Form 3160-3 (August 2007)

HOBBS OCD

APR 22 2013

RECEIVED

ATS-13-370

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.: NM-27507 (SL) NM-107393 (BHL)

6. If Indian, Allotee or Tribe Name:

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

1a. Type of work: ☑ DRILL ☐ REENTER

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.: Red Hills 21 BO Fed Com #1H <398357>

2. Name of Operator: Mewbourne Oil Company <14744>

9. API Well No.: 30-025-41129

3a. Address: PO Box 5270, Hobbs, NM 88241

3b. Phone No. (include area code): 575-393-5905

10. Field and Pool, or Exploratory: Jennings Upper Bone Spring Shale <97838>

4. Location of Well (Report location clearly and in accordance with any State requirements.*)

At surface: 150' FNL & 2310' FEL, Sec. 21 T26S R32E

At proposed prod. zone: 330' FSL & 2310' FEL, Sec. 21 T26S R32E

11. Sec., T. R. M. or Blk. and Survey or Area: Sec. 21 T26S R32E

14. Distance in miles and direction from nearest town or post office*: 30 miles SW of Jal, NM

12. County or Parish: Lea

13. State: NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any): 150'

16. No. of acres in lease: NM-27507-640, nm-107393-538.92

17. Spacing Unit dedicated to this well: 160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.: 665' MOC Red Hills 21 #2H.

19. Proposed Depth: 13,919' - MD, 9337' - TVD

20. BLM/BIA Bond No. on file: NM-1693 Nationwide, NMB000919

21. Elevations (Show whether DF, KDB, RT, GL, etc.): 3157' GL

22. Approximate date work will start*: 04/01/2013

23. Estimated duration: 60 days

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature: Bradley Bishop — Name (Printed/Typed): Bradley Bishop — Date:

Title:

Approved by (Signature): /s/George MacDonell — Name (Printed/Typed): /s/George MacDonell — Date: APR 19 2013

Title: FIELD MANAGER — Office: CARLSBAD FIELD OFFICE

Application approval 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.
Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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.

(Continued on page 2)

*(Instructions on page 2)

Carlsbad Controlled Water Basin

K 04/23/13

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

APR 24 2013

**Drilling Program**
**Mewbourne Oil Company**
Red Hills West 21 BO Fed Com #1H
150' FNL & 2310' FEL (SHL)
Sec 21-T26S-R32E
Lea County, New Mexico

**1. The estimated (TVD) tops of geological markers are as follows:**

| | |
|---|---|
| Rustler | 750' |
| Top of Salt | 950' |
| Base of Salt | 4170' |
| Delaware | 4370' |
| Bell Canyon | 4395' |
| Manzanita Marker | 5630' |
| Brushy Canyon | 6950' |
| *Bone Springs | 8450' |
| Wolfcamp | WILL NOT PENETRATE |

**2. Estimated depths of anticipated fresh water, oil, or gas:**

| | |
|---|---|
| Water | Fresh water is anticipated @ 200' and will be protected by setting surface casing at 775' and cementing to surface. |
| Hydrocarbons | Oil and gas are anticipated in the above (*) formations. These zones will be protected by casing as necessary. |

**3. Pressure control equipment:**

A 2000# WP annular will be installed after running 13 ⅜" casing. A 3000# WP double ram BOP and 3000# WP Annular will be installed after running 9 ⅝" & 7" casing. Pressure tests will be conducted prior to drilling out under all casing strings. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOPs will be inspected and operated as recommended in Onshore Order #2. A Kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the Kelly is not in use.
Will test the 13 ⅜" annular to 1500# and the 9 ⅝" & 7" BOPE to 3000# and annular to 1500# with a third party testing company before drilling below each shoe, but will test again, if needed, in 30 days from the 1st test as per BLM Onshore Oil and Gas Order #2.

**4. Drilling Program:**

MOC proposes to drill a vertical wellbore to 8724' & kick off to horizontal @ 9297' TVD. The well will be drilled to 13,919' MD (9337' TVD). See attached directional plan.

**5. Proposed casing and cementing program:**

**A. Casing Program:**

See COA

| Hole Size | Casing | Wt/Ft. | Grade | Depth | Jt Type |
|---|---|---|---|---|---|
| 17 ½" | 13 ⅜" (new) | 48# | H40 | 0'-~~775'~~ 690 | ST&C |
| 12 ¼" | 9 ⅝" (new) | 36# | J55 | 0'-3400' | LT&C |
| 12 ¼" | 9 ⅝" (new) | 40# | J55 | 3400'-4320' | LT&C |
| 8 ¾" | 7" (new) | 26# | P110 | 0-8724' MD | LT&C |
| 8 ¾" | 7" (new) | 26# | P110 | 8724'-9619'MD | BT&C |
| 6 1/8" | 4 ½" (new) | 13.5# | P110 | 9419'-TD | LT&C |

Minimum casing design factors: Collapse 1.125, Burst 1.0, Tensile strength 1.8.
*Subject to availability of casing.

**B. Cementing Program:**

i. 13 3/8" Surface Casing: 460 sacks *Lite "C" (35:65:4) cement w/salt and lost circulation additives. Yield at 1.75 cuft/sk. 200 sks class "C" w/2% $CaCl_2$. Yield at 1.34 cuft/sk. Cmt circulated to surface w/100% excess.

See COA

ii. 9 5/8" Intermediate Casing: 675 sacks *Lite "C" (35:65:4) cement w/salt and lost circulation material additives. Yield at 2.13 cuft/sk. 200 sks class "C" neat. Yield at 1.33 cuft/sk. Cmt circulated to surface w/25% excess.

iii. 7" Production Casing: 350 sacks *Lite "C" (60:40:0) cement w/salt and fluid loss additives. Yield at 2.12 cuft/sk. 300 sks class "H" w/salt and fluid loss additives. Yield at 1.18 cuft/sk. Cmt calculated to tieback into intermediate casing @ 4120' w/25% excess.

iv. 4 1/2" Production Liner: This will be a Packer/Port completion from TD up inside 7" casing with packer type liner hanger.

*Referring to above blends of lite cement: (wt% fly ash : wt% cement : wt% bentonite of the total of first two numbers). Generic names of additives are used since the availability of specific company and products are unknown at this time.

**Mewbourne Oil Company reserves the right to change cement designs as hole conditions may warrant.*

**6. Mud Program:**

| Interval | Type System | Weight | Viscosity | Fluid Loss |
|---|---|---|---|---|
| 0'-~~775'~~ 690 | FW spud mud | 8.6-9.0 | 32-34 | NA |
| ~~775'~~-4320' | Brine water | 10.0 | 29-30 | NA |
| 4320'-9619' | FW mud | 8.6-8.8 | 28-30 | NA |
| 9619'- TD | FW w/Polymer | 8.5-8.7 | 32-35 | 15 |

*Visual mud monitoring system shall be in place to detect volume changes indicating loss or gain of circulation fluid volume. Sufficient mud materials will be kept on location at all times to combat abnormal conditions.

**7. Evaluation Program:** See COA

| | |
|---|---|
| Samples: | 10' samples from surface casing to TD |
| Logging: | GR, CNL & Gyro from KOP-100' (8624') to surface and GR from KOP to TD. |

**8. Downhole Conditions**

| | |
|---|---|
| Zones of abnormal pressure: | None anticipated |
| Zones of lost circulation: | Anticipated in surface and intermediate holes |
| Maximum bottom hole temperature: | 120 degree F |
| Maximum bottom hole pressure: | 8.3 lbs/gal gradient or less (9337 x .43668 = 4077.28 psi per foot.) |

**9. Anticipated Starting Date:**

Mewbourne Oil Company intends to drill this well as soon as possible after receiving approval with approximately 45 days involved in drilling operations and an additional 10 days involved in completion operations on the project.

# Mewbourne Oil Co

**Lea County, NM**
**Section 21-26S-32E**
**Red Hills 21 BO Federal Com 1H**

**Wellbore #1**

**Plan: Design #1**

# DDC Well Planning Report

**29 January, 2013**

DDC
The DIRECTIONAL DRILLING COMPANY

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well Red Hills 21 BO Federal Com 1H |
| **Company:** | Mewbourne Oil Co | **TVD Reference:** | WELL @ 3177.0usft (Patterson #36) |
| **Project:** | Lea County, NM | **MD Reference:** | WELL @ 3177.0usft (Patterson #36) |
| **Site:** | Section 21-26S-32E | **North Reference:** | Grid |
| **Well:** | Red Hills 21 BO Federal Com 1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #1 | | |

**Project** Lea County, NM

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1927 (Exact solution) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | New Mexico East 3001 | | |

**Site** Section 21-26S-32E

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 376,913.78 usft | **Latitude:** | 32° 2' 4.330 N |
| **From:** | Map | **Easting:** | 704,320.13 usft | **Longitude:** | 103° 40' 26.342 W |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.35 ° |

**Well** Red Hills 21 BO Federal Com 1H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 170.3 usft | **Northing:** | 377,084.10 usft | **Latitude:** | 32° 2' 6.098 N |
| | **+E/-W** | -1,361.2 usft | **Easting:** | 702,958.88 usft | **Longitude:** | 103° 40' 42.143 W |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | | **Ground Level:** | 3,157.0 usft |

**Wellbore** Wellbore #1

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 1/29/2013 | 7.42 | 59.95 | 48,330 |

**Design** Design #1

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.0 |

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|---|---|---|---|---|
| | 0.0 | 0.0 | 0.0 | 179.55 |

**Plan Sections**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8,724.1 | 0.00 | 0.00 | 8,724.1 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 9,618.8 | 89.47 | 179.55 | 9,297.0 | -567.6 | 4.4 | 10.00 | 10.00 | 20.07 | 179.55 | |
| 13,919.3 | 89.47 | 179.55 | 9,337.0 | -4,867.9 | 38.1 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL Red Hills We |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well Red Hills 21 BO Federal Com 1H |
| **Company:** | Mewbourne Oil Co | **TVD Reference:** | WELL @ 3177.0usft (Patterson #36) |
| **Project:** | Lea County, NM | **MD Reference:** | WELL @ 3177.0usft (Patterson #36) |
| **Site:** | Section 21-26S-32E | **North Reference:** | Grid |
| **Well:** | Red Hills 21 BO Federal Com 1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| **Build 10° / 100'** | | | | | | | | | |
| 8,724.1 | 0.00 | 0.00 | 8,724.1 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 8,750.0 | 2.59 | 179.55 | 8,750.0 | -0.6 | 0.0 | 0.6 | 10.00 | 10.00 | 0.00 |
| 8,800.0 | 7.59 | 179.55 | 8,799.8 | -5.0 | 0.0 | 5.0 | 10.00 | 10.00 | 0.00 |
| 8,850.0 | 12.59 | 179.55 | 8,849.0 | -13.8 | 0.1 | 13.8 | 10.00 | 10.00 | 0.00 |
| 8,900.0 | 17.59 | 179.55 | 8,897.2 | -26.8 | 0.2 | 26.8 | 10.00 | 10.00 | 0.00 |
| 8,950.0 | 22.59 | 179.55 | 8,944.2 | -44.0 | 0.3 | 44.0 | 10.00 | 10.00 | 0.00 |
| 9,000.0 | 27.59 | 179.55 | 8,989.5 | -65.2 | 0.5 | 65.2 | 10.00 | 10.00 | 0.00 |
| 9,050.0 | 32.59 | 179.55 | 9,032.7 | -90.2 | 0.7 | 90.2 | 10.00 | 10.00 | 0.00 |
| 9,100.0 | 37.59 | 179.55 | 9,073.6 | -118.9 | 0.9 | 118.9 | 10.00 | 10.00 | 0.00 |
| 9,150.0 | 42.59 | 179.55 | 9,111.8 | -151.1 | 1.2 | 151.1 | 10.00 | 10.00 | 0.00 |
| 9,200.0 | 47.59 | 179.55 | 9,147.1 | -186.5 | 1.5 | 186.5 | 10.00 | 10.00 | 0.00 |
| 9,250.0 | 52.59 | 179.55 | 9,179.2 | -224.9 | 1.8 | 224.9 | 10.00 | 10.00 | 0.00 |
| 9,300.0 | 57.59 | 179.55 | 9,207.8 | -265.9 | 2.1 | 265.9 | 10.00 | 10.00 | 0.00 |
| 9,350.0 | 62.59 | 179.55 | 9,232.7 | -309.2 | 2.4 | 309.2 | 10.00 | 10.00 | 0.00 |
| 9,400.0 | 67.59 | 179.55 | 9,253.8 | -354.5 | 2.8 | 354.5 | 10.00 | 10.00 | 0.00 |
| 9,450.0 | 72.59 | 179.55 | 9,270.8 | -401.5 | 3.1 | 401.5 | 10.00 | 10.00 | 0.00 |
| 9,500.0 | 77.59 | 179.55 | 9,283.7 | -449.8 | 3.5 | 449.8 | 10.00 | 10.00 | 0.00 |
| 9,550.0 | 82.59 | 179.55 | 9,292.3 | -499.0 | 3.9 | 499.1 | 10.00 | 10.00 | 0.00 |
| 9,600.0 | 87.59 | 179.55 | 9,296.6 | -548.8 | 4.3 | 548.9 | 10.00 | 10.00 | 0.00 |
| **EOB @ 89.47° Inc / 179.55° Azm / 9297' TVD** | | | | | | | | | |
| 9,618.8 | 89.47 | 179.55 | 9,297.0 | -567.6 | 4.4 | 567.6 | 10.00 | 10.00 | 0.00 |
| 9,700.0 | 89.47 | 179.55 | 9,297.8 | -648.8 | 5.1 | 648.9 | 0.00 | 0.00 | 0.00 |
| 9,800.0 | 89.47 | 179.55 | 9,298.7 | -748.8 | 5.9 | 748.9 | 0.00 | 0.00 | 0.00 |
| 9,900.0 | 89.47 | 179.55 | 9,299.6 | -848.8 | 6.6 | 848.8 | 0.00 | 0.00 | 0.00 |
| 10,000.0 | 89.47 | 179.55 | 9,300.6 | -948.8 | 7.4 | 948.8 | 0.00 | 0.00 | 0.00 |
| 10,100.0 | 89.47 | 179.55 | 9,301.5 | -1,048.8 | 8.2 | 1,048.8 | 0.00 | 0.00 | 0.00 |
| 10,200.0 | 89.47 | 179.55 | 9,302.4 | -1,148.8 | 9.0 | 1,148.8 | 0.00 | 0.00 | 0.00 |
| 10,300.0 | 89.47 | 179.55 | 9,303.4 | -1,248.8 | 9.8 | 1,248.8 | 0.00 | 0.00 | 0.00 |
| 10,400.0 | 89.47 | 179.55 | 9,304.3 | -1,348.8 | 10.6 | 1,348.8 | 0.00 | 0.00 | 0.00 |
| 10,500.0 | 89.47 | 179.55 | 9,305.2 | -1,448.8 | 11.3 | 1,448.8 | 0.00 | 0.00 | 0.00 |
| 10,600.0 | 89.47 | 179.55 | 9,306.2 | -1,548.8 | 12.1 | 1,548.8 | 0.00 | 0.00 | 0.00 |
| 10,700.0 | 89.47 | 179.55 | 9,307.1 | -1,648.8 | 12.9 | 1,648.8 | 0.00 | 0.00 | 0.00 |
| 10,800.0 | 89.47 | 179.55 | 9,308.0 | -1,748.8 | 13.7 | 1,748.8 | 0.00 | 0.00 | 0.00 |
| 10,900.0 | 89.47 | 179.55 | 9,308.9 | -1,848.7 | 14.5 | 1,848.8 | 0.00 | 0.00 | 0.00 |
| 11,000.0 | 89.47 | 179.55 | 9,309.9 | -1,948.7 | 15.2 | 1,948.8 | 0.00 | 0.00 | 0.00 |
| 11,100.0 | 89.47 | 179.55 | 9,310.8 | -2,048.7 | 16.0 | 2,048.8 | 0.00 | 0.00 | 0.00 |
| 11,200.0 | 89.47 | 179.55 | 9,311.7 | -2,148.7 | 16.8 | 2,148.8 | 0.00 | 0.00 | 0.00 |
| 11,300.0 | 89.47 | 179.55 | 9,312.7 | -2,248.7 | 17.6 | 2,248.8 | 0.00 | 0.00 | 0.00 |
| 11,400.0 | 89.47 | 179.55 | 9,313.6 | -2,348.7 | 18.4 | 2,348.8 | 0.00 | 0.00 | 0.00 |
| 11,500.0 | 89.47 | 179.55 | 9,314.5 | -2,448.7 | 19.2 | 2,448.8 | 0.00 | 0.00 | 0.00 |
| 11,600.0 | 89.47 | 179.55 | 9,315.4 | -2,548.7 | 19.9 | 2,548.8 | 0.00 | 0.00 | 0.00 |
| 11,700.0 | 89.47 | 179.55 | 9,316.4 | -2,648.7 | 20.7 | 2,648.8 | 0.00 | 0.00 | 0.00 |
| 11,800.0 | 89.47 | 179.55 | 9,317.3 | -2,748.7 | 21.5 | 2,748.8 | 0.00 | 0.00 | 0.00 |
| 11,900.0 | 89.47 | 179.55 | 9,318.2 | -2,848.7 | 22.3 | 2,848.8 | 0.00 | 0.00 | 0.00 |
| 12,000.0 | 89.47 | 179.55 | 9,319.2 | -2,948.7 | 23.1 | 2,948.8 | 0.00 | 0.00 | 0.00 |
| 12,100.0 | 89.47 | 179.55 | 9,320.1 | -3,048.7 | 23.9 | 3,048.8 | 0.00 | 0.00 | 0.00 |
| 12,200.0 | 89.47 | 179.55 | 9,321.0 | -3,148.6 | 24.6 | 3,148.7 | 0.00 | 0.00 | 0.00 |
| 12,300.0 | 89.47 | 179.55 | 9,322.0 | -3,248.6 | 25.4 | 3,248.7 | 0.00 | 0.00 | 0.00 |
| 12,400.0 | 89.47 | 179.55 | 9,322.9 | -3,348.6 | 26.2 | 3,348.7 | 0.00 | 0.00 | 0.00 |
| 12,500.0 | 89.47 | 179.55 | 9,323.8 | -3,448.6 | 27.0 | 3,448.7 | 0.00 | 0.00 | 0.00 |
| 12,600.0 | 89.47 | 179.55 | 9,324.7 | -3,548.6 | 27.8 | 3,548.7 | 0.00 | 0.00 | 0.00 |
| 12,700.0 | 89.47 | 179.55 | 9,325.7 | -3,648.6 | 28.5 | 3,648.7 | 0.00 | 0.00 | 0.00 |
| 12,800.0 | 89.47 | 179.55 | 9,326.6 | -3,748.6 | 29.3 | 3,748.7 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well Red Hills 21 BO Federal Com 1H |
| **Company:** | Mewbourne Oil Co | **TVD Reference:** | WELL @ 3177.0usft (Patterson #36) |
| **Project:** | Lea County, NM | **MD Reference:** | WELL @ 3177.0usft (Patterson #36) |
| **Site:** | Section 21 26S-32E | **North Reference:** | Grid |
| **Well:** | Red Hills 21 BO Federal Com 1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Wellbore #1 | | |
| **Design:** | Design #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 12,900.0 | 89.47 | 179.55 | 9,327.5 | -3,848.6 | 30.1 | 3,848.7 | 0.00 | 0.00 | 0.00 |
| 13,000.0 | 89.47 | 179.55 | 9,328.5 | -3,948.6 | 30.9 | 3,948.7 | 0.00 | 0.00 | 0.00 |
| 13,100.0 | 89.47 | 179.55 | 9,329.4 | -4,048.6 | 31.7 | 4,048.7 | 0.00 | 0.00 | 0.00 |
| 13,200.0 | 89.47 | 179.55 | 9,330.3 | -4,148.6 | 32.5 | 4,148.7 | 0.00 | 0.00 | 0.00 |
| 13,300.0 | 89.47 | 179.55 | 9,331.2 | -4,248.6 | 33.2 | 4,248.7 | 0.00 | 0.00 | 0.00 |
| 13,400.0 | 89.47 | 179.55 | 9,332.2 | -4,348.6 | 34.0 | 4,348.7 | 0.00 | 0.00 | 0.00 |
| 13,500.0 | 89.47 | 179.55 | 9,333.1 | -4,448.6 | 34.8 | 4,448.7 | 0.00 | 0.00 | 0.00 |
| 13,600.0 | 89.47 | 179.55 | 9,334.0 | -4,548.5 | 35.6 | 4,548.7 | 0.00 | 0.00 | 0.00 |
| 13,700.0 | 89.47 | 179.55 | 9,335.0 | -4,648.5 | 36.4 | 4,648.7 | 0.00 | 0.00 | 0.00 |
| 13,800.0 | 89.47 | 179.55 | 9,335.9 | -4,748.5 | 37.2 | 4,748.7 | 0.00 | 0.00 | 0.00 |
| 13,900.0 | 89.47 | 179.55 | 9,336.8 | -4,848.5 | 37.9 | 4,848.7 | 0.00 | 0.00 | 0.00 |
| 13,919.3 | 89.47 | 179.55 | 9,337.0 | -4,867.9 | 38.1 | 4,868.0 | 0.00 | 0.00 | 0.00 |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| PBHL Red Hills West<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 9,337.0 | -4,867.9 | 38.1 | 372,216.23 | 702,996.97 | 32° 1' 17.923 N | 103° 40' 42.044 W |

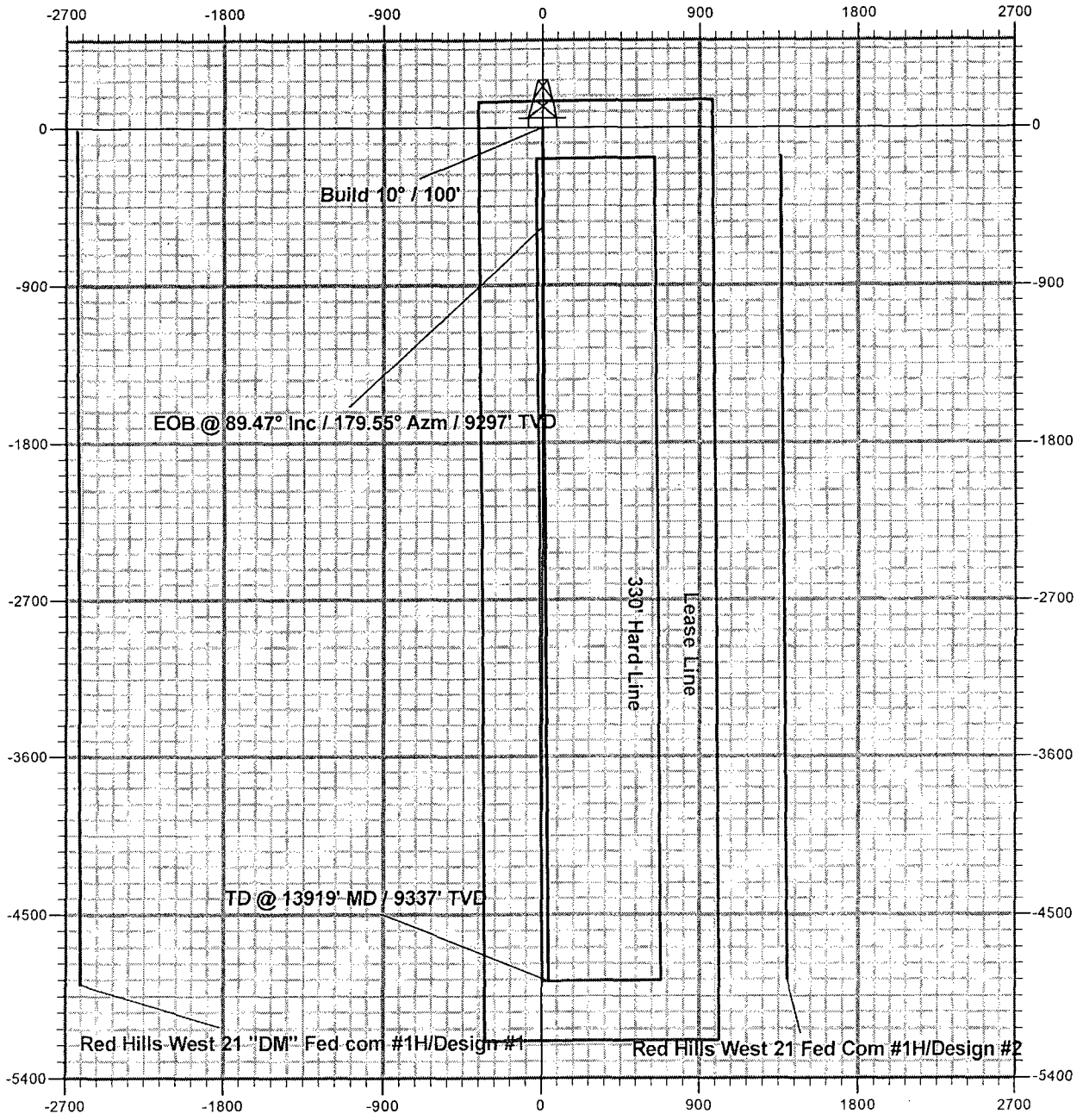
**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 8,724.1 | 8,724.1 | 0.0 | 0.0 | Build 10° / 100' |
| 9,618.8 | 9,297.0 | -567.6 | 4.4 | EOB @ 89.47° Inc / 179.55° Azm / 9297' TVD |
| 13,919.3 | 9,337.0 | -4,867.9 | 38.1 | TD @ 13919' MD / 9337' TVD |

# Mewbourne Oil Company

Lea County, NM
Red Hills 21 BO Federal Com 1H
Quote 130097
Design #1

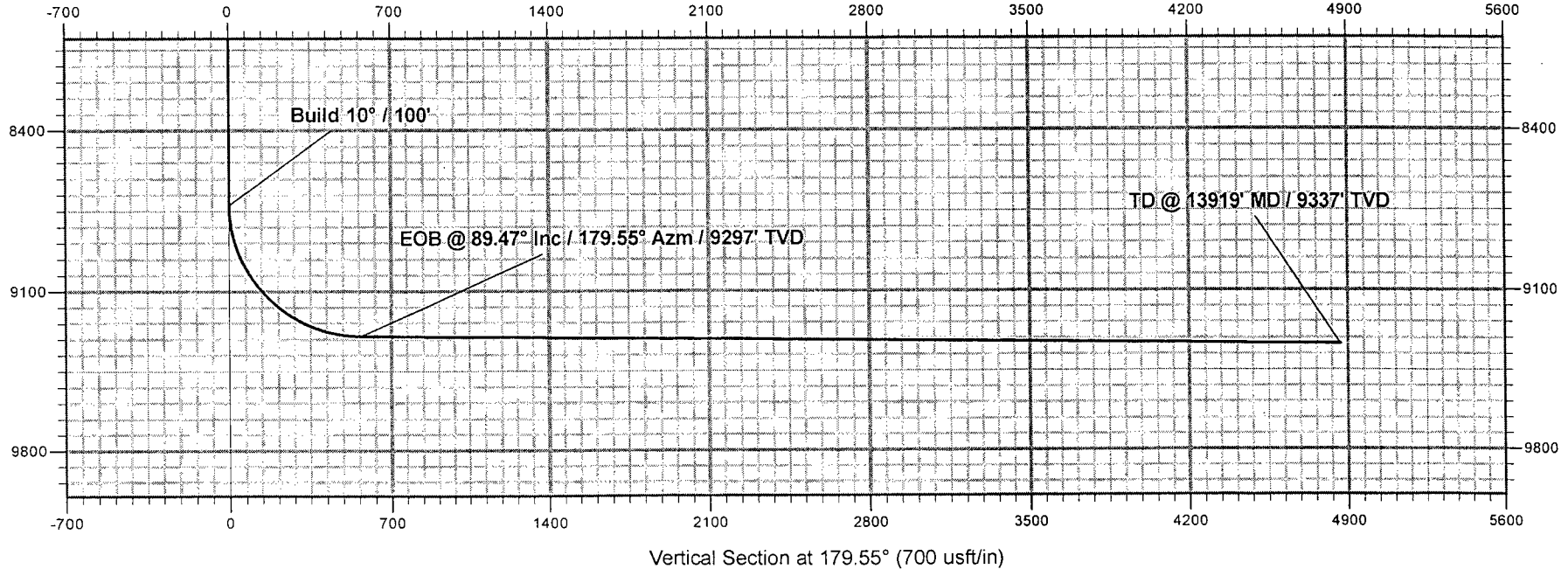
The DIRECTIONAL DRILLING COMPANY



# Mewbourne Oil Company

Lea County, NM
Red Hills 21 BO Federal Com 1H
Quote 130097
Design #1

The DIRECTIONAL DRILLING COMPANY



**Notes Regarding Blowout Preventer**
**Mewbourne Oil Company**
Red Hills West 21 BO Fed Com #1H
150' FNL & 2310' FEL
Sec. 21 T26S R32E
Lea County, New Mexico

I. Drilling nipple (bell nipple) to be constructed so that it can be removed without the use of a welder through the opening of the rotary table, with minimum internal diameter equal to blowout preventer bore.

II. Blowout preventer and all fittings must be in good condition with a minimum 3000 psi working pressure on 9 5/8" and 7" casing.

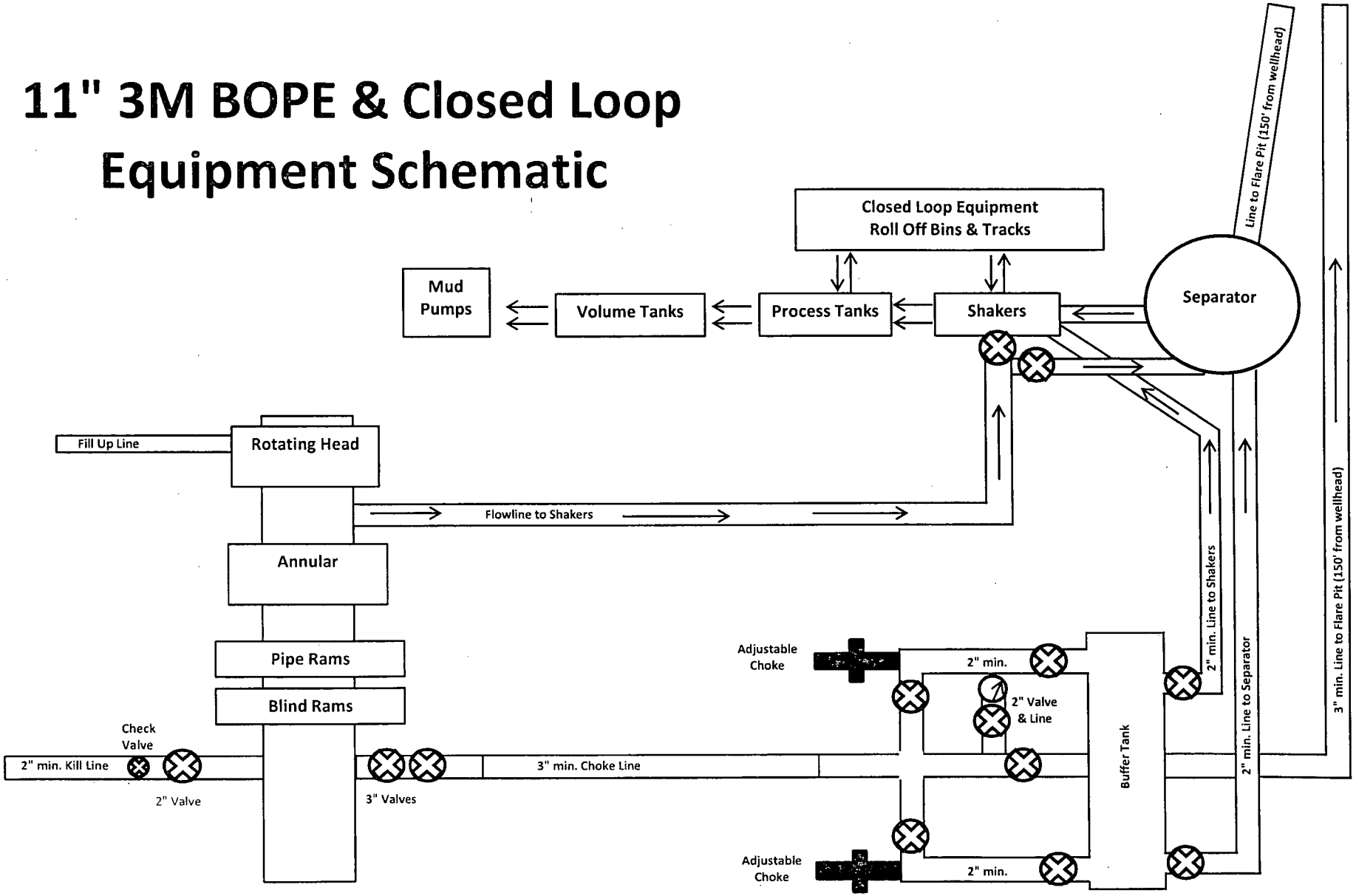
III. Safety valve must be available on the rig floor at all times with proper connections to install in the drill string. Valve must be full bore with minimum 3000 psi working pressure.

IV. Equipment through which bit must pass shall be at least as large as internal diameter of the casing.

V. A kelly cock shall be installed on the kelly at all times.

Blowout preventer closing equipment to include and accumulator of at least 40 gallon capacity, two independent sources of pressure on closing unit, and meet all other API specifications.

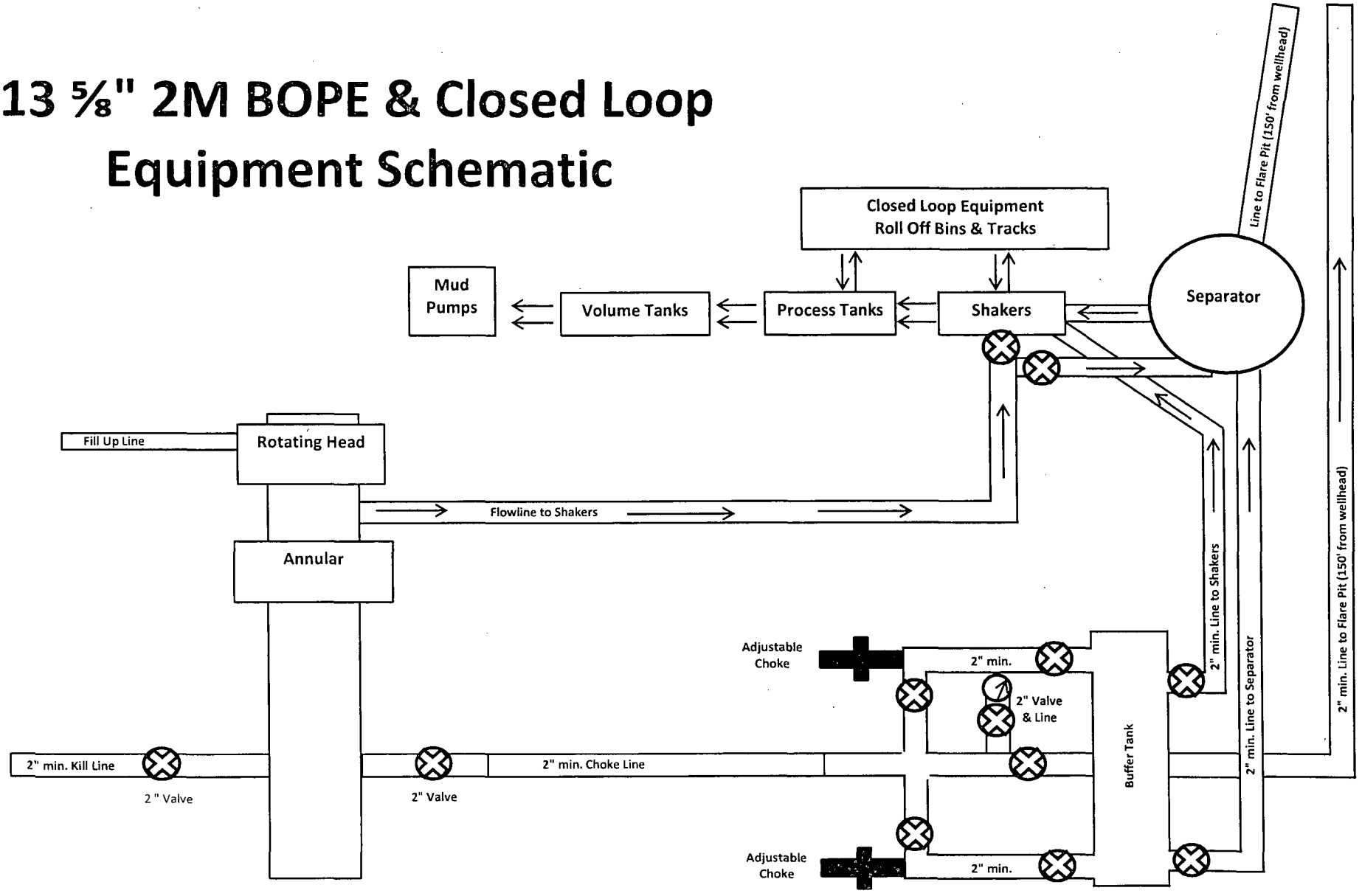
# 11" 3M BOPE & Closed Loop Equipment Schematic




| Exhibit 2 |
| --- |
| Red Hills 21 BO Fed Com #1H |

Note: All valves & lines on choke manifold are 3" unless otherwise noted. Exact manifold configuration may vary.

# 13 ⅝" 2M BOPE & Closed Loop Equipment Schematic




| Exhibit 2A |
| --- |
| Red Hills 21 BO Fed Com #1H |

H2S Diagram
Closed Loop Pad Dimensions 280' x 320'

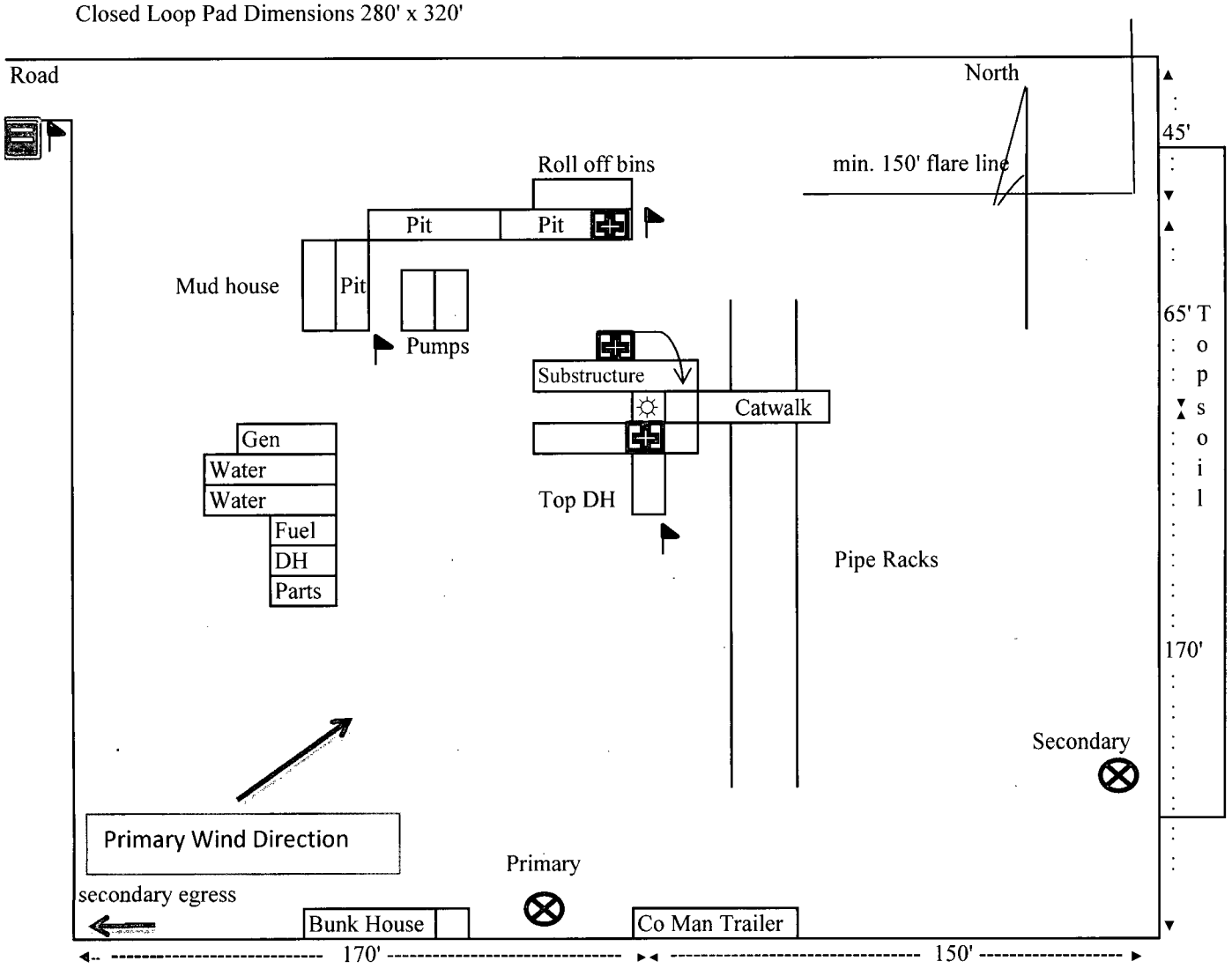



Exhibit 6

= Safety Stations

= Wind Markers

= H2S Monitors

= Warning Signs

Mewbourne Oil Company
Red Hills West 21 BO Fed Com #1H
150' FNL & 2310' FEL
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