

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OM B No. 1004-0137  
Expires: March 31, 2007

## SUNDRY NOTICES AND REPORTS ON WELLS

**Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.**

**SUBMIT IN TRIPLICATE- Other instructions on reverse side.**1. Type of Well  
☒ Oil Well ☐ Gas Well ☐ Other2. Name of Operator **BOPCO, L. P.**3a. Address  
**P. O. Box 2760 Midland, TX 79702**3b. Phone No. (include area code)  
**432-683-2277**

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

**SL: 660' FNL, 1980' FWL, Sec 34, T21S, R29E ULC**  
**BHL: 1,200' FSL, 1,990' FWL, Sec 35, T21S, R29E**

5. Lease Serial No.

**LC 067964**

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

8. Well Name and No.

**Big Eddy Unit #38H**

9. API Well No.

**30-015-20940**

10. Field and Pool, or Exploratory Area

**NMNM 68294X**

11. County or Parish, State

**Eddy Co, NM**

## 12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

| TYPE OF SUBMISSION                                   | TYPE OF ACTION                                |                                           |                                                    |                                                                                          |
|------------------------------------------------------|-----------------------------------------------|-------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Notice of Intent | <input type="checkbox"/> Acidize              | <input type="checkbox"/> Deepen           | <input type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off                                                  |
| <input type="checkbox"/> Subsequent Report           | <input type="checkbox"/> Alter Casing         | <input type="checkbox"/> Fracture Treat   | <input type="checkbox"/> Reclamation               | <input type="checkbox"/> Well Integrity                                                  |
| <input type="checkbox"/> Final Abandonment Notice    | <input type="checkbox"/> Casing Repair        | <input type="checkbox"/> New Construction | <input checked="" type="checkbox"/> Recomplete     | <input checked="" type="checkbox"/> Other <b>Re-enter and drill horizontal wellbore.</b> |
|                                                      | <input type="checkbox"/> Change Plans         | <input type="checkbox"/> Plug and Abandon | <input type="checkbox"/> Temporarily Abandon       |                                                                                          |
|                                                      | <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Plug Back        | <input type="checkbox"/> Water Disposal            |                                                                                          |

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleate horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleation in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

**BOPCO, L.P. respectfully requests approval to horizontally recompleate the existing wellbore of the Big Eddy Unit #38H. The current status of the well is temporarily abandoned as of July 2006. BOPCO plans to remove existing 5-1/2" casing, plug back with a cement plug, and sidetrack to create horizontal wellbore per the attached production procedure, drilling procedure, directional plan, and plats.**

**The multi-use plan is not included in the submittal because only existing roadways and location will be used for production facilities.**

**SEE ATTACHED FOR  
CONDITIONS OF APPROVAL****Accepted for record  
NMOCD****RECEIVED****AUG 11 2011****NMOCD ARTESIA**14. I hereby certify that the foregoing is true and correct  
Name (Printed/Typed)**Tyler Milam**Title **Drilling Engineer**

Signature

Date

**6-22-11****THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Title

Office

Date

**AUG 8 2011****/s/ Chris Walls****BUREAU OF LAND MANAGEMENT  
CARLSBAD FIELD OFFICE**

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**Big Eddy Unit #38**  
**30-015-20940**  
**BOPCO, L.P.**  
**August 8, 2011**  
**Conditions of Approval**

1. Contact BLM 575-361-2822 a minimum of 24 hours prior to all rig moves.
2. 3000 (3M) psi workover BOP to be used with pulling unit. All blowout preventer (BOP) and related equipment (BOPE) shall comply with reasonable well control requirements. A two ram system with a blind ram and a pipe ram designed for the size of the work string shall be adequate. Tapered work strings will require an additional pipe ram. The manifold shall comply with Onshore Oil and Gas Order #2 Attachment I (2M Diagrams of Choke Manifold Equipment). The accumulator system shall have an immediately available power source to close the rams and retain 200 psi above pre-charge. The pre-charge test shall follow requirements in Onshore Order #2.
3. **Drill out existing CIBP at 10,114'.**
  - A. **Spot plug a minimum of 230' in length from 12,500'-12,270'. WOC and tag at 12,270' or shallower. (top of Morrow at 12,450')**
  - B. **Spot plug a minimum of 200' in length from 10,310'-10,110'. WOC and tag at 10,110' or shallower. (top of Wolfcamp at 10,260')**
4. Tag plug across casing stub a minimum of 50' above stub (depending on casing stub depth, length of plug to be approximately 170-180').
5. Once plugs are set the wellhead must be secured and a pressure gauge installed on wellhead. The rig must be moved in within 30 days to drill lateral and cement casing in place. Well is not approved for T/A status without a plug at the 8-5/8" intermediate shoe and a valid MFT.
6. Surface disturbance beyond the existing pad must have prior approval.
7. Closed loop system required.
8. Completion report and subsequent sundry with wellbore schematic required.
9. Well is outside of Delaware participating area. A commercial well determination will need to be submitted.
10. Plug back operations to commence within 60 days of approval.
11. Contact Jim Amos (575-234-5909) for questions regarding interim reclamation.

**CRW 080811**

**PROCEDURE**  
**BIG EDDY UNIT WELL NO. 38**  
**PLUG BACK FOR LOWER BRUSHY CANYON HORIZONTAL RE-ENTRY**  
**EDDY COUNTY, NEW MEXICO**

**CURRENT STATUS:** Well is currently TA as of July 2006. The last casing test was 500 psi in 2006. Prior to TA, the well was completed in the Bone Spring formation from 10,164' – 176' which currently sits below a CIBP (set @ 10,114') and 35' Class H cmt.

**OBJECTIVE:** Per BLM conditions of approval, mill out CIBP above Bone Spring and spot cement plug over Wolfcamp. Cut and pull 5-1/2" casing at TOC and spot in-out plug over casing stub. Spot OH plug across top of Bone Spring and tag after set. From top of BS plug at approximately 6,938', spot cement plug up to 6513'. WOC & tag plug. Spot kick-off plug from 6507' up to 5807'. Tag top of plug and displace hole with 9.5 ppg fresh water mud. POOH laying down tubing and secure wellhead to TA well. Wellbore is now ready for planned re-entry to drill LBC horizontal lateral.

**PROCEDURE:**

1. **PRIOR TO BEGINNING OPERATIONS, ENSURE THAT APPROVED SUNDRY W/ CONDITIONS OF APPROVAL HAS BEEN RECEIVED BY BOPCO. REVIEW SAME VS PROCEDURE FOR CONSISTENCY.**
2. MIRU PU. ND tree. NU 3K BOP with 2-7/8" pipe and blind rams. Test BOP to 3000 psi. POOH with tubing.
3. PU 4-3/4" mill and DC's on 2-7/8" tubing. RIH and mill out CIBP at 10,114' (BLM requiring plug across top of Wolfcamp). Tag CIBP at 12,640' to verify it's still in place.
4. Circulate hole w/ minimum 9.5 ppg fresh water mud to be pre-mixed by Newpark fluids. *Mud properties - Cl- <40,000 ppm, MW 9.5 ppg, vis 40 sec, WL <10.* POOH and LD bit and DC's.
5. RIH w/ open-ended tbg to 10310'. RU Rising Star and spot 35 sx Class H cmt plug (16 ppg, 1.15 yield) from 10,310'-10,002'. This will cover the Top of the Wolfcamp at 10,260', as well as the Bone Spring perms 10,164 -10,176'. PUH and WOC. RIH & tag plug. POOH w/ tbg.
6. PU BOP's. Weld on 5-1/2" lift nipple onto casing. PU on csg and remove casing slips. RU casing jacks and spear if necessary. Reinstall BOP, change out rams to 5-1/2" and test same to 3000 psi.
7. RU Weatherford WL. Run Freepoint. Locate and record depth of free pipe at deepest point (TOC behind 5-1/2" at 7645'; top of Bone Spring @ 6988'). If freepoint is above 7100', call in for further instructions. **Plan to cut casing near TOC.**
8. RU Weatherford W/L Services. PU jet cutter for 5-1/2" 17# N-80 casing and RIH to freepoint depth. Pull tension into casing at cutting depth and cut casing at freepoint. POOH and RD WL.
9. RU LD machine. POOH and LD 5-1/2" csg. RD LD machine.
10. Change out rams to 2-7/8" and test to 3000 psi.

Big Eddy No 38  
Plug back for LBC horizontal re-entry

11. RIH with 2-7/8" prod tbg to 50' below top of cut casing (7695' if cut at est TOC). Circulate hole w/ 9.5 ppg fresh water mud to be pre-mixed by Newpark fluids. *Mud properties - Cl- <40,000 ppm, MW 9.5 ppg, vis 40 sec, WL <10.*
12. Adjust depth to give 50' in and out of casing stub. Spot 40 sx Class H cmt plug (16 ppg, 1.15 yield) from 7695'-7528'. PUH and WOC. RIH & tag plug.
13. PUH to 7038' (50' below top of Bone Spring) and spot 100' cement plug using 50 sx Class H cmt (16 ppg, 1.15 yield) from 7,038'-6,938'. PUH and WOC. RIH & tag plug.
14. From top of plug at 6,938, spot 125 sx cement plug using ~~50~~ sx Class H cmt (16 ppg, 1.15 yield) from 6,938'-6,513'. PUH and WOC. RIH & tag plug.
15. From top of plug at 6,513', spot kick-off plug using 355 sx (50% excess) PLUGCHEM cmt (17 ppg, 1.01 yield) from 6,513'-5,807'. Possible PBTD (100% fill) at 5358'. PUH and WOC. RIH & tag plug. Circulate hole with 9.5 ppg fresh water mud to be pre-mixed by Newpark fluids. *Mud properties - Cl- <40,000 ppm, MW 9.5 ppg, vis 40 sec, WL <10.*
16. POOH laying tubing and secure wellhead to TA well. Wellbore is now ready for planned re-entry to drill LBC horizontal lateral.
17. END OF PLUB-BACK PROCEDURE.

Submitted By: Thomas E. Gentry 6-17-11

Approved By: \_\_\_\_\_

Date: \_\_\_\_\_

#### **Vendor's Contact and Phone Numbers**

Key Energy  
Midland, TX  
Dale Willis  
(432)620-6937 office  
(432)288-0507 cell

Weatherford Wireline  
Midland, TX  
Ernie Garcia  
(432)683-5456 office  
(432)661-5355 cell

New Park Mud  
Bill Butler  
(432)697-8661  
(432)559-5262

Surface casing to be set into the Rustler below all fresh water sands at approximately 467'.

Production casing will be 5-1/2", 17#, J or K-55, 8rd LT&C with ECP (External Casing Packer) and DV Tool set at approximately 7,193' MD. The 5-1/2" casing will be cemented from DV Tool to 800' inside the existing 8-5/8" casing using Halliburton cementing services. The 5-1/2" casing in the lateral will be isolated into separate stages by means of a packer system.

Drilling procedure, BOP diagram, anticipated tops and surface plans attached.

This well is located <sup>Inside</sup> outside the Secretary's Potash area and outside the R-111 Potash area. There are potash leases within 5 miles of the location. (1.5 miles southeast)

BOPCO, L.P., at P. O. Box 2760, Midland, TX, 79702 is a division office of BOPCO, L.P., 201 Main Street, Ft. Worth, TX 76102, Bond No. COB000050 (Nationwide).

**EIGHT POINT DRILLING PROGRAM  
BOPCO, L.P.**

**NAME OF WELL: Big Eddy Unit #38H**

LEGAL DESCRIPTION - SURFACE: 660' FNL & 1980' FWL, Section 34, T21S, R29E, Eddy County, New Mexico.

Lateral BHL: 1200' FSL & 1990' FWL, Section 35, T21S, R29E, Eddy County, New Mexico

**POINT 1: ESTIMATED FORMATION TOPS**

(See No. 2 Below)

**POINT 2: WATER, OIL, GAS AND/OR MINERAL BEARING FORMATIONS**

Anticipated Formation Tops: KB 3,447'  
GL 3,428'

| Formation                 | Estimated<br>Top From KB<br>TVD | MD      | Estimated<br>Subsea Top | BEARING     |
|---------------------------|---------------------------------|---------|-------------------------|-------------|
| T/Fresh Water             | 148'                            | 148'    | +3,122'                 | Fresh Water |
| T/Rustler                 | 303'                            | 303'    | +3,144'                 | Barren      |
| T/Salt                    | 583'                            | 583'    | +2,864'                 | Barren      |
| B/Salt                    | 2,677'                          | 2,677'  | +770'                   | Barren      |
| T/Delaware Mtn Grp        | 3,274'                          | 3,274'  | +173'                   | Barren      |
| T/Bell Canyon             | 3,345'                          | 3,345'  | +102'                   | Oil/Gas     |
| KOP                       | 6,307'                          | 6,307'  | -2,863'                 | Oil/Gas     |
| T/Lower Brushy Canyon     | 6,701'                          | 6,701'  | -3,254'                 | Oil/Gas     |
| T/LBC Marker 1            | 6,821'                          | 6,821'  | -3,374'                 | Oil/Gas     |
| EOC Sand Target           | 6,880'                          | 7,193'  | -3,436'                 | Oil/Gas     |
| TD Horizontal Well        | 7,017'                          | 12,639' | -3,570'                 | Oil/Gas     |
| B/Lower Brushy Canyon SL  | 6,907'                          | 8,203'  | -3,460'                 | Oil/Gas     |
| B/Lower Brushy Canyon BHL | 7,057'                          |         | -3,610'                 | Oil/Gas     |

**POINT 3: CASING PROGRAM**

| <u>TYPE</u>                        | <u>HOLE SIZE</u> | <u>INTERVALS</u> | <u>PURPOSE</u> | <u>CONDITION</u> |
|------------------------------------|------------------|------------------|----------------|------------------|
| 5-1/2", 17#, J-55 or K-55, 8rd LTC | 7-7/8"           | 0' – 12,897'     | Production     | New              |

**CASING DESIGN SAFETY FACTORS:**

| <u>TYPE</u>                          | <u>TENSION</u> | <u>COLLAPSE</u> | <u>BURST</u> |
|--------------------------------------|----------------|-----------------|--------------|
| 5-1/2", 17#, J-55, 8rd LTC           | 2.44           | 1.02            | 1.36         |
| 5-1/2", 17#, K-55, 8rd LTC           | 3.98           | 1.19            | 1.36         |
| <del>5-1/2", 17 #, Flush Joint</del> |                |                 |              |

**DESIGN CRITERIA AND CASING LOADING ASSUMPTIONS:**

2

**SURFACE CASING**

Tension      A 1.6 design factor utilizing the effects of buoyancy (9.2 ppg).

|          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Collapse | A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.48 psi/ft). The effects of axial load on collapse will be considered.                                                                                                                                                                                                                                                                         |
| Burst    | A 1.3 design factor with a surface pressure equal to the fracture gradient at setting depth less a gas gradient to the surface. Internal burst force at the shoe will be fracture pressure at that depth. Backup pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a 1.0 psi/ft gradient. The effects of tension on burst will not be utilized. |

#### PRODUCTION CASING

|          |                                                                                                                                                                                                                                                                       |
|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Tension  | A 1.6 design factor utilizing the effects of buoyancy (11.0 ppg).                                                                                                                                                                                                     |
| Collapse | A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.57 psi/ft). The effects of axial load on collapse will be considered.                                                             |
| Burst    | A 1.25 design factor with anticipated maximum tubing pressure (5,045 psig) on top of the maximum anticipated packer fluid gradient. Backup on production strings will be formation pore pressure (0.43 psi/ft). The effects of tension on burst will not be utilized. |

#### **POINT 4: PRESSURE CONTROL EQUIPMENT (SEE ATTACHED DIAGRAM)**

A 11" x 3000 psi BOP equivalent to Diagram 1 will be nipped up on the surface casing head. The BOP stack, blind and pipe rams, chokes, kill line, Upper and lower Kelly valves, inside BOP, choke manifold when rigged up on the surface casing will be tested to 3000 psig (working pressure of BOPE) and 250 psi by independent tester. Hydril will be tested to 1500 psi.

These tests will be performed:

- a) When initially installed
- b) Whenever any seal subject to test pressure is broken
- c) Following related repairs
- d) At 30 day intervals

A function test to insure that the preventers are operating correctly will be performed on each trip. See the attached Diagram 1 for the minimum criteria for the choke manifold.

**POINT 5: MUD PROGRAM**

3

|                  |                 |               |           |           |           |           |           |
|------------------|-----------------|---------------|-----------|-----------|-----------|-----------|-----------|
| <u>DEPTH</u>     | <u>MUD TYPE</u> | <u>WEIGHT</u> | <u>FV</u> | <u>PV</u> | <u>YP</u> | <u>FL</u> | <u>Ph</u> |
| 6,307' – 12,897' | FW              | 8.4 - 9.2     | 45-35     | NC        | NC        | NC        | 9.5       |

**POINT 6: TECHNICAL STAGES OF OPERATION****A) TESTING**

No drill stem tests are planned

**B) LOGGING.**

Run #1:

PEX (GR-CNL/LDT-AIT) @ TD. GR/CNL to surface.

FMI possible at TD of pilot hole.

Mud Logger: Rig up at surface to assist in picking top of salt.

GR while drilling lateral.

**C) CORING**

No cores are anticipated.

**C) CEMENT**

| <u>INTERVAL</u>                                                      | <u>AMOUNT<br/>SXS</u> | <u>FT OF<br/>FILL</u> | <u>TYPE</u>               | <u>GALS/SX</u> | <u>PPG</u> | <u>FT3/SX</u> |
|----------------------------------------------------------------------|-----------------------|-----------------------|---------------------------|----------------|------------|---------------|
| Cement Plug                                                          | 305                   | 600                   | Halliburton PlugCem - WSH | 3.92           | 17         | 1.01          |
| <b>PRODUCTION:</b>                                                   |                       |                       |                           |                |            |               |
| 2nd 1 <sup>st</sup> Stage<br>Lead: 2,550'-<br>5,807' (50%<br>excess) | 440                   | 3,257                 | EconoCem - HLH            | 10.78          | 12.5       | 1.95          |
| Tail: 5,807' - 7,193'<br>(50% excess)                                | 300                   | 1,386                 | VersaCem - H              | 5.49           | 14.4       | 1.22          |

**E) DIRECTIONAL DRILLING**

BOPCO, L.P. plans to plug back the existing 7-7/8" open hole from 5,907' to 6,507', with 305 sks of cement. See Point 8 part "C" for details. This cement plug will be drilled out to 5,857', tested and then a 7-7/8" directional hole will be kicked off building angle at 10 deg/100' and have an azimuth of 122.11 degrees. Azimuth will be maintained to the end of the curve at 7,194 MD (6,880' TVD). Inclination of 88.654 degrees and Azimuth of 122.11 degrees will be maintained for 5,703', to 12,897 MD (7,014' TVD). At this depth 5-1/2", 17#, J or K-55, 8rd, LTC or UFJ casing will be installed and cemented with DV Tool and ECP @ approximately 7,194' MD (6,880' TVD) with cement being circulated to 800' up the existing 8-5/8" casing. The casing in the lateral will be 5-1/2", 17#, J or K- 55, 8rd, LTC, with a multi-stage packer system.

**POINT 7: ANTICIPATED RESERVOIR CONDITIONS**

Normal pressures are anticipated throughout the Delaware section. A BHP of 3,064 psi (max) or MWE of 8.4 ppg is expected. H<sub>2</sub>S contingency plan is attached.

**POINT 8: OTHER PERTINENT INFORMATION**

**A) Auxiliary Equipment**

Upper and lower kelly cocks. Full opening stab in valve on the rig floor.

**B) Anticipated Starting Date**

Spud date is 8/01/2011.

15 days drilling operations

7 days completion operations

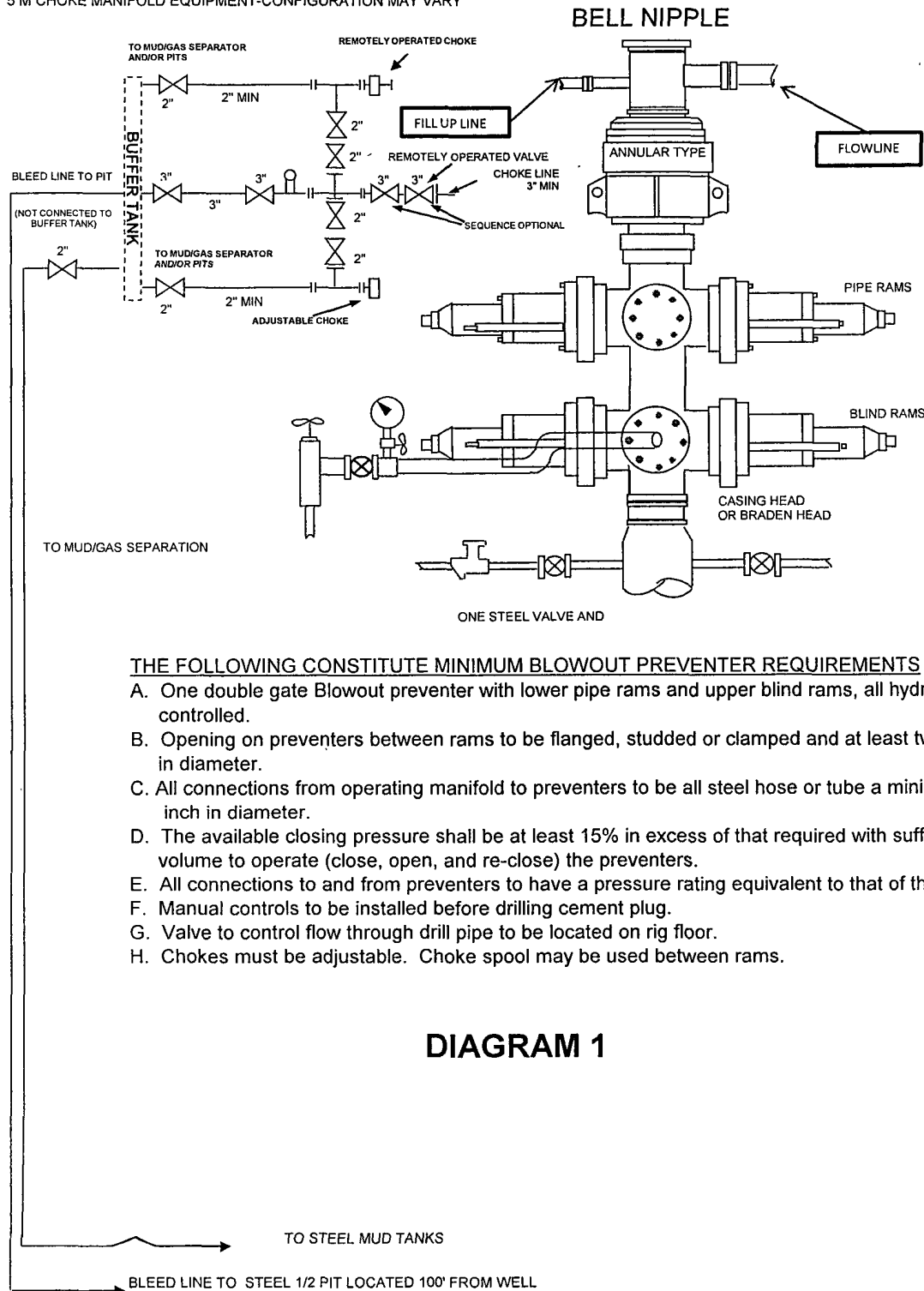
**C) Plug back cement will be 305 sks (approximately) Halliburton PugCem Cement.**

TAM/PJK

# BOPCO, L. P.

## 11" X 3-M WP BOPE WITH 3-M WP ANNULAR

5 M CHOKE MANIFOLD EQUIPMENT-CONFIGURATION MAY VARY



### THE FOLLOWING CONSTITUTE MINIMUM BLOWOUT PREVENTER REQUIREMENTS

- A. One double gate Blowout preventer with lower pipe rams and upper blind rams, all hydraulically controlled.
- B. Opening on preventers between rams to be flanged, studded or clamped and at least two inches in diameter.
- C. All connections from operating manifold to preventers to be all steel hose or tube a minimum of one inch in diameter.
- D. The available closing pressure shall be at least 15% in excess of that required with sufficient volume to operate (close, open, and re-close) the preventers.
- E. All connections to and from preventers to have a pressure rating equivalent to that of the BOPs.
- F. Manual controls to be installed before drilling cement plug.
- G. Valve to control flow through drill pipe to be located on rig floor.
- H. Chokes must be adjustable. Choke spool may be used between rams.



# BOPCO, L.P.

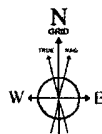
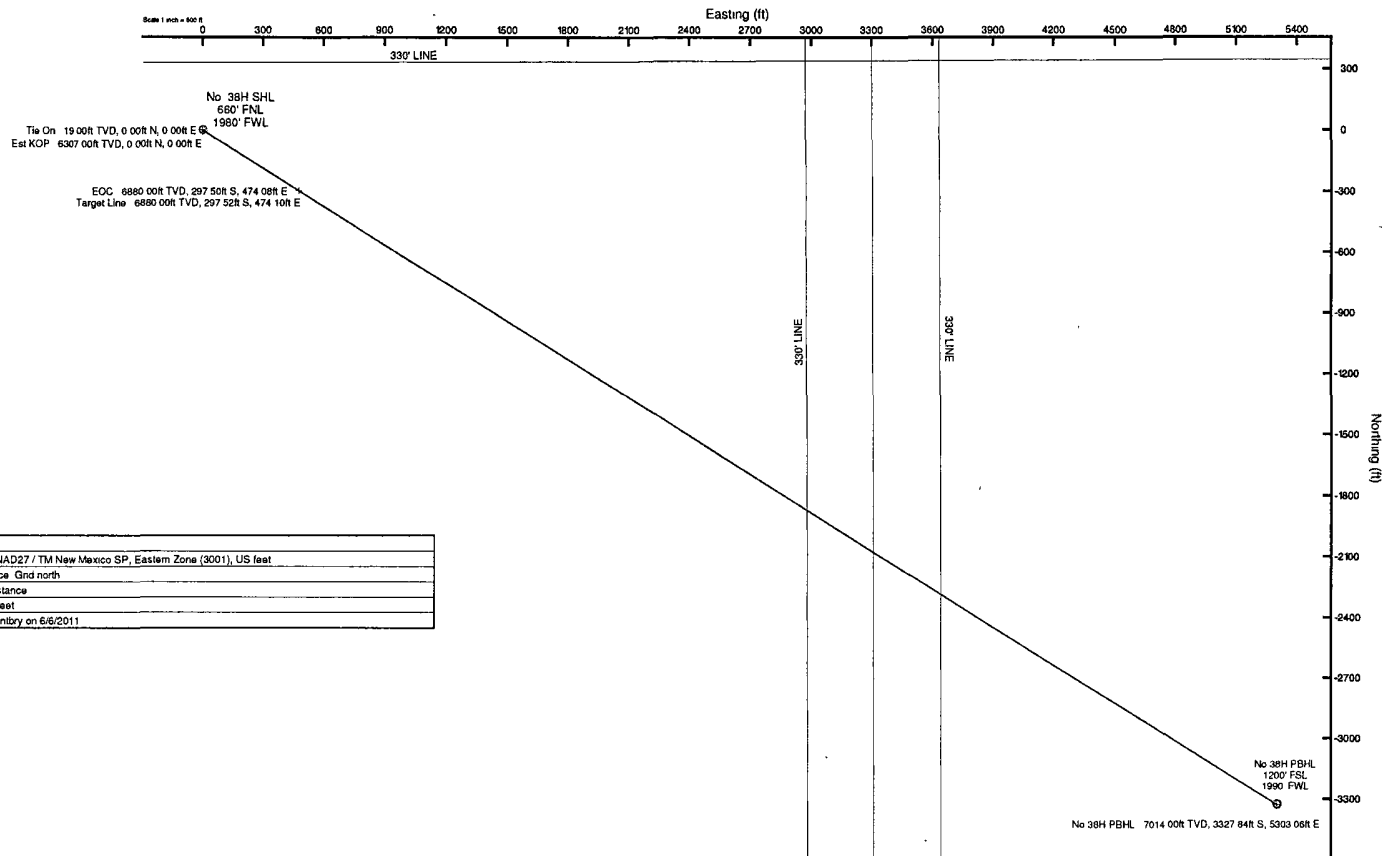
Location Eddy County, NM  
Field (Big Eddy) Sec 34, T21S, R29E  
Facility Big Eddy Unit No. 38H

Slot No 38H SHL  
Well No 38H  
Wellbore No 38H PWB



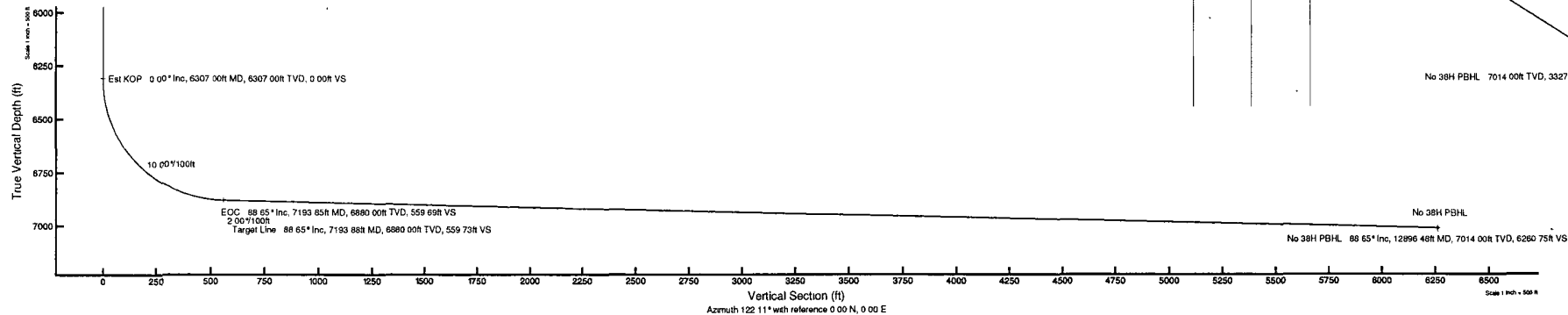
## Well Profile Data

| Design Comment | MD (ft)  | Inc (°) | Az (°)  | TVD (ft) | Local N (ft) | Local E (ft) | DLS (ft/100ft) | VS (ft) |
|----------------|----------|---------|---------|----------|--------------|--------------|----------------|---------|
| Tie On         | 19 00    | 0 000   | 122 110 | 19 00    | 0 00         | 0 00         | 0 00           | 0 00    |
| Est KOP        | 6307 00  | 0 000   | 122 110 | 6307 00  | 0 00         | 0 00         | 0 00           | 0 00    |
| EOC            | 7193 85  | 88 654  | 122 110 | 6880 00  | -297 50      | 474 08       | 10 00          | 559 69  |
| Target Line    | 7193 88  | 88 654  | 122 110 | 6880 00  | -297 52      | 474 10       | 2 00           | 559 73  |
| No 38H PBHL    | 12896 48 | 88 654  | 122 110 | 7014 00  | -3327 84     | 5303 06      | 0 00           | 6260 75 |



BGGM (1945 0 to 2012 0) Dip 60 32° Field 48735 1 nT  
Magnetic North is 7 84 degrees East of True North (at 6/22/2011)  
Grid North is 0 19 degrees East of True North  
To correct azimuth from True to Grid subtract 0 19 degrees  
To correct azimuth from Magnetic to Grid add 7 65 degrees  
For example if the Magnetic North Azimuth = 90 degrees, then the Grid North Azimuth = 90 + 7 65 = 97 65

|                                                                |                                                                    |
|----------------------------------------------------------------|--------------------------------------------------------------------|
| Plot reference wellpath is Prelim_2                            |                                                                    |
| True vertical depths are referenced to Rig on No. 38H SHL (KB) | Grid System NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet |
| Measured depths are referenced to Rig on No. 38H SHL (KB)      | North Reference Grid north                                         |
| Rig on No. 38H SHL (KB) to Mean Sea Level 3447 feet            | Scale True distance                                                |
| Mean Sea Level to Mud Line (At Slot No. 38H SHL) -3428 feet    | Depths are in feet                                                 |
| Coordinates are in feet referenced to Slot                     | Created by genibry on 6/6/2011                                     |





# Planned Wellpath Report

Prelim\_2

Page 1 of 4



## REFERENCE WELLPATH IDENTIFICATION

|          |                               |          |             |
|----------|-------------------------------|----------|-------------|
| Operator | BOPCO, L.P.                   | Slot     | No. 38H SHL |
| Area     | Eddy County, NM               | Well     | No.38H      |
| Field    | (Big Eddy) Sec 34, T21S, R29E | Wellbore | No.38H PWB  |
| Facility | Big Eddy Unit No. 38H         |          |             |

## REPORT SETUP INFORMATION

|                     |                                                        |                      |                           |
|---------------------|--------------------------------------------------------|----------------------|---------------------------|
| Projection System   | NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet | Software System      | WellArchitect® 3.0.0      |
| North Reference     | Grid                                                   | User                 | Gentbry                   |
| Scale               | 0.999923                                               | Report Generated     | 6/6/2011 at 8:50:06 AM    |
| Convergence at slot | 0.19° East                                             | Database/Source file | WA Midland/No.38H_PWB.xml |

## WELLPATH LOCATION

|                       | Local coordinates |          | Grid coordinates |                 | Geographic coordinates |                 |
|-----------------------|-------------------|----------|------------------|-----------------|------------------------|-----------------|
|                       | North[ft]         | East[ft] | Easting[US ft]   | Northing[US ft] | Latitude               | Longitude       |
| Slot Location         | 0.00              | 0.00     | 610823.03        | 524402.80       | 32°26'28.262"N         | 103°58'26.774"W |
| Facility Reference Pt |                   |          | 610823.03        | 524402.80       | 32°26'28.262"N         | 103°58'26.774"W |
| Field Reference Pt    |                   |          | 610823.03        | 524402.80       | 32°26'28.262"N         | 103°58'26.774"W |

## WELLPATH DATUM

|                          |                         |                                                           |                   |
|--------------------------|-------------------------|-----------------------------------------------------------|-------------------|
| Calculation method       | Minimum curvature       | Rig on No. 38H SHL (KB) to Facility Vertical Datum        | 19.00ft           |
| Horizontal Reference Pt  | Slot                    | Rig on No. 38H SHL (KB) to Mean Sea Level                 | 3447.00ft         |
| Vertical Reference Pt    | Rig on No. 38H SHL (KB) | Rig on No. 38H SHL (KB) to Mud Line at Slot (No. 38H SHL) | 19.00ft           |
| MD Reference Pt          | Rig on No. 38H SHL (KB) | Section Origin                                            | N 0.00, E 0.00 ft |
| Field Vertical Reference | Mean Sea Level          | Section Azimuth                                           | 122.11°           |



# Planned Wellpath Report

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## REFERENCE WELLPATH IDENTIFICATION

|          |                               |          |             |
|----------|-------------------------------|----------|-------------|
| Operator | BOPCO, L.P.                   | Slot     | No. 38H SHL |
| Area     | Eddy County, NM               | Well     | No.38H      |
| Field    | (Big Eddy) Sec 34, T21S, R29E | Wellbore | No.38H PWB  |
| Facility | Big Eddy Unit No. 38H         |          |             |

## WELLPATH DATA (134 stations) † = interpolated/extrapolated station

| MD [ft]  | Inclination [°] | Azimuth [°] | TVD [ft] | Vert Sect [ft] | North [ft] | East [ft] | Grid East [US ft] | Grid North [US ft] | Latitude       | Longitude       | DLS [°/100ft] | Comments |
|----------|-----------------|-------------|----------|----------------|------------|-----------|-------------------|--------------------|----------------|-----------------|---------------|----------|
| 0.00†    | 0.000           | 122.110     | 0.00     | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 19.00    | 0.000           | 122.110     | 19.00    | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          | Tie On   |
| 119.00†  | 0.000           | 122.110     | 119.00   | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 219.00†  | 0.000           | 122.110     | 219.00   | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 319.00†  | 0.000           | 122.110     | 319.00   | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 419.00†  | 0.000           | 122.110     | 419.00   | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 519.00†  | 0.000           | 122.110     | 519.00   | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 619.00†  | 0.000           | 122.110     | 619.00   | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 719.00†  | 0.000           | 122.110     | 719.00   | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 819.00†  | 0.000           | 122.110     | 819.00   | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 919.00†  | 0.000           | 122.110     | 919.00   | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 1019.00† | 0.000           | 122.110     | 1019.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 1119.00† | 0.000           | 122.110     | 1119.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 1219.00† | 0.000           | 122.110     | 1219.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 1319.00† | 0.000           | 122.110     | 1319.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 1419.00† | 0.000           | 122.110     | 1419.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 1519.00† | 0.000           | 122.110     | 1519.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 1619.00† | 0.000           | 122.110     | 1619.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 1719.00† | 0.000           | 122.110     | 1719.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 1819.00† | 0.000           | 122.110     | 1819.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 1919.00† | 0.000           | 122.110     | 1919.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 2019.00† | 0.000           | 122.110     | 2019.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 2119.00† | 0.000           | 122.110     | 2119.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 2219.00† | 0.000           | 122.110     | 2219.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 2319.00† | 0.000           | 122.110     | 2319.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 2419.00† | 0.000           | 122.110     | 2419.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 2519.00† | 0.000           | 122.110     | 2519.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 2619.00† | 0.000           | 122.110     | 2619.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 2719.00† | 0.000           | 122.110     | 2719.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 2819.00† | 0.000           | 122.110     | 2819.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 2919.00† | 0.000           | 122.110     | 2919.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 3019.00† | 0.000           | 122.110     | 3019.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 3119.00† | 0.000           | 122.110     | 3119.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 3219.00† | 0.000           | 122.110     | 3219.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 3319.00† | 0.000           | 122.110     | 3319.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 3419.00† | 0.000           | 122.110     | 3419.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 3519.00† | 0.000           | 122.110     | 3519.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 3619.00† | 0.000           | 122.110     | 3619.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 3719.00† | 0.000           | 122.110     | 3719.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 3819.00† | 0.000           | 122.110     | 3819.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 3919.00† | 0.000           | 122.110     | 3919.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 4019.00† | 0.000           | 122.110     | 4019.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 4119.00† | 0.000           | 122.110     | 4119.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 4219.00† | 0.000           | 122.110     | 4219.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |
| 4319.00† | 0.000           | 122.110     | 4319.00  | 0.00           | 0.00       | 0.00      | 610823.03         | 524402.80          | 32°26'28.262"N | 103°58'26.774"W | 0.00          |          |



# Planned Wellpath Report

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## REFERENCE WELLPATH IDENTIFICATION

|          |                               |          |             |
|----------|-------------------------------|----------|-------------|
| Operator | BOPCO, L.P.                   | Slot     | No. 38H SHL |
| Area     | Eddy County, NM               | Well     | No.38H      |
| Field    | (Big Eddy) Sec 34, T21S, R29E | Wellbore | No.38H PWB  |
| Facility | Big Eddy Unit No. 38H         |          |             |

## WELLPATH DATA (134 stations) † = interpolated/extrapolated station

| MD<br>[ft] | Inclination<br>[°] | Azimuth<br>[°] | TVD<br>[ft] | Vert Sect<br>[ft] | North<br>[ft] | East<br>[ft] | Grid East<br>[US ft] | Grid North<br>[US ft] | Latitude       | Longitude       | DLS<br>[°/100ft] | Comments    |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------------|-----------------------|----------------|-----------------|------------------|-------------|
| 4419.00†   | 0.000              | 122.110        | 4419.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 4519.00†   | 0.000              | 122.110        | 4519.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 4619.00†   | 0.000              | 122.110        | 4619.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 4719.00†   | 0.000              | 122.110        | 4719.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 4819.00†   | 0.000              | 122.110        | 4819.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 4919.00†   | 0.000              | 122.110        | 4919.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 5019.00†   | 0.000              | 122.110        | 5019.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 5119.00†   | 0.000              | 122.110        | 5119.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 5219.00†   | 0.000              | 122.110        | 5219.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 5319.00†   | 0.000              | 122.110        | 5319.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 5419.00†   | 0.000              | 122.110        | 5419.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 5519.00†   | 0.000              | 122.110        | 5519.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 5619.00†   | 0.000              | 122.110        | 5619.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 5719.00†   | 0.000              | 122.110        | 5719.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 5819.00†   | 0.000              | 122.110        | 5819.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 5919.00†   | 0.000              | 122.110        | 5919.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 6019.00†   | 0.000              | 122.110        | 6019.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 6119.00†   | 0.000              | 122.110        | 6119.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 6219.00†   | 0.000              | 122.110        | 6219.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             |             |
| 6307.00    | 0.000              | 122.110        | 6307.00     | 0.00              | 0.00          | 0.00         | 610823.03            | 524402.80             | 32°26'28.262"N | 103°58'26.774"W | 0.00             | Est KOP     |
| 6319.00†   | 1.200              | 122.110        | 6319.00     | 0.13              | -0.07         | 0.11         | 610823.14            | 524402.74             | 32°26'28.261"N | 103°58'26.773"W | 10.00            |             |
| 6419.00†   | 11.196             | 122.110        | 6418.29     | 10.91             | -5.80         | 9.24         | 610832.27            | 524397.01             | 32°26'28.204"N | 103°58'26.666"W | 10.00            |             |
| 6519.00†   | 21.193             | 122.110        | 6514.20     | 38.76             | -20.60        | 32.83        | 610855.86            | 524382.20             | 32°26'28.057"N | 103°58'26.392"W | 10.00            |             |
| 6619.00†   | 31.189             | 122.110        | 6603.82     | 82.84             | -44.03        | 70.17        | 610893.20            | 524358.77             | 32°26'27.824"N | 103°58'25.957"W | 10.00            |             |
| 6719.00†   | 41.186             | 122.110        | 6684.42     | 141.81            | -75.38        | 120.12       | 610943.14            | 524327.43             | 32°26'27.512"N | 103°58'25.375"W | 10.00            |             |
| 6819.00†   | 51.182             | 122.110        | 6753.57     | 213.88            | -113.68       | 181.16       | 611004.18            | 524289.13             | 32°26'27.131"N | 103°58'24.665"W | 10.00            |             |
| 6919.00†   | 61.179             | 122.110        | 6809.16     | 296.85            | -157.79       | 251.44       | 611074.45            | 524245.03             | 32°26'26.692"N | 103°58'23.846"W | 10.00            |             |
| 7019.00†   | 71.175             | 122.110        | 6849.50     | 388.21            | -206.35       | 328.83       | 611151.83            | 524196.47             | 32°26'26.209"N | 103°58'22.945"W | 10.00            |             |
| 7119.00†   | 81.172             | 122.110        | 6873.37     | 485.19            | -257.90       | 410.97       | 611233.97            | 524144.92             | 32°26'25.696"N | 103°58'21.989"W | 10.00            |             |
| 7193.85    | 88.654             | 122.110        | 6880.00     | 559.69            | -297.50       | 474.08       | 611297.07            | 524105.32             | 32°26'25.303"N | 103°58'21.254"W | 10.00            | EOC         |
| 7193.88    | 88.654             | 122.110        | 6880.00     | 559.73            | -297.52       | 474.10       | 611297.10            | 524105.31             | 32°26'25.302"N | 103°58'21.254"W | 2.00             | Target Line |
| 7219.00†   | 88.654             | 122.110        | 6880.59     | 584.84            | -310.87       | 495.37       | 611318.37            | 524091.96             | 32°26'25.170"N | 103°58'21.006"W | 0.00             |             |
| 7319.00†   | 88.654             | 122.110        | 6882.94     | 684.81            | -364.01       | 580.05       | 611403.04            | 524038.82             | 32°26'24.641"N | 103°58'20.020"W | 0.00             |             |
| 7419.00†   | 88.654             | 122.110        | 6885.29     | 784.78            | -417.15       | 664.73       | 611487.71            | 523985.69             | 32°26'24.112"N | 103°58'19.034"W | 0.00             |             |
| 7519.00†   | 88.654             | 122.110        | 6887.64     | 884.75            | -470.29       | 749.41       | 611572.39            | 523932.55             | 32°26'23.584"N | 103°58'18.048"W | 0.00             |             |
| 7619.00†   | 88.654             | 122.110        | 6889.99     | 984.73            | -523.43       | 834.09       | 611657.06            | 523879.42             | 32°26'23.055"N | 103°58'17.062"W | 0.00             |             |
| 7719.00†   | 88.654             | 122.110        | 6892.34     | 1084.70           | -576.56       | 918.77       | 611741.73            | 523826.28             | 32°26'22.526"N | 103°58'16.076"W | 0.00             |             |
| 7819.00†   | 88.654             | 122.110        | 6894.69     | 1184.67           | -629.70       | 1003.45      | 611826.41            | 523773.15             | 32°26'21.998"N | 103°58'15.090"W | 0.00             |             |
| 7919.00†   | 88.654             | 122.110        | 6897.04     | 1284.64           | -682.84       | 1088.13      | 611911.08            | 523720.01             | 32°26'21.469"N | 103°58'14.104"W | 0.00             |             |
| 8019.00†   | 88.654             | 122.110        | 6899.39     | 1384.62           | -735.98       | 1172.81      | 611995.75            | 523666.88             | 32°26'20.940"N | 103°58'13.119"W | 0.00             |             |
| 8119.00†   | 88.654             | 122.110        | 6901.74     | 1484.59           | -789.12       | 1257.49      | 612080.43            | 523613.74             | 32°26'20.412"N | 103°58'12.133"W | 0.00             |             |
| 8219.00†   | 88.654             | 122.110        | 6904.09     | 1584.56           | -842.26       | 1342.17      | 612165.10            | 523560.61             | 32°26'19.883"N | 103°58'11.147"W | 0.00             |             |
| 8319.00†   | 88.654             | 122.110        | 6906.44     | 1684.53           | -895.40       | 1426.85      | 612249.77            | 523507.47             | 32°26'19.354"N | 103°58'10.161"W | 0.00             |             |
| 8419.00†   | 88.654             | 122.110        | 6908.79     | 1784.51           | -948.54       | 1511.53      | 612334.45            | 523454.34             | 32°26'18.826"N | 103°58'09.175"W | 0.00             |             |
| 8519.00†   | 88.654             | 122.110        | 6911.14     | 1884.48           | -1001.68      | 1596.21      | 612419.12            | 523401.20             | 32°26'18.297"N | 103°58'08.189"W | 0.00             |             |



# Planned Wellpath Report

Prelim\_2

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## REFERENCE WELLPATH IDENTIFICATION

|          |                               |          |             |
|----------|-------------------------------|----------|-------------|
| Operator | BOPCO, L.P.                   | Slot     | No. 38H SHL |
| Area     | Eddy County, NM               | Well     | No.38H      |
| Field    | (Big Eddy) Sec 34, T21S, R29E | Wellbore | No.38H PWB  |
| Facility | Big Eddy Unit No. 38H         |          |             |

## WELLPATH DATA (134 stations) † = interpolated/extrapolated station

| MD<br>[ft] | Inclination<br>[°] | Azimuth<br>[°] | TVD<br>[ft] | Vert Sect<br>[ft] | North<br>[ft] | East<br>[ft] | Grid East<br>[US ft] | Grid North<br>[US ft] | Latitude       | Longitude       | DLS<br>[°/100ft] | Comments    |
|------------|--------------------|----------------|-------------|-------------------|---------------|--------------|----------------------|-----------------------|----------------|-----------------|------------------|-------------|
| 8619.00†   | 88.654             | 122.110        | 6913.49     | 1984.45           | -1054.82      | 1680.89      | 612503.79            | 523348.07             | 32°26'17.768"N | 103°58'07.203"W | 0.00             |             |
| 8719.00†   | 88.654             | 122.110        | 6915.84     | 2084.42           | -1107.96      | 1765.57      | 612588.47            | 523294.93             | 32°26'17.240"N | 103°58'06.217"W | 0.00             |             |
| 8819.00†   | 88.654             | 122.110        | 6918.19     | 2184.40           | -1161.10      | 1850.25      | 612673.14            | 523241.80             | 32°26'16.711"N | 103°58'05.231"W | 0.00             |             |
| 8919.00†   | 88.654             | 122.110        | 6920.54     | 2284.37           | -1214.24      | 1934.93      | 612757.81            | 523188.66             | 32°26'16.182"N | 103°58'04.245"W | 0.00             |             |
| 9019.00†   | 88.654             | 122.110        | 6922.89     | 2384.34           | -1267.38      | 2019.61      | 612842.49            | 523135.53             | 32°26'15.654"N | 103°58'03.259"W | 0.00             |             |
| 9119.00†   | 88.654             | 122.110        | 6925.24     | 2484.31           | -1320.52      | 2104.29      | 612927.16            | 523082.39             | 32°26'15.125"N | 103°58'02.274"W | 0.00             |             |
| 9219.00†   | 88.654             | 122.110        | 6927.59     | 2584.29           | -1373.65      | 2188.97      | 613011.83            | 523029.26             | 32°26'14.596"N | 103°58'01.288"W | 0.00             |             |
| 9319.00†   | 88.654             | 122.110        | 6929.94     | 2684.26           | -1426.79      | 2273.65      | 613096.51            | 522976.12             | 32°26'14.067"N | 103°58'00.302"W | 0.00             |             |
| 9419.00†   | 88.654             | 122.110        | 6932.29     | 2784.23           | -1479.93      | 2358.33      | 613181.18            | 522922.99             | 32°26'13.539"N | 103°57'59.316"W | 0.00             |             |
| 9519.00†   | 88.654             | 122.110        | 6934.64     | 2884.20           | -1533.07      | 2443.01      | 613265.85            | 522869.85             | 32°26'13.010"N | 103°57'58.330"W | 0.00             |             |
| 9619.00†   | 88.654             | 122.110        | 6936.99     | 2984.18           | -1586.21      | 2527.69      | 613350.53            | 522816.72             | 32°26'12.481"N | 103°57'57.344"W | 0.00             |             |
| 9719.00†   | 88.654             | 122.110        | 6939.34     | 3084.15           | -1639.35      | 2612.37      | 613435.20            | 522763.58             | 32°26'11.953"N | 103°57'56.358"W | 0.00             |             |
| 9819.00†   | 88.654             | 122.110        | 6941.69     | 3184.12           | -1692.49      | 2697.05      | 613519.87            | 522710.45             | 32°26'11.424"N | 103°57'55.372"W | 0.00             |             |
| 9919.00†   | 88.654             | 122.110        | 6944.04     | 3284.09           | -1745.63      | 2781.73      | 613604.55            | 522657.31             | 32°26'10.895"N | 103°57'54.386"W | 0.00             |             |
| 10019.00†  | 88.654             | 122.110        | 6946.39     | 3384.06           | -1798.77      | 2866.41      | 613689.22            | 522604.18             | 32°26'10.367"N | 103°57'53.401"W | 0.00             |             |
| 10119.00†  | 88.654             | 122.110        | 6948.73     | 3484.04           | -1851.91      | 2951.09      | 613773.89            | 522551.04             | 32°26'09.838"N | 103°57'52.415"W | 0.00             |             |
| 10219.00†  | 88.654             | 122.110        | 6951.08     | 3584.01           | -1905.05      | 3035.77      | 613858.57            | 522497.91             | 32°26'09.309"N | 103°57'51.429"W | 0.00             |             |
| 10319.00†  | 88.654             | 122.110        | 6953.43     | 3683.98           | -1958.19      | 3120.45      | 613943.24            | 522444.77             | 32°26'08.780"N | 103°57'50.443"W | 0.00             |             |
| 10419.00†  | 88.654             | 122.110        | 6955.78     | 3783.95           | -2011.33      | 3205.13      | 614027.91            | 522391.64             | 32°26'08.252"N | 103°57'49.457"W | 0.00             |             |
| 10519.00†  | 88.654             | 122.110        | 6958.13     | 3883.93           | -2064.47      | 3289.81      | 614112.59            | 522338.50             | 32°26'07.723"N | 103°57'48.471"W | 0.00             |             |
| 10619.00†  | 88.654             | 122.110        | 6960.48     | 3983.90           | -2117.60      | 3374.49      | 614197.26            | 522285.37             | 32°26'07.194"N | 103°57'47.485"W | 0.00             |             |
| 10719.00†  | 88.654             | 122.110        | 6962.83     | 4083.87           | -2170.74      | 3459.17      | 614281.93            | 522232.23             | 32°26'06.666"N | 103°57'46.500"W | 0.00             |             |
| 10819.00†  | 88.654             | 122.110        | 6965.18     | 4183.84           | -2223.88      | 3543.85      | 614366.61            | 522179.10             | 32°26'06.137"N | 103°57'45.514"W | 0.00             |             |
| 10919.00†  | 88.654             | 122.110        | 6967.53     | 4283.82           | -2277.02      | 3628.53      | 614451.28            | 522125.96             | 32°26'05.608"N | 103°57'44.528"W | 0.00             |             |
| 11019.00†  | 88.654             | 122.110        | 6969.88     | 4383.79           | -2330.16      | 3713.21      | 614535.95            | 522072.82             | 32°26'05.079"N | 103°57'43.542"W | 0.00             |             |
| 11119.00†  | 88.654             | 122.110        | 6972.23     | 4483.76           | -2383.30      | 3797.89      | 614620.63            | 522019.69             | 32°26'04.551"N | 103°57'42.556"W | 0.00             |             |
| 11219.00†  | 88.654             | 122.110        | 6974.58     | 4583.73           | -2436.44      | 3882.57      | 614705.30            | 521966.55             | 32°26'04.022"N | 103°57'41.570"W | 0.00             |             |
| 11319.00†  | 88.654             | 122.110        | 6976.93     | 4683.71           | -2489.58      | 3967.25      | 614789.97            | 521913.42             | 32°26'03.493"N | 103°57'40.585"W | 0.00             |             |
| 11419.00†  | 88.654             | 122.110        | 6979.28     | 4783.68           | -2542.72      | 4051.93      | 614874.64            | 521860.28             | 32°26'02.964"N | 103°57'39.599"W | 0.00             |             |
| 11519.00†  | 88.654             | 122.110        | 6981.63     | 4883.65           | -2595.86      | 4136.61      | 614959.32            | 521807.15             | 32°26'02.436"N | 103°57'38.613"W | 0.00             |             |
| 11619.00†  | 88.654             | 122.110        | 6983.98     | 4983.62           | -2649.00      | 4221.29      | 615043.99            | 521754.01             | 32°26'01.907"N | 103°57'37.627"W | 0.00             |             |
| 11719.00†  | 88.654             | 122.110        | 6986.33     | 5083.60           | -2702.14      | 4305.97      | 615128.66            | 521700.88             | 32°26'01.378"N | 103°57'36.641"W | 0.00             |             |
| 11819.00†  | 88.654             | 122.110        | 6988.68     | 5183.57           | -2755.28      | 4390.65      | 615213.34            | 521647.74             | 32°26'00.850"N | 103°57'35.656"W | 0.00             |             |
| 11919.00†  | 88.654             | 122.110        | 6991.03     | 5283.54           | -2808.42      | 4475.33      | 615298.01            | 521594.61             | 32°26'00.321"N | 103°57'34.670"W | 0.00             |             |
| 12019.00†  | 88.654             | 122.110        | 6993.38     | 5383.51           | -2861.55      | 4560.01      | 615382.68            | 521541.47             | 32°25'59.792"N | 103°57'33.684"W | 0.00             |             |
| 12119.00†  | 88.654             | 122.110        | 6995.73     | 5483.48           | -2914.69      | 4644.69      | 615467.36            | 521488.34             | 32°25'59.263"N | 103°57'32.698"W | 0.00             |             |
| 12219.00†  | 88.654             | 122.110        | 6998.08     | 5583.46           | -2967.83      | 4729.37      | 615552.03            | 521435.20             | 32°25'58.735"N | 103°57'31.712"W | 0.00             |             |
| 12319.00†  | 88.654             | 122.110        | 7000.43     | 5683.43           | -3020.97      | 4814.05      | 615636.70            | 521382.07             | 32°25'58.206"N | 103°57'30.727"W | 0.00             |             |
| 12419.00†  | 88.654             | 122.110        | 7002.78     | 5783.40           | -3074.11      | 4898.73      | 615721.38            | 521328.93             | 32°25'57.677"N | 103°57'29.741"W | 0.00             |             |
| 12519.00†  | 88.654             | 122.110        | 7005.13     | 5883.37           | -3127.25      | 4983.41      | 615806.05            | 521275.80             | 32°25'57.148"N | 103°57'28.755"W | 0.00             |             |
| 12619.00†  | 88.654             | 122.110        | 7007.48     | 5983.35           | -3180.39      | 5068.09      | 615890.72            | 521222.66             | 32°25'56.619"N | 103°57'27.769"W | 0.00             |             |
| 12719.00†  | 88.654             | 122.110        | 7009.83     | 6083.32           | -3233.53      | 5152.77      | 615975.40            | 521169.53             | 32°25'56.091"N | 103°57'26.783"W | 0.00             |             |
| 12819.00†  | 88.654             | 122.110        | 7012.18     | 6183.29           | -3286.67      | 5237.45      | 616060.07            | 521116.39             | 32°25'55.562"N | 103°57'25.798"W | 0.00             |             |
| 12896.48   | 88.654             | 122.110        | 7014.00†    | 6260.75           | -3327.84      | 5303.06      | 616125.68            | 521075.22             | 32°25'55.152"N | 103°57'25.034"W | 0.00             | No 38H PBHL |

## TARGETS

| Name | MD | TVD | North | East | Grid East | Grid North | Latitude | Longitude | Shape |
|------|----|-----|-------|------|-----------|------------|----------|-----------|-------|
|------|----|-----|-------|------|-----------|------------|----------|-----------|-------|

|                | [ft]     | [ft]    | [ft]     | [ft]    | [US ft]   | [US ft]   |                |                 |       |
|----------------|----------|---------|----------|---------|-----------|-----------|----------------|-----------------|-------|
| 1) No.38H PBHL | 12896.48 | 7014.00 | -3327.84 | 5303.06 | 616125.68 | 521075.22 | 32°25'55.152"N | 103°57'25.034"W | point |

| SURVEY PROGRAM - Ref Wellbore: No.38H PWB - Ref Wellpath: Prelim_2 |                |                              |  |                  |  |            |
|--------------------------------------------------------------------|----------------|------------------------------|--|------------------|--|------------|
| Start MD<br>[ft]                                                   | End MD<br>[ft] | Positional Uncertainty Model |  | Log Name/Comment |  | Wellbore   |
| 19.00                                                              | 12896.48       | NaviTrak (Standard)          |  |                  |  | No.38H PWB |