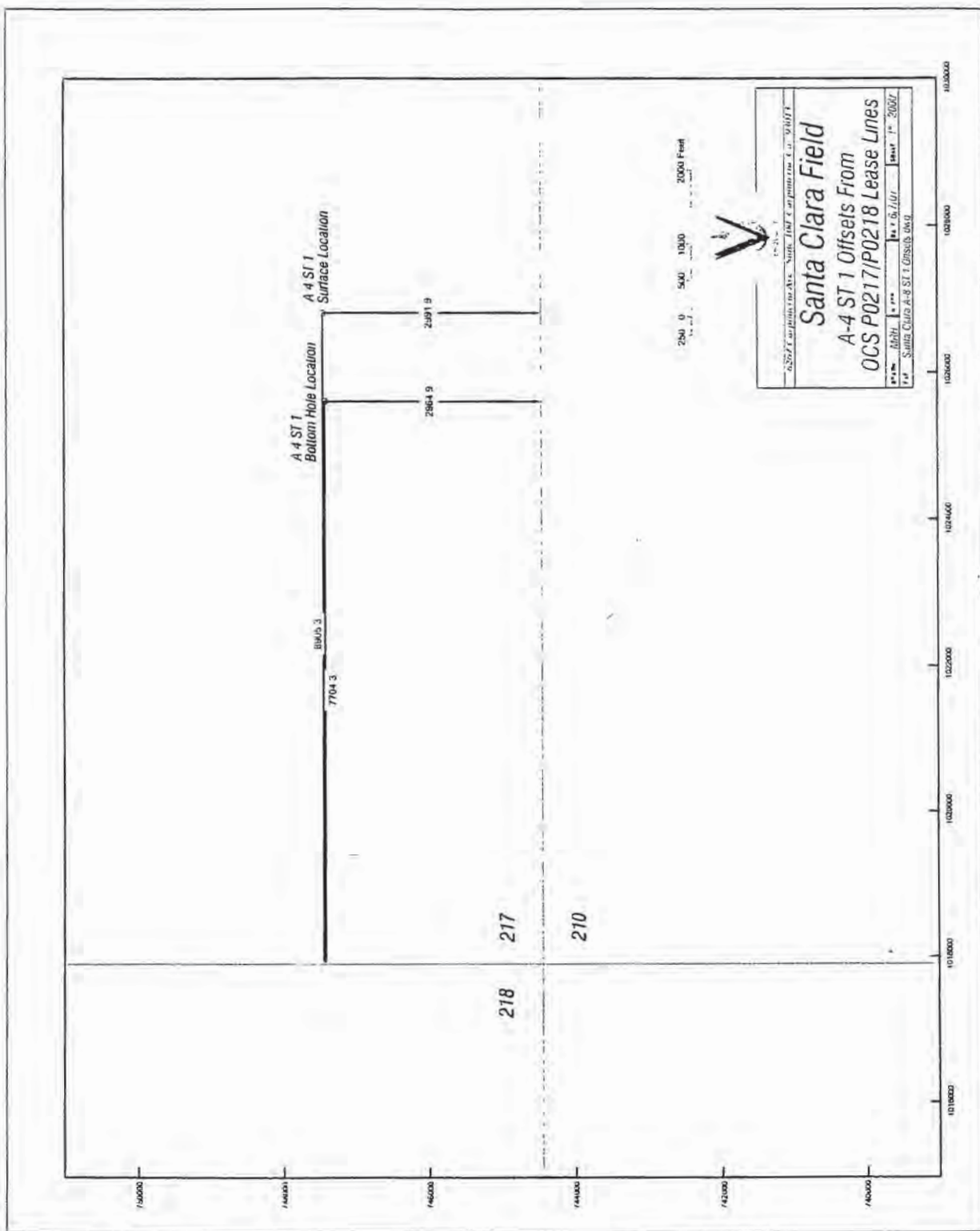
15. ENGINEERING DATA

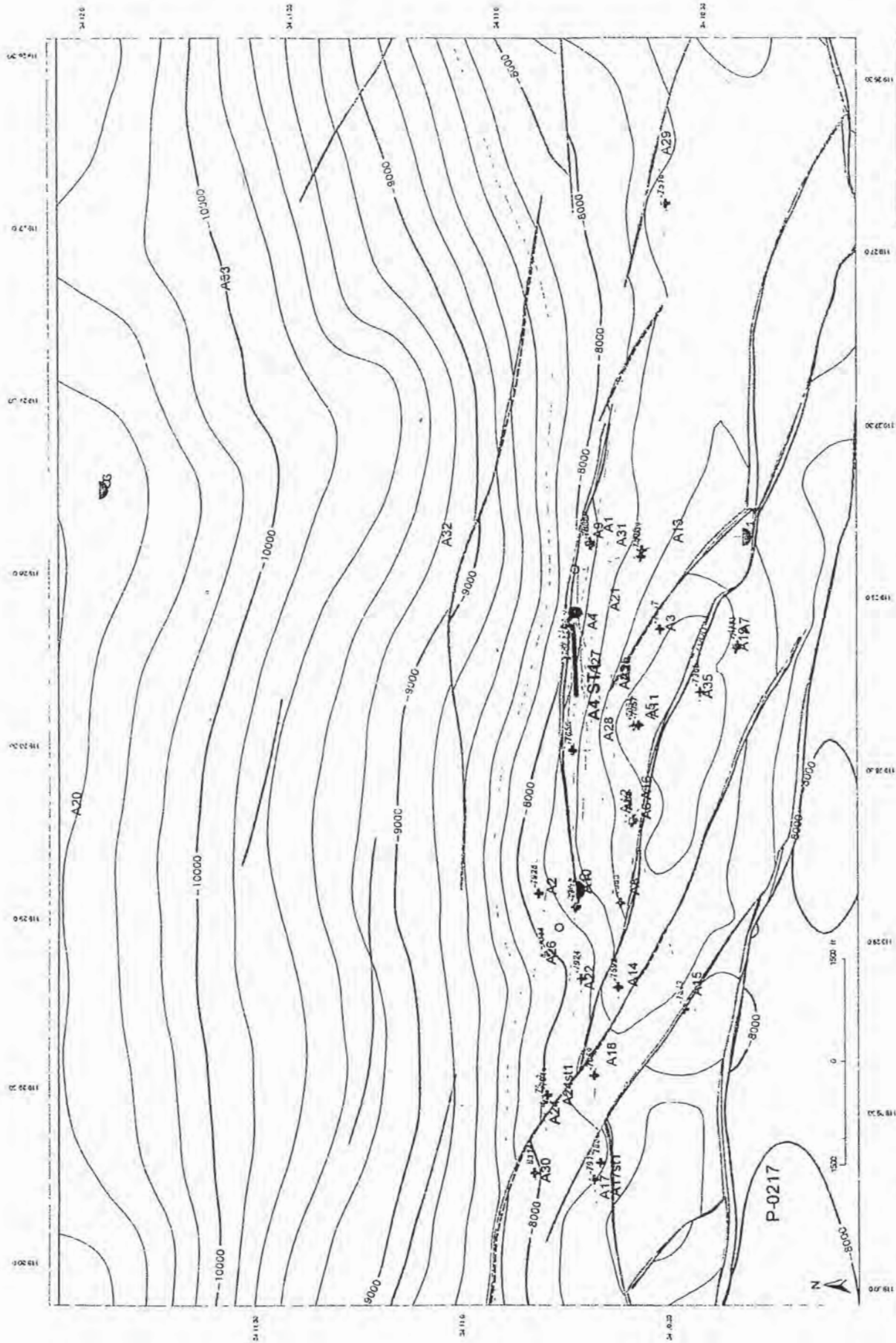
Hole Size (in)	Casing Size (in)	Weight (lb/ft)	Burst Rating (psi)	Type of Connection	MAGIP (psi)	Safety Factors			Top of Liner	Casing Depth (feet)			Casing Shoe (psi)			Well-head Rating (psi)	BOP Size (in)	Based BOP Working Pressure			Dilling Pressure (psi)	Comment (Feet)
						B	C	T		MD	TVN	FG	PP	MV	FG			Annular Divertor (psi)	Casing Test (psi)	MW Used for Test (psi)		
EXIST	Drill Structural	125							MD	840	existing							Annular Divertor (psi)	Casing Test (psi)	MW Used for Test (psi)		
EXIST	Conductor	105								1891	Existing							Ram (psi)				
EXIST	Surface	72								4597	Existing							Ram (psi)				
EXIST	Production	40.43 5.47	8820	BUTT	3000	2.27	1.04	3	Surf	6688			7.73	9.1	11	3000	13 5/8	5000	3000/250	3000/2000	11	Existing
EXIST	Prod Liner	26	7240	BUTT	3000	2.41	1.58	5	6562	6687			7.73	9.1	11	3000	13 5/8	5000	3000/250	2000	11	Existing
8.5	Prod Liner	8.5	8000WWS	NU8rd	3000	slot	slot	2.19	7100	7177			7.73	9.1	11	3000	13 5/8	5000	3000/250	NA	NA	Water
16. CONTACT NAME Dana Billings										17. CONTACT PHONE NO (805) 745-2139										18. CONTACT E-MAIL ADDRESS dbillings@venocoinc.com		

19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more? ☒ YES ☐ NO

20. REMARKS: The 9 5/8" casing will be pressure tested to 3000 psi from surface to 4550 and to 2000 psi from surface to the 7" liner top due to squeeze holes in the 9 5/8" casing. The proposed formation integrity test is 11 ppg.

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain well status, well and casing test, and well casing configuration data. MMS uses this information to have accurate data and information on all wells under its jurisdiction and to ensure compliance with approved plans. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.116. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form is estimated to average 15 hour per response, including the time for reviewing instructions, gathering and reviewing data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form or the information collection, including suggestions for reducing the burden, should be sent to the Information Collection Clearance Office, Mail Stop 4202, Minerals Management Service, 1449 C Street, N.W., Washington, DC 20546.

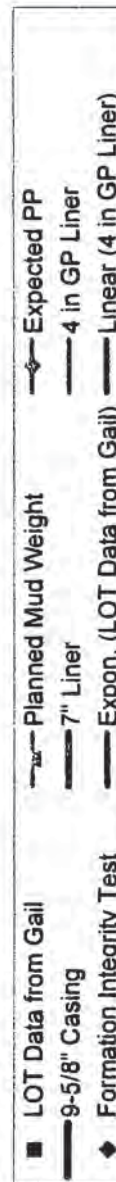
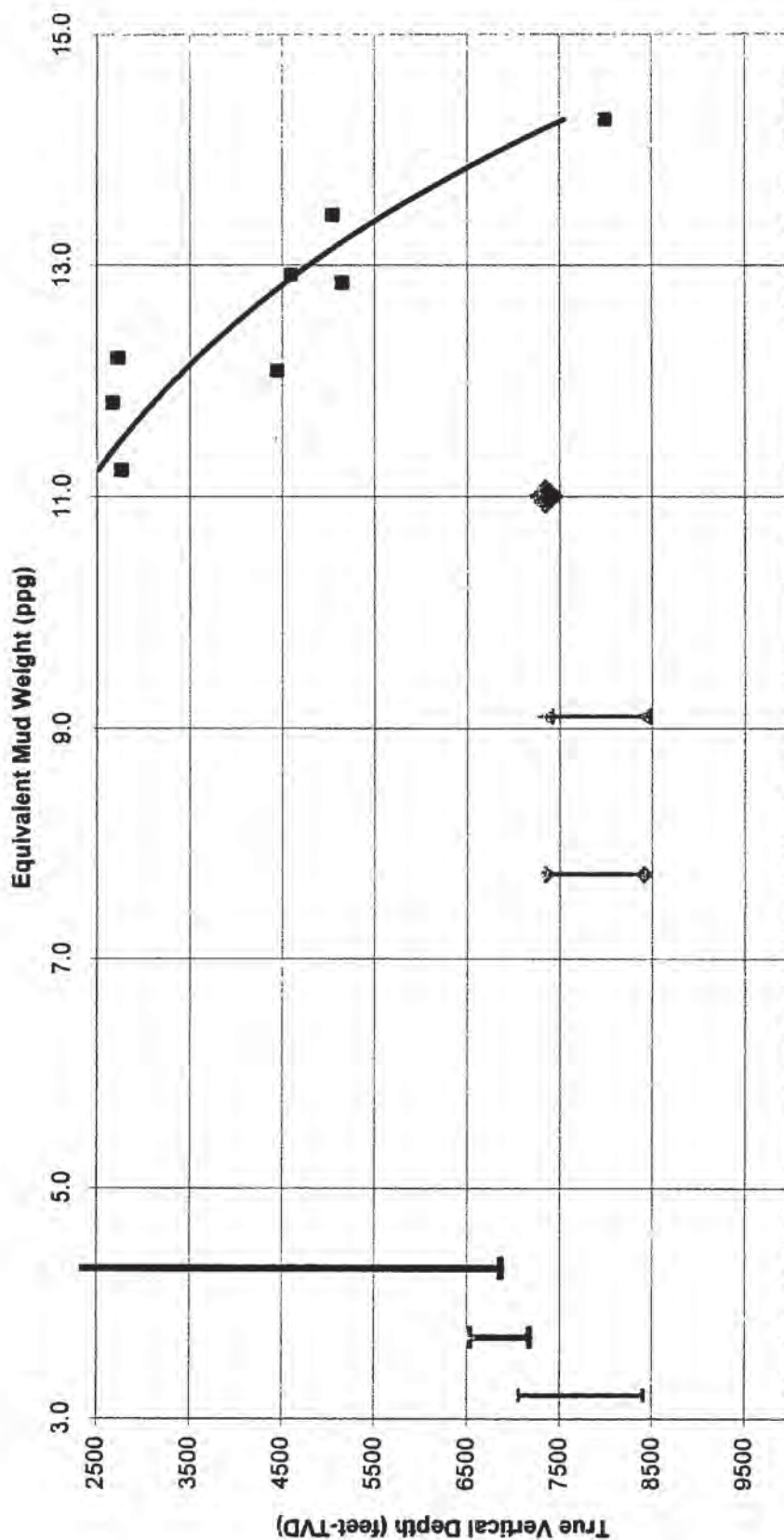




	VENDCO INC Engineering & Surveying	
	Planned A4 ST1 Platform Grade Monterey Zone M3	

Top of PG A4 Benchmarks A4 ST1 A4 ST2 A4 ST3 A4 ST4 A4 ST5 A4 ST6 A4 ST7 A4 ST8 A4 ST9 A4 ST10 A4 ST11 A4 ST12 A4 ST13 A4 ST14 A4 ST15 A4 ST16 A4 ST17 A4 ST18 A4 ST19 A4 ST20 A4 ST21 A4 ST22 A4 ST23 A4 ST24 A4 ST25 A4 ST26 A4 ST27 A4 ST28 A4 ST29 A4 ST30 A4 ST31 A4 ST32 A4 ST33 A4 ST34 A4 ST35 A4 ST36 A4 ST37 A4 ST38 A4 ST39 A4 ST40 A4 ST41 A4 ST42 A4 ST43 A4 ST44 A4 ST45 A4 ST46 A4 ST47 A4 ST48 A4 ST49 A4 ST50 A4 ST51 A4 ST52 A4 ST53 A4 ST54 A4 ST55 A4 ST56 A4 ST57 A4 ST58 A4 ST59 A4 ST60 A4 ST61 A4 ST62 A4 ST63 A4 ST64 A4 ST65 A4 ST66 A4 ST67 A4 ST68 A4 ST69 A4 ST70 A4 ST71 A4 ST72 A4 ST73 A4 ST74 A4 ST75 A4 ST76 A4 ST77 A4 ST78 A4 ST79 A4 ST80 A4 ST81 A4 ST82 A4 ST83 A4 ST84 A4 ST85 A4 ST86 A4 ST87 A4 ST88 A4 ST89 A4 ST90 A4 ST91 A4 ST92 A4 ST93 A4 ST94 A4 ST95 A4 ST96 A4 ST97 A4 ST98 A4 ST99 A4 ST100	A4 ST1 A4 ST2 A4 ST3 A4 ST4 A4 ST5 A4 ST6 A4 ST7 A4 ST8 A4 ST9 A4 ST10 A4 ST11 A4 ST12 A4 ST13 A4 ST14 A4 ST15 A4 ST16 A4 ST17 A4 ST18 A4 ST19 A4 ST20 A4 ST21 A4 ST22 A4 ST23 A4 ST24 A4 ST25 A4 ST26 A4 ST27 A4 ST28 A4 ST29 A4 ST30 A4 ST31 A4 ST32 A4 ST33 A4 ST34 A4 ST35 A4 ST36 A4 ST37 A4 ST38 A4 ST39 A4 ST40 A4 ST41 A4 ST42 A4 ST43 A4 ST44 A4 ST45 A4 ST46 A4 ST47 A4 ST48 A4 ST49 A4 ST50 A4 ST51 A4 ST52 A4 ST53 A4 ST54 A4 ST55 A4 ST56 A4 ST57 A4 ST58 A4 ST59 A4 ST60 A4 ST61 A4 ST62 A4 ST63 A4 ST64 A4 ST65 A4 ST66 A4 ST67 A4 ST68 A4 ST69 A4 ST70 A4 ST71 A4 ST72 A4 ST73 A4 ST74 A4 ST75 A4 ST76 A4 ST77 A4 ST78 A4 ST79 A4 ST80 A4 ST81 A4 ST82 A4 ST83 A4 ST84 A4 ST85 A4 ST86 A4 ST87 A4 ST88 A4 ST89 A4 ST90 A4 ST91 A4 ST92 A4 ST93 A4 ST94 A4 ST95 A4 ST96 A4 ST97 A4 ST98 A4 ST99 A4 ST100
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Platform Grace A-4 ST1 Estimated Pore Pressure, Mud Weight & Fracture Pressure (Note: Fracture Pressure Trendline from Platform Gail for Information Only)



Santa Clara Field
OCS-P-0217 Platform Grace

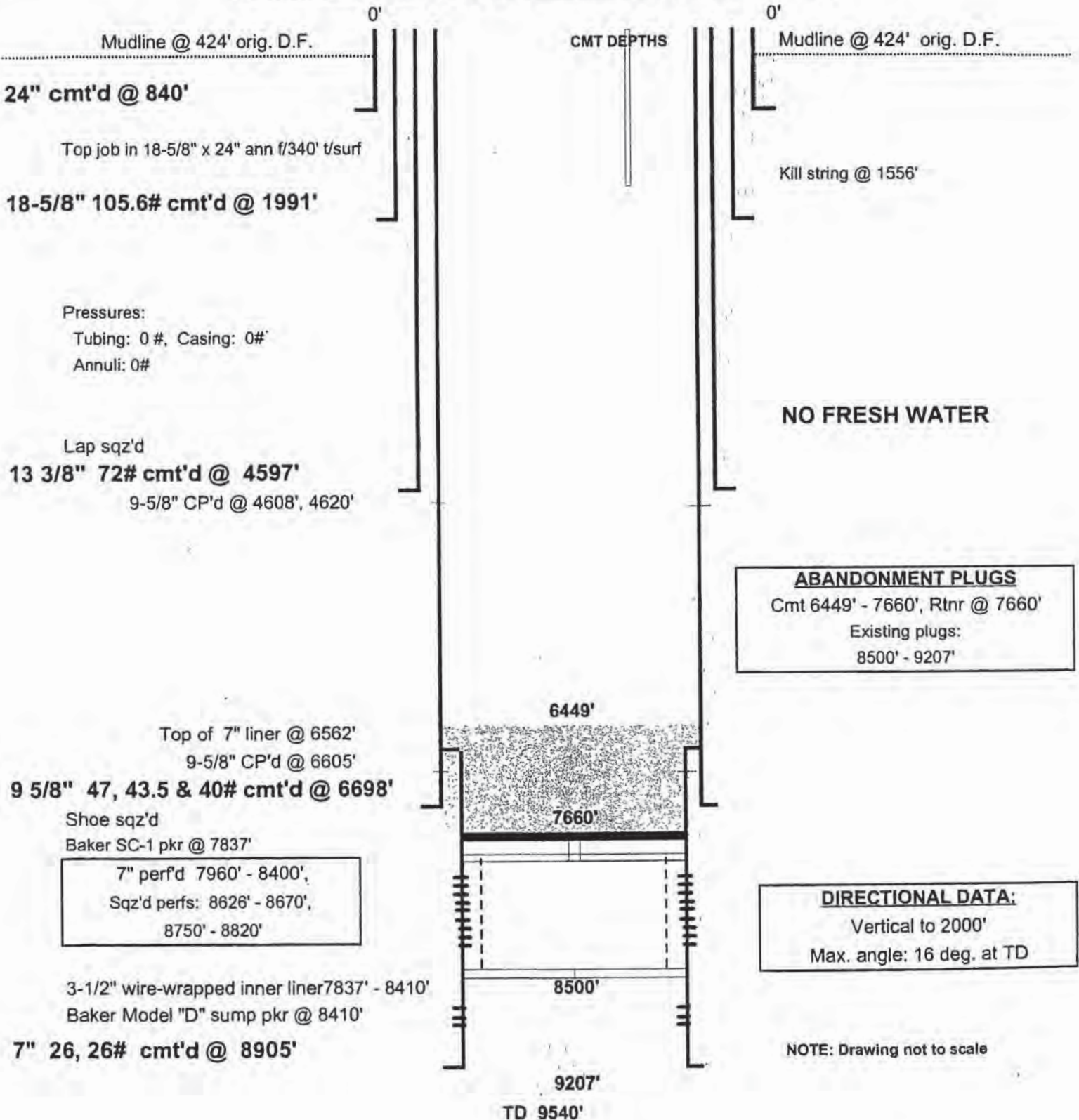
A-4

Elev. 106.4' D.F. T.D. 9540' PBTD: 6449'

W.D. 318'

API # 04-311-20422

CURRENT CONDITION - TEMPORARY ABANDONMENT



NOTE: Drawing not to scale

VENOCO, INC.
PLATFORM GRACE – SANTA CLARA FIELD
A-4 ST1 PROGRAM
API# 04-311-20422-01
LEASE OCS-P-0217
November 13, 2007 (attach to MMS APD)

Objective: Redrill the A-4 well and complete as a production well.

Surface Location: OCS-P-217, Slot M7 (X= 1,026,811.22' & Y= 747,446.73')

Original Elevation: 318' WD, 106.4' (original DF) Above MLLW, 424' Ocean Floor to original DF

New Elevation: D.F. = 100'

Proposed TD: OCS-P-217; 8839' MD / 8406' TVD / -8300' SS

TD Location: 27' S and 1201' W or (X = 1,025,610' and Y = 747,420')

<u>Markers (Orig DF):</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. Fm Press PSI/ PPG</u>
Santa Margarita	6284	6205	-6147	12 +
KOP	7214	7177	-7071	N/A
M2	7693	7626	-7520	3065 psi / 7.73 ppg
M3	8109	7937	-7831	3190 psi / 7.73 ppg
Total Depth	8839	8406	-8300	3378 psi / 7.73 ppg

Formation Pressure

Historical pressures from producing wells show a definitive downward trend versus cumulative production and there does not appear to be an active water drive or pressure support for the reservoir. The estimated BHP is 3378 psi at 8406' TVD. The Calculated MASP for shut-in tubing pressure for this well is 2751 psi. The well abandonment in 1997 used seawater as kill fluid.

Existing Casing:

<u>(Original Rig Floor depth)</u>	<u>MD</u>	
24", 125#, Vetco L	840'	Cmtd w/ 1000 sx
18 5/8", 105.6 K-55	1991'	Cmtd w/ 1650 cf,
13 3/8", 72# N-80	4597'	Cmtd w/ 2160 cf
9 5/8", 40,43.5, 47# SS-95	6698'	Cmtd w/ 1000 cf
7", 23, 26# SS-95, L-80 (Liner)	8905'	Cmtd w/ 560 cf
(TOL at 6562')		

9 5/8" Casing Weight and Grade Details:

<u>Bottom 641'</u>	<u>6698'-6057'</u>	<u>47# SS-95</u>
<u>Next 2047'</u>	<u>6057' – 4010'</u>	<u>43.5# SS-95</u>
<u>Top 4010'</u>	<u>4010' – 0'</u>	<u>40# SS-95</u>

9 5/8" Casing Remedial Cementing Perforations:

Shot Four – ½" holes at 4620' - Circulated 150 sx through holes taking returns to surface in 9 5/8" X 13 3/8" annulus, shut in annulus and squeezed additional 42 sx through holes at 4620'. Clean out and pressure test perforations to 1500 psi with 13.9 ppg mud in hole. Shot Four – ½" holes at 4608'. Squeezed 8 bbls of cement through holes. Drill out cement to 4900' and pressure tested holes at 4608' and 4620' to 1500 psi with 13.9 ppg mud. Pressure test indicated no communication between 9 5/8" and 13 3/8" casing.

7" Cement Bond

The 7" cement bond log run on 8/29/80 indicates poor bond at the 7" casing exit point but hard cement was cleaned out above the liner top and sufficient cement should exist around the 7" casing exit point for this sidetrack.

Production Perforations:

7960' – 8820' selectively perforated – isolated or plugged with cement

Plugs

6449' – 7660' cement
7660' retainer
8500' – 9207' cement

Proposed Casing:

(Original Rig Floor depth)	MD	
24", 125#, Vetco L	840'	Cmtd w/ 1000 sx (existing)
18 5/8", 105.6 K-55	1991'	Cmtd w/ 1650 cf (existing)
13 3/8", 72# N-80	4597'	Cmtd w/ 2160 cf (existing)
9 5/8", 40,43.5, 47# SS-95	6698'	Cmtd w/ 1000 cf (existing)
7", 23,26# (Liner/TOL at 6562')	7214' (window)	Cmtd w/ 560 cf (existing)
4" 9.5# L-80 Base pipe	7100'-8839'	Dura Grip 316L SS, No Shroud, .016 ga screen made on 4" 9.5# L-80 w/ NU 8rd /Open Hole Gravel Pack

Pressure Test of Casing

The casing and 7" X 9 5/8" liner lap were pressure tested to 1500 psi with seawater subsequent to setting the cement retainer during P&A operations in 1996. The casing was tested from 4900' to surface to 1500 psi with 13.9 ppg mud in hole during remedial work in 1985. The casing and liner lap were pressure tested to 2500 psi with 10.5 ppg mud during initial completion operations in 1980.

During this program it is proposed to pressure test the 9 5/8" casing to 3000 psi from above the holes at 4608' and pressure test the casing to 2000 psi from surface to the 7" liner exit point. (The pressure test of squeeze holes at 4620' had equivalent pressure of 2789 psi with 8.5 ppg water per the following: holes at 4620'MD/4591' VD. $(13.9-8.5) \cdot .052 \cdot 4591' = 1289 \text{ psi} + 1500 \text{ psi surface pressure} = 2789 \text{ psi}$)

Tubing Kill String Installed in Well:

The 2 7/8" kill string consists of 48 jts (1494') of tubing landed at 1556'. Tested the casing and cement plug to 1000 psi and the tubing hanger seals to 3000 psi during temporary abandonment operations December 1996.

Note:

- This well is currently a temporary abandonment.
- Perform rig safety inspections with MMS inspectors as required.
- Hold safety meetings, pit drills and H2S drills as required fully training and familiarizing crews with operating procedures.
- BOPE must be tested every 14 days for operations that occur under the approved APD. BOPE test will be for all pipe sizes intended for use (except tail pipe for gravel packing)
- Hydrogen Sulfide Considerations:
The Monterey has potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved Platform Grace Hydrogen Sulfide and Sulfur Dioxide Contingency Plan.

Drilling Procedure

1. Move rig to Well A-4 (slot M7). Note and report all pressures: tubing, tubing X casing annulus and all casing X casing annuli. Pressure test the 9 5/8" casing pack-off and the tubing hanger void to 3000 psi per the Cameron procedure to confirm both hanger seals are good. Inspect the lock down pins and repair or replace as required. Pressure test the bonnet void after working the hold down pins. Follow lock down pin removal procedure developed for Platform Gail, as required. Pressure test and operate the tubing head valves per Cameron procedure and the casing head valve on the 9 5/8" X 13 3/8" annulus. Detailed program to be provided.
2. Rig up on the dry hole tree with a circulating head and full opening safety valve. Install manual choke on the casing head valve. Pressure test valves and lines to 3000 psi. Circulate the well clean with seawater from the kill string tail depth 1556' down the tubing and taking returns through the tubing head valves. There may be residual amounts of oil or gas from the P&A operations. Circulate the well to the refurbished V-5 clean up tank as required. Coordinate with production to monitor pressures and rates. Take clean seawater returns back to the mud pits. Pressure test the casing to 1000 psi against the cement plug. (Note: Casing was pressure test to 1000 psi during the temporary abandonment in 1997.) There will be no discharge of fluids overboard during these operations. Isolate dirty fluids circulated from well into production tanks. NOTE: The production tanks should be emptied well in advance of starting these well circulation activities.
3. Rig up V-G lubricator, pressure test and set back pressure valve in tubing hanger. Nipple up BOP equipped with a minimum of 3- ram preventer and an annular. The BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing, 3 1/2" tubing and 5" drill pipe – the sizes to be used for operations under the APD. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 14 days during operations performed under the approved APD. H2S and LEL detection equipment to be installed and tested as per H2S Contingency Plan, MMS regulations and Venoco Policy. PVT equipment with pump stroke counters and ROP option to be installed. BOPE drills to be performed prior to commencement of operations and each tour using alternate remote stations. Record all drills and the MMS required tracking information in IADC book.
4. Remove BPV, unland hanger. Pull out of the hole and lay down 2 7/8" tubing kill string.

5. Run in hole with 8 1/2" bit and scraper on 5" drill pipe. RIH to top of cement plug, reported at 6449' theoretical. Circulate well clean with seawater. There may be residual amounts of oil or gas from the P&A operations. Circulate the well to the refurbished V-5 clean up tank as required. Co-ordinate with production to monitor pressures and rates. Take clean returns back the mud pits. There will be no discharge of fluids overboard during these operations. Isolate dirty fluids circulated from well into production tanks. NOTE: The production tanks should be emptied well in advance of starting these well circulation activities.
6. Clean out cement in 9 5/8" casing from 6449' to the liner top at 6562'. Use seawater and duovis sweeps to clean hole. Circulate the well clean.
7. Pressure test casing to 2000 psi for 30 minutes and record on chart. Burst pressure for 9 5/8" 40# 95ksi casing is 6820 psi for new. Pull out of the hole with the clean out assembly.
8. Run in hole and set retrievable bridge plug near 4550' and above squeeze holes at 4608'. With seawater in the hole, pressure test casing from 4550' to surface to 3000 psi for 30 minutes and record on chart. Burst pressure for 9 5/8" 40# 95ksi casing is 6820 psi for new. Pull out of hole with running tool. (Note: Hole maximum angle above 4550' is < 14 deg and should allow for bridge plug set and recovery).
9. Nipple down and lift BOPE. Install Cameron 13 5/8" 5000 psi Gray-Loc Hub X 11" 3000 psi tubing head adapter and isolation sleeve. Nipple up BOPE and body pressure test the BOP and new adapter head to 250/3000 psi against the bridge plug and pressure test the isolation sleeve to 250/3000 psi. Run in hole and recover bridge plug from near 4550'.
10. Make up and RIH with 6 1/8" bit with clean out assembly. Clean out cement in 7" liner from top of 7" liner at 6562' to 7270'. Use seawater and duovis sweeps to clean hole. Isolate dirty fluids circulated from well into production tanks. Pull out of hole. Cement cuttings to be sent in for onshore disposal.
11. Pressure test the 7" liner and liner lap to 2000 psi for 15 minutes with seawater in the hole. Note: Liner lap to be exposed during gravel pack operations.
12. Pick up 7" 26# positive casing scraper and tandem watermelon mill assembly with 6 1/8" bit and RIH. Scrape and drift the 7" casing to clean out depth of 7270'. Circulate clean and pull out with scraper assembly
13. Rig up Baker-Atlas wireline with lubricator and pack-off. Pressure test pack off to 2000 psi. Make up and run in hole with 7" bridge plug and CCL on wireline. Correlate to set bridge plug. Set bridge plug +/- 5' above the 7" casing collar nearest to the planned kick off point of 7214'. Pull out and rig down Baker-Atlas wireline.
14. M/U Baker 7" casing 1-trip whipstock with bottom trip anchor, window mill, lower watermelon mill and upper watermelon mill, bumper sub, MWD, and RIH to above bridge plug set at +/- 7214'.
15. Using MWD measurements orient whipstock to high side as per Directional Drillers. Set the whipstock and shear the tools off the whipstock face. Circulate, condition and build mud system for milling the window and carry the metal cuttings out of the hole.

16. Mill and open window drilling 15' – 18' below the bottom of ramp, as per whipstock service company and directional service company. Mill and dress the window as required obtaining good exit point for sidetrack. Drill enough rathole to pass all mills through the window. Mills must smoothly pass through the window before finalizing milling operations. Re-designate well as A-4 ST1. Notify MMS as required in the permit conditions. Perform a Formation Integrity Test to 11.0 ppg EMW. POH with window mill assembly. Prior to drilling out window have Epoch mud loggers rigged for samples as per Formation Evaluation Program.
17. Make up 6 1/8" bit on a steerable directional drilling assembly including MWD/GR. Run in the hole to and sidetrack the well. Directional drill and survey a 8 1/2" hole from KOP of +/- 7214' to a total depth of ' to 8839' MD / 8406' VD. The 6 1/8" hole will be drilled with MI Flo Thru System mixed with seawater. Follow Directional plan - Halliburton Plan A-4ST1-Plan 4 (19-Mar-07). Run solids control equipment and dilute and treat the MI FloThru System to maintain programmed specifications. Prior to drilling ahead have Epoch mud loggers rigged up and ready for samples as per Formation Evaluation Program. Follow requirements set out for NPDES compliance. Plan to catch and expedite mud sample for toxicity testing at 80% total depth
18. Circulate and condition the mud for open hole logs. Wipe the hole to the 7" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
19. Make up and run in hole with Baker Magnet assembly. Run assembly to below window as per Baker recommendations to collect any metal in hole prior to running the CMR logging tools
20. Rig up wire line and run open hole logs (see attached logging program). Condition the hole if necessary between runs. During log run and as recommended by MI mud engineer condition mud in pits by running solids control equipment and lowering solids in preparation for hole opening operations.
Log Run #1 PEX/Spectral GR/CMR
Log Run #2 FMI/GR/Pressure Xpress
21. Make up Baker Oil Tools 6 1/8" X 8 1/2" hole opener with KM tool body and Bear Claw PDC cutters. Run and open 6 1/8" hole to 8 1/2" hole from below window at +/- 7214' to 8839'. Run solids control equipment and dilute and treat the MI FloThru System to maintain programmed specifications.
22. Rig up Schlumberger and run 4-arm caliper log, if indicated by office. Depending on caliper results from A-18 ST1 this log may be eliminated.
23. Make additional under reamer run or make run with 6 1/8" hole opener to TD. Once hole opening is complete run in hole to TD. Make up a clean solids free FLO-THRU and spot in the open hole and 200 ft. up into the casing. Pick up 200 ft. into the casing and change the upper hole over to clean seawater. This change over is in preparation for running of wire wrap screen and open hole gravel pack. Circulate the well and filter seawater to below 100 NTU or as indicated. An assembly with brushes and scraper spaced out in casing may be used.
24. A detailed program to run Wire Wrap Screen and perform open hole gravel pack will be provided. A general completion procedure is listed below.

GENERAL COMPLETION PROCEDURE

For completion operations the BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing, 3 1/2" DP and 5" dp all other pipe sizes to be used for completion operations, except 2 3/8" GP tail pipe. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 14 days during operations under the approved APD.

1. Make up liner assembly consisting of:

- ~4' 4" Circulating Shoe with open hole centralizer
- ~XXXX' 4" Dura Grip 316L SS, No Shroud, .016 ga screen made on 4" 9.5# L-80 w/ NU 8rd
- ~XXX' 4" Slot Pipe
- ~40' 4" Blank Pipe
- ~35' 7" Baker SC-2 Gravel Pack Packer with Sliding Sleeve, and crossover tool
- ~1600' 2 3/8" flush joint tail pipe and polished stinger for circulating shoe (to be run inside WWS – rental from Baker Gravel Pack)

Note: Centralize with one Weatherford centralizer per joint over the coupling. Centralize circulating shoe, WWS and blank pipe. Minimize the use of pipe dope. Apply to pin end only. The use of slot liner in lieu of wire wrap screen will be recommended after log evaluation is completed.

2. Run in with liner assembly as above on work string to desired depth.
3. Rig up pumping equipment and lines. Casing was pressure tested to 2000 psi. Conduct safety meeting. Test lines to 4000 psi. Drop ball. Set and test gravel pack tools per Baker Tool Specialist direction. Release from SC packer. Blow ball seat and release crossover tool.
4. Using clean filtered brine, establish and record pump rate and pressure in reverse position. Establish and record pump rate and pressure in circulating positions. Using clean brine circulate the viscous pill from open hole/WWS annulus into the work string casing annulus. Release tail pipe from the circulating shoe and place the crossover tool into the upper circulating position.
5. Gravel Pack well with 16-30 Low-Fine Ottawa gravel using Baker Gravel Infuser System. Typical pump rates are 4-5 bpm. Once ~10-20 barrels of slurry have cleared the crossover tool you may increase sand loading to maximum of 2 PPG as conditions allow. Continue pumping at this rate and concentration until wellhead pressure begins increasing. Pump rate should be reduced accordingly as well head pressure increases. Once pressure reaches 500 PSI over initial circulating pressure is achieved stop pumps. DO NOT RESTRESS PACK at this time.
6. Close annular BOP and apply 500 PSI to the annulus. Place the crossover tool in the reverse position. Reverse out excess gravel until returns are clean. Monitor and determine the volume of gravel reversed out.
7. To test the gravel pack, lower crossover tool into the circulating position. Circulate at sand out rate and attempt to achieve sand out pressure established earlier. If same sand out pressure cannot be achieved, mix and pump additional amounts of gravel recommended by pump specialist. Repeat this step until final sand out occurs. POOH with service tools.
8. Rig up spoolers and run Electric Submersible Pump on 2 7/8" tubing.
9. Install BPV, nipple down BOP and install production tree. Test void and tree to 3000 psi.

EVALUATION PROGRAM

Mudlogging Program:

Begin Mudlogging upon exiting original A-4 7" casing window, dry cuttings only.

Testing Program:

None expected.

Open Hole Logging program

LWD: None (**MWD/GR only**)

Wireline Logs:

- PEX (high res mode) w/ Spectral GR
- FMI/GR/Pressure Xpress

Logging geologist: Dale Kunitomi 805-987-3026

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

Drilling Fluids Program

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Clean out casing and mill window	Seawater and Duovis Sweeps	8.6	NC	9-10	20-30	+9-10 K
7214'-8839'	Flo Thru	9.2	5-7	<u>8-9</u> <u>(see note below)</u>	14-28	29-32K

Clean out and Mill: Use Seawater with sweeps to clean out cement, viscosify system to mill as needed.

Drill and open hole: 7214' - 8839':

Change over the hole to a FLO-THRU system. Reuse or ship the milling fluid to shore. It is recommended that enough mud has been mixed prior to drilling this section in order to perform the dump and dilute process while drilling. Drill 6 1/8" hole to TD, run Logs, open hole from 6 1/8" to 8 1/2" and run WWS liner

Notes:

- Current field drilling rules allow for pH range of 9-10. Venoco proposes to run the drilling fluid system with pH 8-9. The natural alkalinity of the formations causes the pH to run in the 8-9 range. The mud system utilizes soda ash to combine with the calcium in the seawater to form caustic soda which raises the pH to 9.0-9.5. The pH falls to the 8.5 - 8.8 range while drilling. This method and the pH range of 8-9 have proven to successfully support drilling of wells offshore California.
- Operate solids control equipment as per MI recommendation to maintain drill solids as low as possible without stripping out the necessary components.
- Maintain supply of H₂S scavenger onboard to treat out H₂S.
- A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised a minimum of 0.5 ppg using +/-1450 bbl total circulating volume (850 bbls in hole at TD & 600 bbl active system).

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

Mud Weight, Formation Pressure and Fracture Pressure

1	Casing Size (in)	9-5/8	7	4 slotted
2	Setting Depth (feet - TVD)	6667	7177	8406
3	Programmed FIT EMW at shoe (ppg)	11	11	11
4	Depth of next Casing (feet - TVD)	8406	8406	8406
5	Maximum Expected Formation Pressure (psi)	3378	3378	3378
6	Expected Mud Weight (ppg)	9.2	9.2	9.2
7	Formation Equivalent Mud Weight (ppg)	7.73	7.73	7.73
8	Expected Hydrostatic Pressure at TD (psi)	4021	4021	4021
9	Amount of Overbalance at TD (psi)	643	643	643
10	Fracture Gradient at shoe (psi/ft)	0.57	0.57	0.57
11	Fracture Pressure at shoe (psi)	3814	4105	4808
12	Hydrostatic Pressure at shoe (psi)	3189	3433	4021
13	Margin between Mud Weight and LOT (psi)	624	672	787

Notes:

- A Pressures from Reservoir Engineer Predictions
- B Used the programmed Formation Integrity Test of 11 ppg in above table

Maximum Anticipated Surface Pressure

	<i>Grace Specific Form - Calculations have been customized</i>	Production Casing	7" Mill window	TD
1	Casing Size (in)	9-5/8	7" liner	4" liner
2	Setting Depth (feet - TVD)	6667	7177	8406
3	Expected Leak Off Test EMW at shoe (ppg)	12	12	12
4	Expected Mud Weight (ppg)	9.2	9.2	9.2
5	Depth of next Casing (feet - TVD) use TD for all	8406	8406	8406
6	Maximum Expected Formation Pressure (psi)	3378	3378	3378
7	Expected gas gradient (psi/ft)	0.074	0.074	0.074
8	Formation Equivalent Mud Weight (ppg)	7.73	7.73	7.73
	Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	2756	2756	2756
10	Fracture Gradient at shoe (psi/ft)	0.62	0.62	0.62
11	Fracture Pressure at shoe (psi)	4160	4478	5245
12	Surface pressure to break down shoe (psi)	3667	3947	4623
13	Maximum Anticipated Surface Pressure (psi)	2756	2756	2756
	Max Pressures using 70% Gas & 30% Produced Fluids			
14	Maximum Anticipated Surface Pressure (psi) (SteveH Calc)	2279	2279	2279

Notes:

These are well specific inputs developed from detailed analysis by Reservoir Engineer
 Producing GOR declined from 5000 scf/BO in early 1981 to less than 900 in 1996, when field was shut in
 Almost all produced gas is associated gas and it is very unlikely a well would have 100% gas column
 Historical pressures from producing wells show a definitive downward trend versus cumulative production
 and there does not appear to be an active water drive or pressure support for the reservoir

Casing Design

	Installed	Installed	Slotted
Hole Section	12.25	8.5	8.5
Mud Weight	9.2	9.2	9.2
Buoyancy Factor	0.860	0.860	0.860
MASP (psi) Based on wellhead rating	3000	3000	3000
Gas Lift Pressure (psi)	0	0	0
Casing Size (in)	9-5/8*	7	4
Setting Depth, MD (ft)	6698	7214	8839
Setting Depth, TVD (ft)	6667	7177	8406
Top of Casing, MD (ft)	0	6562	7100
Weight (lb/ft)	40	26	9.5
Grade	SS-95	L-80	L-80
Threads	BUTT	BUTT	NU8rd
ID (in)	8.835	6.276	3.548
Drift diameter (in)	8.599	6.151	3.423
Collapse (psi)	3330	5410	Slot Liner
Burst (psi)	6820	7240	Slot Liner
Joint Strength (kips)	1088	604	250
Body Strength (kips)	1088	604	NA
Collapse Safety Factor	1.04	1.58	NA
Burst Safety Factor	2.27	2.41	NA
Tensile Safety Factor	3.29	5.27	2.19

1. Collapse is based on mud outside of an evacuated casing string.
2. Tension is based on buoyed weight of casing string + 100 kips over pull.

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydril") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydril") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

Vertical to +/- 2185'
 Max Angle: 50 deg @8000' MD (est)
 Original D F Elevation: 106'
 New D F Elevation: 100'
 New D.F. to Tubing Head: 47 15' (est)
 Water Depth: 318'
 Wellhead . Original V-G head with Cameron Adapter on top
 Production Tree: 3 1/2" 3M psi Cameron

SANTA CLARA FIELD

WELL A-4 ST1

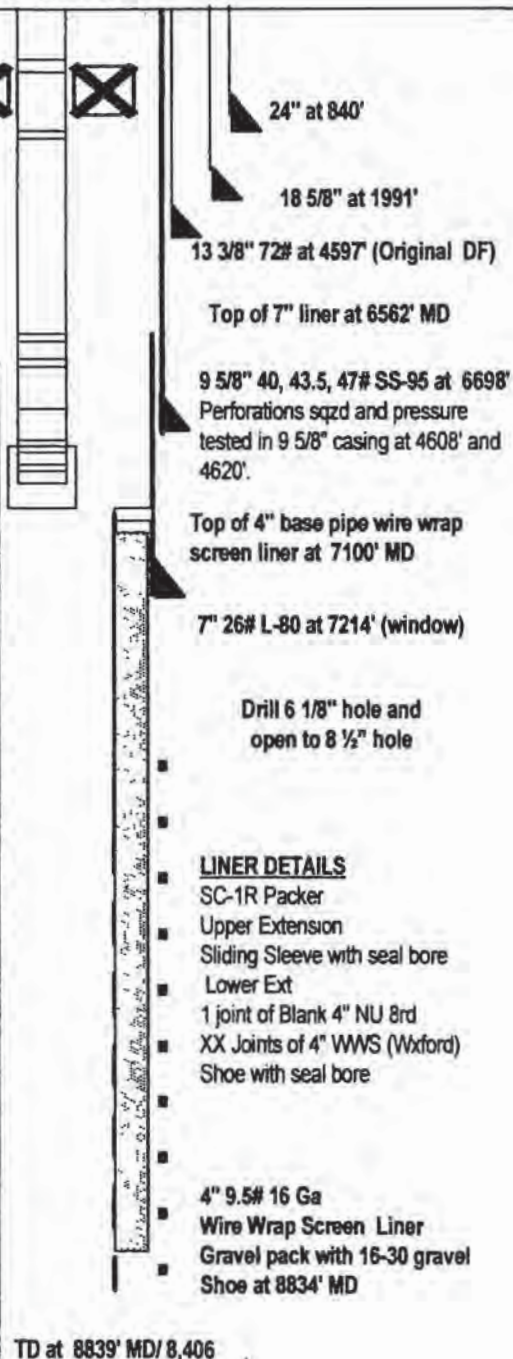
Lease: OCS-P-0217

11/13/07 dnb

Completion Date:

Proposed Production Well

Completion String Description	ID	LENGTH	DEPTH
DF to Top Tubing Hanger		47 15	0
Tbg Hanger		1 10	47 15
3 1/2" 9 3 # L-80 EUE 8rd double pin pup	2.992	3 35	48 25
3 1/2" 8 X 2 7/8" 6.5# L-80 EUE 8rd P XO	2.441	0 79	51 60
2 7/8" pup with full strength coupling as above	2.441	10 16	52 39
16 joints of 2 7/8" tubing as above	2.441	528 51	62 55
2 7/8" pup as above	2.441	6 05	591 06
2 7/8" TE-5 TRSSS Valve	2.312	4 76	597 11
2 7/8" pup as above	2.441	4 09	601 87
2 7/8" pup as above	2.441	6 04	605 96
Upper Extension	3 93	2 47	612 00
9 5/8" Baker Twin Seal Packer w/ 2 3/8" TE-5 ASSSV	2.441	10 84	614 47
Lower Extension	3 93	3 35	625 31
2 7/8" pup as above	2.441	4 10	628 66
1 joint of 2 7/8"	2.441	32 17	632 76
2 7/8" BX nipple	2.312	1 12	664 93
182 joints 2 7/8" tubing as above	2.441	5650 00	666 05
Baker CMU Sliding Sleeve	2.441	4 00	6316 05
2 joints 2 7/8" tubing as above	2.441	64 63	6320 05
2 7/8" BXN nipple	2.000	1 12	6384 68
1 joint 2 7/8" tubing as above	2.441	33 18	6385 80
2 7/8" pup as above	2.441	4 00	6418 98
XO	1.995	0 68	6422 98
Centrifliff ESP Series 400 Pump		18 17	6423 66
Centrifliff ESP Series 400 Pump		17 54	6441 83
Centrifliff ESP Series 400 Pump		7 03	6459 37
Cent Series 400 Gas Separator		1 82	6466 40
5.5" OD/ 5" ID Shroud		40 00	6468 22
			6508 22
Following Equipment inside of shroud			
Centrifliff ESP Series 400 Gas Separator		0 78	
Centrifliff ESP Series 400 Seal		11 17	
Centrifliff ESP Series 450 Motor		17 00	
Centrifliff ESP Series 450 Sensor		4 09	
		33 04	





Azimuths to Grd North
True North 1.77°
Magnetic North 15.03°
Magnetic Field
Strength 47893 2nT
Dip Angle 58.78°
Date 3/19/2007
Model BCGM2006

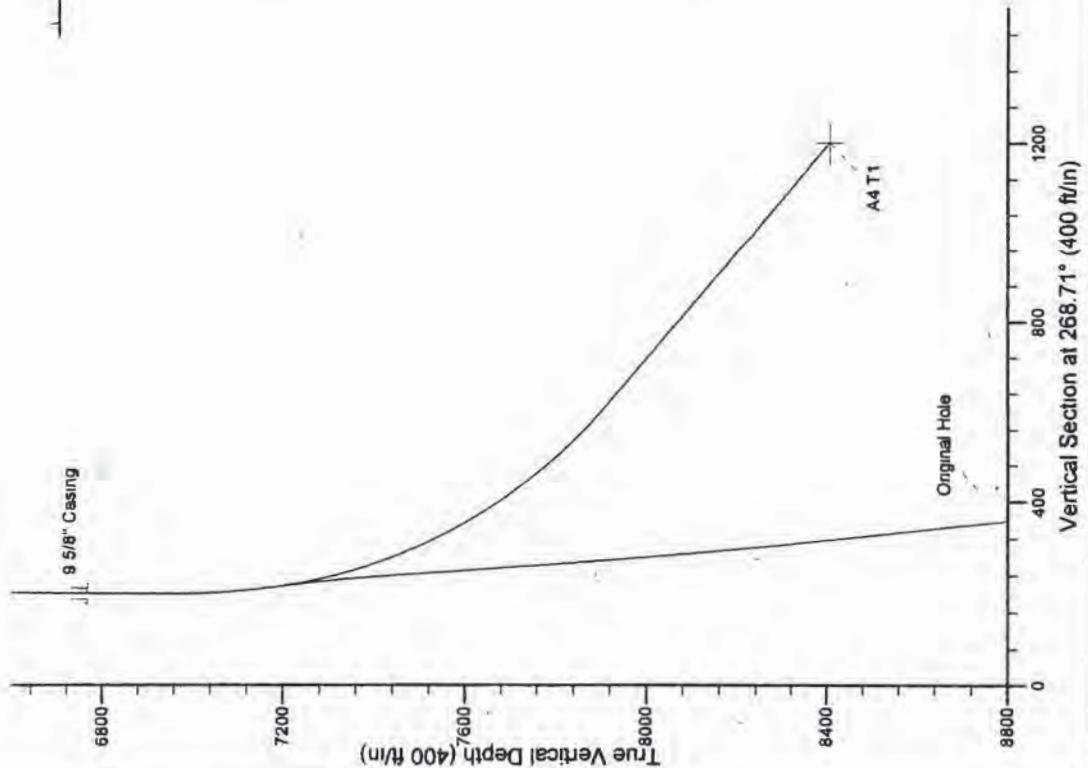
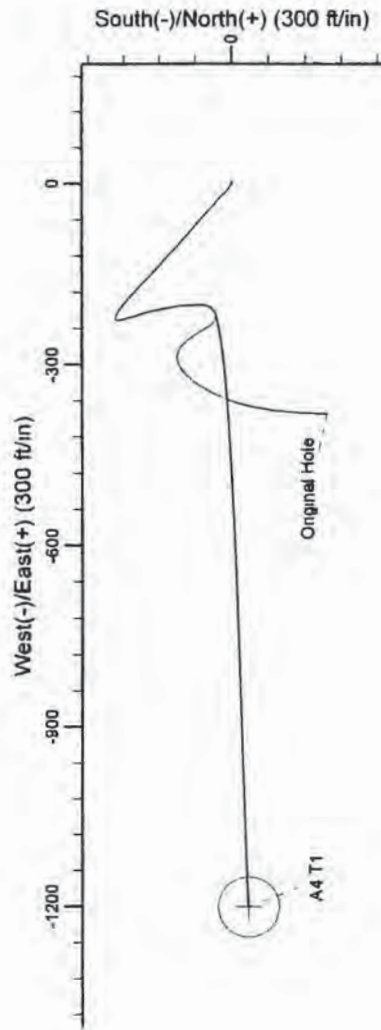
Venoco Inc.

Project: Platform Grace
Site: Santa Clara Unit
Well: A04
RD1

Plan 4 (19-Mar-07)

A04
NAD 1927 (NADCON CONUS)
California VI 406
Reference Grd
RKB @ 105.40ft (Original Well Elev)
Northing 747447.00
Easting 1026811.00

HALLIBURTON
Sperry Drilling Services



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	7214.00	7.47	248.96	7177.00	26.77	-214.88	0.00	0.00	214.22	
2	8073.66	50.00	267.96	7614.40	-6.42	-615.06	5.00	21.48	815.05	
3	8836.04	50.00	267.88	8406.40	-27.00	-1201.00	0.00	0.00	1201.30	A4 T1

Venoco Inc.

Platform Grace

Santa Clara Unit

A04

RD1

Plan: Plan 4 (19-Mar-07)

Job No Plan 4 (19-Mar-07)

Sperry Drilling Services Combo Report

21 May, 2007

Well Coordinates: 747.447 00 N, 1,026.811 00 E (34° 10' 46.58" N, 119° 28' 04.14" W)
Water Depth 318.00 ft

Local Coordinate Origin
Viewing Datum
TVDs to System
North Reference
Unit System
Centered on Well AU4
RKB @ 106.40ft (Original Well Elev)
N
Gnd
API - US Survey Feet

Version 2003.14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for A04 - RD1 - Plan 4 (19-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	106.40	0.00	0.00 N	0.00 E	747,447.00	1,026,811.00	0.00	0.00	
30.00	0.45	171.00	76.40	30.00	0.12 S	0.02 E	747,446.88	1,026,811.02	1.50	-0.02	
60.00	0.17	320.50	46.40	60.00	0.20 S	0.01 E	747,446.80	1,026,811.01	2.01	0.00	
90.00	0.15	152.70	16.40	90.00	0.20 S	0.00 W	747,446.80	1,026,811.00	1.06	0.01	
120.00	0.35	135.50	-13.60	120.00	0.30 S	0.08 E	747,446.70	1,026,811.08	0.70	-0.07	
150.00	0.45	168.40	-43.60	150.00	0.48 S	0.17 E	747,446.52	1,026,811.17	0.82	-0.16	
180.00	0.45	152.30	-73.60	180.00	0.70 S	0.25 E	747,446.30	1,026,811.25	0.42	-0.23	
210.00	0.30	171.20	-103.60	210.00	0.88 S	0.31 E	747,446.12	1,026,811.31	0.64	-0.29	
240.00	0.40	178.00	-133.60	240.00	1.08 S	0.33 E	747,445.94	1,026,811.33	0.36	-0.31	
270.00	0.22	162.40	-163.60	270.00	1.22 S	0.35 E	747,445.78	1,026,811.35	0.66	-0.32	
300.00	0.15	316.30	-193.60	300.00	1.25 S	0.34 E	747,445.75	1,026,811.34	1.20	-0.31	
330.00	0.37	148.40	-223.60	330.00	1.30 S	0.36 E	747,445.70	1,026,811.36	1.73	-0.33	
360.00	0.22	168.98	-253.60	360.00	1.44 S	0.43 E	747,445.56	1,026,811.43	0.60	-0.39	
390.00	0.47	309.80	-283.59	389.99	1.42 S	0.34 E	747,445.58	1,026,811.34	2.18	-0.31	
420.00	0.42	312.40	-313.59	419.99	1.27 S	0.17 E	747,445.73	1,026,811.17	0.18	-0.14	
450.00	0.27	342.80	-343.59	449.99	1.13 S	0.06 E	747,445.87	1,026,811.06	0.77	-0.04	
480.00	0.30	74.60	-373.59	479.99	1.04 S	0.12 E	747,445.96	1,026,811.12	1.37	-0.10	
510.00	0.30	325.70	-403.59	509.99	0.95 S	0.15 E	747,446.05	1,026,811.15	1.63	-0.13	
540.00	0.08	17.00	-433.59	539.99	0.87 S	0.11 E	747,446.13	1,026,811.11	0.88	-0.09	
570.00	0.17	151.80	-463.59	569.99	0.89 S	0.14 E	747,446.11	1,026,811.14	0.78	-0.12	
600.00	0.02	182.90	-493.59	599.99	0.93 S	0.16 E	747,446.07	1,026,811.16	0.51	-0.14	
630.00	0.18	228.20	-523.59	629.99	0.97 S	0.13 E	747,446.03	1,026,811.13	0.56	-0.10	
660.00	0.05	93.00	-553.59	659.99	1.00 S	0.10 E	747,446.00	1,026,811.10	0.73	-0.08	
690.00	0.40	295.90	-583.59	689.99	0.95 S	0.02 E	747,446.05	1,026,811.02	1.49	0.00	
720.00	0.12	215.70	-613.59	719.99	0.93 S	0.09 W	747,446.07	1,026,810.91	1.33	0.11	
750.00	0.12	208.02	-643.59	749.99	0.98 S	0.12 W	747,446.01	1,026,810.88	0.05	0.15	
780.00	0.47	208.20	-673.59	779.99	1.13 S	0.19 W	747,445.87	1,026,810.81	1.17	0.22	
800.00	0.20	3.13	-693.59	799.99	1.18 S	0.23 W	747,445.84	1,026,810.77	3.29	0.25	
820.00	0.27	74.30	-713.59	819.99	1.12 S	0.18 W	747,445.88	1,026,810.82	1.40	0.20	
866.00	0.42	77.50	-759.59	865.99	1.05 S	0.09 E	747,445.95	1,026,811.09	0.33	-0.07	
896.00	0.58	70.50	-789.59	895.99	0.98 S	0.34 E	747,446.02	1,026,811.34	0.57	-0.32	
926.00	0.25	128.50	-819.59	925.99	0.97 S	0.53 E	747,446.03	1,026,811.53	1.85	-0.51	
956.00	0.33	80.00	-849.59	955.99	0.99 S	0.67 E	747,446.01	1,026,811.67	0.83	-0.65	
986.00	0.50	20.50	-879.59	985.99	0.85 S	0.60 E	747,446.15	1,026,811.80	1.46	-0.78	
1,016.00	0.33	22.50	-909.59	1,015.99	0.85 S	0.88 E	747,446.35	1,026,811.88	0.57	-0.87	
1,046.00	0.33	82.50	-939.59	1,045.99	0.58 S	1.00 E	747,446.44	1,026,812.00	1.10	-0.99	
1,076.00	0.25	82.50	-969.59	1,075.99	0.54 S	1.15 E	747,446.48	1,026,812.15	0.27	-1.14	
1,106.00	0.33	45.50	-999.59	1,105.99	0.47 S	1.28 E	747,446.53	1,026,812.28	0.66	-1.27	
1,136.00	0.17	3.50	-1,029.59	1,135.99	0.37 S	1.34 E	747,446.63	1,026,812.34	0.78	-1.33	
1,166.00	0.33	146.50	-1,059.59	1,165.99	0.39 S	1.39 E	747,446.61	1,026,812.39	1.59	-1.38	

HALLIBURTON

Plan Report for A04 - RD1 - Plan 4 (19-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
1,196.00	0.58	150	-1,089.58	1,195.98	0.32 S	1.44 E	747,446.68	1,026,812.44	2.90	-1.44	
1,226.00	0.50	342.50	-1,119.58	1,225.98	0.04 S	1.41 E	747,446.96	1,026,812.41	0.65	-1.41	
1,256.00	0.50	48.50	-1,149.58	1,255.98	0.17 N	1.47 E	747,447.17	1,026,812.47	1.82	-1.47	
1,286.00	0.33	60.50	-1,179.58	1,285.98	0.30 N	1.64 E	747,447.30	1,026,812.64	0.63	-1.65	
1,316.00	0.00	0.00	-1,209.58	1,315.98	0.34 N	1.71 E	747,447.34	1,026,812.71	1.10	-1.72	
1,346.00	0.17	298.50	-1,239.58	1,345.98	0.37 N	1.68 E	747,447.37	1,026,812.68	0.57	-1.88	
1,376.00	0.25	68.00	-1,269.58	1,375.98	0.41 N	1.70 E	747,447.41	1,026,812.70	1.27	-1.71	
1,406.00	0.33	76.50	-1,299.58	1,405.98	0.46 N	1.84 E	747,447.46	1,026,812.84	0.30	-1.85	
1,436.00	0.03	177.50	-1,329.58	1,435.98	0.47 N	1.93 E	747,447.47	1,026,812.93	1.12	-1.94	
1,466.00	0.33	140.50	-1,359.58	1,465.98	0.39 N	1.88 E	747,447.39	1,026,812.88	1.02	-1.98	
1,496.00	0.33	144.50	-1,389.58	1,495.98	0.26 N	2.09 E	747,447.26	1,026,813.09	0.08	-2.09	
1,526.00	0.08	78.50	-1,419.58	1,525.98	0.19 N	2.16 E	747,447.19	1,026,813.16	1.02	-2.16	
1,556.00	0.25	95.50	-1,449.58	1,555.98	0.19 N	2.24 E	747,447.19	1,026,813.24	0.58	-2.25	
1,586.00	0.17	96.50	-1,479.58	1,585.98	0.18 N	2.35 E	747,447.18	1,026,813.35	0.27	-2.36	
1,616.00	0.37	152.50	-1,509.58	1,615.98	0.09 N	2.44 E	747,447.09	1,026,813.44	1.03	-2.44	
1,646.00	0.33	98.50	-1,539.58	1,645.98	0.01 S	2.57 E	747,446.99	1,026,813.57	1.07	-2.57	
1,676.00	0.17	344.50	-1,569.58	1,675.98	0.02 N	2.64 E	747,447.02	1,026,813.64	1.43	-2.64	
1,706.00	0.17	144.50	-1,599.58	1,705.98	0.02 N	2.66 E	747,447.02	1,026,813.66	1.12	-2.66	
1,736.00	0.33	72.00	-1,629.58	1,735.98	0.02 N	2.77 E	747,447.02	1,026,813.77	1.08	-2.77	
1,766.00	0.07	38.50	-1,659.58	1,765.98	0.06 N	2.86 E	747,447.06	1,026,813.86	0.91	-2.86	
1,796.00	0.75	154.50	-1,889.58	1,795.98	0.11 S	2.96 E	747,446.89	1,026,813.96	2.61	-2.95	
1,826.00	0.63	130.50	-1,719.58	1,825.98	0.39 S	3.17 E	747,446.61	1,026,814.17	1.03	-3.16	
1,856.00	0.37	139.50	-1,749.57	1,855.97	0.57 S	3.35 E	747,446.43	1,026,814.35	0.90	-3.34	
1,886.00	0.63	147.50	-1,779.57	1,885.97	0.78 S	3.51 E	747,446.22	1,026,814.51	0.90	-3.48	
1,916.00	0.50	121.50	-1,809.57	1,915.97	0.99 S	3.71 E	747,446.01	1,026,814.71	0.95	-3.68	
1,946.00	0.17	80.50	-1,839.57	1,945.97	1.05 S	3.86 E	747,445.95	1,026,814.96	1.29	-3.84	
1,976.00	0.17	227.50	-1,869.57	1,975.97	1.08 S	3.87 E	747,445.92	1,026,814.87	1.09	-3.85	
1,991.00	0.33	251.50	-1,894.57	1,990.97	1.10 S	3.82 E	747,445.80	1,026,814.82	1.25	-3.78	
2,124.00	1.50	280.00	-2,017.55	2,123.95	0.92 S	1.74 E	747,446.08	1,026,812.74	0.92	-1.72	
2,185.00	3.00	300.00	-2,078.50	2,184.80	0.01 N	0.43 W	747,447.01	1,026,810.57	2.74	0.43	
2,245.00	4.75	296.50	-2,138.36	2,244.76	1.91 N	4.01 W	747,448.91	1,026,806.99	2.84	3.97	
2,308.00	6.50	306.50	-2,201.08	2,307.48	5.19 N	9.22 W	747,452.19	1,026,801.78	3.17	9.10	
2,368.00	8.00	315.00	-2,260.58	2,366.98	10.17 N	14.90 W	747,457.17	1,026,796.10	3.07	14.67	
2,428.00	9.75	315.00	-2,319.88	2,426.26	16.71 N	21.44 W	747,463.71	1,026,789.56	2.92	21.06	
2,467.00	11.00	312.50	-2,348.39	2,454.79	20.32 N	25.22 W	747,467.32	1,026,785.78	4.58	24.76	
2,542.00	13.75	311.00	-2,431.40	2,537.80	32.42 N	38.83 W	747,479.42	1,026,772.17	3.26	38.09	
2,617.00	13.75	312.00	-2,498.52	2,604.92	75.73 N	87.78 W	747,522.73	1,026,723.22	0.09	88.05	
3,064.00	13.50	311.50	-2,938.57	3,044.97	114.48 N	131.19 W	747,561.48	1,026,679.81	0.11	128.58	
3,214.00	13.75	315.00	-3,084.35	3,190.75	138.69 N	156.90 W	747,585.68	1,026,654.10	0.57	153.75	

HALLIBURTON

Plan Report for A04 - RD1 - Plan 4 (19-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
3,363.00	9.75	313.00	-3,230.20	3,336.60	159.82 N	178.66 W	747,606.82	1,026,832.34	2.70	175.02	
3,520.00	6.25	311.50	-3,365.65	3,492.05	174.55 N	194.79 W	747,621.55	1,026,816.21	2.23	190.82	
3,675.00	4.00	305.00	-3,540.02	3,646.42	183.25 N	205.54 W	747,630.25	1,026,805.46	1.50	201.37	
3,859.00	2.50	305.00	-3,723.72	3,830.12	189.23 N	214.08 W	747,636.23	1,026,586.92	0.82	209.78	
4,072.00	1.75	283.00	-3,936.58	4,043.98	182.63 N	221.06 W	747,639.63	1,026,589.94	0.51	216.67	
4,224.00	0.75	260.00	-4,088.54	4,194.94	182.98 N	224.30 W	747,639.98	1,026,586.70	0.72	219.90	
4,496.00	1.00	186.50	-4,360.51	4,466.91	180.31 N	226.32 W	747,637.31	1,026,584.68	0.39	221.99	
4,589.00	1.50	167.00	-4,453.49	4,559.89	188.32 N	226.14 W	747,635.32	1,026,584.86	0.70	221.85	
4,742.00	1.50	171.50	-4,606.44	4,712.84	184.38 N	225.39 W	747,631.38	1,026,585.61	0.08	221.19	
4,871.00	1.50	172.50	-4,735.39	4,841.79	181.04 N	224.92 W	747,628.04	1,026,586.08	0.02	220.80	
5,155.00	2.00	164.50	-5,019.28	5,125.66	172.58 N	223.11 W	747,619.58	1,026,587.89	0.20	219.18	
5,405.00	2.25	162.00	-5,269.09	5,375.49	163.71 N	220.43 W	747,610.71	1,026,580.57	0.11	216.69	
5,711.00	2.50	162.00	-5,574.83	5,681.23	151.65 N	216.51 W	747,598.65	1,026,594.49	0.08	213.05	
6,017.00	3.00	166.50	-5,880.47	5,988.87	137.52 N	212.58 W	747,584.52	1,026,598.42	0.18	209.44	
6,322.00	3.50	170.00	-6,184.98	6,291.38	120.59 N	209.10 W	747,567.58	1,026,601.90	0.18	206.34	
6,479.00	3.75	187.50	-6,341.67	6,448.07	110.85 N	207.16 W	747,557.85	1,026,603.84	0.19	204.61	
6,670.00	4.75	167.50	-6,532.14	6,638.54	97.03 N	204.09 W	747,544.03	1,026,606.91	0.52	201.86	
6,900.00	9.00	178.00	-6,760.44	6,866.64	69.75 N	201.40 W	747,516.75	1,026,609.60	1.92	198.78	
7,023.00	9.75	178.00	-6,881.80	6,988.20	49.72 N	200.70 W	747,496.72	1,026,610.30	0.61	198.54	
7,100.00	9.25	206.50	-6,957.78	7,064.18	37.66 N	203.24 W	747,484.86	1,026,607.76	6.08	202.34	
7,195.00	8.00	243.00	-7,051.78	7,158.18	27.82 N	212.54 W	747,474.82	1,026,598.46	5.80	211.86	
7,214.00	7.47	248.96	-7,070.60	7,177.00	26.77 N	214.88 W	747,473.77	1,026,596.12	5.05	214.22	Start DLS 5.00 TFO 21.48
7,300.00	11.58	256.83	-7,155.40	7,261.80	22.80 N	228.51 W	747,469.80	1,026,582.49	5.00	227.94	
7,400.00	18.48	261.01	-7,252.39	7,359.78	18.29 N	252.31 W	747,465.28	1,026,558.69	5.00	251.83	
7,500.00	21.43	263.30	-7,346.94	7,453.34	13.94 N	284.48 W	747,460.94	1,026,526.52	5.00	284.10	
7,600.00	26.39	264.77	-7,438.33	7,544.73	9.78 N	324.78 W	747,456.76	1,026,486.22	5.00	324.48	
7,700.00	31.37	265.80	-7,525.87	7,632.27	5.84 N	372.90 W	747,452.84	1,026,438.10	5.00	372.67	
7,800.00	36.35	266.57	-7,608.89	7,715.28	2.15 N	428.47 W	747,449.15	1,026,382.53	5.00	428.32	
7,900.00	41.33	267.17	-7,698.75	7,793.15	1.25 S	491.08 W	747,445.75	1,026,318.92	5.00	490.88	
8,000.00	46.32	267.67	-7,759.87	7,865.27	4.35 S	560.23 W	747,442.65	1,026,250.77	5.00	560.19	
8,073.66	50.00	267.99	-7,808.00	7,914.40	6.42 S	615.06 W	747,440.58	1,026,195.94	5.00	615.05	Start 765.38 hold at 8073.66 MD
8,100.00	50.00	267.99	-7,824.93	7,931.33	7.13 S	635.23 W	747,439.67	1,026,175.77	0.00	635.23	
8,200.00	50.00	267.99	-7,869.21	7,995.61	9.82 S	711.78 W	747,437.18	1,026,099.22	0.00	711.82	
8,300.00	50.00	267.99	-7,953.49	8,059.89	12.51 S	788.34 W	747,434.49	1,026,022.66	0.00	788.42	
8,400.00	50.00	267.99	-8,017.77	8,124.17	15.20 S	864.89 W	747,431.90	1,025,946.11	0.00	865.01	
8,500.00	50.00	267.99	-8,082.06	8,188.46	17.88 S	941.45 W	747,429.12	1,025,869.55	0.00	941.61	
8,600.00	50.00	267.99	-8,146.34	8,252.74	20.57 S	1,018.00 W	747,426.43	1,025,793.00	0.00	1,018.21	
8,700.00	50.00	267.99	-8,210.62	8,317.02	23.26 S	1,094.56 W	747,423.74	1,025,716.44	0.00	1,094.80	
8,800.00	50.00	267.99	-8,274.90	8,381.30	25.95 S	1,171.11 W	747,421.05	1,025,638.89	0.00	1,171.40	

HALLIBURTON

Plan Report for A04 - RD1 - Plan 4 (19-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft) Easting (ft)	Map Coordinates Northing (ft) Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
8,839.04	50.00	267.89	-8,300.00	8,406.40	27.00 S 1,201.00 W	747,420.00 1,025,610.00	0.00	1,201.30	TD at 8839.04 - A4 T1

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft) +E/-W (ft)	Comment
7,214.00	7,177.00	-214.88	Start DLS 5.00 TFO 21.48
8,073.66	7,914.40	-815.06	Start 765.39 hold at 8073.66 MD
8,839.04	8,406.40	-1,201.00	TD at 8838.04

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft) +E/-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	268.71	Slot	0.00 0.00	0.00

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
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Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/mis target									
- Shape									
A4 T1	0.00	0.00	8,406.40	-27.00	-1,201.00	747,420.00	1,025,610.00	34 179423	-118 471784
- plan hits target									
- Circle (radius 50.00)									

HALLIBURTON

North Reference Sheet for Santa Clara Unit - A04 - RD1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference. Vertical Depths are relative to RKB @ 106.40ft (Original Well Elev). Northing and Easting are relative to A04.

Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -116.250000°, Longitude Origin 0 000000°, Latitude Origin 33.883333°

False Easting 2,000,000.00ft, False Northing 0.00ft, Scale Reduction 1.00000292

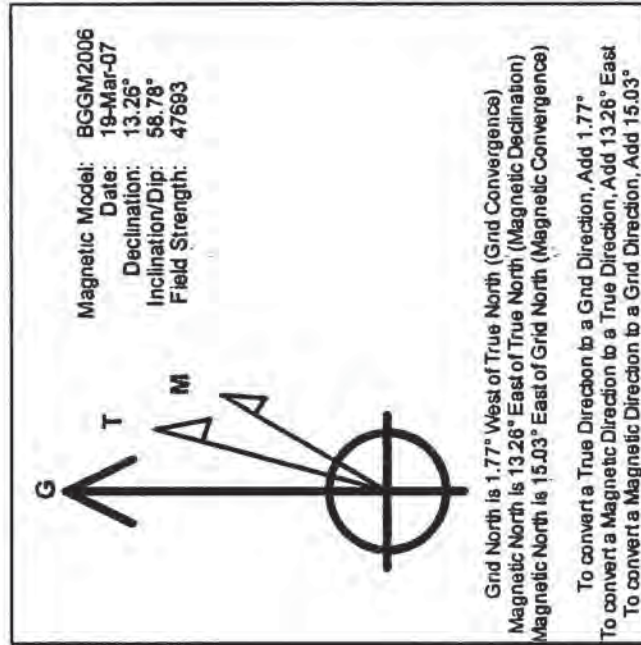
Grid Coordinates of Well 747,447 00 ft N, 1,026,811.00 ft E

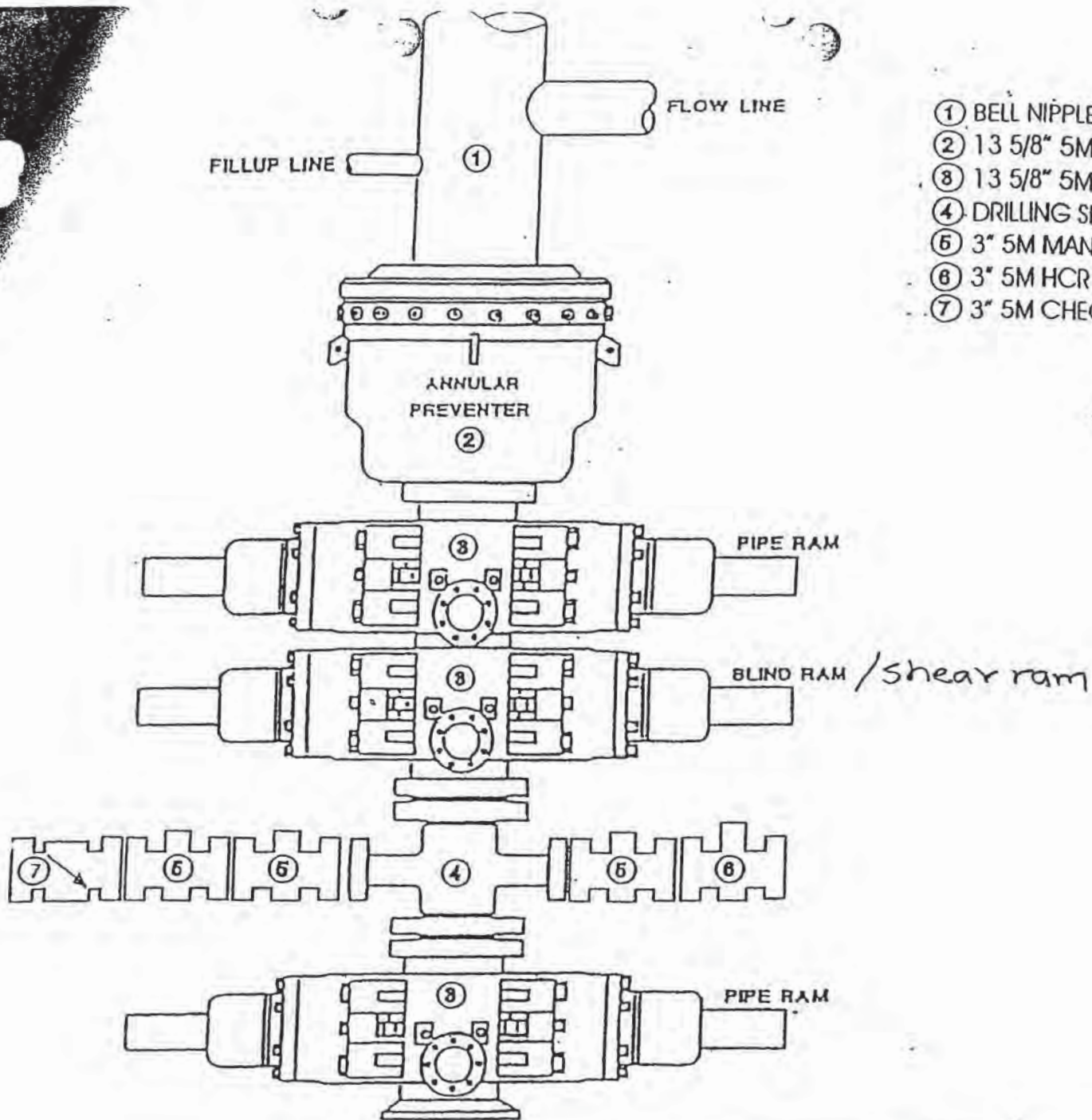
Geographical Coordinates of Well 34° 10' 46.55" N, 118° 28' 04.14" W

Grid Convergence at Surface is -1.77°

Based upon Minimum Curvature type calculations, at a Measured Depth of 8,838.04ft the Bottom Hole Displacement is 1,201.30ft in the Direction of 288.71° (Grid)

Magnetic Convergence at surface is -15.03° (19 March 2007, BGGM2006)

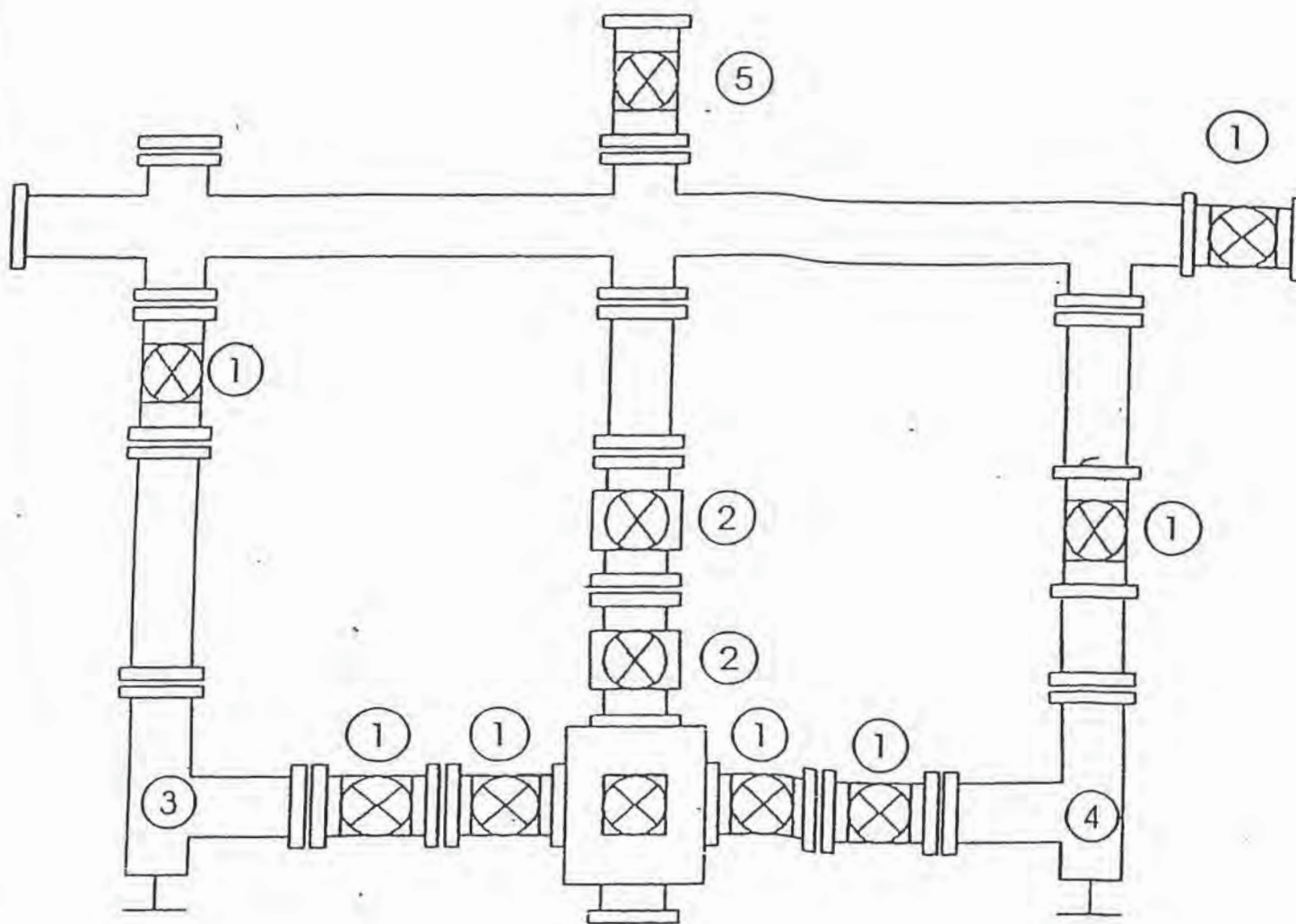




- ① BELL NIPPLE
- ② 13 5/8" 5M GK HYDRILI
- ③ 13 5/8" 5M DOUBLE G/
- ④ DRILLING SPOOL
- ⑤ 3" 5M MANUAL VALVE
- ⑥ 3" 5M HCR VALVE
- ⑦ 3" 5M CHECK VALVE



BLOWOUT
PREVENTION SYSTEM
PLATFORM G.RACE
(PROPOSED)



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD
PLATFORM G.RACE
(PROPOSED)



IN REPLY REFER TO

7106

United States Department of the Interior

MINERALS MANAGEMENT SERVICE

Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010-6064

November 19, 2007

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation & Production

Subject: Geologic Hazards Analysis for Well P-0217 A-4RD

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Santa Clara Oil Field
Lease: OCS-P 0217
Platform: Grace
Well/Slot: A-4RD in slot M7
Objective: Monterey Production well
API: 04-311-20422-01

Surface Location: X = 1,026,811 ft
Lambert Zone 6 Y = 747,446 ft

Estimated Top of Productive Zone X =
Y =

Estimated Bottom Hole Location X = 1,025,610 ft
Y = 747,420 ft

Elevation of KB: + 106 feet
Est. Total Depth (measured): - 9,817 feet (RKB)
Est. Total Depth (true vert.): - 9,656 feet (RKB)

Water Depth (Grace): 318 feet +/-

Overview of Proposal

Venoco, Inc., operator of the Santa Clara Field within the Santa Clara Unit, proposes to drill well OCS-P 0217 A4-RD into the Monterey Formation. The objective of the well is to produce oil from the Monterey formation for Platform Grace.

The proposed well will be drilled using a Kenai Rig on Platform Grace to a bottom hole location in Lease OCS-P 0217, just north of the platform. This side track will drill out the existing cement plugs and the existing perforations will be isolated and plugged with cement. Maximum pressure is not expected to exceed the pressures recorded in 1989 at TD (Monterey Fm) of 3023 psi.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Santa Margarita	Pliocene	6,284 feet	6,205 feet
KOP	Pliocene	7,214 feet	7,177 feet
Top Monterey M2	Miocene	7,693 feet	7,626 feet
Top Monterey M5	Miocene	8,109 feet	7,937 feet
Total Depth	Miocene	8,839 feet	8,406 feet

2. Potential Oil and Gas Reservoirs

Formation	Age	(TVD)	Thickness	HC Type
Monterey	Miocene	7,626	~700 ft	Oil/Associated Gas

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. This well is a side track from well A-4, therefore all the upper zones are already behind casing, and we expect normal salty or briny formation water while drilling.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of P-0217 A4. The present operator and former operator of the Santa Clara field have extensive drilling experience within this area. The proposed drilling program is similar to those utilized in drilling the production wells in the field.

5. Faulting and Folding

The water disposal well is located approximately 900 feet structurally lower and down dip from the crest of the anticline. There are no major faults mapped in the area of the sidetrack.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Grace, due to the drilling of this well.

7. Possible Over-pressured or Depleted Zones

Based on the existing mudlog for the original A4 well drilled by Chevron in 1980, there are no over pressured or high pressure zones expected in the sidetrack of the water disposal well.

8. Logging/Coring

Mud logging upon exiting original A-4 casing. Wire line logs to be run are PEX-HALS-NGT FMI-GR.

9. Other Comments

None.



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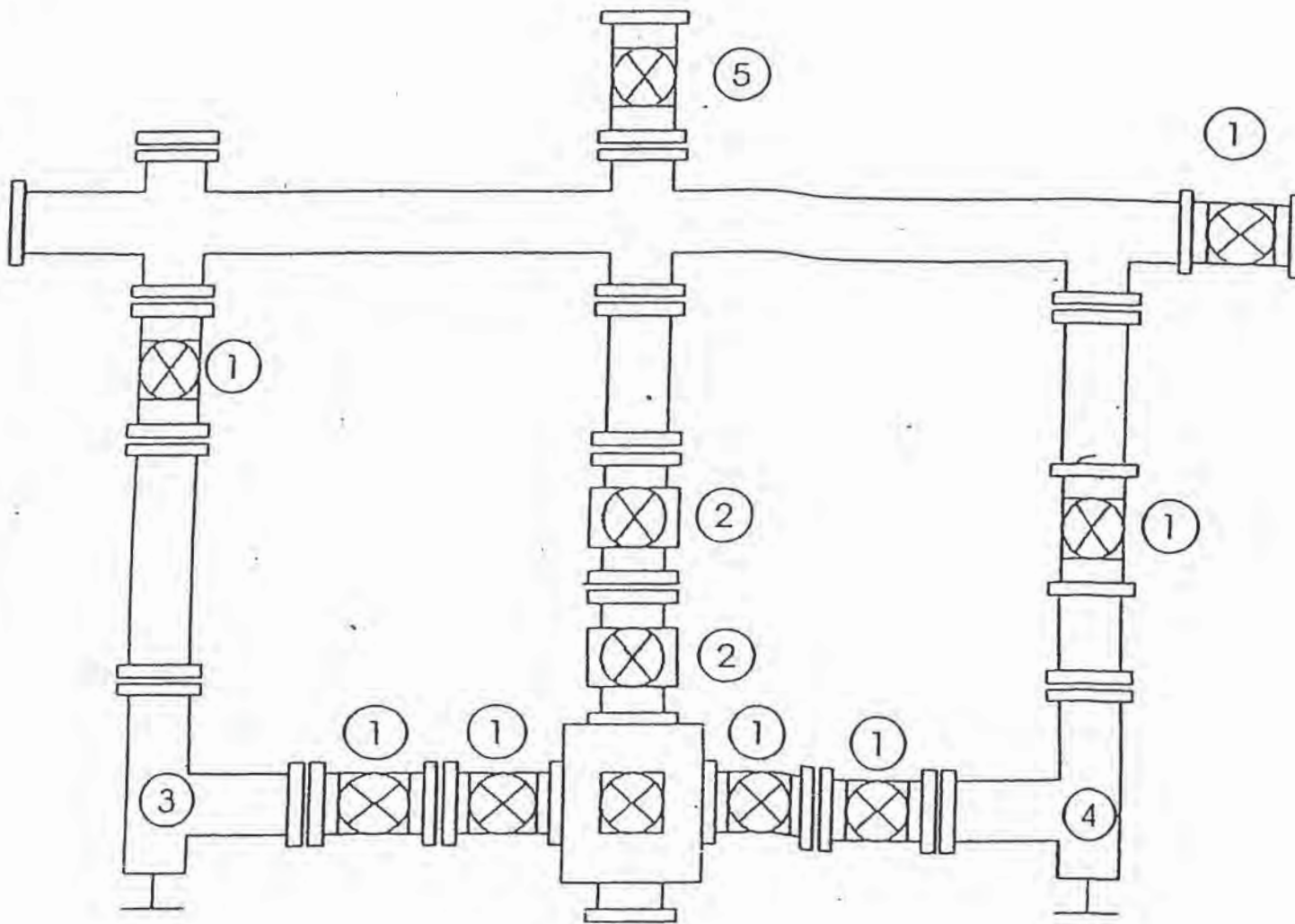
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Lambert Zone 6 Y = 747,446 ft

Estimated Top of X =
Productive Zone Y =

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Hole Location Y = 747,420 ft

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CHOKE MANIFOLD
PLATFORM G.RACE
(PROPOSED)

U.S. Department of the Interior
Minerals Management Service (MMS)

Submit original plus THREE copies,
with ONE copy marked "Public Information."

OMB Control No. 1010-0141
OMB Approval Expires 8/31/2008

Application for Permit to Drill (APD)

1. PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2. MMS OPERATOR NO. 02309	3. OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpintera Ave Suite 100 Carpinteria, CA 93013		
4. WELL NAME (CURRENT) A-4 ST1	5. SIDETRACK NO. (CURRENT) 1	6. BYPASS NO. (CURRENT)			
7. PROPOSED START DATE Dec 18, 2007	8. PLAIN CONTROL NO. (NEW WELL ONLY)				
9. API WELL NO. (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 043112042201					
10. ☐ Revision	11. If revision, please list changes:				
WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE RECEIVED			
12. LEASE NO. P-0217		17. LEASE NO. P-0217			
13. AREA NAME 6B		18. AREA NAME 6B			
14. BLOCK NO. 4862		19. BLOCK NO. 4862			
15. LATITUDE (☐ NAD 83 / ☒ NAD 27)		16. LONGITUDE (☐ NAD 83 / ☒ NAD 27)		20. LATITUDE (☐ NAD 83 / ☒ NAD 27)	
		21. LONGITUDE (☐ NAD 83 / ☒ NAD 27)			
LIST OF SIGNIFICANT MARKERS ANTICIPATED					
22. NAME	23. TOP (MD)	24. TOP (TVD)	22. NAME	23. TOP (MD)	24. TOP (TVD)
M2	7530	7412			
M3	7808	7612			
25. LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250.414(b) through (g) or 30 CFR 250.1817 (c) and (d), as appropriate.) well prognosis, schematic, surface plat, structure map, mud wt curve, directional plan, BOP diagram, mud program, form 123S					
26. CONTACT NAME Dana Billings		27. CONTACT TELEPHONE NO. 805-745-2139		28. CONTACT E-MAIL ADDRESS dbillings@venoco.com	
29. AUTHORIZING OFFICIAL (Type or print name) Ed O'Donnell		30. TITLE Sr. Vice President Coastal			
31. AUTHORIZING SIGNATURE Ed O'Donnell		32. DATE 18 Dec 2007			
THIS SPACE FOR MMS USE ONLY					
APPROVED: ☒ With Attached Conditions ☐ Without Conditions		BY [Signature]		TITLE District Manager	
API WELL NO. ASSIGNED TO THIS WELL 043112042202		DATE 12/27/2007			

Releasable to public
Name: SPH Date: 5/13/13

CONDITIONS OF APPROVAL TO DRILL OCS WELL

Approval is further subject to the following specific conditions:

1. The date actual drilling is started shall be reported promptly to the District Supervisor.
2. A Well Activity Report (WAR), Form MMS-133, (one copy), shall be submitted weekly showing the principal items of work done during the week for development wells. Exploratory wells shall be reported by phone daily. The first development well on a platform shall require a daily phone report.
3. Adequate blowout prevention equipment is outlined in Subpart D of the Code of Federal Regulations (CFR), title 30 starting with paragraph CFR 250.406.
4. Any change in the approved program must receive prior approval from this office. An Application for Permit to Modify (APM) Form MMS-124 (one original signature and three copies) shall be submitted to document approval of request.
5. Any unusual occurrence such as pollution, serious injury to personnel, loss of equipment overboard, damage caused by drifting of drilling vessel off location, well blowout, major equipment failure, etc., shall be verbally reported immediately to the District Supervisor.
6. The District Supervisor shall be notified in advance in the event of production tests.
7. Two copies of all logs, including the mud log to date, shall be furnished to this office immediately after logging.
8. Before a completion program is commenced or the hole is abandoned, the District Supervisor shall be allowed sufficient time to examine well records and give separate approval for this portion of the drilling program.
9. The application to temporarily or permanently abandon a well shall be submitted on form MMS-124 as outlined in Subparts G and Q of the CFR, Title 30, paragraphs CFR 250.700 and 1700, notwithstanding any verbal approval to abandon that may have been given by this office. A Subsequent Report, Form MMS-124, must be submitted no later than 30 days after completion of the approved work.

10. The pertinent and applicable reports required under 30 CFR 250.100 through 250.400 of the Consolidated Offshore Operating Rules for Oil and Gas Operations will be properly and timely submitted. Electric logs and other logging surveys, core description and conventional analysis, stratigraphic determination, formation tests, log and history shall be reported on Form MMS-125 End of Operations Report (EOR) submitted in triplicate, plus a Public Information Copy to this office within 30 days after the completion, suspension or abandonment of the well.
11. Approval of this Application to Drill (APD) does not constitute approval to do other operations, including the setting of anchor pilings, unless details of these operations are submitted with this application. If anchor pilings are necessary, a letter requesting approval and containing the following information shall be filed: number of anchor pilings, depth of pilings, and design of piling method of removing piling or top of piling upon completion or abandonment of the well in order that the ocean floor will be kept clean. Verbal approval may be given by the Camarillo District Supervisor (MMS) provided a written application is filed for approval.
12. This APD is approved subject to the requirement that, should the well be successfully completed for production or re-completed and production resumed after being off of production more than 90 days, this office must be notified when it is placed in a producing status. Such notification may be received in this office by no later than the fifth business day following the date on which the well is placed on production. The notification shall provide, as a minimum, the following information items:
 - 1) Operator name.
 - 2) Platform and well name, number and location.
 - 3) Date well began or resumed production.
 - 4) The lease number and, if applicable, unit participation area to which the well's production is attributable.
13. This APD is valid for one year from the date it is approved.

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is with in 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et. seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet

1. OPERATOR NAME Venoco, Inc.		5. WELL NAME (Proposed) A-1 ST# 2		6. TYPE OF WELL ☐ EXPLORATORY ☒ DEVELOPMENT		11. WATER DEPTH 318'		12. ELEVATION AT NB 106.4' Onq 27 / 107' New DF	
2. API WELL NO. (Proposed) (12 Digits) 04311204220X 2		3. BOTTOM LEASE NO. (Proposed) P-0217		7. SIDETRACK NO. (Proposed) 012		8. BYPASS NO. (Proposed) 00		13. H/S DESIGNATION ☒ KNOWN ☐ UNKNOWN ☐ ABSENT	
4. TOTAL DEPTH (Proposed) MD 8898' 8355'		9. RIG NAME Venoco Rig No. 11		10. RIG TYPE PF		14. H/S ACTIVATION PLAN DEPTH FT (TVD) 6750' / 6778'		15. H/S ACTIVATION PLAN DEPTH (Kick off Point) 2344' MD / 2444' TVD	

16. ENGINEERING DATA											
Hole Size (in)	Casing (Annulus # Lines)	Casing Size (in)	Weight (lb/ft)	Burst Rating (psi)	Type of Connection	Mud Weight (ppg)	Safety Factors			Top of Line	Casing Depth (ft)
							B	C	T		
8 1/2	Drill Structural	24	105							MD	840
8 1/2	Conductor	16 5/8	105							MD	1961
8 1/2	Surface	13 3/8	72							MD	4887
8 1/2	Production	9 5/8	65.13, 64.7							MD	5888
8 1/2	Prod Liner	7	28							MD	6750
8 1/2	Prod Liner	4	1.3							MD	6778
8 1/2	Prod Liner	4	1.3							MD	8355
8 1/2	Prod Liner	4	1.3							MD	8406

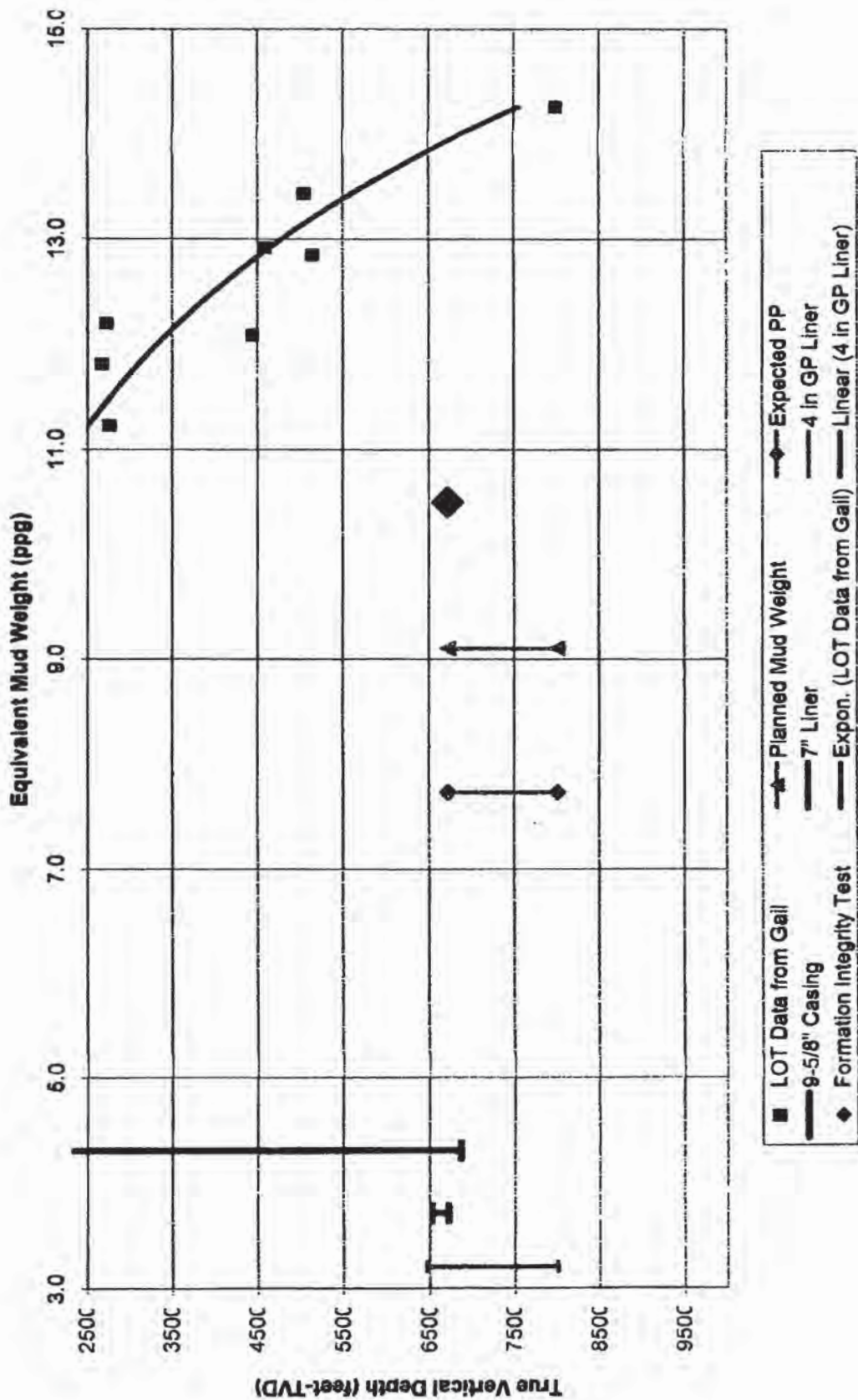
Hole Size (in)	Casing (Annulus # Lines)	Casing Size (in)	Weight (lb/ft)	Burst Rating (psi)	Type of Connection	Mud Weight (ppg)	Safety Factors	Top of Line	Casing Depth (ft)	Vibracast Mud Weight (ppg)	BOP Rate (in)	Test Pressure			Casing (ft)	Casing (ft)	Casing (ft)	Casing (ft)
												Annulus/Drill (psi)	Run (psi)	Run (psi)				
8 1/2	Drill Structural	24	105						MD	840	13 5/8	3000	3000	3000	3000	3000	3000	3000
8 1/2	Conductor	16 5/8	105						MD	1961	13 5/8	3000	3000	3000	3000	3000	3000	3000
8 1/2	Surface	13 3/8	72						MD	4887	13 5/8	3000	3000	3000	3000	3000	3000	3000
8 1/2	Production	9 5/8	65.13, 64.7						MD	5888	13 5/8	3000	3000	3000	3000	3000	3000	3000
8 1/2	Prod Liner	7	28						MD	6750	13 5/8	3000	3000	3000	3000	3000	3000	3000
8 1/2	Prod Liner	4	1.3						MD	6778	13 5/8	3000	3000	3000	3000	3000	3000	3000
8 1/2	Prod Liner	4	1.3						MD	8355	13 5/8	3000	3000	3000	3000	3000	3000	3000
8 1/2	Prod Liner	4	1.3						MD	8406	13 5/8	3000	3000	3000	3000	3000	3000	3000

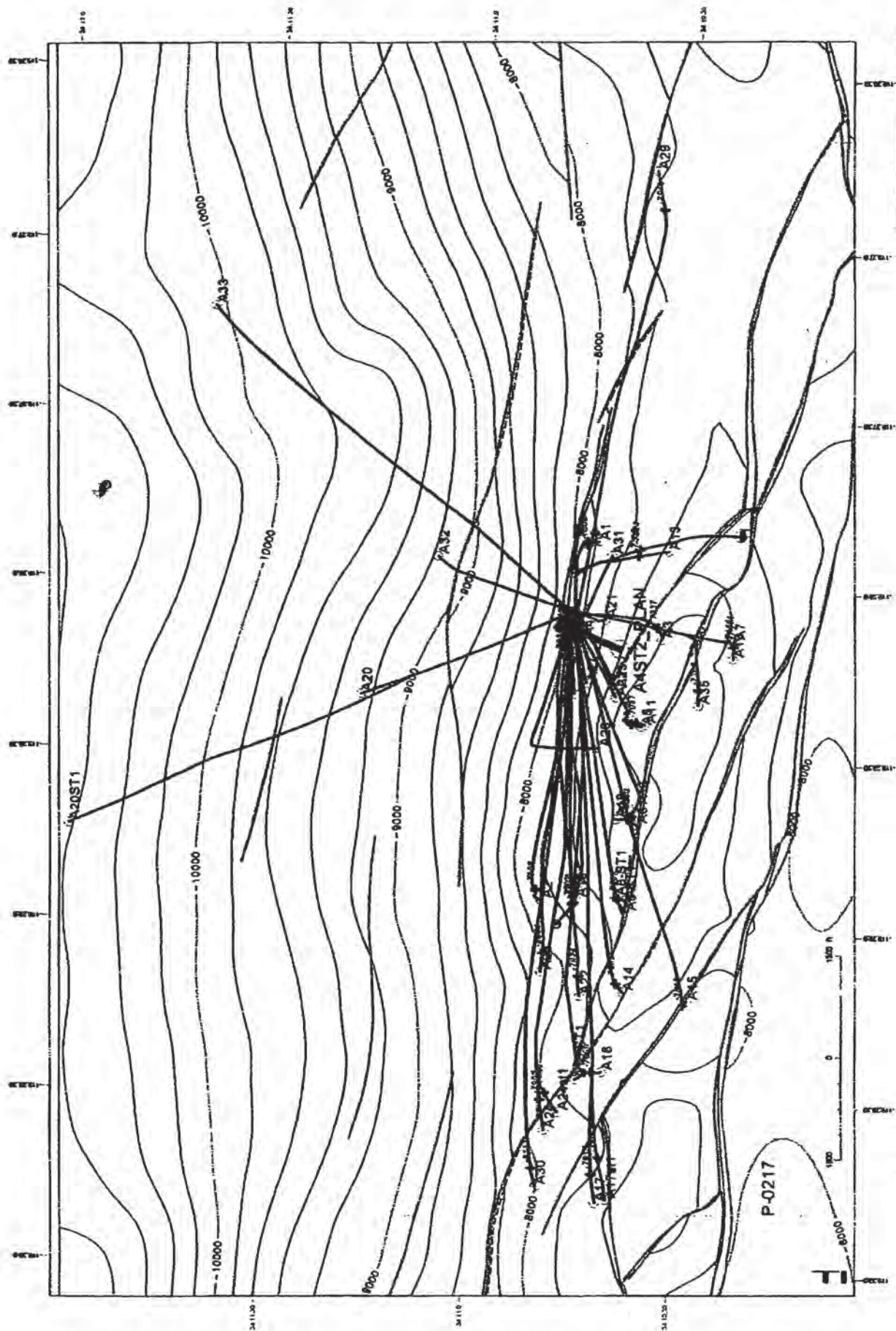
17. CONTACT PHONE NO. (805) 745-2138		18. CONTACT E-MAIL ADDRESS dbillings@venoco.com	
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19. Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more? ☒ YES ☐ NO

20. REMARKS: The 9 5/8" casing will be pressure tested to 2000 psi from surface to 6750' and to 2000 psi from surface to 6778' casing. The proposed formation integrity test is 1/2 ppg. and 7 liner will be pressure test. 571 249 ppg. 10.6

Platform Grace A-4 ST2 Estimated Pore Pressure, Mud Weight & Fracture Pressure
 (Note: Fracture Pressure Trendline from Platform Gail for Information Only)





	VENOCO INC. 14000 14th Ave. S.E. Bellevue, WA 98006
Planned A4 ST2 Platform Grace Monterey Zone M3	14000 14th Ave. S.E. Bellevue, WA 98006

VENOCO, INC.
PLATFORM GRACE – SANTA CLARA FIELD
A-4 ST1 PROGRAM
API# 04-311-20422-02
LEASE OCS-P-0217
December 17, 2007 (attach to MMS APD)

Objective: To plug and abandon the A-4 ST1 well and sidetrack to a new up dip location and complete as a production well.

Surface Location: OCS-P-217, Slot M7 (X= 1,026,811.22' & Y= 747,446.73')

Original Elevation: 318' WD, 106.4' (original DF) Above MLLW, 424' Ocean Floor to original DF

New Elevation: D.F. = 100'

Proposed TD: OCS-P-217; 8355' MD / 8006' TVD / -7900' SS

TD Location: 738' S and 539' W or (X = 1,026,272' and Y = 746,709')

<u>Proposed Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. Fm Press PSI/ PPG</u>
Santa Margarita	6284	6205	-6147	12 +
KOP	6750	6718	-6612	N/A
M2	7530	7412	-7306	
M3	7808	7612	-7506	
Total Depth	8355	8006	-7900	3218 psi / 7.73 ppg

Formation Pressure

Historical pressures from producing wells show a definitive downward trend versus cumulative production and there does not appear to be an active water drive or pressure support for the reservoir. The estimated BHP is 3218 psi at 8006' TVD and the calculated MASP would be 2596. Propose to use the wellhead rating of 3000 psi for MASP calculations. The well abandonment in 1997 used seawater as kill fluid.

Existing Casing:

(Original Rig Floor depth)	<u>MD</u>	
24", 125#, Vetco L	840'	Cmtd w/ 1000 sx
18 5/8", 105.6 K-55	1991'	Cmtd w/ 1650 cf,
13 3/8", 72# N-80	4597'	Cmtd w/ 2160 cf
9 5/8", 40, 43.5, 47# SS-95	6698'	Cmtd w/ 1000 cf
7", 23, 26# SS-95, L-80 (Liner)	7193' (window)	Cmtd w/ 560 cf
(TOL at 6562')		

9 5/8" Casing Weight and Grade Details:

Bottom 641'	6698'-6057'	47# SS-95
Next 2047'	6057' – 4010'	43.5# SS-95
Top 4010'	4010' – 0'	40# SS-95

Open Hole for ST1 well:

7193' to 8826' (Hole is 8 1/2" ID from 7214' to 7310' and 6 1/8" ID from 7310' to TD at 8826')

9 5/8" Casing Remedial Cementing Perforations:

Shot Four – ½" holes at 4620' - Circulated 150 sx through holes taking returns to surface in 9 5/8" X 13 3/8" annulus, shut in annulus and squeezed additional 42 sx through holes at 4620'. Clean out and pressure test perforations to 1500 psi with 13.9 ppg mud in hole.

Shot Four – ½" holes at 4608'. Squeezed 8 bbls of cement through holes. Drill out cement to 4900' and pressure tested holes at 4608' and 4620' to 1500 psi with 13.9 ppg mud. Pressure test indicated no communication between 9 5/8" and 13 3/8" casing.

7" Cement Bond

The 7" cement bond log run on 8/29/80 indicates poor bond at the 7" casing exit point but hard cement was cleaned out above the liner top and sufficient cement should exist around the 7" casing exit point for this sidetrack.

Proposed Casing:

(Original Rig Floor depth)	MD	
24", 125#, Vetco L	840'	Cmtd w/ 1000 sx (existing)
18 5/8", 105.6 K-55	1991'	Cmtd w/ 1650 cf (existing)
13 3/8", 72# N-80	4597'	Cmtd w/ 2160 cf (existing)
9 5/8", 40, 43.5, 47# SS-95	6698'	Cmtd w/ 1000 cf (existing)
7", 23, 26# (Liner/TOL at 6562')	6770' (window)	Cmtd w/ 560 cf (existing)
4" 9.5# L-80 Base pipe	6500'-8355'	Dura Grip 316L SS, No Shroud, .016
ga screen made on 4" 9.5# L-80 w/ NU 8rd /Open Hole Gravel Pack		

Pressure Test History of Casing

The casing and 7" X 9 5/8" liner lap were pressure tested to 1500 psi with seawater subsequent to setting the cement retainer during P&A operations in 1996. The casing was tested from 4900' to surface to 1500 psi with 13.9 ppg mud in hole during remedial work in 1985. The casing and liner lap were pressure tested to 2500 psi with 10.5 ppg mud during initial completion operations in 1980.

During the A-4 ST1 program the casing was pressure tested to 2000 psi from 7270' to surface and to 3000 psi from 4555' to surface. (The pressure test of squeeze holes at 4620' had equivalent pressure of 2789 psi with 8.5 ppg water per the following: holes at 4620' MD/4591' VD. $(13.9-8.5) \cdot .052 \cdot 4591' = 1289 \text{ psi} + 1500 \text{ psi surface pressure} = 2789 \text{ psi}$)

Tubing Kill String Installed in Well:

None

Note:

- This well is currently A-4 ST1 well and drilled to total depth of 8826' MD/8406' TVD
- Hold safety meetings, pit drills and H2S drills as required fully training and familiarizing crews with operating procedures.
- BOPE must be tested every 14 days for operations that occur under the approved APD. BOPE test will be for all pipe sizes intended for use (except tail pipe for gravel packing)
- Hydrogen Sulfide Considerations:
The Monterey has potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved Platform Grace Hydrogen Sulfide and Sulfur Dioxide Contingency Plan.

Drilling Procedure

The following steps will be performed as part of the abandonment APM

- Run in hole with open end tubing to 8800'. Circulate and condition mud. Plug 6 1/8" open hole with class G cement mixed with additives from 8700' to 8200'. Plug well in one stage.
 - Note: The top M3 is at 8136' but depth of 8300' is considered the top of the effective pay and top productive zone for this well. Top of plug at 8200' will be 100' above that.
 - Pull to 7310' and plug open hole and casing from 7093' to 7310' (Current window in 7" casing is milled from 7193' to 7210'). Pull out of hole and lay down cement stinger. Wait on cement and pressure test the casing and cement plug to 2000 psi for 30 minutes. Not greater than 10% drop in pressure is allowed.
1. Make up and run in hole with 7" bridge plug on drill pipe and set at 6770' drill pipe depth. The top of the 7" liner was documented at 6555' MD during the A-4 ST1 well clean out trips.

7" Liner Detail from Liner Hanger to KOP :

Item	Length (from bond log)	Top
Liner Hanger	8'	6555' (current pipe depth)
Joint #1	36'	
Joint #2	36.5'	
Joint #3	36'	
Joint #4	36.5'	
Joint #5	38.5'	
Joint #6	36'	6746.5
Joint #7		6782.5

2. M/U Baker 7" casing 1-trip whipstock with bottom trip anchor, window mill, lower watermelon mill and upper watermelon mill, bumper sub, MWD, and RIH to above bridge plug set at +/- 6770'.
3. Using MWD measurements orient whipstock to high side as per Directional Drillers. Set the whipstock and shear the tools off the whipstock face. Circulate and condition mud system for milling the window and carry the metal cuttings out of the hole.
4. Mill and open window drilling 15' – 18' below the bottom of ramp, as per whipstock service company and directional service company. Mill and dress the window as required obtaining good exit point for sidetrack. Drill enough rathole to pass all mills through the window. Mills must smoothly pass through the window before finalizing milling operations. Re-designate

well as A-4 ST1. Notify MMS as required in the permit conditions. Perform a Formation Integrity Test to 10.5 ppg EMW. POH with window mill assembly. Prior to drilling out window have Epoch mud loggers rigged for samples as per Formation Evaluation Program.

5. Make up 6 1/8" PDC bit on a steerable directional drilling assembly including MWD/GR. Run in the hole to and sidetrack the well. Directional drill and survey a 6 1/8" hole from KOP of +/- 6770' to a total depth of ' to 8355' MD / 8006' VD. The 6 1/8" hole will be drilled with MI Flo Thru System mixed with seawater. Follow Directional plan - Halliburton Plan A-4RD2-Plan 12 (17-Dec-07). Maintain chlorides in mud above 75000 ppm to allow for the DLL. Run solids control equipment and dilute and treat the MI FloThru System to maintain programmed specifications. Prior to drilling ahead have Epoch mud loggers rigged up and ready for samples as per Formation Evaluation Program. Follow requirements set out for NPDES compliance. Plan to catch and expedite mud sample for toxicity testing at 80% total depth
6. Circulate and condition the mud for open hole logs. Wipe the hole to the 7" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
7. Rig up wire line and run open hole logs (see attached logging program). Condition the hole if necessary between runs. During log run and as recommended by MI mud engineer condition mud in pits by running solids control equipment and lowering solids in preparation for hole opening operations.
Log Run #1 PEX/Spectral GR (LateroLog)
Log Run #2 FMI/GR/Pressure Xpress
8. Make up Baker Oil Tools 6 1/8" X 8 1/2" hole opener with KM tool body and Bear Claw PDC cutters. Run and open 6 1/8" hole to 8 1/2" hole from below window at +/- 6750' to 8355'. Run solids control equipment and dilute and treat the MI FloThru System to maintain programmed specifications.
9. Rig up Schlumberger and run 4-arm caliper log.
10. Make additional under reamer run or make run with 6 1/8" hole opener to TD. Once hole opening is complete run in hole to TD. Make up a clean solids free FLO-THRU and spot in the open hole and 200 ft. up into the casing. Pick up 200 ft. into the casing and change the upper hole over to clean seawater. This change over is in preparation for running of wire wrap screen and open hole gravel pack. Circulate the well and filter seawater to below 100 NTU or as indicated. An assembly with brushes and scraper spaced out in casing may be used.
11. Complete well as follows.

Platform Grace**Well A-4 ST2****COMPLETION PROCEDURE**

For completion operations the BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing, 3 1/2" DP and 5" dp all other pipe sizes to be used for completion operations, except 2 3/8" GP tail pipe. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 14 days during the completion phase of the operations and these operations will continue under the approved APD.

Completion Fluid:

Completion fluid to be filtered seawater unless Pressure Express data indicates need for higher density fluid. Per Steve Horner there should not be a need for fluid density above seawater gradient to control well.

NOTE: This program commences after hole opening operations and caliper log are completed.

1. If caliper log indicates, make additional under reamer run. Circulate hole clean and pull out with under reamer.
2. Make up 6 1/8" clean out assembly including a non-rotating 9 5/8" casing scraper and brush spaced out to be +/- 30' above the 7" liner top when bit is on bottom and run hole to TD.
3. Make up +/- 100 bbl solids free FLO-THRU mud mixed to equal or slightly higher density than fluid in the hole. Equalize clean mud into the open hole and 200 ft. up into the casing. Pick up bit 200 ft. into the casing.
4. During following changeover commence ocean discharge if the following conditions are met: 1) Additives and concentrations are within NPDES guidelines – confirm with MI Engineer 2) Mud passes NPDES required sheen test 3) Mud passes 96 hour NPDES shrimp test - Confirmed by Steve Lawry 4) MMS and/or EPA notified per NPDES permit.
5. Changeover well to seawater or to density necessary to provide adequate over-balance. Rotate pipe at 70 rpm and circulate at highest rate possible. Pump a recommended spacer suitable for ocean discharge between the mud and water. This change over is in preparation for running of wire wrap screen and open hole gravel pack. Fluids need to be clean but not filtered. Once returns are clean completion fluid shut down. Continue to mix completion fluid as needed to safely work on well and begin tracking and reporting losses. Clean pits.
6. Mobilize 500 bbl ECI Tank and locate per Rick Beers provided specifications. Have the pits cleaned and empty. Have production tanks empty in preparation for gravel pack. Have Baker DE filter in-line with high-rate seawater delivery system filling the ECI tank.
7. Pull out of the hole with 6 1/8" clean out assembly.
8. Make up liner assembly consisting of:
 - ~4' 4" Circulating Shoe with open hole centralizer
 - ~1600' 4" 9.5# Base pipe Wire Wrapped Screen 16 Gauge (WWS) (Weatherford)
 - ~180' X joints 4" 9.5# Blank Pipe with 8R 16 Gauge slots (Weatherford to provide)
 - ~30' 1 joint 4" 9.5# Blank Pipe (Baker to provide)
 - ~18' Lower Extension
 - ~2.5' Sleeve with Seal bore
 - ~6' Upper Extension
 - ~6' 9 5/8" Baker SC-2 Gravel Pack Packer with Sliding Sleeve, and crossover

~1850' 2 3/8" flush joint tail pipe and polished stinger for circulating shoe (to be run inside WWS – rental from Baker Gravel Pack)

- a. Liner top to be +/- 6500' which is 55' above the 7" liner top that was located at 6555' MD. Locate the gravel pack tools and extension assembly above the 7" liner top due to large OD.
 - b. Centralize with one Weatherford centralizer per joint over the coupling. The screen will have 12" per joint top and bottom for centralizers and the centralizers will require 20 3/4" for full collapse. Locate the set screw end of centralizer on bottom and directly above the screen on lower joint. Tighten set screws and do not allow centralizer to float. Centralize circulating shoe and WWS. The blank and slotted casing to have pre-fabricated welded lugs.
 - c. Minimize the use of pipe dope on the screen and on the drill pipe running string.
9. Run in with liner assembly as above on work string to desired depth. Note up and down weight of assembly.
 10. Rig up pumping equipment and lines. Casing was pressure tested to 2000 psi. Note: Baker requested minimum of 2000 psi for reverse out of gravel. Conduct safety meeting. Test lines to 4000 psi. Drop ball. Set and test SC-2 packer and gravel pack tools per Baker Tool Specialist direction. Release tool and blow ball seat.
 11. Note up and down weight of tools subsequent to release from packer.
 12. Establish and record pump rate and pressure in reverse position. Establish and record pump rate and pressure in circulating positions.
 13. Using filtered seawater from the ECI tank circulate the mud from open hole/WWS annulus into the work string casing annulus. Place the crossover tool into the upper circulating position.
 14. Gravel Pack well with 16-30 Low-Fine Ottawa gravel using Baker Gravel Infuser System. Typical pump rates have been 7.5 BPM. Sand loading has varied between 3/4 - 1 PPG. Continue pumping at recommended rate and concentration until wellhead pressure begins increasing. Pump rate should be reduced accordingly as well head pressure increases. Once pressure reaches 500 PSI over initial circulating pressure stop pumps. DO NOT RESTRESS PACK at this time.
- Notes:
- a. Have all available pit space empty to receive gravel pack returns.
 - b. Have 500 bbls filtered water in ECI tank and have platform seawater delivery system connected to filter and ECI tank.
 - c. Delivery system will need to keep up with 7.5 bbls/minute gravel pack rate. Well will be gravel packed with filtered seawater.
15. Close annular BOP and apply 500 PSI to the annulus. Place the crossover tool in the reverse position. Reverse out excess gravel until returns are clean. Monitor and determine the volume of gravel reversed out.
 16. To test the gravel pack, lower crossover tool into the circulating position. Circulate at sand out rate and attempt to achieve sand out pressure established earlier. If same sand out pressure cannot be achieved, mix and pump additional amounts of gravel recommended by pump specialist. Repeat this step until final sand out occurs.

17. After gravel pack operations completed the fluid above the liner will be changed over to higher density fluid only as needed to safely trip in and out. It is expected that seawater is sufficient density. Circulate and get fluid in hole balanced, Pull out with service tools. Fill hole as needed with filtered seawater and ship gravel pack returns to production operations for handling.
18. Rig up hydrotest unit, Certex spoolers and run Electric Submersible Pump on 2 7/8" tubing as follows.

Rig up a cable spooler and two chemical line spoolers for running of ESP. Pick up the Centrilift ESP. Run ESP equipment, cable and two 3/8" stainless steel chemical lines (with 3/8" check valves).

- Hydrotest tubing to 4000 psi while running in hole with ESP.
 - Install one cross coupling and one mid-joint Cannon Clamp per joint above the pump
 - The ESP cable may be shipped in two spools.
 - Certex will provide spooling units for the ESP cable and one for the Chemical Injection lines, sheaves for derrick.
 - Certex will provide two spools of 3/8" chemical injection line.
 - When running the ESP make sure all starts and stops when running the tubing are slow and smooth to prevent cable damage.
 - Electrical checks will be measured every 1000' and at all connections and splices.
 - Load the chemical lines with water to prevent plugging. Check valves will be installed at the top of each chemical injection line directly below hanger and at the end of each line. Both chemical injection lines will terminate at the pump intake or gas separator section in a secure location that will protect the line and valves while running the completion.
 - Certex will provide a service representative to assist the rig hands with the ESP cable and two 3/8" SS tubing clamping operations. The service representative has experience with the Cannon clamping equipment.
 - The Baker Twin Seal Packer to be set at +/- 600'.
 - The 2 7/8" T-5 TRSSSV will be set near 570', above the Baker Twinseal Packer and the control line will have manifold into the annulus safety valve and tubing safety valve
 - Function test the tubing and annular SSSV and pressure test the control line to 5000 psi.
 - Wellhead and packer electric cable connectors are from BIW and will be installed by Centrilift personnel.
 - Keep Centrilift personnel on board until pump is successfully started up unless otherwise directed due to delays in surface facilities or power availability.
19. Make up the Cameron tubing hanger and install the SSSV control line. Install check valves in chemical lines below the hanger. Function test both SSSV and pressure test the control line to 5000 psi. Leave the control line attached to the hanger to allow operation of the TRSSSV for setting the packer. Install the Bullet cap with O ring on the top of the ESP wellhead mandrel and plug/cap all lines. Secure the hanger with lock down pins. Pressure test the tubing hanger seal void to 3000 psi.

20. Rig up slickline with lubricator and BOPE and pressure test to 3000 psi. Pressure up control line and open the TRSSV and annulus safety valve. Maintain a minimum of 1600 psi over the surface pressure on the control line to keep SSSV from closing on the slickline. Run in hole with tubing plug and set in X nipple below packer. Pressure up on tubing in increments to 3500 psi to set the packer. Pull out and rig down slickline.
21. Set back pressure valve. Remove BOPE and install the new 3 1/8" 3M tree. Test the bonnet void to 3000 psi. Remove backpressure valve. Install blanking plug. Test tree to 3000 psi. Remove blanking plug.
22. Turn well over to production. Hook up and test surface facilities including the ESP cable to the variable speed drive, the SSSV to the control panel, the SSV on the tree and the annulus, and the two chemical injection lines.
23. Start the ESP pump at a low rate as per Centrilift recommended practices and check for the proper pump rotation. Monitor the pump parameters using the surface monitoring system. Skid the rig and equipment to the next well.

EVALUATION PROGRAM

Mudlogging Program:

Begin Mudlogging upon exiting original A-4 ST1 7" casing window, dry cuttings only.

Testing Program:

None expected.

Open Hole Logging program

LWD: None (**MWD/GR only**)

Wireline Logs:

- PEX (high res mode) w/ Spectral GR (LateroLog)
- FMI/GR/Pressure Xpress

Logging geologist: Dale Kunitomi 805-987-3026

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

Drilling Fluids Program**MUD PROGRAM**

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Clean out casing and mill window	Seawater and Duovis Sweeps	8.6	NC	9-10	20-30	+9-10 K
6750' - 8355'	Flo Thru	9.2	5-7	<u>8-9</u> <u>(see note below)</u>	14-28	80K

Clean out and Mill: Use Seawater with sweeps to clean out cement, viscosify system to mill as needed.

Drill and open hole: 6750' - 8355':

Change over the hole to a FLO-THRU system. Reuse or ship the milling fluid to shore. It is recommended that enough mud has been mixed prior to drilling this section in order to perform the dump and dilute process while drilling. Drill 6 1/8" hole to TD, run Logs, open hole from 6 1/8" to 8 1/2" and run WWS liner

Notes:

- Current field drilling rules allow for pH range of 9-10. Venoco proposes to run the drilling fluid system with pH 8-9. The natural alkalinity of the formations causes the pH to run in the 8-9 range. The mud system utilizes soda ash to combine with the calcium in the seawater to form caustic soda which raises the pH to 9.0-9.5. The pH falls to the 8.5 - 8.8 range while drilling. This method and the pH range of 8-9 have proven to successfully support drilling of wells offshore California.
- Operate solids control equipment as per MI recommendation to maintain drill solids as low as possible without stripping out the necessary components.
- Maintain supply of H₂S scavenger onboard to treat out H₂S.
- A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised a minimum of 0.5 ppg using +/-1450 bbl total circulating volume (850 bbls in hole at TD & 600 bbl active system).

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

Mud Weight, Formation Pressure and Fracture Pressure

		9-5/8	7	4 slotted
1	Casing Size (in)	9-5/8	7	4
2	Setting Depth (feet - TVD)	6667	6718	8006
3	Programmed FIT EMW at shoe (ppg)	10.6	10.6	10.6
4	Depth of next Casing (feet - TVD)	8006	8006	8006
5	Maximum Expected Formation Pressure (psi)	3218	3218	3218
6	Expected Mud Weight (ppg)	9.2	9.2	9.2
7	Formation Equivalent Mud Weight (ppg)	7.73	7.73	7.73
8	Expected Hydrostatic Pressure at TD (psi)	3830	3830	3830
9	Amount of Overbalance at TD (psi)	612	612	612
10	Fracture Gradient at shoe (psi/ft)	0.55	0.55	0.55
11	Fracture Pressure at shoe (psi)	3675	3703	4413
12	Hydrostatic Pressure at shoe (psi)	3189	3214	3830
13	Margin between Mud Weight and LOT (psi)	485	489	583

Notes:

A Pressures from Reservoir Engineer Predictions

B Used the programmed Formation Integrity Test of 11 ppg in above table

Maximum Anticipated Surface Pressure

	Grace Specific Form - Calculations have been customized	Production Casing	7" Mill window	TD
1	Casing Size (in)	9-5/8	7" liner	4" liner
2	Setting Depth (feet - TVD)	6667	6718	8006
3	Expected Leak Off Test EMW at shoe (ppg)	12	12	12
4	Expected Mud Weight (ppg)	9.2	9.2	9.2
5	Depth of next Casing (feet - TVD) use TD for all	8406	8406	8406
6	Maximum Expected Formation Pressure (psi)	3218	3218	3218
7	Expected gas gradient (psi/ft)	0.074	0.074	0.074
8	Formation Equivalent Mud Weight (ppg)	7.73	7.73	7.73
	Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	2596	2596	2596
10	Fracture Gradient at shoe (psi/ft)	0.62	0.62	0.62
11	Fracture Pressure at shoe (psi)	4160	4192	4996
12	Surface pressure to break down shoe (psi)	3667	3695	4403
13	Maximum Anticipated Surface Pressure (psi)	2596	2596	2596
	Max Pressures using 70% Gas & 30% Produced Fluids			
14	Maximum Anticipated Surface Pressure (psi) (SteveH Calc)	2279	2279	2279

Notes:

These are well specific inputs developed from detailed analysis by Reservoir Engineer

Producing GOR declined from 5000 scf/BO in early 1981 to less than 900 in 1996, when field was shut in. Almost all produced gas is associated gas and it is very unlikely a well would have 100% gas column. Historical pressures from producing wells show a definitive downward trend versus cumulative production and there does not appear to be an active water drive or pressure support for the reservoir.

Casing Design

Hole Section	12.25	8.5	8.5
Mud Weight	9.2	9.2	9.2
Buoyancy Factor	0.860	0.860	0.860
MASP (psi) Based on wellhead rating	3000	3000	3000
Gas Lift Pressure (psi)	0	0	0
Casing Size (in)	9-5/8*	7	4
Setting Depth, MD (ft)	6698	6750	8355
Setting Depth, TVD (ft)	6667	6718	8006
Top of Casing, MD (ft)	0	6562	6500
Weight (lb/ft)	40	26	9.5
Grade	SS-95	L-80	L-80
Threads	BUTT	BUTT	NU8rd
ID (in)	8.835	6.276	3.548
Drift diameter (in)	8.599	6.151	3.423
Collapse (psi)	3330	5410	Slot Liner
Burst (psi)	6820	7240	Slot Liner
Joint Strength (kips)	1088	604	250
Body Strength (kips)	1088	604	NA
Collapse Safety Factor	1.04	1.68	NA
Burst Safety Factor	2.27	2.41	NA
Tensile Safety Factor	3.29	5.80	2.17
Hole Section	12.25	8.5	8.5

1. Collapse is based on mud outside of an evacuated casing string.
2. Tension is based on buoyed weight of casing string + 100 kips over pull.

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydri") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydri") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

Platform Grace**Well A-4 ST2****COMPLETION PROCEDURE**

For completion operations the BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing, 3 1/2" DP and 5" dp all other pipe sizes to be used for completion operations, except 2 3/8" GP tail pipe. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 14 days during the completion phase of the operations and these operations will continue under the approved APD.

Completion Fluid:

Completion fluid to be filtered seawater unless Pressure Express data indicates need for higher density fluid. Per Steve Horner there should not be a need for fluid density above seawater gradient to control well.

NOTE: This program commences after hole opening operations and caliper log are completed.

1. If caliper log indicates, make additional under reamer run. Circulate hole clean and pull out with under reamer.
2. Make up 6 1/8" clean out assembly including a non-rotating 9 5/8" casing scraper and brush spaced out to be +/- 30' above the 7" liner top when bit is on bottom and run hole to TD.
3. Make up +/- 100 bbl solids free FLO-THRU mud mixed to equal or slightly higher density than fluid in the hole. Equalize clean mud into the open hole and 200 ft. up into the casing. Pick up bit 200 ft. into the casing.
4. During following changeover commence ocean discharge if the following conditions are met: 1) Additives and concentrations are within NPDES guidelines – confirm with MI Engineer 2) Mud passes NPDES required sheen test 3) Mud passes 96 hour NPDES shrimp test - Confirmed by Steve Lawry 4) MMS and/or EPA notified per NPDES permit.
5. Changeover well to seawater or to density necessary to provide adequate over-balance. Rotate pipe at 70 rpm and circulate at highest rate possible. Pump a recommended spacer suitable for ocean discharge between the mud and water. This change over is in preparation for running of wire wrap screen and open hole gravel pack. Fluids need to be clean but not filtered. Once returns are clean completion fluid shut down. Continue to mix completion fluid as needed to safely work on well and begin tracking and reporting losses. Clean pits.
6. Mobilize 500 bbl ECI Tank and locate per Rick Beers provided specifications. Have the pits cleaned and empty. Have production tanks empty in preparation for gravel pack. Have Baker DE filter in-line with high-rate seawater delivery system filling the ECI tank.
7. Pull out of the hole with 6 1/8" clean out assembly.
8. Make up liner assembly consisting of:
 - ~4' 4" Circulating Shoe with open hole centralizer
 - ~1600' 4" 9.5# Base pipe Wire Wrapped Screen 16 Gauge (WWS) (Weatherford)
 - ~180' X joints 4" 9.5# Blank Pipe with 8R 16 Gauge slots (Weatherford to provide)
 - ~30' 1 joint 4" 9.5# Blank Pipe (Baker to provide)
 - ~18' Lower Extension
 - ~2.5' Sleeve with Seal bore
 - ~6' Upper Extension
 - ~6' 9 5/8" Baker SC-2 Gravel Pack Packer with Sliding Sleeve, and crossover

150' 2 3/8" flush joint tail pipe and polished stinger for circulating shoe (to be run inside JS - rental from Baker Gravel Pack)

Liner top to be +/- 6500' which is 55' above the 7" liner top that was located at 6555' MD. Locate the gravel pack tools and extension assembly above the 7" liner top due to large OD.

Centralize with one Weatherford centralizer per joint over the coupling. The screen will have 12" per joint top and bottom for centralizers and the centralizers will require 20 3/4" for full collapse. Locate the set screw end of centralizer on bottom and directly above the screen on lower joint. Tighten set screws and do not allow centralizer to float. Centralize circulating shoe and WWS. The blank and slotted casing to have pre-fabricated welded lugs.

Minimize the use of pipe dope on the screen and on the drill pipe running string.

With liner assembly as above on work string to desired depth. Note up and down weight loss.

Pumping equipment and lines. Casing was pressure tested to 2000 psi. Note: Baker minimum of 2000 psi for reverse out of gravel. Conduct safety meeting. Test lines to Drop ball. Set and test SC-2 packer and gravel pack tools per Baker Tool Specialist. Release tool and blow ball seat.

and down weight of tools subsequent to release from packer.

and record pump rate and pressure in reverse position. Establish and record pump pressure in circulating positions.

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Have all available pit space empty to receive gravel pack returns.

Have 500 bbls filtered water in ECI tank and have platform seawater delivery system connected to filter and ECI tank.

Delivery system will need to keep up with 7.5 bbls/minute gravel pack rate. Well will be gravel packed with filtered seawater.

ular BOP and apply 500 PSI to the annulus. Place the crossover tool in the reverse. Reverse out excess gravel until returns are clean. Monitor and determine the volume reversed out.

gravel pack, lower crossover tool into the circulating position. Circulate at sand out attempt to achieve sand out pressure established earlier. If same sand out pressure achieved, mix and pump additional amounts of gravel recommended by pump. Repeat this step until final sand out occurs.

Azimuth to Grid North
 True North: 1.77°
 Magnetic North: 14.89°
 Magnetic Field
 Strength: 47616.1nT
 Dip Angle: 58.77°
 Date: 12/17/2007
 Model: 8GOM2007

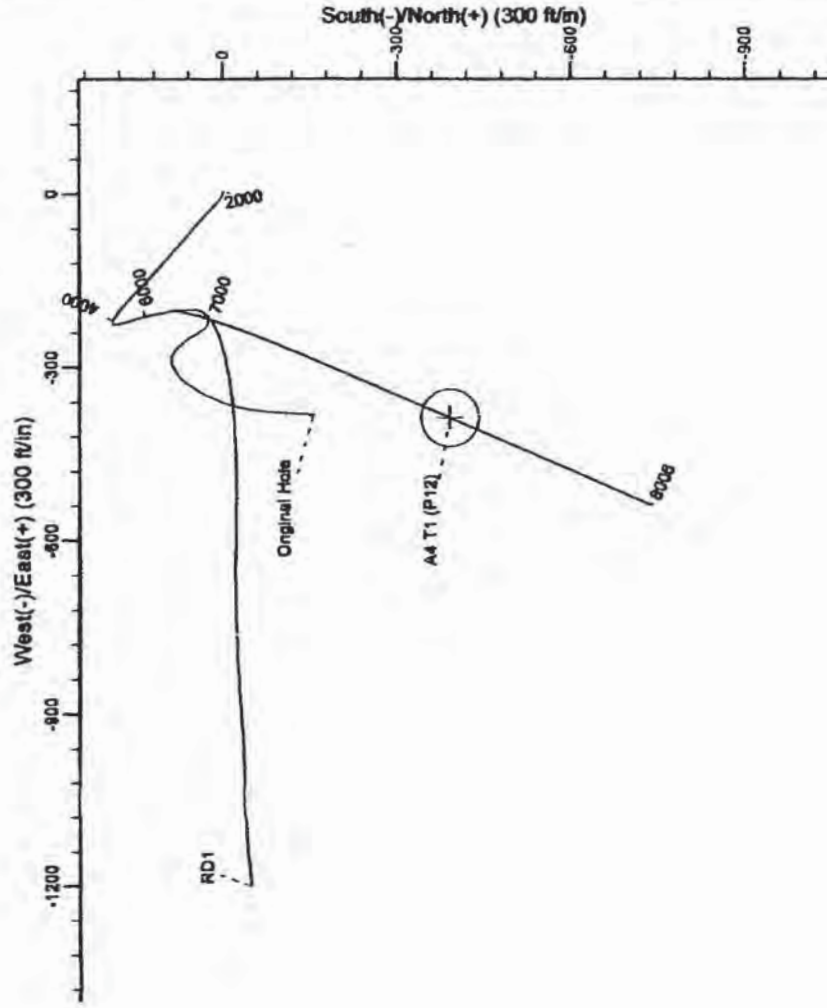
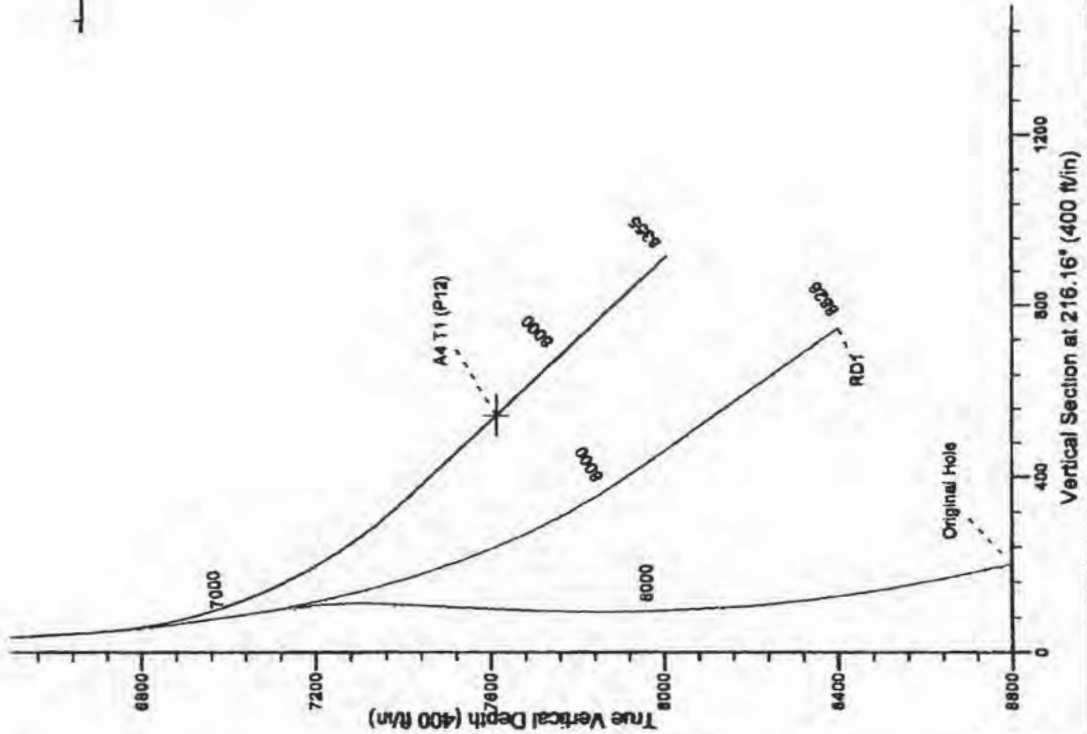


Venoco Inc.

Project: Platform Grace
 Site: Santa Clara Unit
 Well: A04
 RD2 Plan 12
 Plan #12 (17-Dec-07)

A04
 NAD 1927 (NADCON CONUS)
 California VI 406
 Reference: Grid
 RKB @ 100.40m (Original Well Elev)
 Northing: 747447.00
 Easting: 1028811.00

HALLIBURTON
 Sperry Drilling Services



SECTION DETAILS

Sec	MD	Inc	Adj	TVO	+N/S	+E/W	DLeg	TFace	VSec	Target
1	6750.00	6.20	172.77	6716.17	89.51	-202.83	0.00	0.00	47.42	
2	7524.12	43.93	203.56	7408.17	-209.59	-308.98	8.00	34.80	351.83	
3	7808.07	43.83	203.56	7612.56	-380.17	-347.70	0.00	0.00	643.77	A4 T1 (P12)
4	8354.76	43.83	203.56	8008.40	-787.55	-539.28	0.00	0.00	813.83	

Venoco Inc.

Platform Grace

Santa Clara Unit

A04

RD2 Plan 12

Plan: Plan #12 (17-Dec-07)

Job No. Plan #12 (17-Dec-07)

Sperry Drilling Services Combo Report

17 December, 2007

Well Coordinates: 747,447.00 N, 1,028,811.00 E (34° 10' 48.56" N, 119° 28' 04.14" W)
Water Depth: 318.00 N

Local Coordinates Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Centered on Well A04

RKB @ 106.40ft (Original Well Elev)

N

Grid

API - US Survey Feet

Version: 2003.14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for A04 - RD2 Plan 12 - Plan #12 (17-Dec-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	108.40	0.00	0.00 N	0.00 E	747,447.00	1,026,811.00	0.00	0.00	
30.00	0.45	171.00	78.40	30.00	0.12 S	0.02 E	747,446.88	1,026,811.02	1.80	0.08	
60.00	0.17	320.50	48.40	60.00	0.20 S	0.01 E	747,446.80	1,026,811.01	2.01	0.16	
90.00	0.16	182.70	16.40	90.00	0.20 S	0.00 W	747,446.80	1,026,811.00	1.06	0.16	
120.00	0.36	135.50	-13.60	120.00	0.30 S	0.09 E	747,446.70	1,026,811.08	0.70	0.19	
150.00	0.46	188.40	-43.60	150.00	0.48 S	0.17 E	747,446.52	1,026,811.17	0.82	0.29	
180.00	0.46	182.30	-75.60	180.00	0.70 S	0.29 E	747,446.30	1,026,811.25	0.42	0.42	
210.00	0.30	171.20	-103.80	210.00	0.88 S	0.31 E	747,446.12	1,026,811.31	0.64	0.53	
240.00	0.40	176.00	-133.60	240.00	1.06 S	0.33 E	747,445.94	1,026,811.33	0.36	0.66	
270.00	0.32	162.40	-163.60	270.00	1.22 S	0.35 E	747,445.78	1,026,811.35	0.66	0.78	
300.00	0.16	316.30	-193.60	300.00	1.25 S	0.34 E	747,445.76	1,026,811.34	1.20	0.81	
330.00	0.37	148.40	-223.60	330.00	1.30 S	0.38 E	747,445.70	1,026,811.38	1.73	0.84	
360.00	0.22	168.68	-253.60	360.00	1.44 S	0.43 E	747,445.58	1,026,811.43	0.60	0.91	
390.00	0.47	309.80	-283.69	390.00	1.42 S	0.34 E	747,445.58	1,026,811.34	2.18	0.94	
420.00	0.42	312.40	-313.69	420.00	1.27 S	0.17 E	747,445.73	1,026,811.17	0.16	0.93	
450.00	0.27	342.60	-343.69	450.00	1.13 S	0.08 E	747,445.87	1,026,811.08	0.77	0.87	
480.00	0.30	74.80	-373.69	480.00	1.04 S	0.12 E	747,445.98	1,026,811.12	1.37	0.77	
510.00	0.30	325.70	-403.69	510.00	0.95 S	0.15 E	747,446.06	1,026,811.15	1.63	0.88	
540.00	0.06	17.00	-433.69	540.00	0.87 S	0.11 E	747,446.13	1,026,811.11	0.86	0.83	
570.00	0.17	161.60	-463.69	570.00	0.89 S	0.14 E	747,446.11	1,026,811.14	0.78	0.83	
600.00	0.02	162.80	-483.69	600.00	0.93 S	0.16 E	747,446.07	1,026,811.16	0.51	0.88	
630.00	0.16	226.20	-523.69	630.00	0.97 S	0.13 E	747,446.03	1,026,811.13	0.68	0.71	
660.00	0.05	93.00	-553.69	660.00	1.00 S	0.10 E	747,446.00	1,026,811.10	0.73	0.75	
690.00	0.40	295.90	-583.69	690.00	0.95 S	0.02 E	747,446.06	1,026,811.02	1.49	0.76	
720.00	0.12	218.70	-613.69	720.00	0.93 S	0.09 W	747,446.07	1,026,810.91	1.33	0.81	
750.00	0.12	208.02	-643.69	750.00	0.99 S	0.12 W	747,446.01	1,026,810.88	0.05	0.87	
780.00	0.47	208.20	-673.69	780.00	1.13 S	0.19 W	747,445.97	1,026,810.81	1.17	1.02	
810.00	0.20	3.18	-693.69	810.00	1.16 S	0.23 W	747,445.84	1,026,810.77	3.28	1.07	
840.00	0.27	74.30	-713.69	840.00	1.12 S	0.18 W	747,445.98	1,026,810.82	1.40	1.01	
870.00	0.42	77.80	-759.69	870.00	1.05 S	0.09 E	747,445.98	1,026,811.09	0.33	0.80	
900.00	0.58	70.80	-789.69	900.00	0.98 S	0.34 E	747,446.02	1,026,811.34	0.87	0.69	
930.00	0.26	126.50	-819.69	930.00	0.87 S	0.53 E	747,446.03	1,026,811.53	1.55	0.47	
960.00	0.33	80.00	-849.69	960.00	0.99 S	0.87 E	747,446.01	1,026,811.87	0.83	0.41	
990.00	0.60	20.80	-879.69	990.00	0.85 S	0.80 E	747,446.16	1,026,811.80	1.48	0.22	
1,010.00	0.33	22.60	-899.69	1,010.00	0.85 S	0.88 E	747,446.35	1,026,811.88	0.57	0.01	
1,040.00	0.33	82.50	-939.69	1,040.00	0.88 S	1.00 E	747,446.44	1,026,812.00	1.10	-0.14	
1,070.00	0.35	82.60	-989.69	1,070.00	0.54 S	1.16 E	747,446.46	1,026,812.16	0.37	-0.24	
1,100.00	0.33	45.50	-999.69	1,100.00	0.47 S	1.28 E	747,446.53	1,026,812.28	0.86	-0.37	
1,130.00	0.17	3.50	-1,029.69	1,130.00	0.37 S	1.34 E	747,446.83	1,026,812.34	0.78	-0.49	
1,160.00	0.33	148.50	-1,059.69	1,160.00	0.38 S	1.38 E	747,446.81	1,026,812.38	1.59	-0.50	

Vertical to +/- 2185'
 Max Angle: 50 deg @8000' MD (est)
 Original D.F. Elevation: 106'
 New D.F. Elevation: 100'
 New D.F. to Tubing Head: 47.15' (est)
 Water Depth: 318'
 Wellhead: Original V-G head with Cameron Adapter on top
 Production Tree: 3 1/2" 3M psi Cameron

SANTA CLARA FIELD

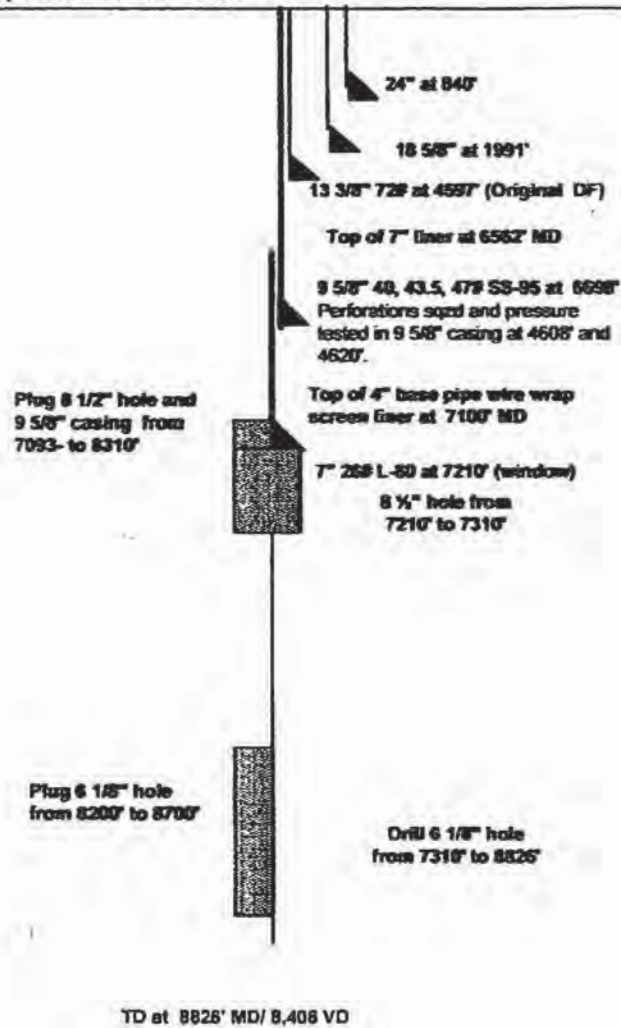
revised 12/18/07 dhh

WELL A-4 ST1

Lease: OCS-P-0217

Completion Date:

Proposed Abandonment of ST1



Azimuths to Grid North
 True North: 1.77°
 Magnetic North: 14.96°
 Magnetic Field
 Strength: 47615.1 nT
 Dip Angle: 58.77°
 Date: 12/17/2007
 Model: BGGN2007

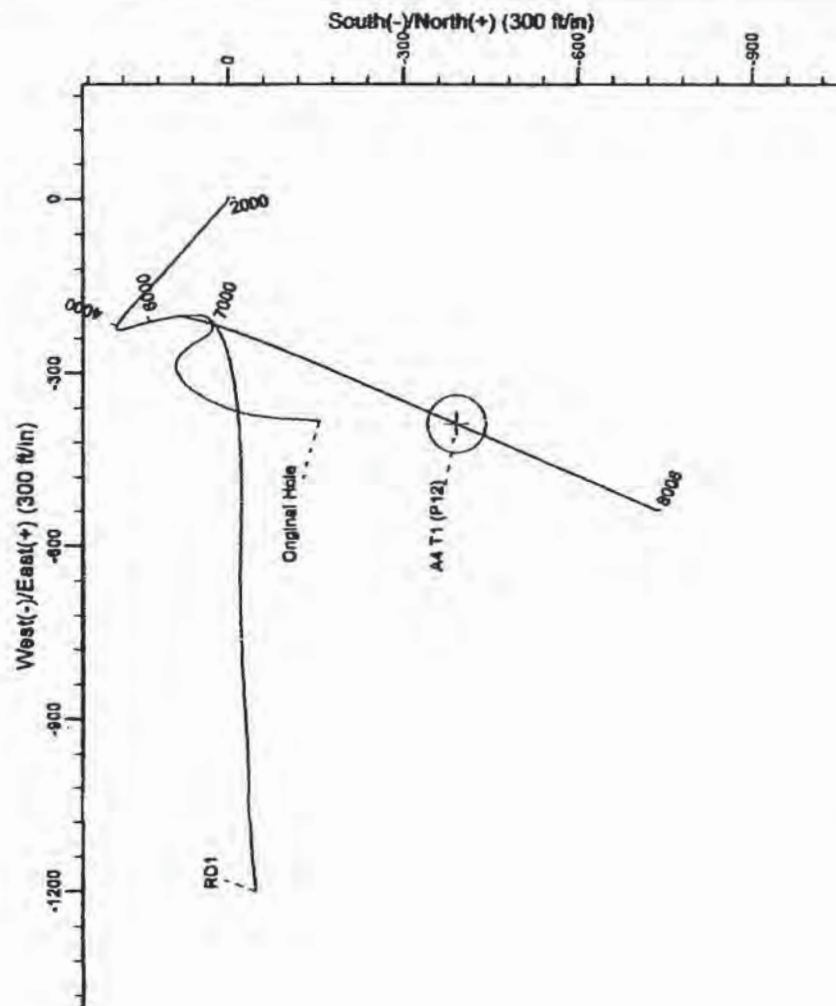
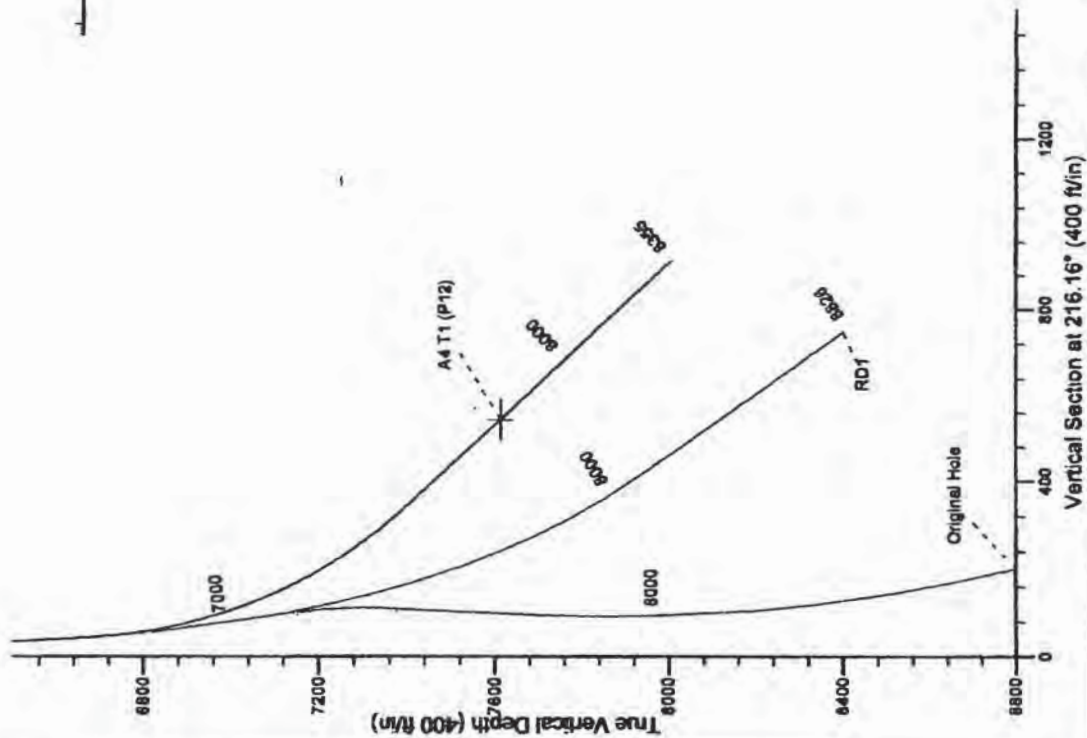


Veroco Inc.

Project: Platform Grace
 Site: Santa Clara Unit
 Well: A04
 RD2 Plan 12
 Plan #12 (17-Dec-07)

A04
 NAD 1927 (NADCON CONUS)
 California VI 408
 Reference: Grid
 RKG @ 103.42m (Original Well Elev)
 Northing: 747447.00
 Easting: 1028911.00

HALLIBURTON
 Sperry Drilling Services



SECTION DETAILS

Sec	MD	Inc	Aal	TVD	+N/S	+E/W	DLag	TFace	VSec	Target
1	6760.00	6.20	172.77	6718.17	88.61	-202.83	0.00	0.00	47.42	
2	7624.12	43.93	203.56	7408.17	-208.59	-308.98	5.00	34.60	351.83	
3	7808.07	43.93	203.56	7612.05	-390.17	-387.70	0.00	0.00	643.77	A4 T1 (P12)
4	8354.79	43.93	203.56	8008.40	-737.56	-539.28	0.00	0.00	813.93	

Venoco Inc.

Platform Grace

Santa Clara Unit

A04

RD2 Plan 12

Plan: Plan #12 (17-Dec-07)

Job No. Plan #12 (17-Dec-07)

Sperry Drilling Services Combo Report

17 December, 2007

Well Coordinates: 747,447.00 N, 1,029,811.00 E (34° 10' 46.58" N, 118° 28' 04.14" W)
Water Depth: 318.00 ft

Local Coordinate Origin:

Viewing Datum:

TVDs to System:

North Reference:

Unit System:

Centered on Well A04

RKB @ 108.40ft (Original Well Elev)

N

Grid

API - US Survey Feet

Version: 2003.14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for A04 - RD2 Plan 12 - Plan #12 (17-Dec-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
0.00	0.00	0.00	106.40	0.00	0.00 N	0.00 E	747,447.00	1,028,811.00	0.00	0.00	
30.00	0.46	171.00	78.40	30.00	0.12 S	0.02 E	747,448.88	1,028,811.02	1.50	0.08	
60.00	0.17	320.80	46.40	60.00	0.20 S	0.01 E	747,448.80	1,028,811.01	2.01	0.16	
90.00	0.16	162.70	16.40	90.00	0.20 S	0.00 W	747,448.80	1,028,811.00	1.08	0.16	
120.00	0.36	138.80	-13.80	120.00	0.30 S	0.08 E	747,448.70	1,028,811.08	0.70	0.19	
150.00	0.46	168.40	-43.80	150.00	0.48 S	0.17 E	747,448.82	1,028,811.17	0.82	0.29	
180.00	0.46	162.30	-73.80	180.00	0.70 S	0.28 E	747,448.30	1,028,811.28	0.42	0.42	
210.00	0.30	171.20	-103.80	210.00	0.88 S	0.31 E	747,448.12	1,028,811.31	0.84	0.63	
240.00	0.40	176.00	-133.80	240.00	1.06 S	0.33 E	747,448.94	1,028,811.33	0.36	0.68	
270.00	0.22	162.40	-163.80	270.00	1.22 S	0.35 E	747,448.76	1,028,811.35	0.66	0.78	
300.00	0.15	316.30	-193.80	300.00	1.26 S	0.34 E	747,448.75	1,028,811.34	1.20	0.81	
330.00	0.37	148.40	-223.80	330.00	1.30 S	0.38 E	747,448.70	1,028,811.38	1.73	0.84	
360.00	0.22	168.88	-253.80	360.00	1.44 S	0.43 E	747,448.58	1,028,811.43	0.80	0.91	
390.00	0.47	309.80	-283.89	390.00	1.42 S	0.34 E	747,448.56	1,028,811.34	2.16	0.94	
420.00	0.42	312.40	-313.89	419.98	1.27 S	0.17 E	747,448.73	1,028,811.17	0.18	0.93	
450.00	0.27	342.80	-343.89	449.98	1.13 S	0.06 E	747,448.87	1,028,811.08	0.77	0.87	
480.00	0.30	74.80	-373.89	479.99	1.04 S	0.12 E	747,448.96	1,028,811.12	1.37	0.77	
510.00	0.30	325.70	-403.89	509.99	0.86 S	0.15 E	747,448.06	1,028,811.18	1.83	0.88	
540.00	0.05	17.00	-433.89	539.99	0.87 S	0.11 E	747,448.19	1,028,811.11	0.86	0.83	
570.00	0.17	151.80	-463.89	569.99	0.89 S	0.14 E	747,448.11	1,028,811.14	0.76	0.83	
600.00	0.02	182.80	-493.89	599.99	0.93 S	0.18 E	747,448.07	1,028,811.16	0.51	0.68	
630.00	0.16	326.20	-523.89	629.99	0.97 S	0.13 E	747,448.03	1,028,811.13	0.66	0.71	
660.00	0.05	93.00	-553.89	659.99	1.00 S	0.10 E	747,448.00	1,028,811.10	0.73	0.75	
690.00	0.40	296.90	-583.89	689.99	0.95 S	0.02 E	747,448.08	1,028,811.02	1.49	0.78	
720.00	0.12	216.70	-613.89	719.99	0.93 S	0.09 W	747,448.07	1,028,810.91	1.33	0.61	
750.00	0.12	208.02	-643.89	749.99	0.99 S	0.12 W	747,448.01	1,028,810.88	0.05	0.67	
780.00	0.47	308.20	-673.89	779.99	1.13 S	0.19 W	747,448.87	1,028,810.81	1.17	1.02	
800.00	0.20	3.13	-693.89	799.99	1.16 S	0.23 W	747,448.84	1,028,810.77	3.28	1.07	
820.00	0.27	74.30	-713.89	819.99	1.12 S	0.16 W	747,448.86	1,028,810.82	1.40	1.01	
860.00	0.42	77.30	-759.89	865.99	1.06 S	0.09 E	747,448.95	1,028,811.09	0.33	0.80	
896.00	0.69	70.50	-789.89	895.99	0.86 S	0.34 E	747,448.02	1,028,811.34	0.87	0.69	
926.00	0.25	128.60	-819.89	925.99	0.97 S	0.53 E	747,448.03	1,028,811.53	1.86	0.47	
956.00	0.33	80.00	-849.89	955.99	0.98 S	0.67 E	747,448.01	1,028,811.57	0.83	0.41	
986.00	0.60	20.80	-879.89	985.99	0.85 S	0.80 E	747,448.16	1,028,811.80	1.48	0.22	
1,016.00	0.33	22.60	-909.89	1,015.99	0.85 S	0.88 E	747,448.35	1,028,811.88	0.87	0.01	
1,046.00	0.33	82.60	-939.89	1,045.99	0.86 S	1.00 E	747,448.44	1,028,812.00	1.10	-0.14	
1,076.00	0.25	82.60	-969.89	1,075.99	0.54 S	1.16 E	747,448.46	1,028,812.16	0.27	-0.24	
1,106.00	0.33	45.50	-999.89	1,105.99	0.47 S	1.28 E	747,448.53	1,028,812.28	0.66	-0.37	
1,136.00	0.17	3.50	-1,029.89	1,135.99	0.37 S	1.34 E	747,448.83	1,028,812.34	0.76	-0.49	
1,166.00	0.33	148.50	-1,059.89	1,165.99	0.39 S	1.39 E	747,448.81	1,028,812.39	1.59	-0.50	

HALLIBURTON

Plan Report for A04 - RD2 Plan 12 - Plan #12 (17-Dec-07)

Measured Depth (ft)	Inclination (°)	Asimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
1,198.00	0.58	150	-1,099.58	1,195.98	0.32 S	1.44 E	747,446.85	1,026,812.44	2.90	-0.80	
1,228.00	0.50	342.60	-1,119.58	1,225.98	0.04 S	1.41 E	747,446.95	1,026,812.41	0.65	-0.60	
1,268.00	0.50	48.50	-1,149.58	1,265.98	0.17 N	1.47 E	747,447.17	1,026,812.47	1.82	-1.00	
1,288.00	0.33	60.80	-1,178.58	1,285.98	0.30 N	1.84 E	747,447.30	1,026,812.84	0.63	-1.21	
1,318.00	0.00	0.00	-1,208.58	1,315.98	0.34 N	1.71 E	747,447.34	1,026,812.71	1.10	-1.29	
1,348.00	0.17	288.50	-1,238.58	1,345.98	0.37 N	1.88 E	747,447.37	1,026,812.88	0.57	-1.28	
1,378.00	0.25	68.00	-1,268.58	1,375.98	0.41 N	1.70 E	747,447.41	1,026,812.70	1.27	-1.33	
1,408.00	0.33	78.80	-1,298.58	1,405.98	0.46 N	1.84 E	747,447.46	1,026,812.84	0.30	-1.48	
1,438.00	0.03	177.50	-1,328.58	1,435.98	0.47 N	1.93 E	747,447.47	1,026,812.83	1.12	-1.51	
1,468.00	0.33	140.80	-1,358.58	1,465.98	0.39 N	1.98 E	747,447.39	1,026,812.98	1.02	-1.49	
1,498.00	0.33	144.50	-1,388.58	1,495.98	0.28 N	2.08 E	747,447.26	1,026,813.08	0.08	-1.44	
1,528.00	0.09	78.50	-1,418.58	1,525.98	0.18 N	2.16 E	747,447.18	1,026,813.16	1.02	-1.43	
1,558.00	0.25	95.50	-1,448.58	1,555.98	0.19 N	2.24 E	747,447.19	1,026,813.24	0.58	-1.48	
1,588.00	0.17	96.50	-1,478.58	1,585.98	0.16 N	2.35 E	747,447.16	1,026,813.35	0.27	-1.53	
1,618.00	0.37	152.50	-1,508.58	1,615.98	0.09 N	2.44 E	747,447.09	1,026,813.44	1.03	-1.51	
1,648.00	0.33	98.50	-1,538.58	1,645.98	0.01 S	2.57 E	747,446.98	1,026,813.57	1.07	-1.51	
1,678.00	0.17	344.50	-1,568.58	1,675.98	0.02 N	2.84 E	747,447.02	1,026,813.84	1.43	-1.58	
1,708.00	0.17	144.50	-1,598.58	1,705.98	0.02 N	2.88 E	747,447.02	1,026,813.88	1.12	-1.59	
1,738.00	0.33	72.00	-1,628.58	1,735.98	0.02 N	2.77 E	747,447.02	1,026,813.77	1.08	-1.84	
1,768.00	0.07	38.50	-1,658.58	1,765.98	0.08 N	2.88 E	747,447.08	1,026,813.88	0.91	-1.73	
1,798.00	0.78	154.50	-1,688.58	1,795.98	0.11 S	2.88 E	747,446.98	1,026,813.88	2.61	-1.88	
1,828.00	0.83	130.50	-1,718.58	1,825.98	0.39 S	3.17 E	747,446.81	1,026,814.17	1.03	-1.55	
1,858.00	0.37	139.50	-1,748.58	1,855.98	0.37 S	3.35 E	747,446.43	1,026,814.38	0.90	-1.52	
1,888.00	0.83	147.50	-1,778.58	1,885.98	0.78 S	3.51 E	747,446.22	1,026,814.81	0.90	-1.44	
1,918.00	0.50	121.50	-1,808.58	1,915.98	0.89 S	3.71 E	747,446.01	1,026,814.71	0.95	-1.39	
1,948.00	0.17	80.50	-1,838.58	1,945.98	1.05 S	3.88 E	747,445.95	1,026,814.88	1.29	-1.43	
1,978.00	0.17	227.50	-1,868.58	1,975.98	1.08 S	3.87 E	747,445.92	1,026,814.87	1.09	-1.42	
1,991.00	0.33	251.50	-1,884.58	1,990.98	1.10 S	3.82 E	747,445.90	1,026,814.82	1.25	-1.38	
2,124.00	1.50	280.00	-2,017.58	2,123.98	0.92 S	1.74 E	747,446.08	1,026,812.74	0.92	-0.28	
2,185.00	3.00	300.00	-2,078.58	2,184.98	0.01 N	0.43 W	747,447.01	1,026,810.37	2.74	0.24	
2,245.00	4.75	288.50	-2,138.58	2,244.78	1.91 N	4.01 W	747,446.81	1,026,808.98	2.94	0.83	
2,308.00	6.50	308.50	-2,201.58	2,307.48	1.19 N	9.22 W	747,452.18	1,026,801.78	3.17	1.25	
2,368.00	8.00	315.00	-2,260.58	2,366.98	10.17 N	14.90 W	747,457.17	1,026,796.10	3.07	0.88	
2,428.00	9.75	315.00	-2,319.58	2,426.28	16.71 N	21.44 W	747,463.71	1,026,789.68	2.92	-0.84	
2,487.00	11.00	312.50	-2,349.58	2,484.78	20.32 N	25.22 W	747,467.32	1,026,786.78	4.58	-1.82	
2,542.00	13.75	311.00	-2,431.40	2,537.90	32.42 N	38.83 W	747,479.42	1,026,772.17	3.28	-3.27	
2,617.00	13.75	312.00	-2,508.52	2,604.92	75.73 N	87.78 W	747,522.73	1,026,723.22	0.09	-8.55	
3,064.00	13.50	311.50	-2,936.57	3,044.97	114.48 N	131.19 W	747,561.48	1,026,679.81	0.11	-15.02	
3,214.00	13.75	315.00	-3,084.35	3,190.75	138.98 N	158.90 W	747,585.88	1,026,654.10	0.57	-19.38	

HALLIBURTON

Plan Report for A04 - R02 Plan 12 - Plan #12 (17-Dec-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	East (ft)	Map Coordinates Northing (ft)	East (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
3,393.00	9.75	313.00	-3,230.20	3,336.60	186.62 N	176.66 W	747,608.92	1,026,632.34	2.70	-23.61	
3,820.00	6.38	311.50	-3,385.66	3,492.05	174.55 N	184.79 W	747,621.95	1,026,616.21	2.23	-25.99	
3,675.00	4.00	308.00	-3,540.02	3,648.42	183.28 N	208.64 W	747,630.25	1,026,605.48	1.50	-28.66	
3,669.00	2.50	308.00	-3,723.72	3,630.12	189.23 N	214.08 W	747,639.23	1,026,586.92	0.82	-28.48	
4,072.00	1.78	283.00	-3,936.88	4,042.88	192.83 N	221.06 W	747,639.63	1,026,589.84	0.51	-26.06	
4,224.00	0.75	280.00	-4,086.94	4,194.94	192.88 N	224.30 W	747,639.98	1,026,586.70	0.72	-23.44	
4,486.00	1.00	185.80	-4,380.51	4,468.91	180.31 N	226.32 W	747,637.31	1,026,584.68	0.38	-20.10	
4,589.00	1.80	187.00	-4,453.48	4,569.89	188.32 N	226.14 W	747,635.32	1,026,584.88	0.70	-18.60	
4,742.00	1.90	171.50	-4,606.44	4,712.64	184.36 N	226.39 W	747,631.38	1,026,585.61	0.08	-15.68	
4,871.00	1.50	172.80	-4,735.39	4,841.78	181.04 N	224.82 W	747,628.04	1,026,586.08	0.02	-13.44	
5,185.00	2.00	164.80	-5,018.28	5,126.68	172.66 N	223.11 W	747,619.68	1,026,587.88	0.20	-7.98	
5,405.00	2.25	162.00	-5,289.09	5,376.49	163.71 N	220.43 W	747,610.71	1,026,590.07	0.11	-2.10	
5,711.00	2.80	162.00	-5,574.83	5,661.23	161.65 N	216.51 W	747,598.65	1,026,594.49	0.08	5.33	
6,017.00	3.00	160.00	-5,890.47	5,966.87	137.52 N	212.58 W	747,584.82	1,026,596.42	0.18	14.42	
6,322.00	3.60	170.00	-6,184.88	6,261.38	120.89 N	209.10 W	747,587.59	1,026,601.80	0.18	28.03	
6,479.00	3.75	167.80	-6,341.87	6,448.07	110.65 N	207.16 W	747,587.85	1,026,603.84	0.18	32.74	
6,870.00	4.75	167.80	-6,532.14	6,838.54	97.03 N	204.09 W	747,544.03	1,026,606.91	0.52	42.08	
6,760.00	9.20	172.77	-6,811.77	6,716.17	86.51 N	202.83 W	747,636.91	1,026,608.17	1.92	47.42	Start DLS 5.00 TFO 34.80
6,800.00	8.38	182.58	-6,661.37	6,767.77	83.19 N	202.68 W	747,630.19	1,026,609.34	5.00	52.42	
6,900.00	13.09	181.88	-6,789.80	6,866.00	84.82 N	205.31 W	747,511.82	1,026,605.89	5.00	58.82	
7,000.00	17.95	186.28	-6,855.93	6,962.33	85.94 N	211.97 W	747,485.94	1,026,599.03	5.00	93.64	
7,100.00	22.97	188.84	-6,948.62	7,058.02	8.74 N	222.87 W	747,452.74	1,026,588.43	5.00	126.70	
7,200.00	27.82	200.53	-7,039.97	7,146.37	34.63 S	237.03 W	747,412.47	1,026,673.97	5.00	167.74	
7,300.00	32.78	201.74	-7,128.28	7,232.69	81.86 S	255.25 W	747,365.44	1,026,655.75	5.00	216.46	
7,400.00	37.75	202.88	-7,207.61	7,314.51	134.99 S	277.08 W	747,312.01	1,026,633.92	5.00	272.48	
7,600.00	42.73	203.40	-7,284.22	7,390.62	194.41 S	302.37 W	747,262.89	1,026,606.83	5.00	335.36	
7,524.12	43.93	203.56	-7,301.77	7,408.17	208.89 S	308.88 W	747,237.41	1,026,602.04	5.00	351.53	Start 283.94 hold at 7524.12 MD
7,600.00	43.93	203.56	-7,358.41	7,482.61	287.85 S	330.00 W	747,189.15	1,026,481.00	5.00	402.80	
7,700.00	43.93	203.56	-7,426.43	7,534.63	321.44 S	357.73 W	747,125.86	1,026,453.27	5.00	470.80	
7,808.07	43.93	203.56	-7,508.28	7,612.66	380.17 S	387.70 W	747,056.93	1,026,423.30	5.00	543.77	Start 546.72 hold at 7808.07 MD - A4 T1 (P12)
7,900.00	43.93	203.56	-7,572.47	7,676.87	445.84 S	413.19 W	746,988.36	1,026,397.81	5.00	608.02	
8,000.00	43.93	203.56	-7,644.49	7,750.89	512.23 S	440.82 W	746,934.77	1,026,370.08	5.00	673.72	
8,100.00	43.93	203.56	-7,716.51	7,822.91	578.83 S	466.64 W	746,871.17	1,026,342.38	5.00	741.43	
8,200.00	43.93	203.56	-7,788.52	7,894.92	659.42 S	486.37 W	746,807.58	1,026,314.63	5.00	809.13	
8,300.00	43.93	203.56	-7,860.54	7,966.94	703.02 S	504.10 W	746,743.98	1,026,286.80	5.00	878.84	
8,384.78	43.93	203.56	-7,900.00	8,005.40	737.86 S	539.28 W	746,708.14	1,026,271.71	5.00	913.93	TD at 8384.78

Venoco Inc.
Platform Grace

HALLIBURTON

Plan Report for A04 - RD2 Plan 12 - Plan #12 (17-Dec-07)

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
6,760.00	6,716.17	89.51	-302.83	Start DLS 5.00 TFO 34.90
7,524.12	7,406.17	-308.59	-308.96	Start 263.94 hold at 7624.12 MD
7,808.07	7,612.66	-390.17	-387.70	Start 646.72 hold at 7808.07 MD
8,364.79	8,006.40	-737.86	-636.26	TD at 8364.79

Vertical Section Information

Angle Type	Target	Asimuth (°)	Origin Type	+N/-S (ft)	+E/-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	216.16	Slot	0.00	0.00	0.00

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Nothing (ft)	Easting (ft)	Latitude	Longitude
A4 T1 (P12)	0.00	360.00	7,612.66	-390.17	-387.70	747,056.83	1,028,423.30	34,176494	-119.489058
- plan hits target									
- Circle (radius 50.00)									

HALLIBURTON

North Reference Sheet for Santa Clara Unit - A04 - RD2 Plan 12

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to RKB @ 106.40ft (Original Well Elev). Northing and Easting are relative to A04

Coordinate System is US State Plane 1927 (Exact solution), California VI 408 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -116.250000°, Longitude Origin: 0.000000°, Latitude Origin: 33.853333°

False Easting: 2,000,000.00ft, False Northing: 0.00ft, Scale Reduction: 1.00000292

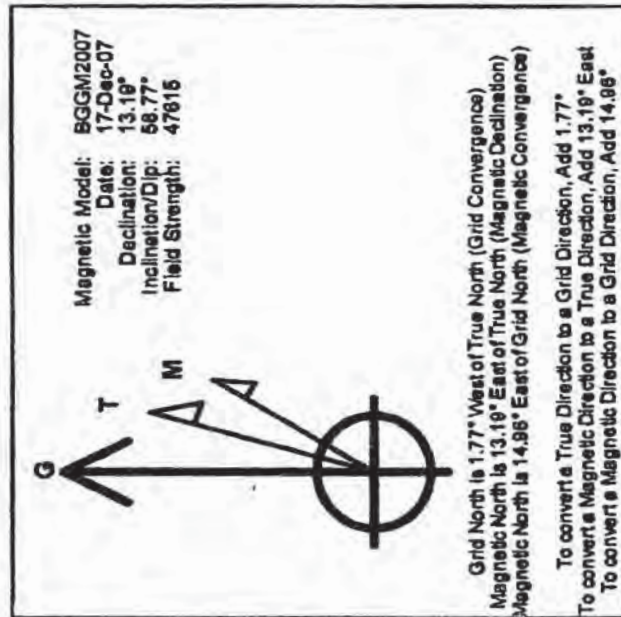
Grid Coordinates of Well: 747,447.00 ft N, 1,028,811.00 ft E

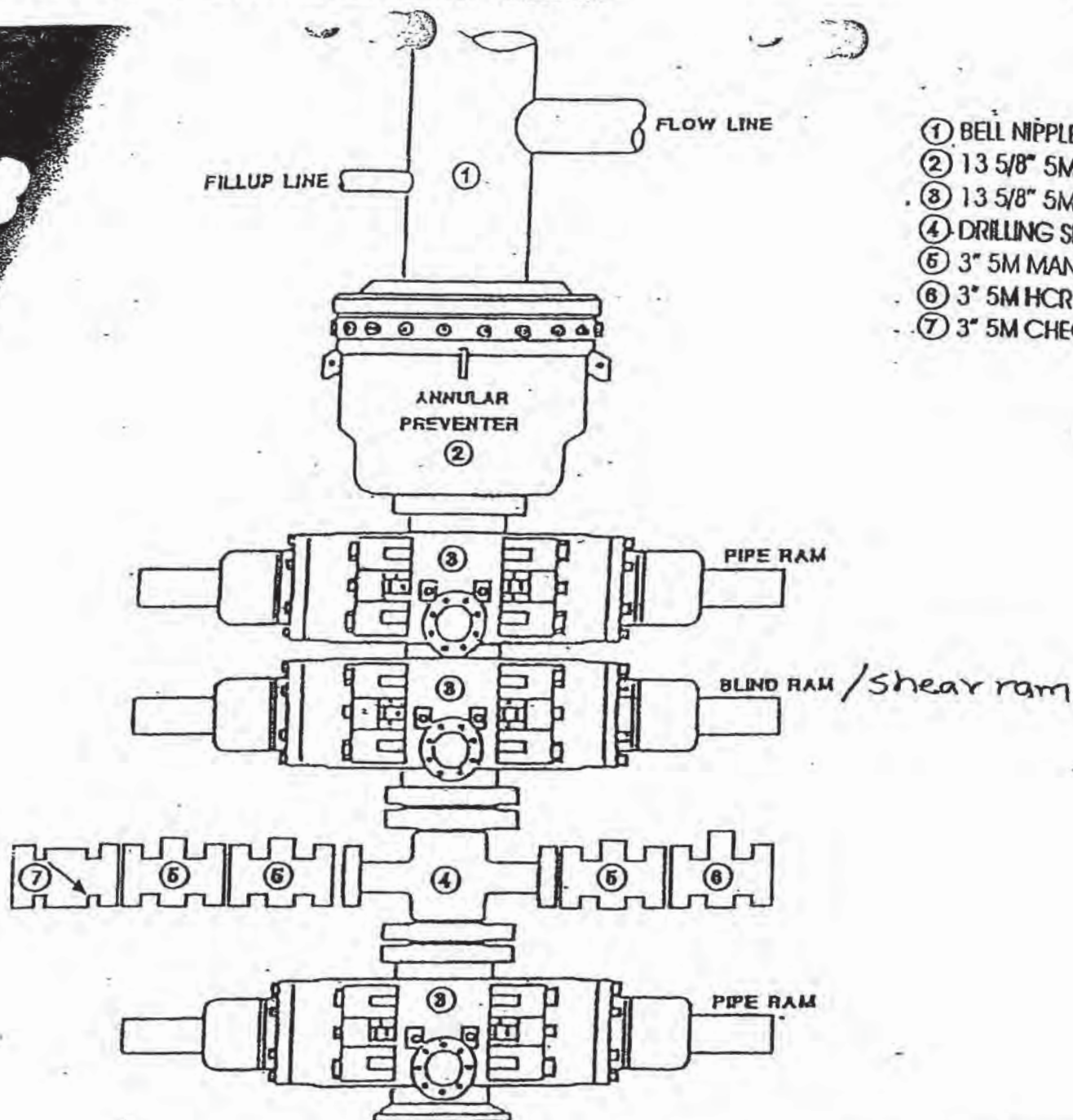
Geographical Coordinates of Well: 34° 10' 48.56" N, 119° 28' 04.14" W

Grid Convergence at Surface is: -1.77°

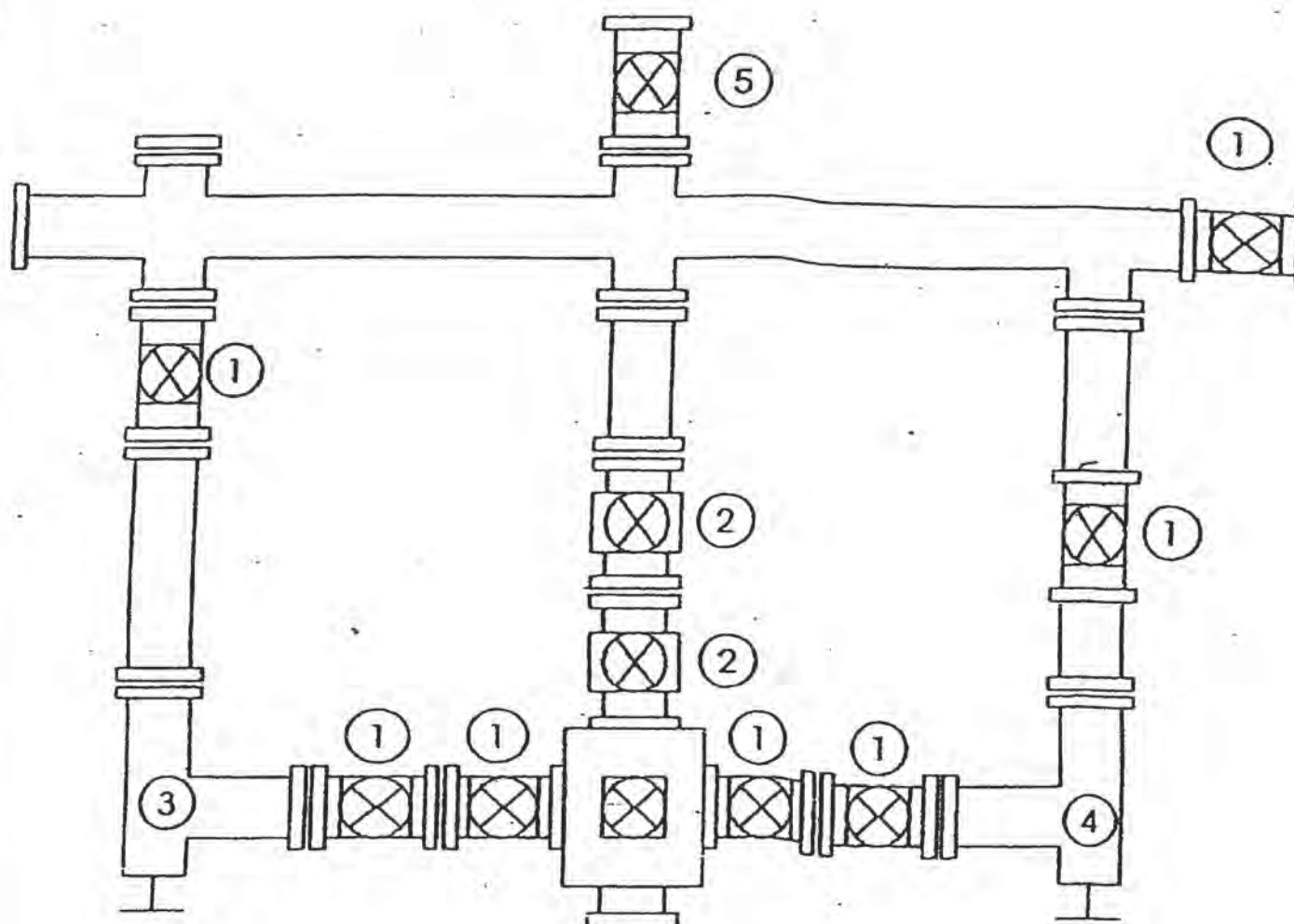
Based upon Minimum Curvature type calculations, at a Measured Depth of 8,354.79ft
the Bottom Hole Displacement is 913.93ft in the Direction of 216.18° (Grid).

Magnetic Convergence at surface is: -14.86° (17 December 2007, , BGGM2007)





BLOWOUT
 PREVENTION SYSTEM
 PLATFORM G.RACE
 (PROPOSED)



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKER MANIFOLD
PLATFORM GRACE
(PROPOSED)

Application for Permit to Drill (APD)

1. PROPOSAL TO DRILL ☐ NEW WELL ☒ SIDETRACK ☐ BYPASS ☐ DEEPEN		2. MMS OPERATOR NO 02309	3. OPERATOR NAME and ADDRESS (Submitting office) Venoco Inc 6267 Carpinteria Ave. Suite 100 Carpinteria, CA 93013
4. WELL NAME (CURRENT) A-8	5. SIDETRACK NO (CURRENT)	6. BYPASS NO (CURRENT)	
7. PROPOSED START DATE August 10, 2007	8. PLAN CONTROL NO (NEW WELL ONLY)		
9. API WELL NO (CURRENT SIDETRACK / BYPASS) (12 DIGITS) 04-311-20437			

10. ☐ Revision	11. If revision, please list changes
---------------------------------------	--------------------------------------

WELL AT TOTAL DEPTH (PROPOSED)		WELL AT SURFACE	
12. LEASE NO P-0217	17. LEASE NO P0217	RECEIVED  MINERALS MANAGEMENT SERVICE CALIFORNIA DISTRICT	
13. AREA NAME 6B	18. AREA NAME 6B		
14. BLOCK NO 4862	19. BLOCK NO. 4862		
15. LATITUDE (☐ NAD 83 / ☒ NAD 27) X = 1022381	16. LONGITUDE (☐ NAD 83 / ☒ NAD 27) Y = 746671		
20. LATITUDE (☐ NAD 83 / ☒ NAD 27) X = 1026813	21. LONGITUDE (☐ NAD 83 / ☒ NAD 27) Y = 747467		

LIST OF SIGNIFICANT MARKERS ANTICIPATED

22. NAME	23. TOP (MD)	24. TOP (TVD)	22. NAME	23. TOP (MD)	24. TOP (TVD)
M3	9035	7500			
M4	9791	8231			

25. LIST ALL ATTACHMENTS (Attach complete well prognosis and attachments required by 30 CFR 250.414(b) through (g) or 30 CFR 250.1617 (c) and (d), as appropriate)
well prognosis, schematic, surface plat, structure map, mud weight curve, directional plot and plan, BOP Diagram, mud program, Form 123S

26. CONTACT NAME Dana Billings	27. CONTACT TELEPHONE NO. 805-745-2139	28. CONTACT E-MAIL ADDRESS dbillings@venocoinc.com
29. AUTHORIZING OFFICIAL (Type or print name) ROGER HAMMON	30. TITLE VP CRUSTAL ASSETS	
31. AUTHORIZING SIGNATURE 	32. DATE 7-2-07	

THIS SPACE FOR MMS USE ONLY

APPROVED: ☒ With Attached Conditions ☐ Without Conditions	BY 	TITLE District Manager
API WELL NO. ASSIGNED TO THIS WELL		DATE JUL 25 2007

Application for Permit to Drill (APD) Information Sheet

33) Question Information Sheet		
Questions	Response	Remarks
A) Will you maintain quantities of mud and mud material (including weight materials and additives) sufficient to raise the entire system mud weight 1/2 ppg or more?	☒ YES ☐ NO ☐ N/A	
B) If hydrocarbon-based drilling fluids were used, is the drilling rig outfitted for zero discharge and will zero discharge procedures be followed?	☐ YES ☐ NO ☒ N/A	
C) If drilling the shallow casings strings riserless, will you maintain kill weight mud on the rig and monitor the wellbore with an ROV to ensure that it is not flowing?	☐ YES ☐ NO ☒ N/A	
D) If requesting a waiver of the conductor casing, have you submitted a log to MMS G&G that is within 500 feet of the proposed bottom hole location for the proposed surface casing point?	☐ YES ☐ NO ☒ N/A	
E) Will the proposed operation be covered by an EPA Discharge Permit? (please provide permit number in remarks for this question)	☒ YES ☐ NO ☐ N/A	
F) Will all wells in the well bay and related production equipment be shut-in when moving on to or off of an offshore platform, or from well to well on the platform? If not, please explain.	☐ YES ☒ NO ☐ N/A	Follow field drilling rules

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et. seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123, is estimated to average between 2.5-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Supplemental APD Information Sheet (Casing Design)

1) Operator Name: Venoco, Inc.	2) Well Name (Proposed): A-8	ST: 1	BP:
3) Bottom Hole Lease: P-0217	4) Surface Lease: P-0217		
5) API Number: 04-311-20437	6) Type of Well: ☐ Exploratory ☒ Development		
7) H ₂ S: ☐ Absent ☒ Known ☐ Unknown	8) H ₂ S Activation Plan Depth (TVD) (ft): surface		
9) Rig Name: Venoco Rig 11	10) SubSea BOP: ☐ Yes ☒ No		
11) Water Depth (ft): 318	12) RKB Height (ft): 106.4	13) Mineral Code:	
14) Drive Pipe Size (in): 24	15) Drive Pipe Depth (ft): 640	16) Anchors ☐ Yes ☒ No	

17) Well Design Information

Interval Number: Existing		Type:		Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)
	13 3/8"	72	N-80				
	9 5/8"	40.43 5.47	SS-95	6820	3330	8630/7114	3300

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in) 8 1/2"	Type AP/Variable/Shear/Pipe	Annular Test (psi) 250/3000			
Mud Weight (ppg) 9.1	Size (in) 13 5/8	BOP/Diverter Test (psi) 250/3000			
Mud Type Code Water Base	Wellhead Rating (psi) 3000	Mud Test Weight (ppg) 9.1			
Frac Gradient (ppg) 11	Annular Rating (psi) 5000	Casing/Liner Test (psi) 3000			
Liner Top Depth (ft) NA	BOP/Diverter Rating (psi) 5000	Formation Test (ppg) 10.5			
Cement Volume (ft ³) NA					

Interval Number:		Type:		Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)

GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in)	Type	Annular Test (psi)			
Mud Weight (ppg)	Size (in)	BOP/Diverter Test (psi)			
Mud Type Code	Wellhead Rating (psi)	Mud Test Weight (ppg)			
Frac Gradient (ppg)	Annular Rating (psi)	Casing/Liner Test (psi)			
Liner Top Depth (ft)	BOP/Diverter Rating (psi)	Formation Test (ppg)			
Cement Volume (ft ³)					

Interval Number:		Type:		Name:			
Section Number	Casing Size (in)	Casing Weight (#/ft)	Casing Grade	Burst Rating (psi)	Collapse Rating (psi)	Depth (ft) MD TVD	Pore Pressure (psi)

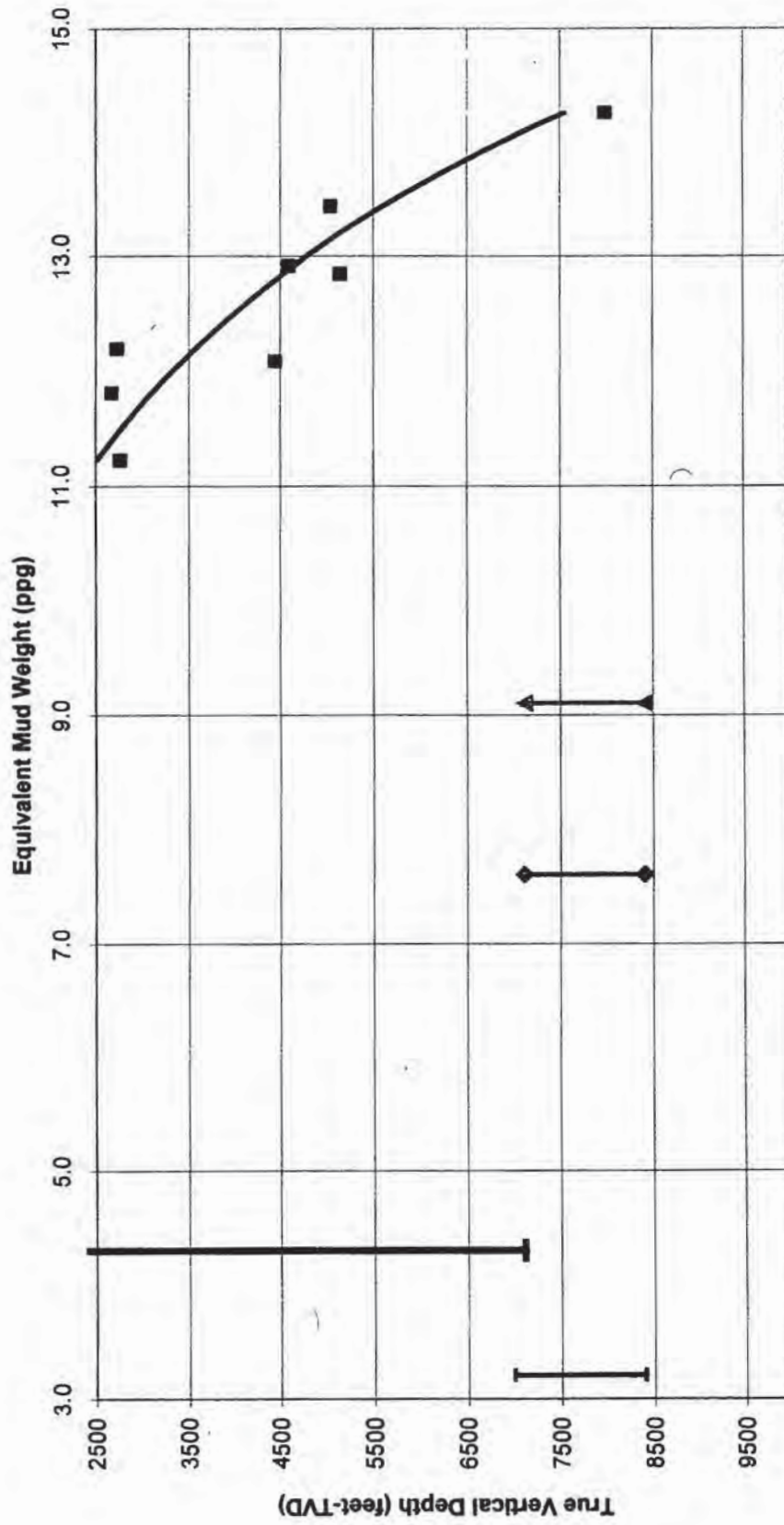
GENERAL INFORMATION		PREVENTER INFORMATION		TEST INFORMATION	
Hole Size (in)	Type	Annular Test (psi)			
Mud Weight (ppg)	Size (in)	BOP/Diverter Test (psi)			
Mud Type Code	Wellhead Rating (psi)	Mud Test Weight (ppg)			
Frac Gradient (ppg)	Annular Rating (psi)	Casing/Liner Test (psi)			
Liner Top Depth (ft)	BOP/Diverter Rating (psi)	Formation Test (ppg)			
Cement Volume (ft ³)					

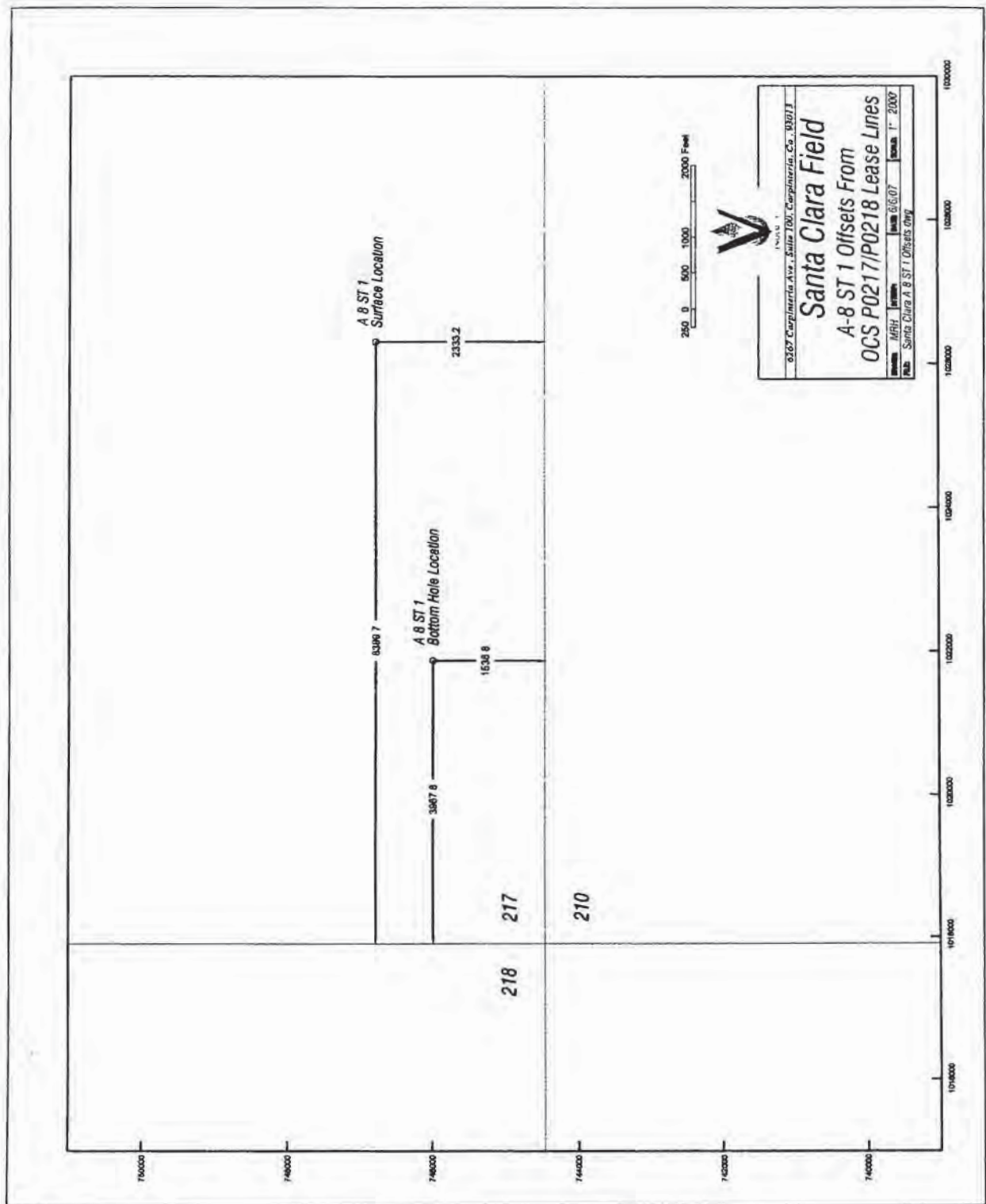
* NOTE* For additional casing/liner intervals, please submit an additional Form MMS-123S.

PAPERWORK REDUCTION ACT OF 1995 (PRA) STATEMENT: The PRA (44 U.S.C. 3501 et seq.) requires us to inform you that we collect this information to obtain knowledge of equipment and procedures to be used in drilling operations. MMS uses the information to evaluate and approve or disapprove the adequacy of the equipment and/or procedures to safely perform the proposed drilling operation. Responses are mandatory (43 U.S.C. 1334). Proprietary data are covered under 30 CFR 250.196. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB Control Number. Public reporting burden for this form, MMS-123S, is estimated to average between 1-3 hours per response, depending on whether it is a paper submittal or electronic submittal. This includes the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to the Information Collection Clearance Officer, Mail Stop 4230, Minerals Management Service, 1849 C Street, NW, Washington, DC 20240.

Platform Grace A-8 ST1 Estimated Pore Pressure, Mud Weight & Fracture Pressure

Note: Fracture Pressure data from Platform Gail





VENOCO, INC.
PLATFORM GRACE – SANTA CLARA FIELD
A-8 ST1 PROGRAM
API# 04-311-20437-01
LEASE OCS-P-0217
June 26, 2007 (attach to MMS APD)

Objective: Sidetrack the A-8 well and complete as a production well.

Surface Location: OCS-P-217, Slot M3 (X= 1,026,812.78' & Y= 747,466.67')

Elevation: 318' WD, 106.4' (original DF) Above MLLW, 424' Ocean Floor to original DF

Proposed TD: OCS-P-217; 9967' MD / 8406' TVD / -8300' SS

TD Location: 796.40' S and 4431.91' W or (X = 1,022,381.09' and Y = 746,670.60')

<u>Proposed Markers:</u>	<u>MD</u>	<u>TVD</u>	<u>SS</u>	<u>Est. Fm Press PSI</u>
Santa Margarita	7106	5680	-5574	12 +
KOP	8630	7114	-7008	N/A
M2	8690	7174	-7067	
M3	9035	7500	-7394	
M4	9791	8231	-8124	
Total Depth	9967	8406	-8300	<u>3300 psi at 8350' TVD</u>

Formation Pressure

Historical pressures from producing wells show a definitive downward trend versus cumulative production and there does not appear to be an active water drive or pressure support for the reservoir. The estimated BHP is 3300 psi at 8350' TVD. The Calculated MASP for shut-in tubing pressure for this well is 2670 psi. The well abandonment in 1997 used seawater as kill fluid.

Existing Casing: (Original Rig Floor depths)

24", 125#, Vetco L	840'	Cmtd w/ 1000 sx
18 5/8", 105.6 K-55 Butt	2134'	Cmtd w/ 1650 cf,
13 3/8", 72# N-80 Butt	5261'	Cmtd w/ 3100 cf
9 5/8", 40,43.5, 47# SS-95	8630'	Cmtd w/ 1309 cf
7", 26# L-80 butt (Liner)	8520'-9543'	2" X 30M Slot/10-16 gravel
Burns Lead Seal Hanger, port collars at 8523', 8796', 8997', 9332'. 1279 cf gravel.		

9 5/8" Casing Detail

<u>Wt</u>	<u>Interval</u>
40	0'-3951'
43.5	3951'-5482'
47	5482'-8630'

Existing Perforations:

8610' WSO holes
8528' – 9543' Selective Milled Slots 2" X 30 Mesh

Plugs

8228'-9543' with retainer set at 8428'. Squeeze 259 cf below retainer and place 85 cf on top of retainer. Estimate TOC 8228'.

Pressure Test of Casing

The casing and final cement plug at 8228' (est) were pressure tested to 1000 psi on 1/03/97. The 9 5/8" casing was pressure tested to 2000 psi on 12/31/1980 at initial installation. A WSO was run on holes shot at 8610' – test was OK. During this program it is proposed to pressure test the 9 5/8" casing to 3000 psi which is above the calculated MASP of 2670 psi.

Proposed Casing: (Not adjusted for New Rig Floor depths)

24", 125#, Vetco L	840'	Cmtd w/ 1000 sx
18 5/8", 105.6 K-55 Butt	2134'	Cmtd w/ 1650 cf,
13 3/8", 72# N-80 Butt	5261'	Cmtd w/ 3100 cf
9 5/8", 40,43.5, 47# SS-95	8630'	Cmtd w/ 1309 cf
4" 9.5# L-80 Base pipe	8530'-9967'	WWS/Open Hole Gravel Pack

Tubing Kill String Installed in Well:

The 2 7/8" kill string tubing landed at 1578'. Tested the casing and cement plug to 1000 psi and the tubing hanger seals to 3000 psi during temporary abandonment operations January 1997.

Note:

- Lost and did not recover packer rubber during workover in 1988.
- The 9 5/8" X 13 3/8" casing pack off was pressure tested to 3000 psi after being repacked with JRZ sealant in May 1993.

Note:

- This well is currently a temporary abandonment.
- Perform rig safety inspections with MMS inspectors.
- Hold safety meetings, pit drills and H2S drills as required fully training and familiarizing crews with operating procedures.
- BOPE must be tested every 14 days during the drilling phase and every 7 days during completion phase with all pipe sizes intended for use (except tail pipe)
- Hydrogen Sulfide Considerations:
The Monterey has potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved Platform Grace Hydrogen Sulfide and Sulfur Dioxide Contingency Plan.

Drilling Procedure

1. Move rig to Well A-8 (slot M3). Note and report all pressures: tubing, tubing X casing annulus and all casing X casing annuli. Pressure test the 9 5/8" casing pack-off and the tubing hanger void to 3000 psi per the Cameron procedure to confirm both hanger seals are good. Inspect the lock down pins and repair or replace as required. Follow lock down pin removal procedure developed for Platform Gail, as required. Replace the tubing head valves per Cameron procedure.
2. Rig up on the dry hole tree with a circulating head and full opening safety valve. Install manual choke on the casing head valve. Pressure test valves and lines to 3000 psi. Circulate the well clean with seawater from the kill string tail depth 1551' down the tubing and taking returns through the tubing head valves. There may be residual amounts of oil or gas from the P&A operations. Circulate the well to the refurbished V-5 clean up tank as required. Coordinate with production to monitor pressures and rates. Take clean seawater returns back to the mud pits. Pressure test the casing to 1000 psi against the cement plug. (Note: Casing was pressure test to 1000 psi during the temporary abandonment in 1997.) There will be no discharge of fluids overboard during these operations. Isolate dirty fluids circulated from well into production tanks.
3. Set back pressure valve in tubing hanger. Nipple up BOP equipped with a minimum of 3-ram preventer and an annular. The BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing, 3 1/2" tubing and 5" drill pipe – the sizes to be used for drilling, workover and completion operations. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 14 days during the drilling phase and every 7 days during the completion phase of the operations. H2S and LEL detection equipment to be installed and tested as per H2S Contingency Plan, MMS regulations and Venoco Policy. PVT equipment with pump stroke counters and ROP option to be installed. BOPE drills to be performed prior to commencement of operations and each tour using alternate remote stations. Record all drills and the MMS required tracking information in IADC book. Prior to rig commencing work, and if required, MMS and Venoco Inc. shall perform a rig and equipment inspection.
4. Remove BPV, unland hanger. Pull out of the hole and lay down 2 7/8" tubing kill string.
5. Run in hole with 8 1/2" bit and scraper while picking up and drifting the 5" drill pipe. RIH to top of cement plug, reported at 8228' theoretical. Circulate well clean with seawater. There may

be residual amounts of oil or gas from the P&A operations. Circulate the well to the refurbished V-5 clean up tank as required. Co-ordinate with production to monitor pressures and rates. Take clean returns back the mud pits. There will be no discharge of fluids overboard during these operations. Isolate dirty fluids circulated from well into production tanks.

6. Pressure test casing to 3000 psi for 30 minutes and record on chart. Burst pressure for 9 5/8" 40# 95ksi casing is 6820 psi for new. Pull out of the hole with the clean out assembly.
7. Nipple down BOPE and lift stack. Take measurements to allow for final fabrication on isolation sleeve to be installed with Cameron 13 5/8" 5000 psi Gray-Loc Hub X 11" 3000 psi tubing head adapter. Nipple up BOPE and body pressure test the BOPE.
8. M/U 8 1/2" bit with clean out assembly and RIH. Clean out cement and cement retainer in 9 5/8" casing from +/- 8228' to TOL at 8520' with seawater and gel sweeps and circulate hole clean. Pull out of hole with 8 1/2" clean out assembly. Document exact depth for top of liner and use to correlate liner cuts. Isolate fluids and cement cuttings from well for onshore disposal.
9. Make up and RIH with 6 1/8" bit with clean out assembly while pick up and drift the 3 1/2" drill pipe. Clean out cement in 7" slotted liner from 8520' to 8800' MD with seawater and gel sweeps and circulate hole clean. Pull out of hole. Isolate fluids and cement cuttings from well for onshore disposal.
10. Make up Baker Hydraulic 7" Casing Cutter. Run in hole to near 8690'. Use cutter to locate collar and make cut +/- 8690'. (Assume 38' joints since 152' total length from tally). Pull up and make second cut below liner hanger. Pull out with cutter. Run in hole with Bowen spear for 7" 26# casing and recover Burns hanger. Make up and run in hole with spear and liner recovery fishing bottom hole assembly. Engage spear, pull and recover 7" liner. (100% yield on 7" body = 604M#).

Note: If pipe does not come decision will be made to re-cut or attempt to cup wash liner to loosen gravel. The hole from 8630' to 8790' was + 20 inch per caliper log. There was 494 cf of gravel was pumped through top port collar filling from 8523' to port collar at 8796'.

7" Liner Detail from Hanger to cut depth :

8520' - 8523'	7" X 9 5/8" 47# Burns lead seal liner hanger
8523'-8528'	7" Burns Port Collar with 3' Blank extension
8528'-8624'	7" 26# L-80 Butt w/ 2"X30M 8Row 6" Centers SMC slots
8624'-8644'	7" 26# L-80 Butt w/ 2"X30M 32Row 6" Centers SMC slots
8644'-8796' (152')	7" 26# L-80 Butt w/ 2"X30M 32Row 6" Centers SMC slots

11. Make a clean out run with 8 1/2" bit and circulate out fill and gravel to top of 7" casing at +/- 8690'.
12. Make up +/- 200' 2 7/8" tubing stinger with bull plug and perforated pup joint above. Run in on 5" drill pipe to top of 7" casing at +/- 8690' (run 15' into the 7" stub if possible). Mix and pump 200 cubic feet of class "G" cement with additives. Pull out of hole to 5000' and circulate bottoms up and monitor returns for cement. WOC. Run in hole and tag plug. If plug

inside the 9 5/8" casing pressure test casing and plug to 3000 psi. If tag is low or pressure test no good, lay additional plug based upon tag depth. Pull out of hole. WOC. Tag plug and pressure test casing and plug to 3000 psi.

13. Nipple down BOPE and lift stack. Install Cameron 13 5/8" 5000 psi Gray-Loc Hub X 11" 3000 psi tubing head adapter and isolation sleeve. Nipple up BOPE and body pressure test the BOPE and new adapter head to 250/3000 psi against the cement plug.
14. Pick up 8 1/2" bit and rotary clean out assembly. Clean out cement in 9 5/8" casing from TOC to 8620'. Change over well to MI FloThru mud system. Use spacers as recommended by MI. Isolate returns for dumping or onshore disposal. Pull out of hole.
15. Make up 8 1/2" bit on a steerable directional drilling assembly including MWD/GR. Run in the hole to and sidetrack the well. Re-designate well as A-8 ST1. Notify MMS as required in the permit conditions. Directional drill and survey a 8 1/2" hole from KOP of 8630' to 8640'. Perform a Formation Integrity Test to 11.0 ppg EMW.
16. Directional drill 8 1/2" hole from 8640' to the total depth of 9967' MD / 8406' TVD. The 8 1/2" hole will be drilled with MI Flo Thru System mixed with seawater. Follow Directional plan - Halliburton Plan A8-ST1-Plan 9 (28-Mar-07). Run solids control equipment and dilute and treat the MI FloThru System to maintain programmed specifications. Prior to drilling ahead have Epoch mud loggers rigged up and ready for samples as per Formation Evaluation Program. Follow requirements set out for NPDES compliance. Plan to catch and expedite mud sample for toxicity testing at 80% depth
17. Circulate and condition the mud for open hole logs. Wipe the hole to the 9 5/8" casing shoe. Run back to bottom, circulate the well clean and pull out of the hole.
18. Rig up wire line and run open hole logs (see attached logging program). Condition the hole if necessary between runs. During log run and as recommended by MI mud engineer condition mud in pits by running solids control equipment and lowering solids in preparation for changeover of well.

Log Run #1 PEX/Spectral GR/CMR
Log Run #2 FMI/GR/Pressure Xpress

19. Make up 8 1/2" clean out assembly. Run in hole to TD and condition mud for wire wrap screen liner. Make up a clean solids free FLO-THRU volume and spot in the open hole and 200 ft. up into the 9 5/8" casing. Pick up to 200 ft. into the casing and change the upper hole over to clean completion fluid mixed in seawater. This change over is in preparation for running of wire wrap screen and open hole gravel pack.
20. A detailed program to run Wire Wrap Screen and perform open hole gravel pack will be provided. A general completion procedure is listed below.

GENERAL COMPLETION PROCEDURE

For completion operations the BOP will be equipped with shear rams. Test the BOP to 250/3000 psi with 2 7/8" tubing, 3 1/2" DP and 5" dp all other pipe sizes to be used for completion operations, except 2 3/8" GP tail pipe. All tests will be recorded on a chart for record keeping and for the MMS. The applicable BOPE will be tested every 7 days during the completion phase of the operations.

1. Make up liner assembly consisting of:
 - ~4' 4" Circulating Shoe with open hole centralizer
 - ~1300' 4" Base pipe Wire Wrapped Screen 16 Gauge (WWS)
 - ~150' 4" Slot Pipe
 - ~40' 4" Blank Pipe
 - ~35' 9 5/8" Baker SC-2 Gravel Pack Packer with Sliding Sleeve, and crossover tool
 - ~1280' 2 3/8" flush joint tail pipe and polished stinger for circulating shoe (to be run inside WWS – rental from Baker Gravel Pack)

Note: Centralize with one Weatherford centralizer per joint over the coupling. Centralize circulating shoe, WWS and blank pipe. Minimize the use of pipe dope. Apply to pin end only.
2. Run in with liner assembly as above on work string to desired depth.
3. Rig up pumping equipment and lines. Casing was pressure tested to 3000 psi. Conduct safety meeting. Test lines to 4000 psi. Drop ball. Set and test gravel pack tools per Baker Tool Specialist direction. Blow ball seat and release crossover tool.
4. Using clean filtered brine, establish and record pump rate and pressure in reverse position. Establish and record pump rate and pressure in circulating positions. Using clean brine circulate the viscous pill from open hole/WWS annulus into the work string casing annulus. Release tail pipe from the circulating shoe and place the crossover tool into the upper circulating position.
5. Gravel Pack well with 16-30 Low-Fine Ottawa gravel using Baker Gravel Infuser System. Typical pump rates are 4-5 bpm. Once ~10-20 barrels of slurry have cleared the crossover tool you may increase sand loading to maximum of 2 PPG as conditions allow. Continue pumping at this rate and concentration until wellhead pressure begins increasing. Pump rate should be reduced accordingly as well head pressure increases. Once pressure reaches 500 PSI over initial circulating pressure is achieved stop pumps. DO NOT RESTRESS PACK at this time.
6. Close annular BOP and apply 500 PSI to the annulus. Place the crossover tool in the reverse position. Reverse out excess gravel until returns are clean. Monitor and determine the volume of gravel reversed out.
7. To test the gravel pack, lower crossover tool into the circulating position. Circulate at sand out rate and attempt to achieve sand out pressure established earlier. If same sand out pressure cannot be achieved, mix and pump additional amounts of gravel recommended by pump specialist. Repeat this step until final sand out occurs. POOH with service tools.
8. Rig up spoolers and run Electric Submersible Pump on 2 7/8" tubing.
9. Install BPV, nipple down BOP and install production tree. Test void and tree to 3000 psi. Install flow lines.

EVALUATION PROGRAM

Mudlogging Program:

Begin Mudlogging upon exiting original A-8 9 5/8" casing shoe, dry cuttings only.

Testing Program:

None expected.

Open Hole Logging program

LWD: None (**MWD/GR only**)

Wireline Logs:

- PEX (high res mode) w/ Spectral GR, CMR
- FMI/GR/Pressure Xpress

Logging geologist: Dale Kunitomi 805-987-3026

Primary Geologist: Monica Carlsen Work 805-745-2115
Home 805-687-0598
Cell 805-448-5622

Back-up Geologist: Mike Wracher Work 805-745-2272
Home 805-682-4780
Cell 805-689-8666

Drilling Fluids Program

MUD PROGRAM

Interval	Mud Type	Weight	Fluid Loss	pH	YP	Chlorides
Clean out casing	Gel - water	9.0-9.2	NC	9-10	20-30	+9-10 K
8630' - 9967'	Flo Thru	9.0- 9.2	5-7	9-10	14-28	29-32K

Clean out casing: The fluid system used for the clean out operations will be gel based. The products used for this interval are approved for offshore Region 9. The mud system and cuttings can be dumped overboard if all the environmental tests are negative. The low shear rate viscosity will be raised as necessary to transport metal cuttings out of the hole. Add soda ash to control total hardness and caustic soda to control the pH.

8630' - 9967': Change over the hole to a FLO-THRU system as outlined below. Ship the milling fluid to shore or dump as instructed. It is recommended that enough mud has been mixed prior to drilling this section in order to perform the dump and dilute process while drilling. Drill 8 ½" hole to TD, run Logs, run WWS liner

Notes:

- Operate solids control equipment as per MI recommendation to maintain drill solids as low as possible without stripping out the necessary components.
- Maintain supply of H₂S scavenger onboard to treat out H₂S.
- A minimum of 500 sx of barite shall be kept on the platform at all times. This amount will allow the mud weight to be raised a minimum of 0.5 ppg using +/-1400 bbl total circulating volume (800 bbls in hole at TD & 600 bbl active system).

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

Maximum Anticipated Surface Pressure

	<i>Grace Specific Form</i>	Production Casing	Remove	Slot
1	Casing Size (in)	9-5/8	7"	4.5"
2	Setting Depth (feet - TVD)	7114	8406	8406
3	Expected Leak Off Test EMW at shoe (ppg)	12	12	12
4	Expected Mud Weight (ppg)	9.2	9.2	9.2
5	Depth of next Casing (feet - TVD) use TD for all	8406	8406	8406
6	Maximum Expected Formation Pressure (psi)	3300	3300	3300
7	Expected gas gradient (psi/ft)	0.074	0.074	0.074
8	Formation Equivalent Mud Weight (ppg)	7.60	7.60	7.60
	Max Pressures using 100% Gas to Surface			
9	Max Surface Pressure neglecting shoe (psi)	2678	2678	2678
10	Fracture Gradient at shoe (psi/ft)	0.62	0.62	0.62
11	Fracture Pressure at shoe (psi)	4439	5245	5245
12	Surface pressure to break down shoe (psi)	3913	4623	4623
13	Maximum Anticipated Surface Pressure (psi)	2678	2678	2678
	Max Pressures using 70% Gas & 30% Produced Fluids			
14	Maximum Anticipated Surface Pressure (psi) (SteveH Calc)	1975	1975	1975

Notes:

- These are well specific inputs developed from detailed analysis by Reservoir Engineer
- Producing GOR declined from 5000 scf/BO in early 1981 to less than 900 in 1996, when field was shutin
- Almost all produced gas is associated gas and it is very unlikely a well would have 100% gas column
- Historical pressures from producing wells show a definitive downward trend versus cumulative production and there does not appear to be an active water drive or pressure support for the reservoir
- Formation Gradient based upon 3300 psi at 8350 ft TVD

Mud Weight and Fracture Gradient

1	Casing Size (in)	9-5/8	7	4" Slot
2	Setting Depth (feet - TVD)	7114	NA	8406
3	Programmed FIT EMW at shoe (ppg)	11	11	11
4	Depth of next Casing (feet - TVD)	8406	8406	8406
5	Maximum Expected Formation Pressure (psi)	3300	3300	3300
6	Expected Mud Weight (ppg)	9.2	9.2	9.2
7	Formation Equivalent Mud Weight (ppg)	7.05	7.05	7.05
8	Expected Hydrostatic Pressure at TD (psi)	4021	4021	4021
9	Amount of Overbalance at TD (psi)	721	721	721
10	Fracture Gradient at shoe (psi/ft)	0.57	0.57	0.57
11	Fracture Pressure at shoe (psi)	4069	#VALUE!	4808
12	Hydrostatic Pressure at shoe (psi)	3403	#VALUE!	4021
13	Margin between Mud Weight and LOT (psi)	666	#VALUE!	787

Casing Design

	Production Casing	Exist Liner Removed	Slotted Wire Wrap Screen
Hole Section	12.25*	8.5	8.5
Mud Weight	9.2	9.2	9.2
Buoyancy Factor	0.860	0.860	0.860
MASP (psi) (based upon wellhead rating)	3000	NA	NA
Gas Lift Pressure (psi)	0	0	0
Casing Size (in)	9-5/8*	7	4"
Setting Depth, MD (ft)	8630	NA	9967
Setting Depth, TVD (ft)	7114	NA	8406
Top of Casing, MD (ft)	0	NA	8510
Weight (lb/ft)	40	26	9.5
Grade	SS-95	L-80	L-80
Threads	BUTT	BUTT	10rd NU
ID (in)	8.835	6.276	3.548
Drift diameter (in)	8.599	6.151	3.423
Collapse (psi)	3330	5410	Slotted
Burst (psi)	6820	7240	Slotted
Joint Strength (kips)	1088	604	Slot Liner
Body Strength (kips)	1088	604	Slot Liner
Collapse Safety Factor	0.98	#VALUE!	#VALUE!
Burst Safety Factor	2.55	#VALUE!	#VALUE!
Tensile Safety Factor	2.74	#VALUE!	#VALUE!

SHUT-IN PROCEDURE

KEEP PATHS ON CHOKE MANIFOLD CLOSED

While drilling

Pull up and position TJ above rotary table.
Shut down pump.
Check for flow.
Close annular preventer ("Hydri") and open HCR valve.
Toolpusher and Drilling Foreman on floor.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

While tripping

Set slips with TJ positioned above rotary table.
Install full opening safety valve in open position.
Close safety valve.
Close annular preventer ("Hydri") and open HCR valve.
Tool pusher and Drilling Foreman on floor.
Put on Kelly (or Top Drive) and open safety valve.
Read/record SIDPP.
Read/record SICP.
Start moving pipe if reasonable.
Read/record gain in pit volume.

- NOTES:
- 1) When well has been shut-in and readable pressures have been observed, do not open well to verify entry or check its rate.
 - 2) Decide on maximum CP for pipe movement ahead of time.
 - 3) Install inside BOP if needed in control procedure.

DRILLERS METHOD

KILL PROCEDURE

First Step:

Hold SIDPP constant until circulation is started by bleeding mud from casing. Allow pressure to rise 100 psi before bleeding. Do not bleed gas.

Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed to be kept constant throughout circulation.

Hold casing pressure constant a few more minutes until drill pipe pressure stabilizes (small choke adjustment may be required).

Read drill pipe pressure.

Hold this drill pipe pressure constant until kick is circulated out of hole and mud returns are at or near normal weight.

Shut down pump and close choke at the same time. SEE NOTE.

Read pressures: SIDPP and SICP should be about equal to original SIDPP.

Note: Hold casing pressure constant while bringing pump speed down slowly. When pump speed is down to the point that the pump is barely running, **shut pump off first and then finish closing choke.**

Second Step:

1. Calculate kill weight mud required and increase mud weight to that value.
2. Hold casing pressure constant, by opening choke slowly, while bringing pump up to kill rate speed. This speed is to be held constant throughout circulation.
3. Hold casing pressure constant until drill string volume has been pumped. Very little choke adjustment should be required.
4. Read circulating drill pipe pressure.
5. Hold this drill pipe pressure constant until mud returns are at kill weight.
6. Shut down pump and shut in well.
7. Read pressures. Pressures should be zero.
8. Open choke.
9. Check for flow.

Note: If possible with mud system, commence mixing kill weight mud, based on the original SIDPP while circulating out kick. Kill weight based on the SIDPP after the kick has been circulated out of the hole should be used for second circulation.

Hydrogen Sulfide Considerations:

Production formations on Platform Grace have potential for hydrogen sulfide gas. Assume any gas circulated to surface to have hydrogen sulfide potential. Operations will adhere to the MMS approved "Hydrogen Sulfide and Sulfur Dioxide Contingency Plan".

Santa Clara Field
OOSP-0217 Platform Grac

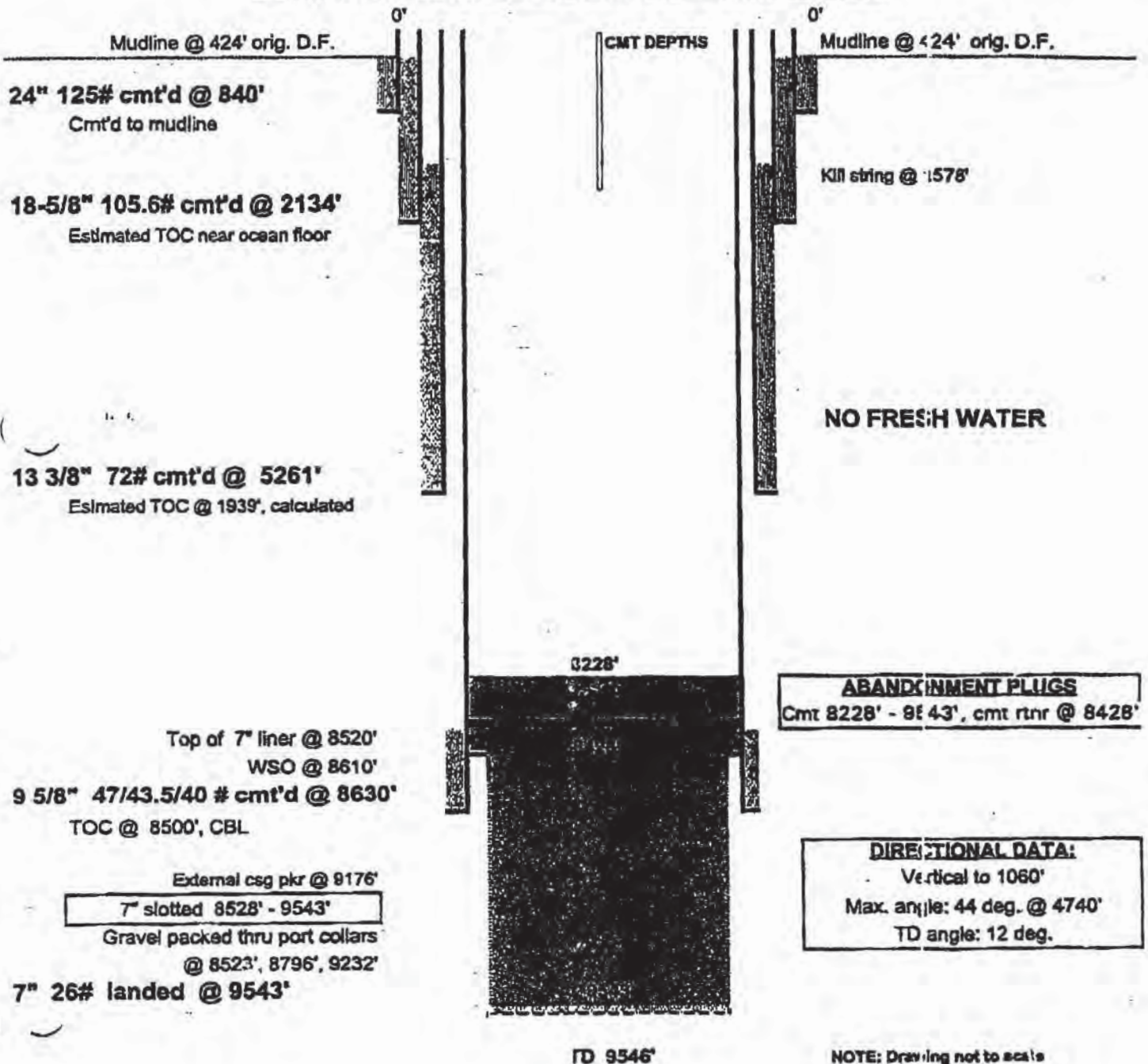
A-8

Elev. 106.4' D.F. T.D. 9546' PLITD 8228'

W.D. 318'

API # 04-31'-20437

CURRENT CONDITION - TEMPORARY ABANDONMENT



NOTE: Drawing not to scale

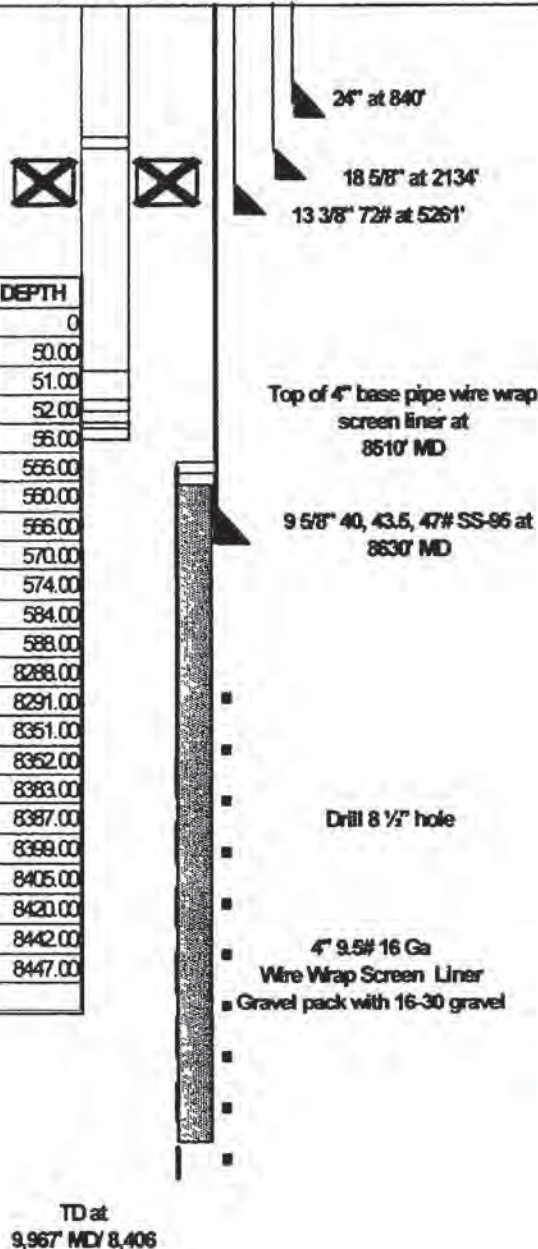
Vertical to +/- 1100'
 Max Angle: 45 deg @ 4950' MD
 Original D.F. Elevation: 105'
 D.F. to Tubing Head
 Water Depth: 318'
 Proposed Tree: 3 1/2" 3M psi Cameron

SANTA CLARA FIELD
WELL A-8 ST1
 Lease: OCS-P-0217
 Proposed Production Well

06/12/07

Completion Date

Completion String Description	ID	LENGTH	DEPTH
KB		50.00	0
Tbg Hanger		1.00	50.00
3 1/2" Pin X 2 7/8" 6.5# L-80 EUE 8rd XID		1.00	51.00
2 7/8" pup with full strength coupling as above		4.00	52.00
2 7/8" tubing as above		500.00	56.00
2 7/8" pup as above		4.00	566.00
2 7/8" TE-6 TRSSS Valve		6.00	560.00
2 7/8" pup as above		4.00	566.00
2 7/8" pup as above		4.00	570.00
9 5/8" Baker Twin Seal Hydraulic Packer		10.00	574.00
2 7/8" pup as above		4.00	584.00
2 7/8" tubing as above		7700.00	588.00
Baker CMSiding Sleeve		3.00	8288.00
2 7/8" tubing as above		60.00	8291.00
2 7/8" BXN nipple		1.00	8351.00
2 7/8" tubing as above		31.00	8352.00
2 7/8" pup as above		4.00	8363.00
ESP Pump		12.00	8367.00
ESP Intake		6.00	8369.00
ESP Seal		15.00	8405.00
ESP Motor		22.00	8420.00
ESP Sensor		5.00	8442.00
			8447.00





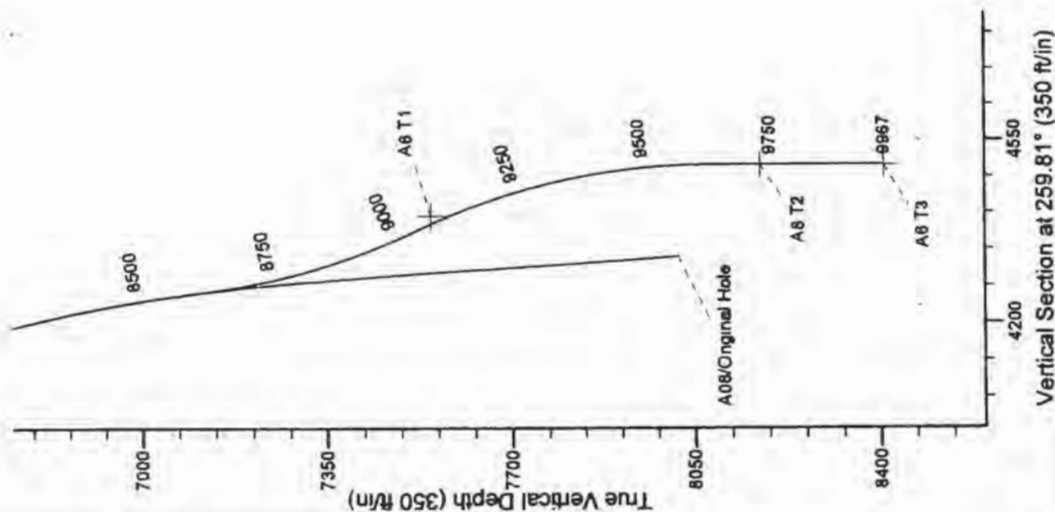
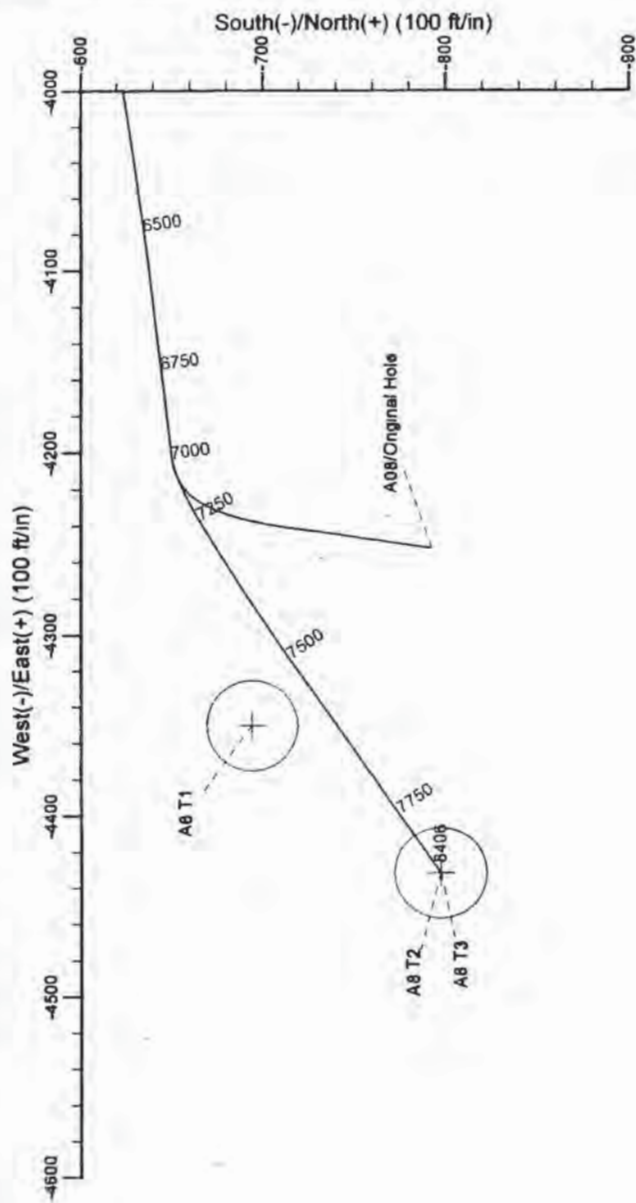
Azimuths to Grid North
True North 1 77°
Magnetic North 15.03°
Magnetic Field
Strength 47863.2nT
Dip Angle 58.78°
Date: 3/18/2007
Model BGM2008

Venoco Inc.

Project: Platform Grace
Site: Santa Clara Unit
Well: A08
Wellbore: ST1
Design: Plan 9 (28-Mar-07)

A08
NAD 1927 (NADCON CONUS)
California VI 406
Grid
RKB @ 106.40m (Original Well Elev)
Northing: 747457.00
Easting: 1028813.00

HALLIBURTON
Sperdy Drilling Services



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	VSec	Target
1	8630.00	8.98	251.71	7114.48	-851.94	-4208.78	0.00	0.00	4258.70	
2	9034.81	28.83	235.47	7498.84	-712.03	-4308.30	5.00	-21.42	4387.30	
3	9091.05	28.83	235.47	7550.20	-728.47	-4330.28	0.00	0.00	4380.51	
4	9827.85	0.00	0.00	8087.40	-798.40	-4431.81	5.00	180.00	4502.80	A8 T2
5	9732.85	0.00	0.00	8172.40	-798.40	-4431.81	0.00	0.00	4502.80	A8 T2
6	9896.85	0.00	0.00	8406.40	-798.40	-4431.81	0.00	0.00	4502.80	A8 T3

Venoco Inc.

Platform Grace

Santa Clara Unit

A08

ST1

Plan: Plan 9 (28-Mar-07)

Job No. Plan 9 (28-Mar-07)

Sperry Drilling Services Combo Report

28 March, 2007

Well Coordinates: 747,467.00 N, 1,026,813.00 E (34° 10' 46 75" N, 119° 28' 04 13" W)
Ground Level 0.00 ft

Local Coordinate Origin

Viewing Datum

TVDs to System

North Reference

Unit System

Centered on Well A08

RKB @ 106 40ft (Original Well Elev)

N

Gnd

API - US Survey Feet

Version 2003.14 Build 82

HALLIBURTON

HALLIBURTON

Plan Report for A08 - ST1 - Plan 9 (28-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Msp Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
0.00	0.00	0.00	106.40	0.00	0.00 N	0.00 E	747,467.00	1,026,813.00	0.00	0.00	
30.00	0.90	111.00	76.40	30.00	0.06 S	0.22 E	747,466.92	1,026,813.22	3.00	-0.20	
60.00	0.81	94.00	46.40	60.00	0.19 S	0.86 E	747,466.81	1,026,813.88	0.89	-0.63	
90.00	0.30	97.00	16.41	89.98	0.21 S	0.99 E	747,466.79	1,026,813.99	2.04	-0.94	
120.00	0.25	101.00	-13.59	119.98	0.23 S	1.14 E	747,466.77	1,026,814.14	0.18	-1.08	
150.00	0.42	148.00	-43.59	149.98	0.34 S	1.28 E	747,466.66	1,026,814.28	1.00	-1.18	
180.00	0.20	148.00	-73.59	179.98	0.47 S	1.35 E	747,466.53	1,026,814.35	0.73	-1.25	
210.00	0.22	150.00	-103.59	209.98	0.57 S	1.41 E	747,466.43	1,026,814.41	0.08	-1.29	
240.00	0.38	185.00	-133.59	239.98	0.71 S	1.48 E	747,466.28	1,026,814.48	0.59	-1.32	
270.00	0.53	177.00	-183.59	269.98	0.95 S	1.50 E	747,466.05	1,026,814.50	0.59	-1.31	
300.00	0.36	171.00	-183.58	299.98	1.16 S	1.52 E	747,465.82	1,026,814.52	0.52	-1.28	
330.00	0.47	170.00	-223.58	329.98	1.40 S	1.56 E	747,465.60	1,026,814.58	0.30	-1.28	
360.00	0.38	168.00	-253.58	359.98	1.82 S	1.60 E	747,465.38	1,026,814.60	0.30	-1.28	
390.00	0.45	172.00	-283.58	389.98	1.83 S	1.64 E	747,465.17	1,026,814.84	0.25	-1.29	
420.00	0.12	141.00	-313.58	419.98	1.88 S	1.87 E	747,465.02	1,026,814.67	1.18	-1.30	
450.00	0.15	78.00	-343.58	449.98	1.99 S	1.73 E	747,465.01	1,026,814.73	0.47	-1.35	
480.00	0.32	32.00	-373.58	479.98	1.81 S	1.81 E	747,465.09	1,026,814.81	0.81	-1.45	
510.00	0.83	25.00	-403.58	509.98	1.69 S	1.93 E	747,465.31	1,026,814.93	1.05	-1.60	
540.00	0.45	26.00	-433.58	539.98	1.44 S	2.05 E	747,465.56	1,026,815.05	0.80	-1.78	
570.00	0.48	38.00	-463.58	569.98	1.23 S	2.18 E	747,465.77	1,026,815.18	0.38	-1.93	
600.00	0.55	35.00	-493.58	599.98	1.02 S	2.34 E	747,465.98	1,026,815.34	0.26	-2.12	
630.00	0.83	46.00	-523.58	629.98	0.79 S	2.54 E	747,466.21	1,026,815.64	0.46	-2.36	
660.00	0.52	50.00	-553.58	659.98	0.58 S	2.77 E	747,466.42	1,026,815.77	0.39	-2.62	
690.00	0.50	58.00	-583.58	689.98	0.42 S	2.98 E	747,466.58	1,026,815.98	0.19	-2.85	
720.00	0.47	80.00	-613.58	719.98	0.29 S	3.19 E	747,466.71	1,026,816.19	0.15	-3.09	
750.00	0.40	77.00	-643.58	749.98	0.20 S	3.40 E	747,466.80	1,026,816.40	0.49	-3.31	
780.00	0.37	57.00	-673.57	779.97	0.13 S	3.59 E	747,466.87	1,026,816.59	0.46	-3.51	
810.00	0.15	46.00	-703.57	809.97	0.05 S	3.70 E	747,466.95	1,026,816.70	0.75	-3.83	
840.00	0.78	133.00	-733.57	839.97	0.16 S	3.87 E	747,466.84	1,026,816.87	2.82	-3.78	
862.00	1.00	72.50	-775.57	861.97	0.24 S	4.43 E	747,466.76	1,026,817.43	2.18	-4.32	
813.00	0.25	28.50	-808.57	912.97	0.10 S	4.72 E	747,466.90	1,026,817.72	2.73	-4.63	
844.00	1.25	38.50	-837.56	943.96	0.22 N	4.86 E	747,467.22	1,026,817.96	3.25	-4.92	
875.00	1.25	44.50	-868.58	974.96	0.73 N	5.41 E	747,467.73	1,026,818.41	0.42	-5.45	
1,006.00	0.75	47.50	-898.55	1,005.95	1.11 N	5.79 E	747,468.11	1,026,818.79	1.82	-5.90	
1,037.00	0.25	31.50	-930.55	1,036.95	1.30 N	5.98 E	747,468.30	1,026,818.98	1.86	-6.12	
1,099.00	2.50	254.50	-992.53	1,086.93	1.08 N	4.75 E	747,468.08	1,026,817.75	4.34	-4.86	
1,130.00	4.25	280.00	-1,023.48	1,128.98	0.66 N	2.98 E	747,467.68	1,026,815.98	5.73	-3.04	
1,161.00	5.50	283.50	-1,054.38	1,160.76	0.31 N	0.36 E	747,467.31	1,026,813.38	4.14	-0.41	
1,192.00	8.50	257.50	-1,085.19	1,191.58	0.24 S	2.83 W	747,466.76	1,026,810.17	3.80	2.83	
1,223.00	7.00	280.50	-1,115.98	1,222.36	0.93 S	6.41 W	747,466.07	1,026,806.58	1.97	6.47	

HALLIBURTON

Plan Report for A08 - ST1 - Plan 9 (28-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
1,254.00	8.75	267.50	-1,148.88	1,253.08	1.35 S	10.83 W	747,485.65	1,028,802.37	6.43	10.70	
1,285.00	10.50	266.50	-1,177.25	1,283.65	1.62 S	15.80 W	747,485.38	1,026,787.20	5.87	15.84	
1,316.00	11.25	262.50	-1,207.88	1,314.09	2.19 S	21.82 W	747,484.81	1,026,781.38	3.43	21.87	
1,347.00	13.00	262.00	-1,238.00	1,344.40	3.07 S	26.07 W	747,483.93	1,026,784.93	5.88	28.17	
1,378.00	15.00	260.50	-1,268.08	1,374.48	4.22 S	35.48 W	747,482.78	1,026,777.52	6.58	35.87	
1,409.00	16.00	265.50	-1,297.95	1,404.35	5.21 S	43.70 W	747,461.78	1,026,789.30	5.38	43.93	
1,440.00	17.50	283.50	-1,327.64	1,434.04	6.08 S	52.59 W	747,460.92	1,026,780.41	5.18	52.84	
1,471.00	18.00	265.00	-1,357.08	1,463.46	7.04 S	62.25 W	747,459.86	1,026,750.75	5.07	62.51	
1,502.00	21.00	266.50	-1,388.21	1,492.61	7.83 S	72.83 W	747,459.37	1,026,740.17	7.52	73.03	
1,533.00	22.00	268.50	-1,415.05	1,521.45	7.93 S	84.19 W	747,459.07	1,026,728.81	3.23	84.25	
1,564.00	23.00	264.50	-1,443.88	1,550.08	8.88 S	96.02 W	747,458.34	1,026,716.98	5.90	96.04	
1,595.00	24.00	263.00	-1,472.12	1,578.52	10.01 S	108.31 W	747,458.88	1,026,704.68	3.76	108.37	
1,626.00	25.00	263.00	-1,500.33	1,606.73	11.58 S	121.07 W	747,455.42	1,026,691.93	3.23	121.21	
1,657.00	26.50	263.50	-1,528.25	1,634.65	13.16 S	134.44 W	747,453.84	1,026,678.58	4.88	134.65	
1,688.00	28.00	263.50	-1,555.81	1,662.21	14.78 S	148.54 W	747,452.24	1,026,664.48	4.84	148.81	
1,719.00	28.50	262.00	-1,582.98	1,689.38	16.85 S	183.33 W	747,450.35	1,026,649.87	5.37	183.70	
1,750.00	30.75	280.50	-1,609.80	1,716.20	19.02 S	178.71 W	747,447.98	1,026,634.28	4.71	179.26	
1,781.00	32.50	280.00	-1,636.19	1,742.59	21.77 S	184.73 W	747,445.23	1,026,618.27	5.71	185.51	
1,812.00	33.50	281.00	-1,662.18	1,768.59	24.56 S	211.36 W	747,442.44	1,026,601.82	3.87	212.39	
1,843.00	35.50	281.50	-1,687.74	1,794.14	27.23 S	228.73 W	747,439.77	1,026,584.27	8.52	228.94	
1,874.00	37.00	260.00	-1,712.74	1,816.14	30.18 S	246.82 W	747,436.82	1,026,566.18	5.62	248.27	
1,905.00	38.25	260.50	-1,737.28	1,843.69	33.38 S	265.47 W	747,433.62	1,026,547.53	4.15	267.19	
1,936.00	38.75	260.00	-1,761.55	1,867.95	36.65 S	284.48 W	747,430.35	1,026,528.51	1.90	288.49	
1,967.00	39.00	260.50	-1,785.88	1,892.09	39.85 S	303.87 W	747,427.05	1,026,509.33	1.29	305.85	
1,998.00	39.75	260.00	-1,809.85	1,916.05	43.28 S	323.05 W	747,423.72	1,026,489.95	2.63	325.61	
2,028.00	40.00	260.50	-1,833.44	1,939.84	46.84 S	342.64 W	747,420.38	1,026,470.36	1.31	345.48	
2,060.00	41.25	260.50	-1,858.97	1,963.37	49.97 S	362.55 W	747,417.03	1,026,450.45	4.03	365.87	
2,091.00	42.25	280.00	-1,880.10	1,986.50	53.47 S	382.88 W	747,413.53	1,026,430.11	3.40	388.31	
2,121.00	43.50	260.50	-1,902.08	2,008.48	56.93 S	403.01 W	747,410.07	1,026,409.98	4.32	408.72	
2,227.00	43.50	259.50	-1,978.97	2,085.37	69.80 S	474.86 W	747,397.40	1,026,338.14	0.65	478.68	
2,420.00	43.25	258.50	-2,119.28	2,225.68	94.86 S	604.97 W	747,372.12	1,026,208.03	0.38	612.21	
2,804.00	42.50	258.50	-2,254.10	2,360.50	119.84 S	727.65 W	747,347.18	1,026,065.35	0.41	737.37	
2,788.00	42.25	259.50	-2,388.55	2,494.85	143.25 S	848.08 W	747,323.75	1,025,984.94	0.39	860.02	
2,867.00	41.75	260.50	-2,523.06	2,628.46	164.29 S	987.32 W	747,302.71	1,025,945.88	0.48	981.13	
3,152.00	41.25	259.50	-2,661.82	2,768.02	185.57 S	1,088.04 W	747,281.43	1,025,724.96	0.45	1,103.71	
3,337.00	41.00	260.50	-2,800.98	2,907.38	206.70 S	1,207.87 W	747,260.30	1,025,605.13	0.38	1,225.38	
3,496.00	41.00	261.00	-2,920.86	3,027.38	223.46 S	1,310.82 W	747,243.54	1,025,502.18	0.21	1,329.68	
3,676.00	41.75	261.00	-3,058.05	3,162.45	242.06 S	1,428.33 W	747,224.82	1,025,384.67	0.42	1,448.63	
3,860.00	42.25	261.00	-3,182.78	3,289.19	261.34 S	1,548.94 W	747,205.66	1,025,263.06	0.27	1,571.72	

HALLIBURTON

Plan Report for A08 - ST1 - Plan 9 (28-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Eastings (ft)	Map Coordinates Northing (ft)	Eastings (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
4,043.00	42.75	281.00	-3,327.71	3,434.11	280.68 S	1,572.05 W	747,186.32	1,025,140.95	0.27	1,885.33	
4,225.00	43.00	281.00	-3,481.08	3,587.48	300.05 S	1,784.38 W	747,166.95	1,025,016.84	0.14	1,819.14	
4,408.00	43.00	281.50	-3,585.88	3,702.08	318.14 S	1,918.38 W	747,147.88	1,024,894.62	0.19	1,844.58	
4,659.00	43.75	281.50	-3,777.37	3,883.77	344.52 S	2,086.19 W	747,122.48	1,024,724.81	0.30	2,116.20	
4,849.00	44.75	282.00	-3,985.10	4,091.50	373.54 S	2,286.45 W	747,093.48	1,024,524.55	0.37	2,318.44	
5,191.00	44.00	282.00	-4,158.07	4,264.47	387.10 S	2,458.05 W	747,089.90	1,024,358.95	0.31	2,487.56	
5,250.00	44.25	282.50	-4,200.43	4,306.83	402.84 S	2,488.75 W	747,084.38	1,024,316.25	0.73	2,528.80	
5,478.00	44.25	281.50	-4,363.74	4,470.14	424.78 S	2,654.28 W	747,042.22	1,024,158.71	0.31	2,887.58	
5,685.00	44.50	281.50	-4,511.70	4,616.10	446.18 S	2,787.47 W	747,020.82	1,024,015.53	0.12	2,832.28	
5,898.00	44.25	281.50	-4,663.95	4,770.35	468.18 S	2,944.78 W	746,998.81	1,023,868.21	0.12	2,981.18	
6,113.00	44.50	282.50	-4,917.83	4,924.03	489.12 S	3,093.69 W	746,977.88	1,023,719.31	0.35	3,131.42	
6,266.00	44.00	263.00	-4,927.22	5,033.82	502.59 S	3,189.59 W	746,984.41	1,023,613.41	0.40	3,238.04	
6,481.00	42.00	282.50	-5,084.48	5,190.86	521.08 S	3,345.04 W	746,945.92	1,023,467.88	0.94	3,384.47	
6,633.00	41.00	282.00	-5,198.30	5,304.70	534.68 S	3,444.84 W	746,932.34	1,023,368.16	0.69	3,485.10	
6,775.00	40.25	281.50	-5,308.07	5,412.47	547.92 S	3,538.34 W	746,919.08	1,023,278.86	0.58	3,577.50	
6,942.00	38.00	280.50	-5,437.42	5,543.82	564.01 S	3,638.15 W	746,902.99	1,023,174.85	2.57	3,680.55	
7,094.00	31.75	281.00	-5,583.58	5,689.99	577.84 S	3,721.75 W	746,886.36	1,023,061.25	2.80	3,765.24	
7,277.00	27.75	260.50	-5,722.44	5,828.84	592.21 S	3,811.38 W	746,874.79	1,023,001.84	2.19	3,856.02	
7,481.00	21.50	280.50	-5,916.88	6,023.28	606.92 S	3,899.27 W	746,860.08	1,022,913.73	2.92	3,945.14	
7,675.00	20.00	280.50	-6,088.94	6,195.34	617.88 S	3,983.58 W	746,848.32	1,022,849.44	0.82	4,010.32	
7,880.00	19.75	281.50	-6,282.92	6,389.32	627.52 S	4,026.68 W	746,839.48	1,022,787.32	0.23	4,073.20	
8,011.00	19.00	282.50	-6,405.37	6,511.77	634.50 S	4,075.28 W	746,832.50	1,022,737.72	0.54	4,123.26	
8,195.00	15.25	283.00	-6,581.18	6,687.58	641.38 S	4,129.01 W	746,825.84	1,022,683.99	2.04	4,177.36	
8,378.00	11.25	283.50	-6,759.27	6,865.67	646.32 S	4,170.65 W	746,820.88	1,022,642.35	2.18	4,218.22	
8,581.00	6.00	282.50	-6,939.87	7,046.07	650.00 S	4,201.02 W	746,817.00	1,022,611.96	1.78	4,248.78	
8,830.00	8.86	251.71	-7,008.08	7,114.48	651.94 S	4,208.76 W	746,815.08	1,022,603.24	2.52	4,258.70	KOP / Start DLS 5.00 TFO -21.42
8,700.00	10.30	244.55	-7,077.28	7,183.88	655.97 S	4,219.44 W	746,811.03	1,022,593.56	5.00	4,288.84	
8,800.00	15.20	239.83	-7,174.79	7,281.19	666.40 S	4,238.66 W	746,800.90	1,022,574.14	5.00	4,289.90	
8,900.00	20.14	237.38	-7,270.05	7,378.45	682.28 S	4,284.71 W	746,784.72	1,022,548.29	5.00	4,318.15	
9,000.00	25.11	235.87	-7,362.32	7,468.72	703.48 S	4,298.79 W	746,763.52	1,022,518.21	5.00	4,353.47	
9,034.81	26.83	235.47	-7,383.44	7,489.84	712.03 S	4,308.30 W	746,754.97	1,022,503.70	5.00	4,367.30	Start 58.44 hold at 9034.81 MD
9,084.55	26.83	235.47	-7,438.00	7,544.40	724.81 S	4,327.87 W	746,742.19	1,022,485.13	0.00	4,387.84	A8 T1
9,091.05	26.83	235.47	-7,443.60	7,550.20	728.47 S	4,330.29 W	746,740.53	1,022,482.71	0.00	4,390.51	Start Drop -5.00
9,100.00	26.38	235.47	-7,451.80	7,558.20	728.74 S	4,333.59 W	746,738.28	1,022,479.41	5.00	4,394.18	
9,200.00	21.38	235.47	-7,543.21	7,649.81	751.89 S	4,368.93 W	746,715.31	1,022,448.07	5.00	4,431.03	
9,300.00	16.38	235.47	-7,637.80	7,744.20	770.03 S	4,393.56 W	746,696.97	1,022,419.42	5.00	4,480.51	
9,400.00	11.38	235.47	-7,734.85	7,841.25	783.62 S	4,413.34 W	746,683.38	1,022,389.88	5.00	4,482.36	
9,500.00	6.38	235.47	-7,833.82	7,940.02	782.38 S	4,428.08 W	746,674.62	1,022,368.94	5.00	4,486.42	
9,600.00	1.38	235.47	-7,933.36	8,039.78	786.21 S	4,431.83 W	746,670.78	1,022,381.37	5.00	4,502.58	

HALLIBURTON

Plan Report for A08 - ST1 - Plan 9 (28-Mar-07)

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
9,627.65	0.00	0.00	-7,961.00	8,067.40	796.40 S	4,431.91 W	746,870.60	1,022,381.08	5.00	4,502.90	Start 105.00 hold at 9627.65 MD
9,700.00	0.00	0.00	-8,033.35	8,139.75	796.40 S	4,431.91 W	746,870.60	1,022,381.08	0.00	4,502.90	
9,732.85	0.00	0.00	-8,086.00	8,172.40	796.40 S	4,431.91 W	746,870.60	1,022,381.08	0.00	4,502.90	Start 234.00 hold at 9732.85 MD - A8 T2
9,800.00	0.00	0.00	-8,133.35	8,239.75	796.40 S	4,431.91 W	746,870.60	1,022,381.08	0.00	4,502.90	
9,800.00	0.00	0.00	-8,233.35	8,339.75	796.40 S	4,431.91 W	746,870.60	1,022,381.08	0.00	4,502.90	
9,968.65	0.00	0.00	-8,300.00	8,408.40	796.40 S	4,431.91 W	746,870.60	1,022,381.08	0.00	4,502.90	TD at 9968.65 - A8 T3

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
8,630.00	7,114.48	-851.84	-4,209.78	KOP / Start DLS 5.00 TFO -21.42
9,034.81	7,499.84	-712.03	-4,308.30	Start 56.44 hold at 9034.61 MD
9,091.05	7,550.20	-728.47	-4,330.28	Start Drop -5.00
9,627.65	8,067.40	-796.40	-4,431.91	Start 105.00 hold at 9627.65 MD
9,732.85	8,172.40	-796.40	-4,431.91	Start 234.00 hold at 9732.65 MD
9,968.65	8,408.40	-796.40	-4,431.91	TD at 9968.65

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
TD	No Target (Freehand)	259.61	Spot	0.00	0.00	0.00

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Plan Report for A08 - ST1 - Plan 9 (28-Mar-07)

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N-S (ft)	+E-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target - Shape									
A8 T1	0.00	0.00	7,544.40	-694.32	-4,350.32	746,772.66	1,022,462.88	34 177377	-119.482117
- plan misses by 37.85ft at 8085.10ft MD (7544.88 TVD, -724.95 N, -4328.08 E)									
- Circle (radius 25.00)									
A8 T3	0.00	0.00	8,408.40	-796.40	-4,431.91	746,670.60	1,022,381.09	34 177080	-119.482378
- plan hits target									
- Circle (radius 25.00)									
A8 T2	0.00	0.00	8,172.40	-796.40	-4,431.91	746,670.60	1,022,381.09	34 177080	-119.482378
- plan hits target									
- Circle (radius 25.00)									

HALLIBURTON

North Reference Sheet for Santa Clara Unit - A08 - ST1

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference
Vertical Depths are relative to RKB @ 106.40ft (Original Well Elev). Northing and Easting are relative to A08

Coordinate System is US State Plane 1927 (Exact solution), California VI 406 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is -118.250000°, Longitude Origin 0.000000°, Latitude Origin 33.853333°

False Easting 2,000,000.00ft, False Northing 0.00ft, Scale Reduction 1.00006293

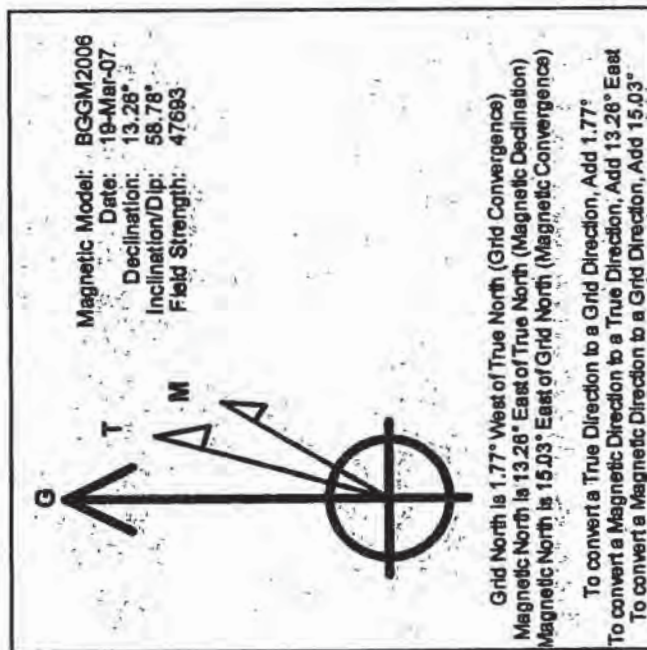
Grid Coordinates of Well: 747,467.00 ft N, 1,026,813.00 ft E

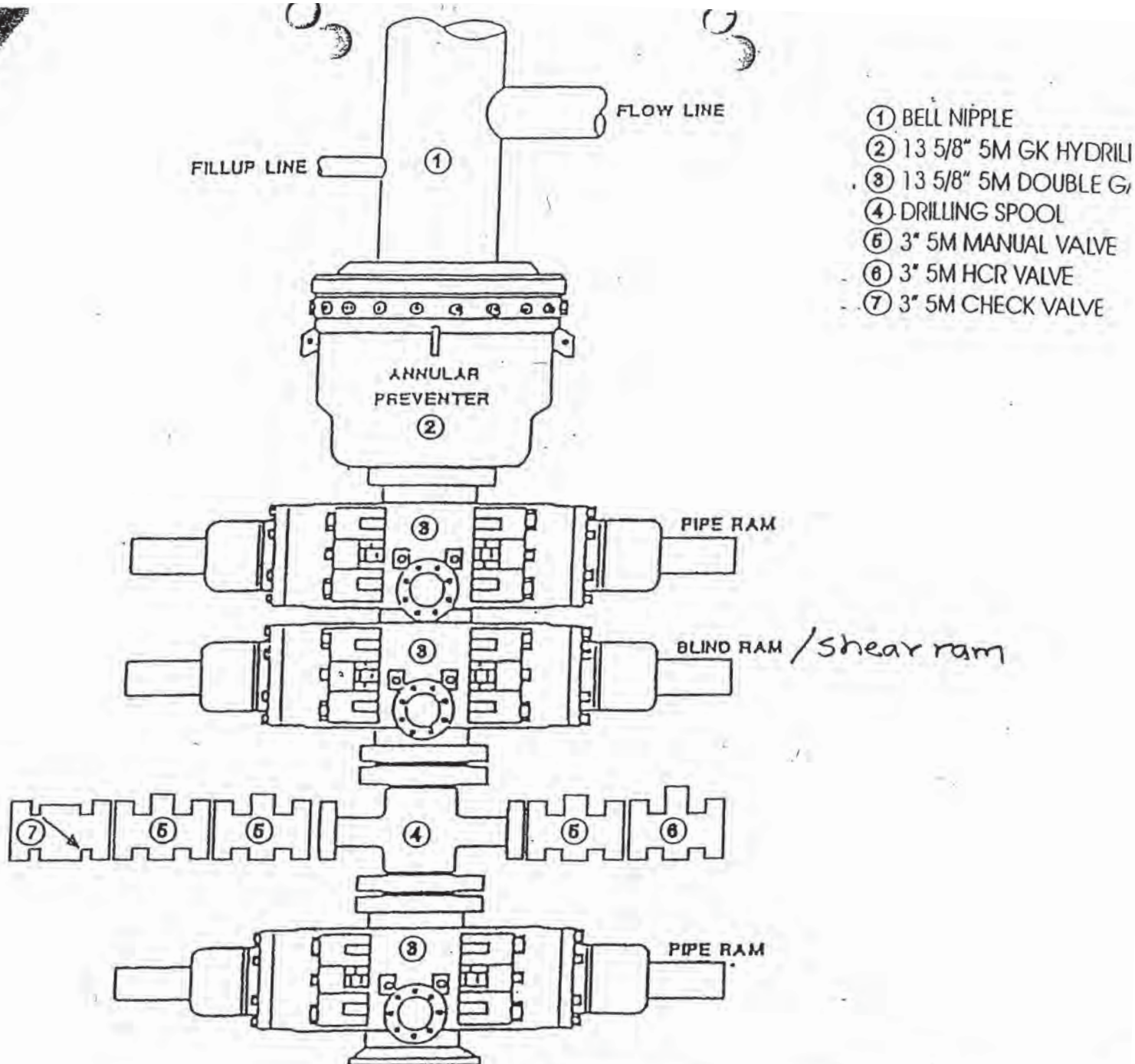
Geographical Coordinates of Well: 34° 10' 46.75" N, 118° 28' 04.13" W

Grid Convergence at Surface is: -1.77°

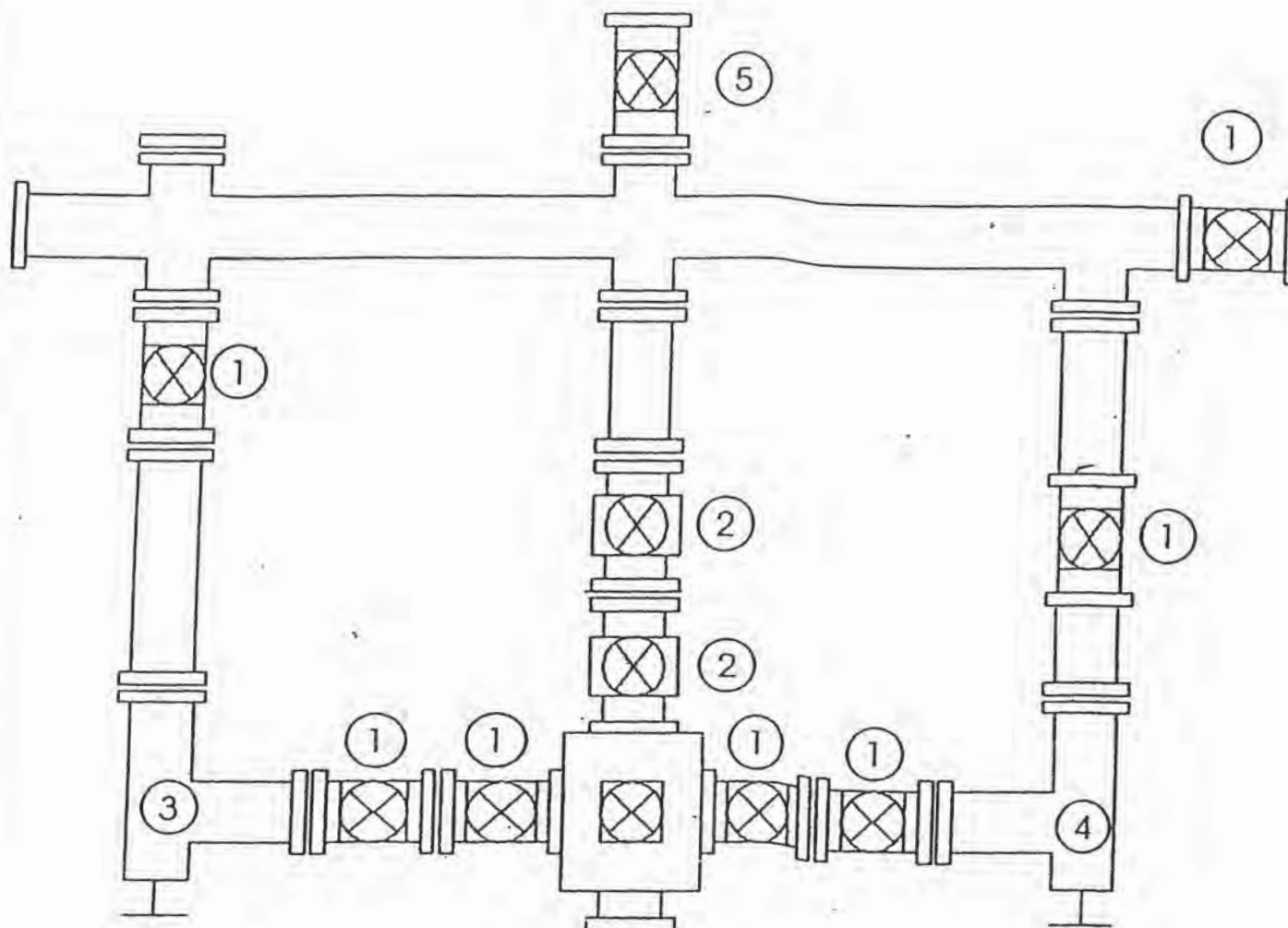
Based upon Minimum Curvature type calculations, at a Measured Depth of 9,966.65ft
the Bottom Hole Displacement is 4,502.90ft in the Direction of 259.81° (Grid).

Magnetic Convergence at surface is: -15.03° (19 March 2007, .8GGM2006)





BLOWOUT PREVENTION SYSTEM PLATFORM G, RACE (PROPOSED)



- ① 3" 5M GATE VALVE
- ② 4" 5M GATE VALVE
- ③ 3" 5M MANUAL CHOKE
- ④ 3" 5M HYDRAULIC CHOKE
- ⑤ 2" 5M BALL VALVE



CHOKE MANIFOLD
PLATFORM G.RACE
(PROPOSED)



United States Department of the Interior

MINERALS MANAGEMENT SERVICE
Pacific OCS Region
770 Paseo Camarillo
Camarillo, California 93010-6064

7106

July 17, 2007

Memorandum

To: District Supervisor, Camarillo District

From: Frank Victor, Office of Reservoir Evaluation & Production

Subject: Geologic Hazards Analysis for Well P-0217 A-8ST01

Basic Information

Operator: Venoco, Inc.
Unit: Santa Clara Unit
Field: Santa Clara Oil Field
Lease: OCS-P 0217
Platform: Grace
Well/Slot: A-8ST in slot M3
Objective: Monterey Production
API: 04-311-20437-01

Surface Location: X = 1,026,812 ft
Lambert Zone 6 Y = 747,466 ft

Estimated Top of Productive Zone X =
Y =

Estimated Bottom Hole Location X = 1,022,381 ft
Y = 746,670 ft

Elevation of KB: + 106 feet
Est. Total Depth (measured): - 9,967 feet (RKB)
Est. Total Depth (true vert.): - 8,406 feet (RKB)

Water Depth (Grace): 318 feet +/-

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Overview of Proposal

Venoco, Inc., operator of the Santa Clara Field within the Santa Clara Unit, proposes to drill well OCS-P 0217 A8-ST into the Monterey Formation. The objective of the well is to drill into the Monterey Formation and produce from this reservoir as part of the Platform Grace return to production.

The proposed well will be drilled using a Kenai Rig on Platform Grace to a bottom hole location in Lease OCS-P 0217, west of the platform. This side track will drill out the existing cement plugs and the existing perforations will be isolated and plugged with cement. Maximum pressure is not expected to exceed the pressures recorded at TD (Monterey Fm) of 3300 psi.

1. Geologic Marker Horizons

Formation	Age	MD (RKB)	TVD (RKB)
Santa Margarita	Pliocene	7,106 feet	5,680 feet
KOP	Pliocene	8,630 feet	7,114 feet
Top Monterey M2	Miocene	8,690 feet	7,174 feet
Top Monterey M3	Miocene	9,035 feet	7,500 feet
Top Monterey M4	Miocene	9,791 feet	8,231 feet
Total Depth	Miocene	9,967 feet	8,406 feet

2. Potential Oil and Gas Reservoirs

Formation	Age	(TVD)	Thickness	HC Type
Monterey	Miocene	7,174 feet	~700 feet	Oil & Assoc Gas

3. Possible Fresh or Salt Water Flow, Depth/Thickness

No fresh water aquifers have been noted in any well reports or logs from the adjacent wells. Formation waters tend to be salty to briny. This well is a side track from well A-14, therefore all the upper zones are already behind casing, and we expect normal salty or briny formation water while drilling.

4. Possible Lost Circulation Zones

No significant lost circulation events were noted in the mud log or well history of P-0217 A8. The present operator and former operator of the Santa Clara field have extensive drilling experience within this area. The proposed drilling program is similar to those utilized in drilling the production wells in the field.

5. Faulting and Folding

The production well is located on the structural high and slightly down dip from the crest of the anticline. There are no "major" faults mapped in the area of the sidetrack, however a minor displacement east west trending fault is close to the final TD location of the well.

6. Possible Shallow Gas Zones

No significant shallow gas zones are expected to be located in or around Platform Grace, due to the drilling of this well.

7. Possible Over-pressured or Depleted Zones

Based on the existing mudlog for the original A14 well drilled by Chevron in 1985, there are no over pressured or high pressure zones expected in the sidetrack of the water disposal well.

8. Logging/Coring

Mud logging upon exiting original A-8 casing. Wire line logs to be run are PEX/Spectral GR-CMR FMI-GR/Pressure Xpress. Primary Venoco geologist is Monica Carlsen.

9. Other Comments

It should be noted that the Monterey has potential for hydrogen sulfide gas. The drilling plan states that any gas circulated to the surface to have hydrogen sulfide potential and the operations will adhere to the MMS approved Platform Grace Hydrogen Sulfide and Sulfur Dioxide Contingency Plan.

INC's Issued for Venoco (Gail and Grace), 2005 thru 2012 (California District)

Dis	Inspection Type	Date Inspected	Date Issued	Facility	Facility ID	Operator	Op ID	INC Type	INC	Enf	Date		Remarks
											Corrected	Recinded	
8	PC/A	03/12/07	03/24/07	GAIL	51016	VENOCO	02309	P	P262	C	03/25/07		SSSV on Injector E-21L failed leak test. Well is shut-in pending wireline. Well will be monitored by personnel if necessary to use it. This includes person at wellhead to manually close master valve if necessary.
Correction Remarks }													
8	PC/A	03/12/07	03/24/07	GAIL	51016	VENOCO	02309	P	P364	C	03/24/07		Wellhead side FSV on Injector E-21L failed leak test.
Correction Remarks }													
8	PC/A	03/26/06	04/06/06	GAIL	51016	VENOCO	02309	P	P451	C	04/06/06		FSV was opened up, cleaned & retested properly.
Correction Remarks }													
Correction Remarks }													
Reset & tested to 1610.													