

Form 3160-3  
(June 2015)FORM APPROVED  
OMB No. 1004-0137  
Expires: January 31, 2018

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**APPLICATION FOR PERMIT TO DRILL OR REENTER**

|  |  |   |  |
|--|--|---|--|
| 1a. Type of work: <input type="checkbox"/> DRILL <input type="checkbox"/> REENTER<br>1b. Type of Well: <input type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other<br>1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone |  | 5. Lease Serial No.<br><br>6. If Indian, Allottee or Tribe Name<br><br>7. If Unit or CA Agreement, Name and No.<br><br>8. Lease Name and Well No.<br><br>9. API Well No.<br>30 015 47628                              |  |
| 2. Name of Operator  |  | 10. Field and Pool, or Exploratory  |  |
| 3a. Address  |  | 3b. Phone No. (include area code)   |  |
| 4. Location of Well (Report location clearly and in accordance with any State requirements. *)<br>At surface<br>At proposed prod. zone   |  | 11. Sec., T. R. M. or Blk. and Survey or Area   |  |
| 14. Distance in miles and direction from nearest town or post office*  |  | 12. County or Parish  |  |
| 13. State  |  | 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)   |  |
| 16. No of acres in lease   |  | 17. Spacing Unit dedicated to this well   |  |
| 18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.   |  | 19. Proposed Depth  |  |
| 20. BLM/BIA Bond No. in file   |  | 21. Elevations (Show whether DF, KDB, RT, GL, etc.)   |  |
| 22. Approximate date work will start*  |  | 23. Estimated duration  |  |
| 24. Attachments  |  |   |  |
| The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, and the Hydraulic Fracturing rule per 43 CFR 3162.3-3 (as applicable)   |  |   |  |
| 1. Well plat certified by a registered surveyor.<br>2. A Drilling Plan.<br>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).<br>5. Operator certification.<br>6. Such other site specific information and/or plans as may be requested by the BLM. |  |
| 25. Signature  |  | Name (Printed/Typed)  |  |
| Title  |  | Date  |  |
| Approved by (Signature)  |  | Name (Printed/Typed)  |  |
| Title  |  | 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.<br>Conditions of approval, if any, are attached.  |  |   |  |
| 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.   |  |   |  |

Oil base muds are not to be used until fresh water zones are cased and cemented providing isolation from the oil or diesel. This includes synthetic oils. Oil based mud, drilling fluids and solids must be contained in a steel closed loop system.

- Will require a directional survey with the C-104
- Surface casing must be set 25' below top of Rustler
- Anhydrite in order to seal off protectable water

Once the well is spud, to prevent ground water contamination through whole or partial conduits from the surface, the operator shall drill without interruption through the fresh water zone or zones and shall immediately set in cement the water protection string

APPROVED WITH CONDITIONS

SL  
(Continued on page 2)

GP 11/4/2020 GEO Review

\*(Instructions on page 2)

Approval Date: 09/25/2020

Entered - KMS NMOCD

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

|  |                      |   |                     |  |  |
|--|----------------------|---|---------------------|--|--|
| <sup>1</sup> API Number<br><b>30 015 47628</b>               |                      | <sup>2</sup> Pool Code<br><b>98220</b>                            |                     | <sup>3</sup> Pool Name<br><b>PURPLE SAGE; WOLFCAMP GAS</b> |  |
| <sup>4</sup> Property Code<br><b>329780</b>                  |                      | <sup>5</sup> Property Name<br><b>ARMSTRONG 26/35 WOKN FED COM</b> |                     |  | <sup>6</sup> Well Number<br><b>3H</b>  |
| <sup>7</sup> OGRID NO.<br><b>14744</b>                       |                      | <sup>8</sup> Operator Name<br><b>MEWBOURNE OIL COMPANY</b>        |                     |  | <sup>9</sup> Elevation<br><b>3339'</b> |
| <sup>10</sup> Surface Location                               |                      |   |                     |  |  |
| UL or lot no.<br><b>K</b>                                    | Section<br><b>26</b> | Township<br><b>25S</b>  | Range<br><b>31E</b> | Lot Idn  | Feet from the<br><b>2500</b>           |
|  |                      |   |                     | North/South line<br><b>SOUTH</b>                           | Feet From the<br><b>2645</b>           |
|  |                      |   |                     | East/West line<br><b>WEST</b>                              | County<br><b>EDDY</b>                  |
| <sup>11</sup> Bottom Hole Location If Different From Surface |                      |   |                     |  |  |
| UL or lot no.<br><b>N</b>                                    | Section<br><b>35</b> | Township<br><b>25S</b>  | Range<br><b>31E</b> | Lot Idn  | Feet from the<br><b>330</b>            |
|  |                      |   |                     | North/South line<br><b>SOUTH</b>                           | Feet from the<br><b>2310</b>           |
|  |                      |   |                     | East/West line<br><b>WEST</b>                              | County<br><b>EDDY</b>                  |
| <sup>12</sup> Dedicated Acres<br><b>480</b>                  |                      | <sup>13</sup> Joint or Infill                                     |                     | <sup>14</sup> Consolidation Code                           |  |
|  |                      |   |                     | <sup>15</sup> Order No.                                    |  |

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

|   |  |   |   |
|---|--|---|---|
| <p><b>GEODETIC DATA</b><br/>NAD 83 GRID - NM EAST<br/><b>SURFACE LOCATION</b><br/>N 400931.9 - E 722321.7<br/>LAT: 32.1008927° N<br/>LONG: 103.7488543° W</p> <p><b>26</b></p> <p><b>2645'</b></p> <p><b>S.L.</b></p> <p><b>PROJECT AREA</b></p> <p><b>2500'</b></p> <p><b>PRODUCING AREA</b></p> <p><b>35</b></p> <p><b>GEODETIC DATA</b><br/>NAD 83 GRID - NM EAST<br/><b>BOTTOM HOLE</b><br/>N 393471.0 - E 722014.0<br/>LAT: 32.0803886° N<br/>LONG: 103.7499784° W</p> <p><b>B.H.</b></p> <p><b>2310'</b></p> <p><b>330'</b></p> |  | <p><b>CORNER DATA</b><br/>NAD 83 GRID - NM EAST</p> <p>A: FOUND BRASS CAP "1939"<br/>N 393123.4 - E 719706.3</p> <p>B: FOUND BRASS CAP "1939"<br/>N 395768.0 - E 719692.1</p> <p>C: FOUND BRASS CAP "1939"<br/>N 398416.8 - E 719679.1</p> <p>D: FOUND BRASS CAP "1939"<br/>N 401064.4 - E 719677.2</p> <p>E: CALCULATED CORNER<br/>N 403712.6 - E 719676.3</p> <p>F: FOUND BRASS CAP "1939"<br/>N 403715.4 - E 722336.0</p> <p>G: FOUND BRASS CAP "1939"<br/>N 403723.6 - E 724993.6</p> <p>H: FOUND BRASS CAP "1939"<br/>N 401083.2 - E 725002.4</p> <p>I: FOUND BRASS CAP "1939"<br/>N 398442.3 - E 725012.1</p> <p>J: FOUND BRASS CAP "1939"<br/>N 395801.2 - E 725019.9</p> <p>K: FOUND BRASS CAP "1916"<br/>N 393164.7 - E 725028.3</p> <p>L: FOUND BRASS CAP "1939"<br/>N 393143.8 - E 723266.9</p> <p>M: FOUND BRASS CAP "1939"<br/>N 398432.6 - E 722344.9</p> | <p><b>17 OPERATOR CERTIFICATION</b><br/>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature: <i>Bradley Bishop</i> Date: <b>1-15-19</b></p> <p>Printed Name: <b>BRADLEY BISHOP</b></p> <p>E-mail Address: <b>BBISHOP@MEWBOURNE.COM</b></p> |
| <p><b>18 SURVEYOR CERTIFICATION</b><br/>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p><b>1-07-19</b><br/>Date of Survey</p> <p>Signature and Seal of Professional Surveyor: <i>Robert M. Howett</i></p> <p><b>19680</b><br/>Certificate Number</p>   |  | <p><b>ROBERT M. HOWETT</b><br/>NEW MEXICO<br/>19680<br/>PROFESSIONAL SURVEYOR</p>   |   |

Job No.: LS19010030

Intent ☒ As Drilled ☐

API #

|   |  |                   |
|---|--|-------------------|
| Operator Name:<br>MEWBOURNE OIL COMPANY | Property Name:<br>ARMSTRONG 26/35 W0KN FED COM | Well Number<br>3H |
|---|--|-------------------|

Kick Off Point (KOP)

|                        |               |                 |              |     |                           |               |              |               |                |
|------------------------|---------------|-----------------|--------------|-----|---------------------------|---------------|--------------|---------------|----------------|
| UL<br>K                | Section<br>26 | Township<br>25S | Range<br>31E | Lot | Feet<br>2500              | From N/S<br>S | Feet<br>2310 | From E/W<br>W | County<br>EDDY |
| Latitude<br>32.1008949 |               |                 |              |     | Longitude<br>-103.7499349 |               |              |               | NAD<br>83      |

First Take Point (FTP)

|                        |               |                 |              |     |                           |               |              |               |                |
|------------------------|---------------|-----------------|--------------|-----|---------------------------|---------------|--------------|---------------|----------------|
| UL<br>K                | Section<br>26 | Township<br>25S | Range<br>31E | Lot | Feet<br>2318              | From N/S<br>S | Feet<br>2310 | From E/W<br>W | County<br>EDDY |
| Latitude<br>32.1003946 |               |                 |              |     | Longitude<br>-103.7499360 |               |              |               | NAD<br>83      |

Last Take Point (LTP)

|                        |               |                 |              |     |                           |               |              |               |                |
|------------------------|---------------|-----------------|--------------|-----|---------------------------|---------------|--------------|---------------|----------------|
| UL<br>N                | Section<br>35 | Township<br>25S | Range<br>31E | Lot | Feet<br>330               | From N/S<br>S | Feet<br>2310 | From E/W<br>W | County<br>EDDY |
| Latitude<br>32.0803886 |               |                 |              |     | Longitude<br>-103.7499784 |               |              |               | NAD<br>83      |

Is this well the defining well for the Horizontal Spacing Unit? ☒

Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

API #

|                |                |             |
|----------------|----------------|-------------|
| Operator Name: | Property Name: | Well Number |
|----------------|----------------|-------------|

KZ 06/29/2018

## Additional Operator Remarks

### Location of Well

1. SHL: NESW / 2500 FSL / 2645 FWL / TWSP: 25S / RANGE: 31E / SECTION: 26 / LAT: 32.1008927 / LONG: -103.7488543 ( TVD: 0 feet, MD: 0 feet )  
PPP: NESW / 2318 FSL / 2310 FWL / TWSP: 25S / RANGE: 31E / SECTION: 26 / LAT: 32.1003946 / LONG: -103.749936 ( TVD: 11712 feet, MD: 11774 feet )  
PPP: NESW / 1324 FSL / 2310 FWL / TWSP: 25S / RANGE: 31E / SECTION: 26 / LAT: 32.0976622 / LONG: -103.7499418 ( TVD: 11806 feet, MD: 12791 feet )  
PPP: NENW / 0 FNL / 2310 FWL / TWSP: 25S / RANGE: 31E / SECTION: 35 / LAT: 32.0940227 / LONG: -103.7499495 ( TVD: 11791 feet, MD: 14115 feet )  
BHL: SESW / 330 FSL / 2310 FWL / TWSP: 25S / RANGE: 31E / SECTION: 35 / LAT: 32.0803886 / LONG: -103.7499784 ( TVD: 11736 feet, MD: 19075 feet )

### BLM Point of Contact

Name: Tenille Ortiz

Title: Legal Instruments Examiner

Phone: 5752342224

Email: tortiz@blm.gov

# PECOS DISTRICT DRILLING CONDITIONS OF APPROVAL

|                              |  |
|------------------------------|--|
| <b>OPERATOR'S NAME:</b>      | <b>Mewbourne Oil Company</b>             |
| <b>LEASE NO.:</b>            | <b>NMNM128360</b>                        |
| <b>WELL NAME &amp; NO.:</b>  | <b>Armstrong 26-35 W0KN Fed Com 3H</b>   |
| <b>SURFACE HOLE FOOTAGE:</b> | <b>2500'/S &amp; 2645'/W</b>             |
| <b>BOTTOM HOLE FOOTAGE:</b>  | <b>330'/S &amp; 2310'/W</b>              |
| <b>LOCATION:</b>             | <b>Section 26, T.25 S., R.31 E., NMP</b> |
| <b>COUNTY:</b>               | <b>Eddy County, New Mexico</b>           |

COA

|                      |  |  |                                     |
|----------------------|--|--|-------------------------------------|
| H2S                  | <input type="radio"/> Yes                        | <input checked="" type="radio"/> No        |                                     |
| Potash               | <input checked="" type="radio"/> None            | <input type="radio"/> Secretary            | <input type="radio"/> R-111-P       |
| Cave/Karst Potential | <input type="radio"/> Low                        | <input checked="" type="radio"/> Medium    | <input type="radio"/> High          |
| Cave/Karst Potential | <input type="radio"/> Critical                   |  |                                     |
| Variance             | <input type="radio"/> None                       | <input checked="" type="radio"/> Flex Hose | <input type="radio"/> Other         |
| Wellhead             | <input type="radio"/> Conventional               | <input checked="" type="radio"/> Multibowl | <input type="radio"/> Both          |
| Other                | <input type="checkbox"/> 4 String Area           | <input type="checkbox"/> Capitan Reef      | <input type="checkbox"/> WIPP       |
| Other                | <input checked="" type="checkbox"/> Fluid Filled | <input type="checkbox"/> Cement Squeeze    | <input type="checkbox"/> Pilot Hole |
| Special Requirements | <input type="checkbox"/> Water Disposal          | <input checked="" type="checkbox"/> COM    | <input type="checkbox"/> Unit       |

## A. HYDROGEN SULFIDE

Hydrogen Sulfide (H2S) monitors shall be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.

## B. CASING

### Casing Design:

1. The **13-3/8** inch surface casing shall be set at approximately **1100** feet (a minimum of **70 feet (Eddy County)** into the Rustler Anhydrite and above the salt) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after

- completing the cement job.
- b. Wait on cement (WOC) time for a primary cement job will be a minimum of **8 hours** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

**First intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.**

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing shall be set at approximately **4250** feet is:
  - Cement to surface. If cement does not circulate see B.1.a, c-d above.  
**Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst or potash.**  
**Excess cement calculates to 18%, additional cement might be required.**

- ❖ In Medium Cave/Karst Areas if cement does not circulate to surface on the first two casing strings, the cement on the 3rd casing string must come to surface.

**Production casing must be kept fluid filled to meet BLM minimum collapse requirement.**

3. The minimum required fill of cement behind the **7** inch production casing is:

**Option 1 (Single Stage):**

- Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.  
**Excess cement calculates to 4%, additional cement might be required.**

**Option 2:**

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

- a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.
  - b. Second stage above DV tool:
    - Cement should tie-back at least **200 feet** into previous casing string. Operator shall provide method of verification.
4. The minimum required fill of cement behind the **4-1/2** inch production liner is:
- Cement should tie-back **100 feet** into the previous casing. Operator shall provide method of verification.

### C. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).<sup>\*</sup>
2. Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **10,000 (10M) psi. Variance is approved to use a 5000 (5M) Annular which shall be tested to 5000 (5M) psi.**
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
  - b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
  - e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

## **D. SPECIAL REQUIREMENT (S)**

### **Communitization Agreement**

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

## **GENERAL REQUIREMENTS**

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ Eddy County

Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822

☒ Lea County

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575)  
393-3612

1. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
  - a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
  - b. When the operator proposes to set surface casing with Spudder Rig



- Notify the BLM when moving in and removing the Spudder Rig.
  - Notify the BLM when moving in the 2<sup>nd</sup> Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
  - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.
2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
  3. The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

#### A. CASING

1. Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.
2. Wait on cement (WOC) for Potash Areas: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.
3. Wait on cement (WOC) for Water Basin: After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements. The casing integrity test can be done (prior to the cement setting up) immediately after bumping the plug.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.
5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.
6. On that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.
7. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.
8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

#### B. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.
3. 5M or higher system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.
4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:
  - a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.

- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
  - c. Manufacturer representative shall install the test plug for the initial BOP test.
  - d. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
  - e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.
- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. In potash areas, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).
  - c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
  - d. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall

have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.

- e. The results of the test shall be reported to the appropriate BLM office.
- f. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
- g. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
- h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

#### C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

#### D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**OTA09012020**



APD ID: 10400038115

Submission Date: 03/12/2019

Highlighted data  
reflects the most  
recent changes

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/35 W0KN FED COM

Well Number: 3H

[Show Final Text](#)

Well Type: OIL WELL

Well Work Type: Drill

## Section 1 - Geologic Formations

| Formation ID | Formation Name  | Elevation | True Vertical Depth | Measured Depth | Lithologies                 | Mineral Resources | Producing Formation |
|--------------|-----------------|-----------|---------------------|----------------|-----------------------------|-------------------|---------------------|
| 375831       | UNKNOWN         | 3339      | 27                  | 27             |                             | NONE              | N                   |
| 375832       | RUSTLER         | 2239      | 1100                | 1100           | ANHYDRITE, DOLOMITE         | USEABLE WATER     | N                   |
| 375833       | TOP SALT        | 1949      | 1390                | 1390           | SALT                        | NONE              | N                   |
| 375834       | BASE OF SALT    | -780      | 4119                | 4119           | SALT                        | NONE              | N                   |
| 375838       | LAMAR           | -986      | 4325                | 4325           | LIMESTONE                   | NATURAL GAS, OIL  | N                   |
| 375835       | BELL CANYON     | -1011     | 4350                | 4350           | SANDSTONE                   | NATURAL GAS, OIL  | N                   |
| 375839       | CHERRY CANYON   | -1960     | 5299                | 5299           | SANDSTONE                   | NATURAL GAS, OIL  | N                   |
| 375836       | MANZANITA       | -2159     | 5498                | 5498           |                             | NONE              | N                   |
| 375840       | BONE SPRING     | -4985     | 8324                | 8324           | LIMESTONE, SHALE            | NATURAL GAS, OIL  | N                   |
| 375841       | BONE SPRING 1ST | -6218     | 9557                | 9557           | SANDSTONE                   | NATURAL GAS, OIL  | N                   |
| 375842       | BONE SPRING 2ND | -6611     | 9950                | 9950           | SANDSTONE                   | NATURAL GAS, OIL  | N                   |
| 375844       | BONE SPRING 3RD | -7878     | 11217               | 11217          | SANDSTONE                   | NATURAL GAS, OIL  | N                   |
| 375845       | WOLFCAMP        | -8328     | 11667               | 11667          | LIMESTONE, SANDSTONE, SHALE | NATURAL GAS, OIL  | Y                   |

## Section 2 - Blowout Prevention

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** ARMSTRONG 26/35 W0KN FED COM

**Well Number:** 3H

**Pressure Rating (PSI):** 10M

**Rating Depth:** 19075

**Equipment:** Annular, Pipe Ram, Blind Ram

**Requesting Variance?** YES

**Variance request:** A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. Anchors are not required by manufacturer. A multibowl wellhead is being used. See attached schematic.

**Testing Procedure:** BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested. Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

**Choke Diagram Attachment:**

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_Flex\_Line\_Specs\_20191018112727.pdf

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_Flex\_Line\_Specs\_API\_16C\_20191018112727.pdf

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_10M\_BOPE\_Choke\_Diagram\_20200820112311.pdf

**BOP Diagram Attachment:**

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_10M\_Annular\_BOP\_Variance\_20200820112324.doc

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_10M\_BOPE\_Schematic\_20200820112324.pdf

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_10M\_Multi\_Bowl\_WH\_20200820112324.pdf

### Section 3 - Casing

| Casing ID | String Type  | Hole Size | Csg Size | Condition | Standard | Tapered String | Top Set MD | Bottom Set MD | Top Set TVD | Bottom Set TVD | Top Set MSL | Bottom Set MSL | Calculated casing length MD | Grade   | Weight | Joint Type | Collapse SF | Burst SF | Joint SF Type | Joint SF | Body SF Type | Body SF |
|-----------|--------------|-----------|----------|-----------|----------|----------------|------------|---------------|-------------|----------------|-------------|----------------|-----------------------------|---------|--------|------------|-------------|----------|---------------|----------|--------------|---------|
| 1         | SURFACE      | 17.5      | 13.375   | NEW       | API      | N              | 0          | 1100          | 0           | 1100           |             |                | 1100                        | H-40    | 48     | ST&C       | 1.53        | 3.44     | DRY           | 6.1      | DRY          | 10.25   |
| 2         | INTERMEDIATE | 12.25     | 9.625    | NEW       | API      | Y              | 0          | 4250          | 0           | 4250           |             |                | 4250                        | J-55    | 36     | LT&C       | 1.13        | 1.96     | DRY           | 2.9      | DRY          | 3.61    |
| 3         | PRODUCTION   | 8.75      | 7.0      | NEW       | API      | N              | 0          | 12097         | 0           | 11814          |             |                | 12097                       | HCP-110 | 26     | LT&C       | 1.34        | 1.7      | DRY           | 2.2      | DRY          | 2.64    |
| 4         | LINER        | 6.125     | 4.5      | NEW       | API      | N              | 11343      | 19075         | 11814       | 11736          |             |                | 7732                        | P-110   | 13.5   | LT&C       | 1.46        | 1.69     | DRY           | 3.24     | DRY          | 4.04    |

**Casing Attachments**

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** ARMSTRONG 26/35 W0KN FED COM

**Well Number:** 3H

## Casing Attachments

---

**Casing ID:** 1      **String Type:** SURFACE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_Csg\_Assumptions\_20190311145621.pdf

---

**Casing ID:** 2      **String Type:** INTERMEDIATE

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_Intermediate\_Tapered\_String\_Diagram\_20190311145754.pdf

**Casing Design Assumptions and Worksheet(s):**

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_Csg\_Assumptions\_20190311145724.pdf

---

**Casing ID:** 3      **String Type:** PRODUCTION

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_Csg\_Assumptions\_20190311145846.pdf

---

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** ARMSTRONG 26/35 W0KN FED COM

**Well Number:** 3H

## Casing Attachments

**Casing ID:** 4 **String Type:** LINER

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

**Casing Design Assumptions and Worksheet(s):**

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_Csg\_Assumptions\_20190311150052.pdf

## Section 4 - Cement

| String Type  | Lead/Tail | Stage Tool Depth | Top MD | Bottom MD | Quantity(sx) | Yield | Density | Cu Ft | Excess% | Cement type | Additives  |
|--------------|-----------|------------------|--------|-----------|--------------|-------|---------|-------|---------|-------------|--|
| SURFACE      | Lead      |                  | 0      | 909       | 600          | 2.12  | 12.5    | 1272  | 100     | Class C     | Salt, Gel, Extender, LCM   |
| SURFACE      | Tail      |                  | 909    | 1100      | 200          | 1.34  | 14.8    | 268   | 100     | Class C     | Retarder   |
| INTERMEDIATE | Lead      |                  | 0      | 3558      | 650          | 2.12  | 12.5    | 1378  | 25      | Class C     | Salt, Gel, Extender, LCM   |
| INTERMEDIATE | Tail      |                  | 3558   | 4250      | 200          | 1.34  | 14.8    | 268   | 25      | Class C     | Retarder   |
| PRODUCTION   | Lead      | 5498             | 4050   | 4811      | 70           | 2.12  | 12.5    | 148   | 25      | Class C     | Gel, Retarder, Defoamer, Extender  |
| PRODUCTION   | Tail      |                  | 4811   | 5498      | 100          | 1.34  | 14.8    | 134   | 25      | Class C     | Retarder   |
| PRODUCTION   | Lead      | 5498             | 5498   | 9618      | 370          | 2.12  | 12.5    | 784   | 25      | Class C     | Gel, Retarder, Defoamer, Extender  |
| PRODUCTION   | Tail      |                  | 9618   | 12097     | 400          | 1.18  | 15.6    | 472   | 25      | Class H     | Retarder, Fluid Loss, Defoamer   |
| LINER        | Lead      |                  | 11343  | 19075     | 310          | 2.97  | 11.2    | 921   | 25      | Class H     | Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent |



**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** ARMSTRONG 26/35 W0KN FED COM

**Well Number:** 3H

## Section 5 - Circulating Medium

**Mud System Type:** Closed

**Will an air or gas system be Used?** NO

**Description of the equipment for the circulating system in accordance with Onshore Order #2:**

**Diagram of the equipment for the circulating system in accordance with Onshore Order #2:**

**Describe what will be on location to control well or mitigate other conditions:** Lost circulation material Sweeps Mud scavengers in surface hole

**Describe the mud monitoring system utilized:** Pason, PVT, visual monitoring

## Circulating Medium Table

| Top Depth | Bottom Depth | Mud Type        | Min Weight (lbs/gal) | Max Weight (lbs/gal) | Density (lbs/cu ft) | Gel Strength (lbs/100 sqft) | PH | Viscosity (CP) | Salinity (ppm) | Filtration (cc) | Additional Characteristics |
|-----------|--------------|-----------------|----------------------|----------------------|---------------------|-----------------------------|----|----------------|----------------|-----------------|----------------------------|
| 1100      | 4250         | SALT SATURATED  | 10                   | 10                   |                     |                             |    |                |                |                 |                            |
| 4250      | 1181<br>4    | WATER-BASED MUD | 8.6                  | 9.5                  |                     |                             |    |                |                |                 |                            |
| 1173<br>6 | 1181<br>4    | OIL-BASED MUD   | 10                   | 13                   |                     |                             |    |                |                |                 |                            |
| 0         | 1100         | SPUD MUD        | 8.6                  | 8.8                  |                     |                             |    |                |                |                 |                            |

## Section 6 - Test, Logging, Coring

**List of production tests including testing procedures, equipment and safety measures:**

GR/CNL will be run from KOP (11,343') to surface.

**List of open and cased hole logs run in the well:**

DS,GR,MWD,MUDLOG

**Coring operation description for the well:**

None

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** ARMSTRONG 26/35 W0KN FED COM

**Well Number:** 3H

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 7372

**Anticipated Surface Pressure:** 4774.68

**Anticipated Bottom Hole Temperature(F):** 165

**Anticipated abnormal pressures, temperatures, or potential geologic hazards?** NO

**Describe:**

**Contingency Plans geohazards description:**

**Contingency Plans geohazards attachment:**

**Hydrogen Sulfide drilling operations plan required?** YES

**Hydrogen sulfide drilling operations plan:**

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_H2S\_Plan\_20190311150627.pdf

## Section 8 - Other Information

**Proposed horizontal/directional/multi-lateral plan submission:**

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_Dir\_Plan\_20190311150701.pdf

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_Dir\_Plot\_20190311150702.pdf

**Other proposed operations facets description:**

**Other proposed operations facets attachment:**

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_C101\_20190311150718.pdf

Armstrong\_26\_35\_W0KN\_Fed\_Com\_3H\_Drlg\_Program\_20191216153222.doc

**Other Variance attachment:**



GATES E & S NORTH AMERICA, INC.  
134 44TH STREET  
CORPUS CHRISTI, TEXAS 78405

PHONE: 361-887-9807  
FAX: 361-887-0812  
EMAIL: [Tim.Cantu@gates.com](mailto:Tim.Cantu@gates.com)  
WEB: [www.gates.com](http://www.gates.com)

## 10K CEMENTING ASSEMBLY PRESSURE TEST CERTIFICATE

|                 |                     |                  |                |
|-----------------|---------------------|------------------|----------------|
| Customer :      | AUSTIN DISTRIBUTING | Test Date:       | 4/30/2015      |
| Customer Ref. : | 4060578             | Hose Serial No.: | D-043015-7     |
| Invoice No. :   | 500506              | Created By:      | JUSTIN CROPPER |

Product Description: 10K3.548.0CK4.1/1610KFLGE/E LE

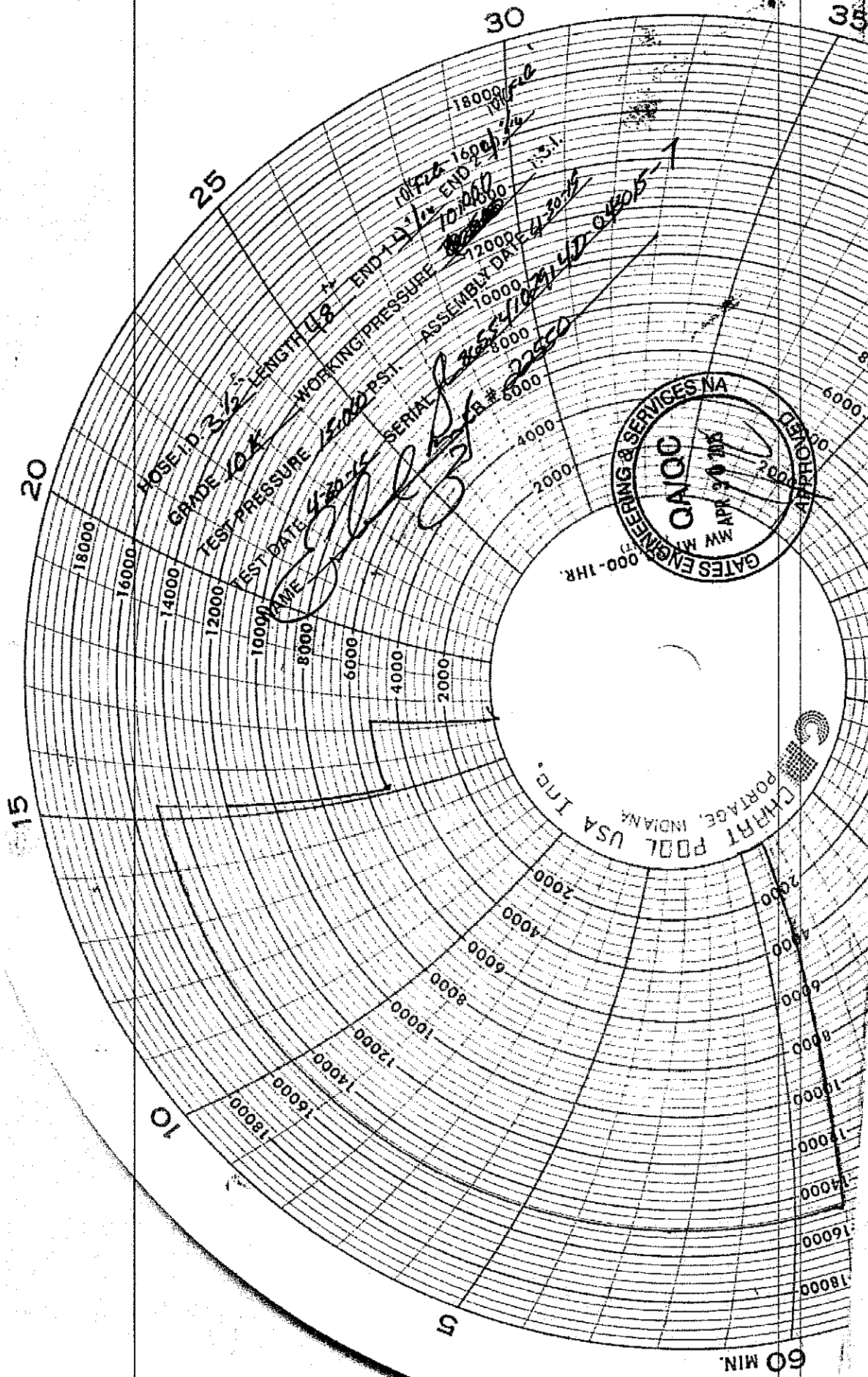
|                    |                |                 |                        |
|--------------------|----------------|-----------------|------------------------|
| End Fitting 1 :    | 4 1/16 10K FLG | End Fitting 2 : | 4 1/16 10K FLG         |
| Gates Part No. :   | 4773-6290      | Assembly Code : | L36554102914D-043015-7 |
| Working Pressure : | 10,000 PSI     | Test Pressure : | 15,000 PSI             |

Gates E & S North America, Inc. certifies that the following hose assembly has been tested to the Gates Oilfield Roughneck Agreement/Specification requirements and passed the 15 minute hydrostatic test per API Spec 7K/Q1, Fifth Edition, June 2010, Test pressure 9.6.7 and per Table 9 to 15,000 psi in accordance with this product number. Hose burst pressure 9.6.7.2 exceeds the minimum of 2.5 times the working pressure per Table 9.

|                   |           |             |            |
|-------------------|-----------|-------------|------------|
| Quality Manager : | QUALITY   | Production: | PRODUCTION |
| Date :            | 4/30/2015 | Date :      | 4/30/2015  |
| Signature :       |           | Signature : |            |

Form PTC - 01 Rev.02







GATES ENGINEERING & SERVICES NORTH AMERICA  
7603 Prairie Oak Dr.  
Houston, TX 77086

PHONE: (281) 602 - 4119  
FAX:  
EMAIL: Troy.Schmidt@gates.com  
WEB: www.gates.com

## 10K CHOKE & KILL ASSEMBLY PRESSURE TEST CERTIFICATE

|                      |                                     |                  |                         |
|----------------------|-------------------------------------|------------------|-------------------------|
| Customer:            | A-7 AUSTIN INC DBA AUSTIN HOSE      | Test Date:       | 8/20/2018               |
| Customer Ref.:       | 4101901                             | Hose Serial No.: | H-082018-10             |
| Invoice No.:         | 511956                              | Created By:      | Moose Naqvi             |
| Product Description: | 10KF3.035.0CK41/1610KFLGFXDxFLT L/E |                  |                         |
| End Fitting 1:       | 4 1/16 in. Fixed Flange             | End Fitting 2:   | 4 1/16 in. Float Flange |
| Gates Part No.:      | 68503010-9721632                    | Assembly Code:   | L40695052218H-082018-10 |
| Working Pressure:    | 10,000 psi.                         | Test Pressure:   | 15,000 psi.             |

Gates Engineering & Services North America certifies that the following hose assembly has successfully passed all pressure testing requirements set forth in Gates specifications: GTS-04-052 (for 5K assemblies) or GTS-04-053 (10K assemblies), which include reference to Specification API 16C (2nd Edition); sections 7.5.4, 7.5.9, and 10.8.7. A test graph will accompany this test certificate to illustrate conformity to test requirements.

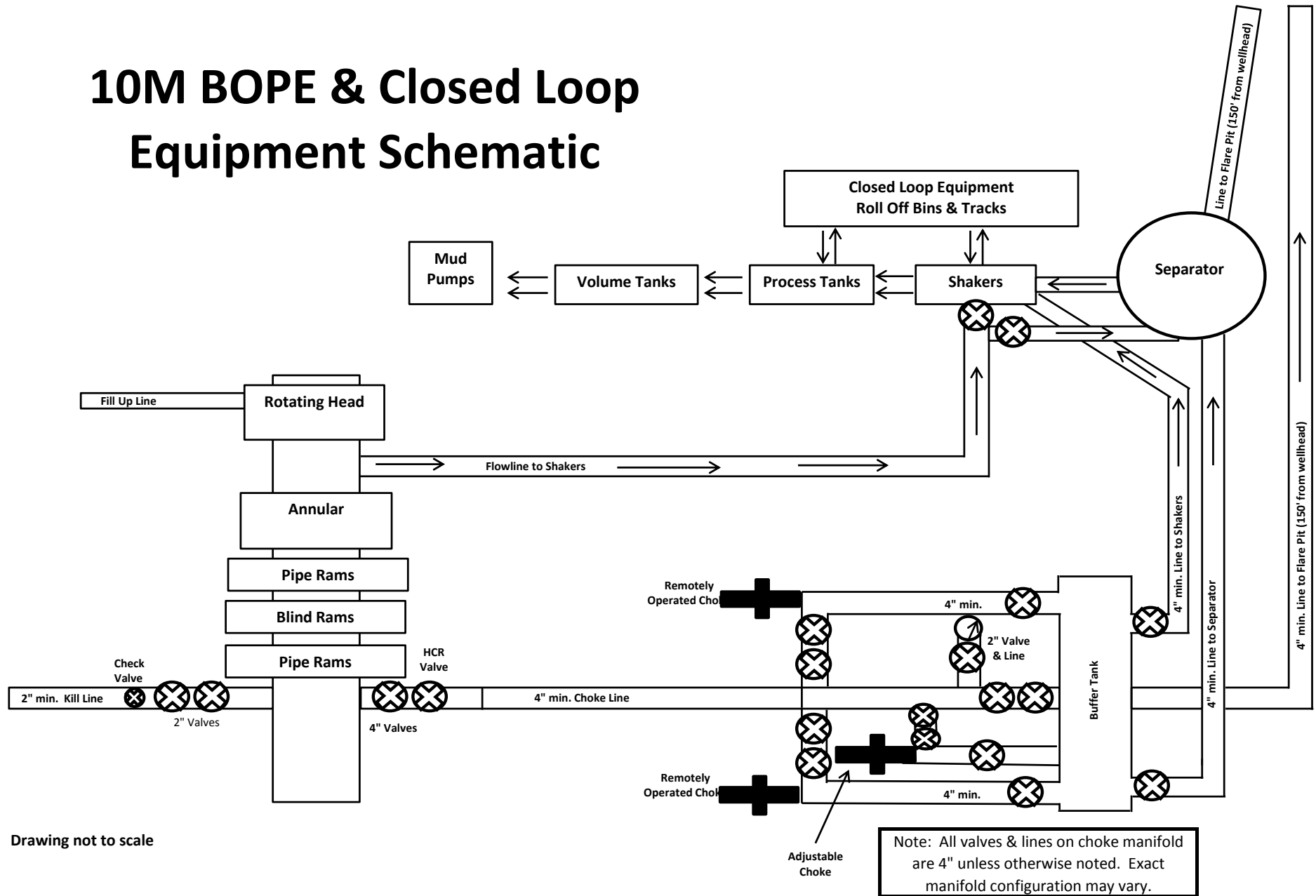
Quality: QUALITY  
Date : 8/20/2018  
Signature : *Moose Naqvi*

Production: PRODUCTION  
Date : 8/20/2018  
Signature : *[Signature]*

Form PTC - 01 Rev.0 2



# 10M BOPE & Closed Loop Equipment Schematic



Drawing not to scale

## 10,000 PSI Annular BOP Variance Request

Mewbourne Oil Company request a variance to use a 5000 psi annular BOP with a 10,000 psi BOP stack. The component and compatibility tables along with the general well control plans demonstrate how the 5000 psi annular BOP will be protected from pressures that exceed its rated working pressure (RWP). The pressure at which the control of the wellbore is transferred from the annular preventer to another available preventer will not exceed 3500 psi (70% of the RWP of the 5000 psi annular BOP).

### 1. Component and Preventer Compatibility Tables

The tables below outline the tubulars and the compatible preventers in use. This table, combined with the drilling fluid, documents that two barriers to flow will be maintained at all times.

| 12-1/4" Intermediate Hole Section<br>10M psi Requirement |                  |                   |     |  |            |
|--|------------------|-------------------|-----|--|------------|
| Component  | OD               | Primary Preventer | RWP | Alternate Preventer(s)                     | RWP        |
| Drillpipe  | 5.000" or 4.500" | Annular           | 5M  | Upper 3.5"-5.5" VBR<br>Lower 3.5"-5.5" VBR | 10M<br>10M |
| HWDP   | 5.000" or 4.500" | Annular           | 5M  | Upper 3.5"-5.5" VBR<br>Lower 3.5"-5.5" VBR | 10M<br>10M |
| Jars   | 6.500"           | Annular           | 5M  | -  | -          |
| DCs and MWD tools  | 6.500"-8.000"    | Annular           | 5M  | -  | -          |
| Mud Motor  | 8.000"-9.625"    | Annular           | 5M  | -  | -          |
| Intermediate Casing                                      | 9.625"           | Annular           | 5M  | -  | -          |
| Open-Hole  | -                | Blind Rams        | 10M | -  | -          |

| 8-3/4" Production Hole Section<br>10M psi Requirement |                  |                   |     |  |            |
|---|------------------|-------------------|-----|--|------------|
| Component   | OD               | Primary Preventer | RWP | Alternate Preventer(s)                     | RWP        |
| Drillpipe   | 5.000" or 4.500" | Annular           | 5M  | Upper 3.5"-5.5" VBR<br>Lower 3.5"-5.5" VBR | 10M<br>10M |
| HWDP  | 5.000" or 4.500" | Annular           | 5M  | Upper 3.5"-5.5" VBR<br>Lower 3.5"-5.5" VBR | 10M<br>10M |
| Jars  | 6.500"           | Annular           | 5M  | -  | -          |
| DCs and MWD tools                                     | 6.500"-8.000"    | Annular           | 5M  | -  | -          |
| Mud Motor   | 6.750"-8.000"    | Annular           | 5M  | -  | -          |
| Production Casing                                     | 7"               | Annular           | 5M  | -  | -          |

|           |   |            |     |   |   |
|-----------|---|------------|-----|---|---|
| Open-Hole | - | Blind Rams | 10M | - | - |
|-----------|---|------------|-----|---|---|

| <b>6-1/8" Lateral Hole Section<br/>10M psi Requirement</b> |                   |                          |            |  |            |
|--|-------------------|--------------------------|------------|--|------------|
| <b>Component</b>   | <b>OD</b>         | <b>Primary Preventer</b> | <b>RWP</b> | <b>Alternate Preventer(s)</b>              | <b>RWP</b> |
| Drillpipe  | 4.500"            | Annular                  | 5M         | Upper 3.5"-5.5" VBR<br>Lower 3.5"-5.5" VBR | 10M<br>10M |
| HWDP   | 4.500"            | Annular                  | 5M         | Upper 3.5"-5.5" VBR<br>Lower 3.5"-5.5" VBR | 10M<br>10M |
| DCs and MWD tools  | 4.750"-<br>5.500" | Annular                  | 5M         | Upper 3.5"-5.5" VBR<br>Lower 3.5"-5.5" VBR | 10M<br>10M |
| Mud Motor  | 4.750"-<br>5.500" | Annular                  | 5M         | Upper 3.5"-5.5" VBR<br>Lower 3.5"-5.5" VBR | 10M<br>10M |
| Production Casing  | 4.500"            | Annular                  | 5M         | Upper 3.5"-5.5" VBR<br>Upper 3.5"-5.5" VBR | 10M<br>10M |
| Open-Hole  | -                 | Blind Rams               | 10M        | -  | -          |

VBR = Variable Bore Ram

## 2. Well Control Procedures

Below are the minimal high-level tasks prescribed to assure a proper shut-in while drilling, tripping, running casing, pipe out of the hole (open hole), and moving the BHA through the BOPs. At least one well control drill will be performed weekly per crew to demonstrate compliance with the procedure and well control plan. The well control drill will be recorded in the daily drilling log. The type of drill will be determined by the ongoing operations, but reasonable attempts will be made to vary the type of drill conducted (pit, trip, open hole, choke, etc.). This well control plan will be available for review by rig personnel in the Mewbourne Oil Company drilling supervisor's office on location and on the rig floor. All BOP equipment will be tested as per Onshore O&G Order No. 2 with the exception of the 5000 psi annular which will be tested to 70% of its RWP.

### General Procedure While Drilling

1. Sound alarm (alert crew)
2. Space out drill string
3. Shut down pumps (stop pumps and rotary)
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)



5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP & SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

#### General Procedure While Tripping

1. Sound alarm (alert crew)
2. Stab full-opening safety valve & close
3. Space out drill string
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP & SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

#### General Procedure While Running Production Casing

1. Sound alarm (alert crew)

2. Stab crossover and full-opening safety valve and close
3. Space out string
4. Shut-in well (uppermost applicable BOP, typically annular preventer, first. HCR & choke will already be in the closed position.)
5. Confirm shut-in
6. Notify toolpusher/company representative
7. Read and record the following:
  - a. SIDPP & SICP
  - b. Pit gain
  - c. Time
8. Regroup and identify forward plan
9. If pressure has built or is anticipated during the kill to reach 70% or greater of the RWP of the annular preventer, confirm spacing and close the upper variable bore rams.

#### General Procedure With No Pipe In Hole (Open Hole)

1. Sound alarm (alert crew)
2. Shut-in with blind rams (HCR & choke will already be in the closed position)
3. Confirm shut-in
4. Notify toolpusher/company representative
5. Read and record the following:
  - a. SICP
  - b. Pit gain
  - c. Time
6. Regroup and identify forward plan

#### General Procedures While Pulling BHA Through Stack

1. PRIOR to pulling last joint of drillpipe through stack:
  - a. Perform flow check. If flowing, continue to (b).
  - b. Sound alarm (alert crew)
  - c. Stab full-opening safety valve and close
  - d. Space out drill string with tool joint just beneath the upper variable bore rams
  - e. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
  - f. Confirm shut-in
  - g. Notify toolpusher/company representative
  - h. Read and record the following:
    - i. SIDPP & SICP
    - ii. Pit gain
    - iii. Time
  - i. Regroup and identify forward plan
2. With BHA in the stack and compatible ram preventer and pipe combination immediately available:
  - a. Sound alarm (alert crew)
  - b. Stab crossover and full-opening safety valve and close
  - c. Space out drill string with upset just beneath the upper variable bore rams
  - d. Shut-in using upper variable bore rams (HCR & choke will already be in the closed position)
  - e. Confirm shut-in
  - f. Notify toolpusher/company representative
  - g. Read and record the following:
    - i. SIDPP & SICP
    - ii. Pit gain

iii. Time

h. Regroup and identify forward plan

3. With BHA in the stack and NO compatible ram preventer and pipe combination immediately available:

a. Sound alarm (alert crew)

b. If possible, pull string clear of the stack and follow "Open Hole" procedure.

c. If impossible to pull string clear of the stack:

d. Stab crossover, make up one joint/stand of drillpipe and full-opening safety valve and close

e. Space out drill string with tooljoint just beneath the upper variable bore ram

f. Shut-in using upper variable bore ram (HCR & choke will already be in the closed position)

g. Confirm shut-in

h. Notify toolpusher/company representative

i. Read and record the following:

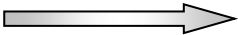
i. SIDPP & SICP

ii. Pit gain

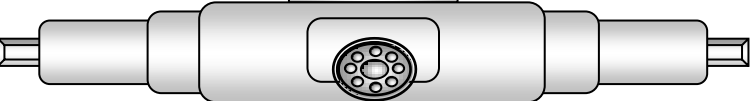
iii. Time

j. Regroup and identify forward plan

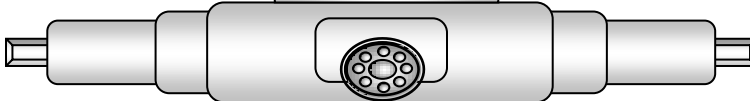
Hydril "GK"  
13-5/8" 5M



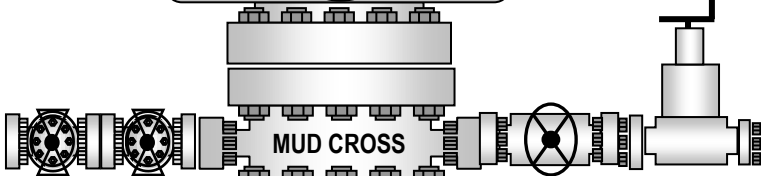
Cameron Type U  
13-5/8" 10M



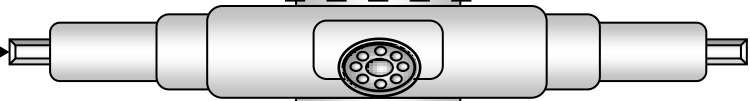
Variable Bore Rams



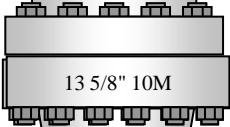
BLIND RAMS



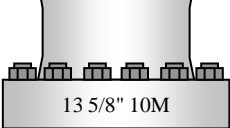
MUD CROSS



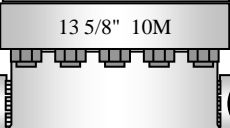
Variable Bore Rams



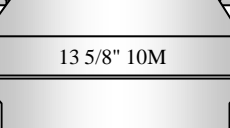
13 5/8" 10M



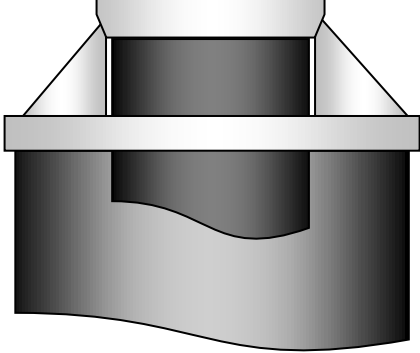
13 5/8" 10M



13 5/8" 10M

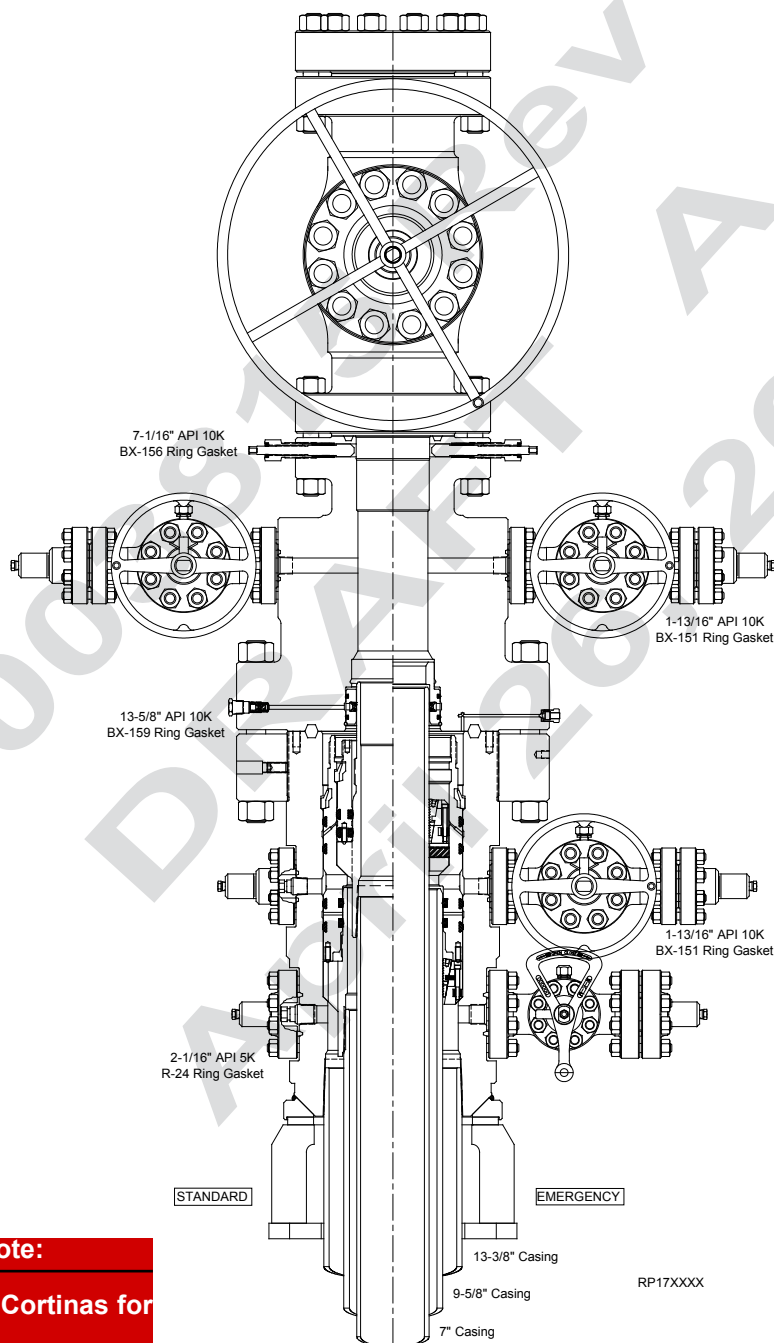


13 5/8" 10M



# RUNNING PROCEDURE

## Mewbourne Oil Co

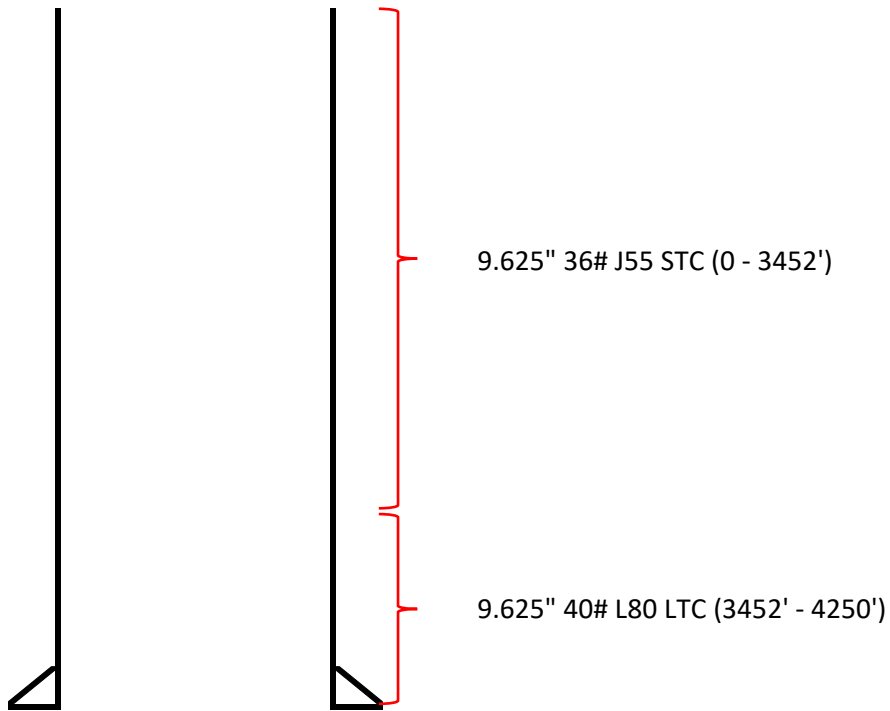


### Publication Status Note:

Draft A sent to John Cortinas for review; RA 04/29/17

## Surface Systems Publication

# TAPERED STRING DIAGRAM



|     | COLLAPSE | BURST | JOINT<br>YIELD | BODY YIELD |
|-----|----------|-------|----------------|------------|
| 36# | 1.130    | 1.960 | 2.900          | 3.610      |
| 40# | 1.400    | 2.600 | 22.780         | 28.700     |

**Mewbourne Oil Company, Armstrong 26/35 W0KN Fed Com #3H**  
**Sec 26 & 35, T25S, R31E**  
**SL: 2500' FSL & 2645' FWL (Sec 26)**  
**BHL: 330' FSL & 2310' FWL (Sec 35)**

## 2. Casing Program

| Hole Size                 | Casing Interval |        | Csg. Size | Weight (lbs) | Grade  | Conn. | SF Collapse | SF Burst | SF Jt Tension      | SF Body Tension    |
|---------------------------|-----------------|--------|-----------|--------------|--------|-------|-------------|----------|--------------------|--------------------|
|                           | From            | To     |           |              |        |       |             |          |                    |                    |
| 17.5"                     | 0'              | 1100'  | 13.375"   | 48           | H40    | STC   | 1.53        | 3.44     | 6.10               | 10.25              |
| 12.25"                    | 0'              | 3452'  | 9.625"    | 36           | J55    | LTC   | 1.13        | 1.96     | 2.90               | 3.61               |
| 12.25"                    | 3452'           | 4250'  | 9.625"    | 40           | L80    | LTC   | 1.40        | 2.60     | 22.78              | 28.70              |
| 8.75"                     | 0'              | 12097' | 7"        | 26           | HCP110 | LTC   | 1.34        | 1.70     | 2.20               | 2.64               |
| 6.125"                    | 11343'          | 19075' | 4.5"      | 13.5         | P110   | LTC   | 1.46        | 1.69     | 3.24               | 4.04               |
| BLM Minimum Safety Factor |                 |        |           |              |        |       | 1.125       | 1        | 1.6 Dry<br>1.8 Wet | 1.6 Dry<br>1.8 Wet |

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

|  | Y or N |
|--|--------|
| Is casing new? If used, attach certification as required in Onshore Order #1   | Y      |
| Is casing API approved? If no, attach casing specification sheet.  | Y      |
| Is premium or uncommon casing planned? If yes attach casing specification sheet.   | N      |
| Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria). | Y      |
| Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?                             | Y      |
| Is well located within Capitan Reef?   | N      |
| If yes, does production casing cement tie back a minimum of 50' above the Reef?  |        |
| Is well within the designated 4 string boundary.   |        |
| Is well located in SOPA but not in R-111-P?  | N      |
| If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?                       |        |
| Is well located in R-111-P and SOPA?   | N      |
| If yes, are the first three strings cemented to surface?   |        |
| Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?   |        |
| Is well located in high Cave/Karst?  | N      |
| If yes, are there two strings cemented to surface?   |        |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?   |        |
| Is well located in critical Cave/Karst?  | N      |
| If yes, are there three strings cemented to surface?   |        |



**Mewbourne Oil Company, Armstrong 26/35 W0KN Fed Com #3H**  
**Sec 26 & 35, T25S, R31E**  
**SL: 2500' FSL & 2645' FWL (Sec 26)**  
**BHL: 330' FSL & 2310' FWL (Sec 35)**

## 2. Casing Program

| Hole Size                 | Casing Interval |        | Csg. Size | Weight (lbs) | Grade  | Conn. | SF Collapse | SF Burst | SF Jt Tension      | SF Body Tension    |
|---------------------------|-----------------|--------|-----------|--------------|--------|-------|-------------|----------|--------------------|--------------------|
|                           | From            | To     |           |              |        |       |             |          |                    |                    |
| 17.5"                     | 0'              | 1100'  | 13.375"   | 48           | H40    | STC   | 1.53        | 3.44     | 6.10               | 10.25              |
| 12.25"                    | 0'              | 3452'  | 9.625"    | 36           | J55    | LTC   | 1.13        | 1.96     | 2.90               | 3.61               |
| 12.25"                    | 3452'           | 4250'  | 9.625"    | 40           | L80    | LTC   | 1.40        | 2.60     | 22.78              | 28.70              |
| 8.75"                     | 0'              | 12097' | 7"        | 26           | HCP110 | LTC   | 1.34        | 1.70     | 2.20               | 2.64               |
| 6.125"                    | 11343'          | 19075' | 4.5"      | 13.5         | P110   | LTC   | 1.46        | 1.69     | 3.24               | 4.04               |
| BLM Minimum Safety Factor |                 |        |           |              |        |       | 1.125       | 1        | 1.6 Dry<br>1.8 Wet | 1.6 Dry<br>1.8 Wet |

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

|  | Y or N |
|--|--------|
| Is casing new? If used, attach certification as required in Onshore Order #1   | Y      |
| Is casing API approved? If no, attach casing specification sheet.  | Y      |
| Is premium or uncommon casing planned? If yes attach casing specification sheet.   | N      |
| Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria). | Y      |
| Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?                             | Y      |
| Is well located within Capitan Reef?   | N      |
| If yes, does production casing cement tie back a minimum of 50' above the Reef?  |        |
| Is well within the designated 4 string boundary.   |        |
| Is well located in SOPA but not in R-111-P?  | N      |
| If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?                       |        |
| Is well located in R-111-P and SOPA?   | N      |
| If yes, are the first three strings cemented to surface?   |        |
| Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?   |        |
| Is well located in high Cave/Karst?  | N      |
| If yes, are there two strings cemented to surface?   |        |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?   |        |
| Is well located in critical Cave/Karst?  | N      |
| If yes, are there three strings cemented to surface?   |        |

**Mewbourne Oil Company, Armstrong 26/35 W0KN Fed Com #3H**  
**Sec 26 & 35, T25S, R31E**  
**SL: 2500' FSL & 2645' FWL (Sec 26)**  
**BHL: 330' FSL & 2310' FWL (Sec 35)**

## 2. Casing Program

| Hole Size                 | Casing Interval |        | Csg. Size | Weight (lbs) | Grade  | Conn. | SF Collapse | SF Burst | SF Jt Tension      | SF Body Tension    |
|---------------------------|-----------------|--------|-----------|--------------|--------|-------|-------------|----------|--------------------|--------------------|
|                           | From            | To     |           |              |        |       |             |          |                    |                    |
| 17.5"                     | 0'              | 1100'  | 13.375"   | 48           | H40    | STC   | 1.53        | 3.44     | 6.10               | 10.25              |
| 12.25"                    | 0'              | 3452'  | 9.625"    | 36           | J55    | LTC   | 1.13        | 1.96     | 2.90               | 3.61               |
| 12.25"                    | 3452'           | 4250'  | 9.625"    | 40           | L80    | LTC   | 1.40        | 2.60     | 22.78              | 28.70              |
| 8.75"                     | 0'              | 12097' | 7"        | 26           | HCP110 | LTC   | 1.34        | 1.70     | 2.20               | 2.64               |
| 6.125"                    | 11343'          | 19075' | 4.5"      | 13.5         | P110   | LTC   | 1.46        | 1.69     | 3.24               | 4.04               |
| BLM Minimum Safety Factor |                 |        |           |              |        |       | 1.125       | 1        | 1.6 Dry<br>1.8 Wet | 1.6 Dry<br>1.8 Wet |

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

|  | Y or N |
|--|--------|
| Is casing new? If used, attach certification as required in Onshore Order #1   | Y      |
| Is casing API approved? If no, attach casing specification sheet.  | Y      |
| Is premium or uncommon casing planned? If yes attach casing specification sheet.   | N      |
| Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria). | Y      |
| Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?                             | Y      |
| Is well located within Capitan Reef?   | N      |
| If yes, does production casing cement tie back a minimum of 50' above the Reef?  |        |
| Is well within the designated 4 string boundary.   |        |
| Is well located in SOPA but not in R-111-P?  | N      |
| If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?                       |        |
| Is well located in R-111-P and SOPA?   | N      |
| If yes, are the first three strings cemented to surface?   |        |
| Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?   |        |
| Is well located in high Cave/Karst?  | N      |
| If yes, are there two strings cemented to surface?   |        |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?   |        |
| Is well located in critical Cave/Karst?  | N      |
| If yes, are there three strings cemented to surface?   |        |

**Mewbourne Oil Company, Armstrong 26/35 W0KN Fed Com #3H**  
**Sec 26 & 35, T25S, R31E**  
**SL: 2500' FSL & 2645' FWL (Sec 26)**  
**BHL: 330' FSL & 2310' FWL (Sec 35)**

## 2. Casing Program

| Hole Size                 | Casing Interval |        | Csg. Size | Weight (lbs) | Grade  | Conn. | SF Collapse | SF Burst | SF Jt Tension      | SF Body Tension    |
|---------------------------|-----------------|--------|-----------|--------------|--------|-------|-------------|----------|--------------------|--------------------|
|                           | From            | To     |           |              |        |       |             |          |                    |                    |
| 17.5"                     | 0'              | 1100'  | 13.375"   | 48           | H40    | STC   | 1.53        | 3.44     | 6.10               | 10.25              |
| 12.25"                    | 0'              | 3452'  | 9.625"    | 36           | J55    | LTC   | 1.13        | 1.96     | 2.90               | 3.61               |
| 12.25"                    | 3452'           | 4250'  | 9.625"    | 40           | L80    | LTC   | 1.40        | 2.60     | 22.78              | 28.70              |
| 8.75"                     | 0'              | 12097' | 7"        | 26           | HCP110 | LTC   | 1.34        | 1.70     | 2.20               | 2.64               |
| 6.125"                    | 11343'          | 19075' | 4.5"      | 13.5         | P110   | LTC   | 1.46        | 1.69     | 3.24               | 4.04               |
| BLM Minimum Safety Factor |                 |        |           |              |        |       | 1.125       | 1        | 1.6 Dry<br>1.8 Wet | 1.6 Dry<br>1.8 Wet |

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

|  | Y or N |
|--|--------|
| Is casing new? If used, attach certification as required in Onshore Order #1   | Y      |
| Is casing API approved? If no, attach casing specification sheet.  | Y      |
| Is premium or uncommon casing planned? If yes attach casing specification sheet.   | N      |
| Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria). | Y      |
| Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?                             | Y      |
| Is well located within Capitan Reef?   | N      |
| If yes, does production casing cement tie back a minimum of 50' above the Reef?  |        |
| Is well within the designated 4 string boundary.   |        |
| Is well located in SOPA but not in R-111-P?  | N      |
| If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?                       |        |
| Is well located in R-111-P and SOPA?   | N      |
| If yes, are the first three strings cemented to surface?   |        |
| Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?   |        |
| Is well located in high Cave/Karst?  | N      |
| If yes, are there two strings cemented to surface?   |        |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?   |        |
| Is well located in critical Cave/Karst?  | N      |
| If yes, are there three strings cemented to surface?   |        |

## Hydrogen Sulfide Drilling Operations Plan **Mewbourne Oil Company**

### **1. General Requirements**

Rule 118 does not apply to this well because MOC has researched this area and no high concentrations of H<sub>2</sub>S were found. MOC will have on location and working all H<sub>2</sub>S safety equipment before the Delaware formation for purposes of safety and insurance requirements.

### **2. Hydrogen Sulfide Training**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will have received training from a qualified instructor in the following areas prior to entering the drilling pad area of the well:

1. The hazards and characteristics of hydrogen sulfide gas.
2. The proper use of personal protective equipment and life support systems.
3. The proper use of hydrogen sulfide detectors, alarms, warning systems, briefing areas, evacuation procedures.
4. The proper techniques for first aid and rescue operations.

Additionally, supervisory personnel will be trained in the following areas:

- 1 The effects of hydrogen sulfide on metal components. If high tensile tubular systems are utilized, supervisory personnel will be trained in their special maintenance requirements.
- 2 Corrective action and shut in procedures, blowout prevention, and well control procedures while drilling a well.
- 3 The contents of the Hydrogen Sulfide Drilling Operations Plan.

There will be an initial training session prior to encountering a known hydrogen sulfide source. The initial training session shall include a review of the site specific Hydrogen Sulfide Drilling Operations Plan.

### **3. Hydrogen Sulfide Safety Equipment and Systems**

All hydrogen sulfide safety equipment and systems will be installed, tested, and operational prior to drilling below the 9 5/8" intermediate casing.

1. Well Control Equipment
  - A. Choke manifold with minimum of one adjustable choke/remote choke.
  - B. Blowout preventers equipped with blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
  - C. Auxiliary equipment including annular type blowout preventer.
2. Protective Equipment for Essential Personnel

Thirty minute self contained work unit located in the dog house and at briefing areas.

Additionally: If H<sub>2</sub>S is encountered in concentrations less than 10 ppm, fans will be placed in work areas to prevent the accumulation of hazardous amounts of poisonous gas. If higher concentrations of H<sub>2</sub>S are detected the well will be shut in and a rotating head, mud/gas separator, remote choke and flare line with igniter will be installed.

3. Hydrogen Sulfide Protection and Monitoring Equipment  
Two portable hydrogen sulfide monitors positioned on location for optimum coverage and detection. The units shall have audible sirens to notify personnel when hydrogen sulfide levels exceed 20 PPM.
4. Visual Warning Systems
  - A. Wind direction indicators as indicated on the wellsite diagram.
  - B. Caution signs shall be posted on roads providing access to location. Signs shall be painted a high visibility color with lettering of sufficient size to be readable at reasonable distances from potentially contaminated areas.

#### **4. Mud Program**

The mud program has been designed to minimize the amount of hydrogen sulfide entrained in the mud system. Proper mud weight, safe drilling practices, and the use of hydrogen sulfide scavengers will minimize hazards while drilling the well.

#### **5. Metallurgy**

All tubular systems, wellheads, blowout preventers, drilling spools, kill lines, choke manifolds, and valves shall be suitable for service in a hydrogen sulfide environment when chemically treated.

#### **6. Communications**

State & County Officials phone numbers are posted on rig floor and supervisors trailer. Communications in company vehicles and toolpushers are either two way radios or cellular phones.

#### **7. Well Testing**

Drill stem testing is not an anticipated requirement for evaluation of this well. If a drill stem test is required, it will be conducted with a minimum number of personnel in the immediate vicinity. The test will be conducted during daylight hours only.

#### **8. Emergency Phone Numbers**

|   |                            |
|---|----------------------------|
| <b>Eddy County Sheriff's Office</b>                                   | <b>911 or 575-887-7551</b> |
| <b>Ambulance Service</b>  | <b>911 or 575-885-2111</b> |
| <b>Carlsbad Fire Dept</b>   | <b>911 or 575-885-2111</b> |
| <b>Loco Hills Volunteer Fire Dept.</b>                                | <b>911 or 575-677-3266</b> |
| <b>Closest Medical Facility - Columbia Medical Center of Carlsbad</b> | <b>575-492-5000</b>        |

|                              |                              |                     |
|------------------------------|------------------------------|---------------------|
| <b>Mewbourne Oil Company</b> | <b>Hobbs District Office</b> | <b>575-393-5905</b> |
|                              | <b>Fax</b>                   | <b>575-397-6252</b> |
|                              | <b>2<sup>nd</sup> Fax</b>    | <b>575-393-7259</b> |

|                                |                       |                     |
|--------------------------------|-----------------------|---------------------|
| <b>District Manager</b>        | <b>Robin Terrell</b>  | <b>575-390-4816</b> |
| <b>Drilling Superintendent</b> | <b>Frosty Lathan</b>  | <b>575-390-4103</b> |
|                                | <b>Bradley Bishop</b> | <b>575-390-6838</b> |
| <b>Drilling Foreman</b>        | <b>Wesley Noseff</b>  | <b>575-441-0729</b> |

# **Mewbourne Oil Company**

**Eddy County, New Mexico NAD 83**

**Armstrong 26/35 W0KN Fed Com #3H**

**SL: 2500 FSL & 2645 FWL (Sec 26)**

**Sec 26, T25S, R31E**

**BHL: 330 FSL & 2310 FWL (Sec 35)**

**Plan: Design #1**

## **Standard Planning Report**

**05 March, 2019**

## Planning Report

|                  |                                  |                                     |  |
|------------------|----------------------------------|-------------------------------------|--|
| <b>Database:</b> | Hobbs                            | <b>Local Co-ordinate Reference:</b> | Site Armstrong 26/35 W0KN Fed Com #3H  |
| <b>Company:</b>  | Mewbourne Oil Company            | <b>TVD Reference:</b>               | WELL @ 3366.0usft (Original Well Elev) |
| <b>Project:</b>  | Eddy County, New Mexico NAD 83   | <b>MD Reference:</b>                | WELL @ 3366.0usft (Original Well Elev) |
| <b>Site:</b>     | Armstrong 26/35 W0KN Fed Com #3H | <b>North Reference:</b>             | Grid                                   |
| <b>Well:</b>     | SL: 2500 FSL & 2645 FWL (Sec 26) | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | BHL: 330 FSL & 2310 FWL (Sec 35) |                                     |  |
| <b>Design:</b>   | Design #1                        |                                     |  |

|                    |                                |                      |                |
|--------------------|--------------------------------|----------------------|----------------|
| <b>Project</b>     | Eddy County, New Mexico NAD 83 |                      |                |
| <b>Map System:</b> | US State Plane 1983            | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983      |                      |                |
| <b>Map Zone:</b>   | New Mexico Eastern Zone        |                      |                |

|                       |     |                                  |                 |            |                   |        |
|-----------------------|-----|----------------------------------|-----------------|------------|-------------------|--------|
| Site                  |     | Armstrong 26/35 W0KN Fed Com #3H |                 |            |                   |        |
| Site Position:        |     | Northing:                        | 400,931.90 usft | Latitude:  | 32.1008926        |        |
| From:                 | Map | Easting:                         | 722,321.70 usft | Longitude: | -103.7488544      |        |
| Position Uncertainty: |     | 0.0 usft                         | Slot Radius:    | 13-3/16 "  | Grid Convergence: | 0.31 ° |

|                      |                                  |          |                     |                 |               |              |
|----------------------|----------------------------------|----------|---------------------|-----------------|---------------|--------------|
| Well                 | SL: 2500 FSL & 2645 FWL (Sec 26) |          |                     |                 |               |              |
| Well Position        | +N/-S                            | 0.0 usft | Northing:           | 400,931.90 usft | Latitude:     | 32.1008926   |
|                      | +E/-W                            | 0.0 usft | Easting:            | 722,321.70 usft | Longitude:    | -103.7488544 |
| Position Uncertainty |                                  | 0.0 usft | Wellhead Elevation: | 3,366.0 usft    | Ground Level: | 3,339.0 usft |

|                  |                                  |                    |                        |                      |                            |
|------------------|----------------------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | BHL: 330 FSL & 2310 FWL (Sec 35) |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b>                | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2010                         | 3/5/2019           | 6.70                   | 59.85                | 47,754                     |

|                          |                                |                     |                      |                      |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|
| <b>Design</b>            | Design #1                      |                     |                      |                      |
| <b>Audit Notes:</b>      |                                |                     |                      |                      |
| <b>Version:</b>          | <b>Phase:</b>                  | PROTOTYPE           | <b>Tie On Depth:</b> | 0.0                  |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b>  | <b>Direction (°)</b> |
|                          | 0.0                            | 0.0                 | 0.0                  | 182.36               |

| <b>Plan Sections</b>  |                 |             |                       |              |              |                         |                        |                       |         |                     |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|---------------------|
| 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    |                     |
| 1,100.0               | 0.00            | 0.00        | 1,100.0               | 0.0          | 0.0          | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 1,226.4               | 1.90            | 269.83      | 1,226.3               | 0.0          | -2.1         | 1.50                    | 1.50                   | 0.00                  | 269.83  |                     |
| 11,216.1              | 1.90            | 269.83      | 11,210.7              | -1.0         | -332.5       | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 11,342.5              | 0.00            | 0.00        | 11,337.0              | -1.0         | -334.6       | 1.50                    | -1.50                  | 0.00                  | 180.00  | KOP: 2500 FSL & 231 |
| 12,097.2              | 90.64           | 179.79      | 11,814.0              | -483.4       | -332.9       | 12.01                   | 12.01                  | 0.00                  | 179.79  |                     |
| 19,075.2              | 90.64           | 179.79      | 11,736.0              | -7,460.9     | -307.7       | 0.00                    | 0.00                   | 0.00                  | 0.00    | BHL: 330 FSL & 2310 |

## Planning Report

|                  |                                  |                                     |  |
|------------------|----------------------------------|-------------------------------------|--|
| <b>Database:</b> | Hobbs                            | <b>Local Co-ordinate Reference:</b> | Site Armstrong 26/35 W0KN Fed Com #3H  |
| <b>Company:</b>  | Mewbourne Oil Company            | <b>TVD Reference:</b>               | WELL @ 3366.0usft (Original Well Elev) |
| <b>Project:</b>  | Eddy County, New Mexico NAD 83   | <b>MD Reference:</b>                | WELL @ 3366.0usft (Original Well Elev) |
| <b>Site:</b>     | Armstrong 26/35 W0KN Fed Com #3H | <b>North Reference:</b>             | Grid                                   |
| <b>Well:</b>     | SL: 2500 FSL & 2645 FWL (Sec 26) | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | BHL: 330 FSL & 2310 FWL (Sec 35) |                                     |  |
| <b>Design:</b>   | 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) |
| 0.0                              | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| SL: 2500 FSL & 2645 FWL (Sec 26) |                 |             |                       |              |              |                         |                         |                        |                       |
| 100.0                            | 0.00            | 0.00        | 100.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 200.0                            | 0.00            | 0.00        | 200.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 300.0                            | 0.00            | 0.00        | 300.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 400.0                            | 0.00            | 0.00        | 400.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 500.0                            | 0.00            | 0.00        | 500.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 600.0                            | 0.00            | 0.00        | 600.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 700.0                            | 0.00            | 0.00        | 700.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 800.0                            | 0.00            | 0.00        | 800.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 900.0                            | 0.00            | 0.00        | 900.0                 | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,000.0                          | 0.00            | 0.00        | 1,000.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,100.0                          | 0.00            | 0.00        | 1,100.0               | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,200.0                          | 1.50            | 269.83      | 1,200.0               | 0.0          | -1.3         | 0.1                     | 1.50                    | 1.50                   | 0.00                  |
| 1,226.4                          | 1.90            | 269.83      | 1,226.3               | 0.0          | -2.1         | 0.1                     | 1.50                    | 1.50                   | 0.00                  |
| 1,300.0                          | 1.90            | 269.83      | 1,299.9               | 0.0          | -4.5         | 0.2                     | 0.00                    | 0.00                   | 0.00                  |
| 1,400.0                          | 1.90            | 269.83      | 1,399.9               | 0.0          | -7.8         | 0.3                     | 0.00                    | 0.00                   | 0.00                  |
| 1,500.0                          | 1.90            | 269.83      | 1,499.8               | 0.0          | -11.1        | 0.5                     | 0.00                    | 0.00                   | 0.00                  |
| 1,600.0                          | 1.90            | 269.83      | 1,599.8               | 0.0          | -14.4        | 0.6                     | 0.00                    | 0.00                   | 0.00                  |
| 1,700.0                          | 1.90            | 269.83      | 1,699.7               | -0.1         | -17.8        | 0.8                     | 0.00                    | 0.00                   | 0.00                  |
| 1,800.0                          | 1.90            | 269.83      | 1,799.7               | -0.1         | -21.1        | 0.9                     | 0.00                    | 0.00                   | 0.00                  |
| 1,900.0                          | 1.90            | 269.83      | 1,899.6               | -0.1         | -24.4        | 1.1                     | 0.00                    | 0.00                   | 0.00                  |
| 2,000.0                          | 1.90            | 269.83      | 1,999.6               | -0.1         | -27.7        | 1.2                     | 0.00                    | 0.00                   | 0.00                  |
| 2,100.0                          | 1.90            | 269.83      | 2,099.5               | -0.1         | -31.0        | 1.4                     | 0.00                    | 0.00                   | 0.00                  |
| 2,200.0                          | 1.90            | 269.83      | 2,199.4               | -0.1         | -34.3        | 1.5                     | 0.00                    | 0.00                   | 0.00                  |
| 2,300.0                          | 1.90            | 269.83      | 2,299.4               | -0.1         | -37.6        | 1.7                     | 0.00                    | 0.00                   | 0.00                  |
| 2,400.0                          | 1.90            | 269.83      | 2,399.3               | -0.1         | -40.9        | 1.8                     | 0.00                    | 0.00                   | 0.00                  |
| 2,500.0                          | 1.90            | 269.83      | 2,499.3               | -0.1         | -44.2        | 2.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,600.0                          | 1.90            | 269.83      | 2,599.2               | -0.1         | -47.5        | 2.1                     | 0.00                    | 0.00                   | 0.00                  |
| 2,700.0                          | 1.90            | 269.83      | 2,699.2               | -0.2         | -50.8        | 2.2                     | 0.00                    | 0.00                   | 0.00                  |
| 2,800.0                          | 1.90            | 269.83      | 2,799.1               | -0.2         | -54.1        | 2.4                     | 0.00                    | 0.00                   | 0.00                  |
| 2,900.0                          | 1.90            | 269.83      | 2,899.1               | -0.2         | -57.4        | 2.5                     | 0.00                    | 0.00                   | 0.00                  |
| 3,000.0                          | 1.90            | 269.83      | 2,999.0               | -0.2         | -60.8        | 2.7                     | 0.00                    | 0.00                   | 0.00                  |
| 3,100.0                          | 1.90            | 269.83      | 3,099.0               | -0.2         | -64.1        | 2.8                     | 0.00                    | 0.00                   | 0.00                  |
| 3,200.0                          | 1.90            | 269.83      | 3,198.9               | -0.2         | -67.4        | 3.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,300.0                          | 1.90            | 269.83      | 3,298.8               | -0.2         | -70.7        | 3.1                     | 0.00                    | 0.00                   | 0.00                  |
| 3,400.0                          | 1.90            | 269.83      | 3,398.8               | -0.2         | -74.0        | 3.3                     | 0.00                    | 0.00                   | 0.00                  |
| 3,500.0                          | 1.90            | 269.83      | 3,498.7               | -0.2         | -77.3        | 3.4                     | 0.00                    | 0.00                   | 0.00                  |
| 3,600.0                          | 1.90            | 269.83      | 3,598.7               | -0.2         | -80.6        | 3.6                     | 0.00                    | 0.00                   | 0.00                  |
| 3,700.0                          | 1.90            | 269.83      | 3,698.6               | -0.3         | -83.9        | 3.7                     | 0.00                    | 0.00                   | 0.00                  |
| 3,800.0                          | 1.90            | 269.83      | 3,798.6               | -0.3         | -87.2        | 3.9                     | 0.00                    | 0.00                   | 0.00                  |
| 3,900.0                          | 1.90            | 269.83      | 3,898.5               | -0.3         | -90.5        | 4.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,000.0                          | 1.90            | 269.83      | 3,998.5               | -0.3         | -93.8        | 4.1                     | 0.00                    | 0.00                   | 0.00                  |
| 4,100.0                          | 1.90            | 269.83      | 4,098.4               | -0.3         | -97.1        | 4.3                     | 0.00                    | 0.00                   | 0.00                  |
| 4,200.0                          | 1.90            | 269.83      | 4,198.3               | -0.3         | -100.4       | 4.4                     | 0.00                    | 0.00                   | 0.00                  |
| 4,300.0                          | 1.90            | 269.83      | 4,298.3               | -0.3         | -103.8       | 4.6                     | 0.00                    | 0.00                   | 0.00                  |
| 4,400.0                          | 1.90            | 269.83      | 4,398.2               | -0.3         | -107.1       | 4.7                     | 0.00                    | 0.00                   | 0.00                  |
| 4,500.0                          | 1.90            | 269.83      | 4,498.2               | -0.3         | -110.4       | 4.9                     | 0.00                    | 0.00                   | 0.00                  |
| 4,600.0                          | 1.90            | 269.83      | 4,598.1               | -0.3         | -113.7       | 5.0                     | 0.00                    | 0.00                   | 0.00                  |
| 4,700.0                          | 1.90            | 269.83      | 4,698.1               | -0.3         | -117.0       | 5.2                     | 0.00                    | 0.00                   | 0.00                  |
| 4,800.0                          | 1.90            | 269.83      | 4,798.0               | -0.4         | -120.3       | 5.3                     | 0.00                    | 0.00                   | 0.00                  |
| 4,900.0                          | 1.90            | 269.83      | 4,898.0               | -0.4         | -123.6       | 5.5                     | 0.00                    | 0.00                   | 0.00                  |
| 5,000.0                          | 1.90            | 269.83      | 4,997.9               | -0.4         | -126.9       | 5.6                     | 0.00                    | 0.00                   | 0.00                  |
| 5,100.0                          | 1.90            | 269.83      | 5,097.9               | -0.4         | -130.2       | 5.8                     | 0.00                    | 0.00                   | 0.00                  |



## Planning Report

|                  |                                  |                                     |  |
|------------------|----------------------------------|-------------------------------------|--|
| <b>Database:</b> | Hobbs                            | <b>Local Co-ordinate Reference:</b> | Site Armstrong 26/35 W0KN Fed Com #3H  |
| <b>Company:</b>  | Mewbourne Oil Company            | <b>TVD Reference:</b>               | WELL @ 3366.0usft (Original Well Elev) |
| <b>Project:</b>  | Eddy County, New Mexico NAD 83   | <b>MD Reference:</b>                | WELL @ 3366.0usft (Original Well Elev) |
| <b>Site:</b>     | Armstrong 26/35 W0KN Fed Com #3H | <b>North Reference:</b>             | Grid                                   |
| <b>Well:</b>     | SL: 2500 FSL & 2645 FWL (Sec 26) | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | BHL: 330 FSL & 2310 FWL (Sec 35) |                                     |  |
| <b>Design:</b>   | 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) |  |
| 5,200.0               | 1.90            | 269.83      | 5,197.8               | -0.4         | -133.5       | 5.9                     | 0.00                    | 0.00                   | 0.00                  |  |
| 5,300.0               | 1.90            | 269.83      | 5,297.7               | -0.4         | -136.8       | 6.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 5,400.0               | 1.90            | 269.83      | 5,397.7               | -0.4         | -140.1       | 6.2                     | 0.00                    | 0.00                   | 0.00                  |  |
| 5,500.0               | 1.90            | 269.83      | 5,497.6               | -0.4         | -143.4       | 6.3                     | 0.00                    | 0.00                   | 0.00                  |  |
| 5,600.0               | 1.90            | 269.83      | 5,597.6               | -0.4         | -146.8       | 6.5                     | 0.00                    | 0.00                   | 0.00                  |  |
| 5,700.0               | 1.90            | 269.83      | 5,697.5               | -0.4         | -150.1       | 6.6                     | 0.00                    | 0.00                   | 0.00                  |  |
| 5,800.0               | 1.90            | 269.83      | 5,797.5               | -0.5         | -153.4       | 6.8                     | 0.00                    | 0.00                   | 0.00                  |  |
| 5,900.0               | 1.90            | 269.83      | 5,897.4               | -0.5         | -156.7       | 6.9                     | 0.00                    | 0.00                   | 0.00                  |  |
| 6,000.0               | 1.90            | 269.83      | 5,997.4               | -0.5         | -160.0       | 7.1                     | 0.00                    | 0.00                   | 0.00                  |  |
| 6,100.0               | 1.90            | 269.83      | 6,097.3               | -0.5         | -163.3       | 7.2                     | 0.00                    | 0.00                   | 0.00                  |  |
| 6,200.0               | 1.90            | 269.83      | 6,197.3               | -0.5         | -166.6       | 7.4                     | 0.00                    | 0.00                   | 0.00                  |  |
| 6,300.0               | 1.90            | 269.83      | 6,297.2               | -0.5         | -169.9       | 7.5                     | 0.00                    | 0.00                   | 0.00                  |  |
| 6,400.0               | 1.90            | 269.83      | 6,397.1               | -0.5         | -173.2       | 7.7                     | 0.00                    | 0.00                   | 0.00                  |  |
| 6,500.0               | 1.90            | 269.83      | 6,497.1               | -0.5         | -176.5       | 7.8                     | 0.00                    | 0.00                   | 0.00                  |  |
| 6,600.0               | 1.90            | 269.83      | 6,597.0               | -0.5         | -179.8       | 7.9                     | 0.00                    | 0.00                   | 0.00                  |  |
| 6,700.0               | 1.90            | 269.83      | 6,697.0               | -0.5         | -183.1       | 8.1                     | 0.00                    | 0.00                   | 0.00                  |  |
| 6,800.0               | 1.90            | 269.83      | 6,796.9               | -0.6         | -186.4       | 8.2                     | 0.00                    | 0.00                   | 0.00                  |  |
| 6,900.0               | 1.90            | 269.83      | 6,896.9               | -0.6         | -189.7       | 8.4                     | 0.00                    | 0.00                   | 0.00                  |  |
| 7,000.0               | 1.90            | 269.83      | 6,996.8               | -0.6         | -193.1       | 8.5                     | 0.00                    | 0.00                   | 0.00                  |  |
| 7,100.0               | 1.90            | 269.83      | 7,096.8               | -0.6         | -196.4       | 8.7                     | 0.00                    | 0.00                   | 0.00                  |  |
| 7,200.0               | 1.90            | 269.83      | 7,196.7               | -0.6         | -199.7       | 8.8                     | 0.00                    | 0.00                   | 0.00                  |  |
| 7,300.0               | 1.90            | 269.83      | 7,296.7               | -0.6         | -203.0       | 9.0                     | 0.00                    | 0.00                   | 0.00                  |  |
| 7,400.0               | 1.90            | 269.83      | 7,396.6               | -0.6         | -206.3       | 9.1                     | 0.00                    | 0.00                   | 0.00                  |  |
| 7,500.0               | 1.90            | 269.83      | 7,496.5               | -0.6         | -209.6       | 9.3                     | 0.00                    | 0.00                   | 0.00                  |  |
| 7,600.0               | 1.90            | 269.83      | 7,596.5               | -0.6         | -212.9       | 9.4                     | 0.00                    | 0.00                   | 0.00                  |  |
| 7,700.0               | 1.90            | 269.83      | 7,696.4               | -0.6         | -216.2       | 9.6                     | 0.00                    | 0.00                   | 0.00                  |  |
| 7,800.0               | 1.90            | 269.83      | 7,796.4               | -0.7         | -219.5       | 9.7                     | 0.00                    | 0.00                   | 0.00                  |  |
| 7,900.0               | 1.90            | 269.83      | 7,896.3               | -0.7         | -222.8       | 9.8                     | 0.00                    | 0.00                   | 0.00                  |  |
| 8,000.0               | 1.90            | 269.83      | 7,996.3               | -0.7         | -226.1       | 10.0                    | 0.00                    | 0.00                   | 0.00                  |  |
| 8,100.0               | 1.90            | 269.83      | 8,096.2               | -0.7         | -229.4       | 10.1                    | 0.00                    | 0.00                   | 0.00                  |  |
| 8,200.0               | 1.90            | 269.83      | 8,196.2               | -0.7         | -232.7       | 10.3                    | 0.00                    | 0.00                   | 0.00                  |  |
| 8,300.0               | 1.90            | 269.83      | 8,296.1               | -0.7         | -236.1       | 10.4                    | 0.00                    | 0.00                   | 0.00                  |  |
| 8,400.0               | 1.90            | 269.83      | 8,396.1               | -0.7         | -239.4       | 10.6                    | 0.00                    | 0.00                   | 0.00                  |  |
| 8,500.0               | 1.90            | 269.83      | 8,496.0               | -0.7         | -242.7       | 10.7                    | 0.00                    | 0.00                   | 0.00                  |  |
| 8,600.0               | 1.90            | 269.83      | 8,595.9               | -0.7         | -246.0       | 10.9                    | 0.00                    | 0.00                   | 0.00                  |  |
| 8,700.0               | 1.90            | 269.83      | 8,695.9               | -0.7         | -249.3       | 11.0                    | 0.00                    | 0.00                   | 0.00                  |  |
| 8,800.0               | 1.90            | 269.83      | 8,795.8               | -0.8         | -252.6       | 11.2                    | 0.00                    | 0.00                   | 0.00                  |  |
| 8,900.0               | 1.90            | 269.83      | 8,895.8               | -0.8         | -255.9       | 11.3                    | 0.00                    | 0.00                   | 0.00                  |  |
| 9,000.0               | 1.90            | 269.83      | 8,995.7               | -0.8         | -259.2       | 11.5                    | 0.00                    | 0.00                   | 0.00                  |  |
| 9,100.0               | 1.90            | 269.83      | 9,095.7               | -0.8         | -262.5       | 11.6                    | 0.00                    | 0.00                   | 0.00                  |  |
| 9,200.0               | 1.90            | 269.83      | 9,195.6               | -0.8         | -265.8       | 11.7                    | 0.00                    | 0.00                   | 0.00                  |  |
| 9,300.0               | 1.90            | 269.83      | 9,295.6               | -0.8         | -269.1       | 11.9                    | 0.00                    | 0.00                   | 0.00                  |  |
| 9,400.0               | 1.90            | 269.83      | 9,395.5               | -0.8         | -272.4       | 12.0                    | 0.00                    | 0.00                   | 0.00                  |  |
| 9,500.0               | 1.90            | 269.83      | 9,495.4               | -0.8         | -275.7       | 12.2                    | 0.00                    | 0.00                   | 0.00                  |  |
| 9,600.0               | 1.90            | 269.83      | 9,595.4               | -0.8         | -279.1       | 12.3                    | 0.00                    | 0.00                   | 0.00                  |  |
| 9,700.0               | 1.90            | 269.83      | 9,695.3               | -0.8         | -282.4       | 12.5                    | 0.00                    | 0.00                   | 0.00                  |  |
| 9,800.0               | 1.90            | 269.83      | 9,795.3               | -0.9         | -285.7       | 12.6                    | 0.00                    | 0.00                   | 0.00                  |  |
| 9,900.0               | 1.90            | 269.83      | 9,895.2               | -0.9         | -289.0       | 12.8                    | 0.00                    | 0.00                   | 0.00                  |  |
| 10,000.0              | 1.90            | 269.83      | 9,995.2               | -0.9         | -292.3       | 12.9                    | 0.00                    | 0.00                   | 0.00                  |  |
| 10,100.0              | 1.90            | 269.83      | 10,095.1              | -0.9         | -295.6       | 13.1                    | 0.00                    | 0.00                   | 0.00                  |  |
| 10,200.0              | 1.90            | 269.83      | 10,195.1              | -0.9         | -298.9       | 13.2                    | 0.00                    | 0.00                   | 0.00                  |  |
| 10,300.0              | 1.90            | 269.83      | 10,295.0              | -0.9         | -302.2       | 13.4                    | 0.00                    | 0.00                   | 0.00                  |  |
| 10,400.0              | 1.90            | 269.83      | 10,395.0              | -0.9         | -305.5       | 13.5                    | 0.00                    | 0.00                   | 0.00                  |  |
| 10,500.0              | 1.90            | 269.83      | 10,494.9              | -0.9         | -308.8       | 13.6                    | 0.00                    | 0.00                   | 0.00                  |  |

## Planning Report

|                  |                                  |                                     |  |
|------------------|----------------------------------|-------------------------------------|--|
| <b>Database:</b> | Hobbs                            | <b>Local Co-ordinate Reference:</b> | Site Armstrong 26/35 W0KN Fed Com #3H  |
| <b>Company:</b>  | Mewbourne Oil Company            | <b>TVD Reference:</b>               | WELL @ 3366.0usft (Original Well Elev) |
| <b>Project:</b>  | Eddy County, New Mexico NAD 83   | <b>MD Reference:</b>                | WELL @ 3366.0usft (Original Well Elev) |
| <b>Site:</b>     | Armstrong 26/35 W0KN Fed Com #3H | <b>North Reference:</b>             | Grid                                   |
| <b>Well:</b>     | SL: 2500 FSL & 2645 FWL (Sec 26) | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | BHL: 330 FSL & 2310 FWL (Sec 35) |                                     |  |
| <b>Design:</b>   | 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) |
| 10,600.0                                      | 1.90            | 269.83      | 10,594.8              | -0.9         | -312.1       | 13.8                    | 0.00                    | 0.00                   | 0.00                  |
| 10,700.0                                      | 1.90            | 269.83      | 10,694.8              | -0.9         | -315.4       | 13.9                    | 0.00                    | 0.00                   | 0.00                  |
| 10,800.0                                      | 1.90            | 269.83      | 10,794.7              | -1.0         | -318.7       | 14.1                    | 0.00                    | 0.00                   | 0.00                  |
| 10,900.0                                      | 1.90            | 269.83      | 10,894.7              | -1.0         | -322.1       | 14.2                    | 0.00                    | 0.00                   | 0.00                  |
| 11,000.0                                      | 1.90            | 269.83      | 10,994.6              | -1.0         | -325.4       | 14.4                    | 0.00                    | 0.00                   | 0.00                  |
| 11,100.0                                      | 1.90            | 269.83      | 11,094.6              | -1.0         | -328.7       | 14.5                    | 0.00                    | 0.00                   | 0.00                  |
| 11,200.0                                      | 1.90            | 269.83      | 11,194.5              | -1.0         | -332.0       | 14.7                    | 0.00                    | 0.00                   | 0.00                  |
| 11,216.1                                      | 1.90            | 269.83      | 11,210.7              | -1.0         | -332.5       | 14.7                    | 0.00                    | 0.00                   | 0.00                  |
| 11,300.0                                      | 0.64            | 269.83      | 11,294.5              | -1.0         | -334.4       | 14.8                    | 1.50                    | -1.50                  | 0.00                  |
| 11,342.5                                      | 0.00            | 0.00        | 11,337.0              | -1.0         | -334.6       | 14.8                    | 1.50                    | -1.50                  | 0.00                  |
| <b>KOP: 2500 FSL &amp; 2310 FWL (Sec 26)</b>  |                 |             |                       |              |              |                         |                         |                        |                       |
| 11,400.0                                      | 6.90            | 179.79      | 11,394.3              | -4.5         | -334.6       | 18.2                    | 12.01                   | 12.01                  | 0.00                  |
| 11,500.0                                      | 18.92           | 179.79      | 11,491.6              | -26.8        | -334.5       | 40.5                    | 12.01                   | 12.01                  | 0.00                  |
| 11,600.0                                      | 30.93           | 179.79      | 11,582.2              | -68.8        | -334.4       | 82.5                    | 12.01                   | 12.01                  | 0.00                  |
| 11,700.0                                      | 42.94           | 179.79      | 11,662.0              | -128.8       | -334.1       | 142.5                   | 12.01                   | 12.01                  | 0.00                  |
| 11,773.8                                      | 51.80           | 179.79      | 11,711.9              | -183.0       | -333.9       | 196.6                   | 12.01                   | 12.01                  | 0.00                  |
| <b>FTP: 2318 FSL &amp; 2310 FWL (Sec 26)</b>  |                 |             |                       |              |              |                         |                         |                        |                       |
| 11,800.0                                      | 54.95           | 179.79      | 11,727.5              | -204.1       | -333.9       | 217.6                   | 12.01                   | 12.01                  | 0.00                  |
| 11,900.0                                      | 66.96           | 179.79      | 11,776.0              | -291.3       | -333.6       | 304.8                   | 12.01                   | 12.01                  | 0.00                  |
| 12,000.0                                      | 78.97           | 179.79      | 11,805.2              | -386.8       | -333.2       | 400.2                   | 12.01                   | 12.01                  | 0.00                  |
| 12,097.2                                      | 90.64           | 179.79      | 11,814.0              | -483.4       | -332.9       | 496.7                   | 12.01                   | 12.01                  | 0.00                  |
| 12,100.0                                      | 90.64           | 179.79      | 11,814.0              | -486.2       | -332.9       | 499.5                   | 0.00                    | 0.00                   | 0.00                  |
| 12,200.0                                      | 90.64           | 179.79      | 11,812.9              | -586.2       | -332.5       | 599.4                   | 0.00                    | 0.00                   | 0.00                  |
| 12,300.0                                      | 90.64           | 179.79      | 11,811.7              | -686.2       | -332.1       | 699.3                   | 0.00                    | 0.00                   | 0.00                  |
| 12,400.0                                      | 90.64           | 179.79      | 11,810.6              | -786.2       | -331.8       | 799.2                   | 0.00                    | 0.00                   | 0.00                  |
| 12,500.0                                      | 90.64           | 179.79      | 11,809.5              | -886.2       | -331.4       | 899.1                   | 0.00                    | 0.00                   | 0.00                  |
| 12,600.0                                      | 90.64           | 179.79      | 11,808.4              | -986.2       | -331.0       | 999.0                   | 0.00                    | 0.00                   | 0.00                  |
| 12,700.0                                      | 90.64           | 179.79      | 11,807.3              | -1,086.2     | -330.7       | 1,098.9                 | 0.00                    | 0.00                   | 0.00                  |
| 12,790.8                                      | 90.64           | 179.79      | 11,806.2              | -1,177.0     | -330.4       | 1,189.6                 | 0.00                    | 0.00                   | 0.00                  |
| <b>PPP2: 1324 FSL &amp; 2310 FWL (Sec 26)</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 12,800.0                                      | 90.64           | 179.79      | 11,806.1              | -1,186.1     | -330.3       | 1,198.8                 | 0.00                    | 0.00                   | 0.00                  |
| 12,900.0                                      | 90.64           | 179.79      | 11,805.0              | -1,286.1     | -330.0       | 1,298.6                 | 0.00                    | 0.00                   | 0.00                  |
| 13,000.0                                      | 90.64           | 179.79      | 11,803.9              | -1,386.1     | -329.6       | 1,398.5                 | 0.00                    | 0.00                   | 0.00                  |
| 13,100.0                                      | 90.64           | 179.79      | 11,802.8              | -1,486.1     | -329.2       | 1,498.4                 | 0.00                    | 0.00                   | 0.00                  |
| 13,200.0                                      | 90.64           | 179.79      | 11,801.7              | -1,586.1     | -328.9       | 1,598.3                 | 0.00                    | 0.00                   | 0.00                  |
| 13,300.0                                      | 90.64           | 179.79      | 11,800.6              | -1,686.1     | -328.5       | 1,698.2                 | 0.00                    | 0.00                   | 0.00                  |
| 13,400.0                                      | 90.64           | 179.79      | 11,799.4              | -1,786.1     | -328.2       | 1,798.1                 | 0.00                    | 0.00                   | 0.00                  |
| 13,500.0                                      | 90.64           | 179.79      | 11,798.3              | -1,886.1     | -327.8       | 1,898.0                 | 0.00                    | 0.00                   | 0.00                  |
| 13,600.0                                      | 90.64           | 179.79      | 11,797.2              | -1,986.1     | -327.4       | 1,997.9                 | 0.00                    | 0.00                   | 0.00                  |
| 13,700.0                                      | 90.64           | 179.79      | 11,796.1              | -2,086.1     | -327.1       | 2,097.8                 | 0.00                    | 0.00                   | 0.00                  |
| 13,800.0                                      | 90.64           | 179.79      | 11,795.0              | -2,186.1     | -326.7       | 2,197.7                 | 0.00                    | 0.00                   | 0.00                  |
| 13,900.0                                      | 90.64           | 179.79      | 11,793.8              | -2,286.1     | -326.4       | 2,297.6                 | 0.00                    | 0.00                   | 0.00                  |
| 14,000.0                                      | 90.64           | 179.79      | 11,792.7              | -2,386.1     | -326.0       | 2,397.5                 | 0.00                    | 0.00                   | 0.00                  |
| 14,100.0                                      | 90.64           | 179.79      | 11,791.6              | -2,486.1     | -325.6       | 2,497.4                 | 0.00                    | 0.00                   | 0.00                  |
| 14,114.9                                      | 90.64           | 179.79      | 11,791.4              | -2,501.0     | -325.6       | 2,512.3                 | 0.00                    | 0.00                   | 0.00                  |
| <b>PPP3: 0 FNL &amp; 2310 FWL (Sec 35)</b>    |                 |             |                       |              |              |                         |                         |                        |                       |
| 14,200.0                                      | 90.64           | 179.79      | 11,790.5              | -2,586.1     | -325.3       | 2,597.3                 | 0.00                    | 0.00                   | 0.00                  |
| 14,300.0                                      | 90.64           | 179.79      | 11,789.4              | -2,686.0     | -324.9       | 2,697.2                 | 0.00                    | 0.00                   | 0.00                  |
| 14,400.0                                      | 90.64           | 179.79      | 11,788.3              | -2,786.0     | -324.6       | 2,797.0                 | 0.00                    | 0.00                   | 0.00                  |
| 14,500.0                                      | 90.64           | 179.79      | 11,787.1              | -2,886.0     | -324.2       | 2,896.9                 | 0.00                    | 0.00                   | 0.00                  |
| 14,600.0                                      | 90.64           | 179.79      | 11,786.0              | -2,986.0     | -323.8       | 2,996.8                 | 0.00                    | 0.00                   | 0.00                  |
| 14,700.0                                      | 90.64           | 179.79      | 11,784.9              | -3,086.0     | -323.5       | 3,096.7                 | 0.00                    | 0.00                   | 0.00                  |
| 14,800.0                                      | 90.64           | 179.79      | 11,783.8              | -3,186.0     | -323.1       | 3,196.6                 | 0.00                    | 0.00                   | 0.00                  |

## Planning Report

|                  |                                  |                                     |  |
|------------------|----------------------------------|-------------------------------------|--|
| <b>Database:</b> | Hobbs                            | <b>Local Co-ordinate Reference:</b> | Site Armstrong 26/35 W0KN Fed Com #3H  |
| <b>Company:</b>  | Mewbourne Oil Company            | <b>TVD Reference:</b>               | WELL @ 3366.0usft (Original Well Elev) |
| <b>Project:</b>  | Eddy County, New Mexico NAD 83   | <b>MD Reference:</b>                | WELL @ 3366.0usft (Original Well Elev) |
| <b>Site:</b>     | Armstrong 26/35 W0KN Fed Com #3H | <b>North Reference:</b>             | Grid                                   |
| <b>Well:</b>     | SL: 2500 FSL & 2645 FWL (Sec 26) | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | BHL: 330 FSL & 2310 FWL (Sec 35) |                                     |  |
| <b>Design:</b>   | Design #1                        |                                     |  |

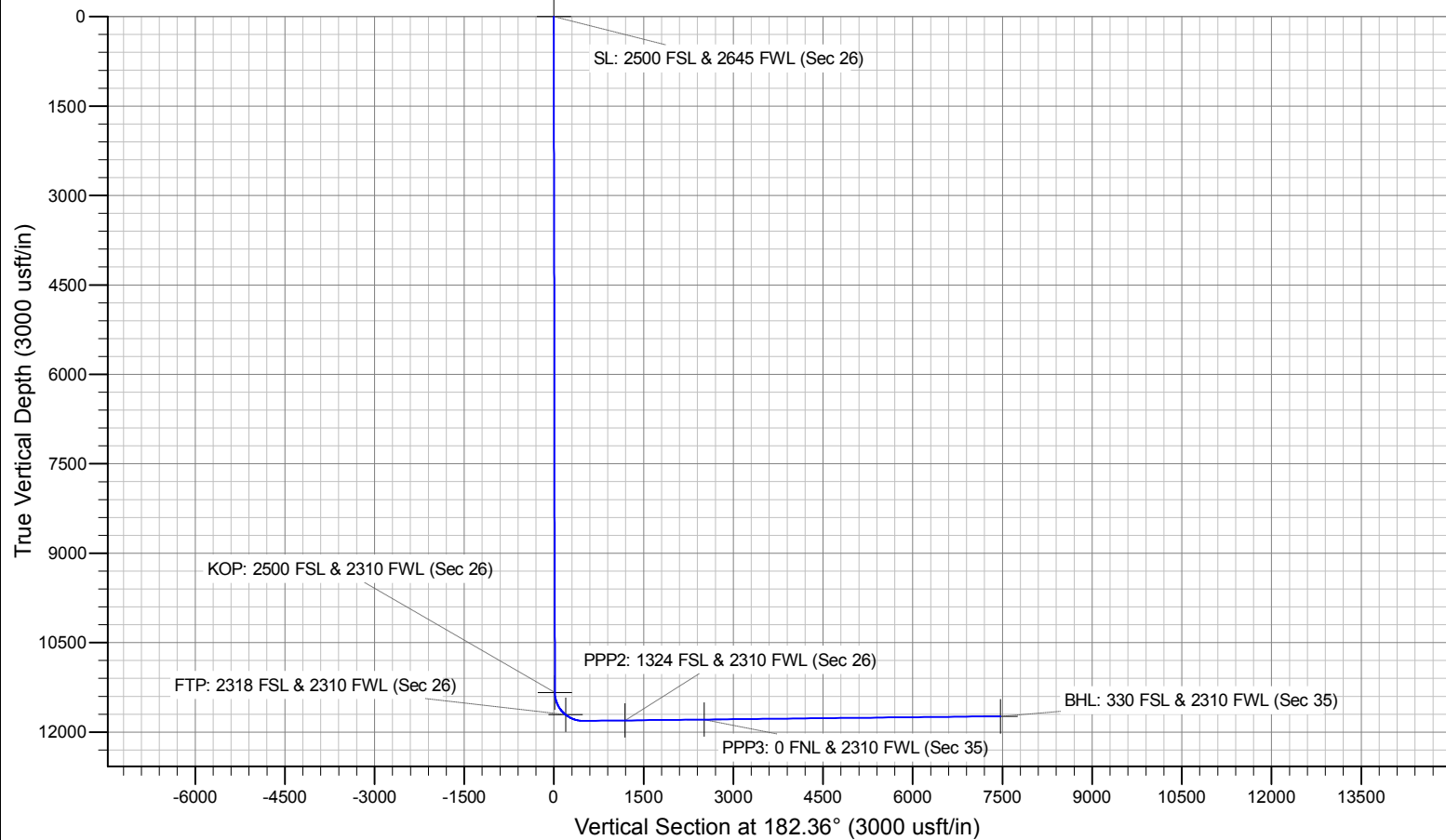
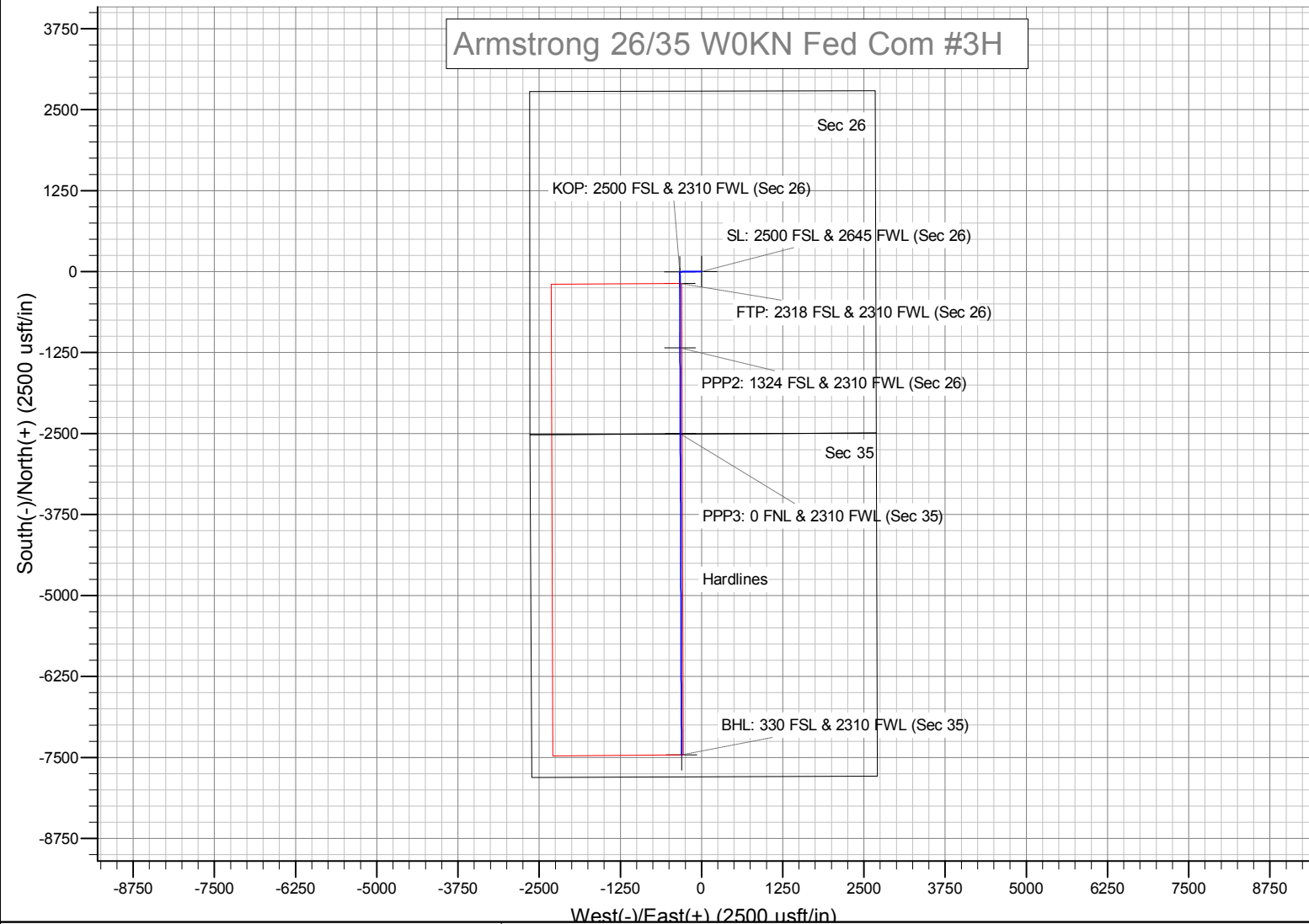
| Planned Survey                   |                 |             |                       |              |              |                         |                         |                        |                       |
|----------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 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) |
| 14,900.0                         | 90.64           | 179.79      | 11,782.7              | -3,286.0     | -322.8       | 3,296.5                 | 0.00                    | 0.00                   | 0.00                  |
| 15,000.0                         | 90.64           | 179.79      | 11,781.6              | -3,386.0     | -322.4       | 3,396.4                 | 0.00                    | 0.00                   | 0.00                  |
| 15,100.0                         | 90.64           | 179.79      | 11,780.4              | -3,486.0     | -322.0       | 3,496.3                 | 0.00                    | 0.00                   | 0.00                  |
| 15,200.0                         | 90.64           | 179.79      | 11,779.3              | -3,586.0     | -321.7       | 3,596.2                 | 0.00                    | 0.00                   | 0.00                  |
| 15,300.0                         | 90.64           | 179.79      | 11,778.2              | -3,686.0     | -321.3       | 3,696.1                 | 0.00                    | 0.00                   | 0.00                  |
| 15,400.0                         | 90.64           | 179.79      | 11,777.1              | -3,786.0     | -321.0       | 3,796.0                 | 0.00                    | 0.00                   | 0.00                  |
| 15,500.0                         | 90.64           | 179.79      | 11,776.0              | -3,886.0     | -320.6       | 3,895.9                 | 0.00                    | 0.00                   | 0.00                  |
| 15,600.0                         | 90.64           | 179.79      | 11,774.8              | -3,986.0     | -320.2       | 3,995.8                 | 0.00                    | 0.00                   | 0.00                  |
| 15,700.0                         | 90.64           | 179.79      | 11,773.7              | -4,085.9     | -319.9       | 4,095.7                 | 0.00                    | 0.00                   | 0.00                  |
| 15,800.0                         | 90.64           | 179.79      | 11,772.6              | -4,185.9     | -319.5       | 4,195.6                 | 0.00                    | 0.00                   | 0.00                  |
| 15,900.0                         | 90.64           | 179.79      | 11,771.5              | -4,285.9     | -319.1       | 4,295.4                 | 0.00                    | 0.00                   | 0.00                  |
| 16,000.0                         | 90.64           | 179.79      | 11,770.4              | -4,385.9     | -318.8       | 4,395.3                 | 0.00                    | 0.00                   | 0.00                  |
| 16,100.0                         | 90.64           | 179.79      | 11,769.3              | -4,485.9     | -318.4       | 4,495.2                 | 0.00                    | 0.00                   | 0.00                  |
| 16,200.0                         | 90.64           | 179.79      | 11,768.1              | -4,585.9     | -318.1       | 4,595.1                 | 0.00                    | 0.00                   | 0.00                  |
| 16,300.0                         | 90.64           | 179.79      | 11,767.0              | -4,685.9     | -317.7       | 4,695.0                 | 0.00                    | 0.00                   | 0.00                  |
| 16,400.0                         | 90.64           | 179.79      | 11,765.9              | -4,785.9     | -317.3       | 4,794.9                 | 0.00                    | 0.00                   | 0.00                  |
| 16,500.0                         | 90.64           | 179.79      | 11,764.8              | -4,885.9     | -317.0       | 4,894.8                 | 0.00                    | 0.00                   | 0.00                  |
| 16,600.0                         | 90.64           | 179.79      | 11,763.7              | -4,985.9     | -316.6       | 4,994.7                 | 0.00                    | 0.00                   | 0.00                  |
| 16,700.0                         | 90.64           | 179.79      | 11,762.5              | -5,085.9     | -316.3       | 5,094.6                 | 0.00                    | 0.00                   | 0.00                  |
| 16,800.0                         | 90.64           | 179.79      | 11,761.4              | -5,185.9     | -315.9       | 5,194.5                 | 0.00                    | 0.00                   | 0.00                  |
| 16,900.0                         | 90.64           | 179.79      | 11,760.3              | -5,285.9     | -315.5       | 5,294.4                 | 0.00                    | 0.00                   | 0.00                  |
| 17,000.0                         | 90.64           | 179.79      | 11,759.2              | -5,385.9     | -315.2       | 5,394.3                 | 0.00                    | 0.00                   | 0.00                  |
| 17,100.0                         | 90.64           | 179.79      | 11,758.1              | -5,485.9     | -314.8       | 5,494.2                 | 0.00                    | 0.00                   | 0.00                  |
| 17,200.0                         | 90.64           | 179.79      | 11,757.0              | -5,585.8     | -314.5       | 5,594.1                 | 0.00                    | 0.00                   | 0.00                  |
| 17,300.0                         | 90.64           | 179.79      | 11,755.8              | -5,685.8     | -314.1       | 5,694.0                 | 0.00                    | 0.00                   | 0.00                  |
| 17,400.0                         | 90.64           | 179.79      | 11,754.7              | -5,785.8     | -313.7       | 5,793.8                 | 0.00                    | 0.00                   | 0.00                  |
| 17,500.0                         | 90.64           | 179.79      | 11,753.6              | -5,885.8     | -313.4       | 5,893.7                 | 0.00                    | 0.00                   | 0.00                  |
| 17,600.0                         | 90.64           | 179.79      | 11,752.5              | -5,985.8     | -313.0       | 5,993.6                 | 0.00                    | 0.00                   | 0.00                  |
| 17,700.0                         | 90.64           | 179.79      | 11,751.4              | -6,085.8     | -312.7       | 6,093.5                 | 0.00                    | 0.00                   | 0.00                  |
| 17,800.0                         | 90.64           | 179.79      | 11,750.3              | -6,185.8     | -312.3       | 6,193.4                 | 0.00                    | 0.00                   | 0.00                  |
| 17,900.0                         | 90.64           | 179.79      | 11,749.1              | -6,285.8     | -311.9       | 6,293.3                 | 0.00                    | 0.00                   | 0.00                  |
| 18,000.0                         | 90.64           | 179.79      | 11,748.0              | -6,385.8     | -311.6       | 6,393.2                 | 0.00                    | 0.00                   | 0.00                  |
| 18,100.0                         | 90.64           | 179.79      | 11,746.9              | -6,485.8     | -311.2       | 6,493.1                 | 0.00                    | 0.00                   | 0.00                  |
| 18,200.0                         | 90.64           | 179.79      | 11,745.8              | -6,585.8     | -310.9       | 6,593.0                 | 0.00                    | 0.00                   | 0.00                  |
| 18,300.0                         | 90.64           | 179.79      | 11,744.7              | -6,685.8     | -310.5       | 6,692.9                 | 0.00                    | 0.00                   | 0.00                  |
| 18,400.0                         | 90.64           | 179.79      | 11,743.5              | -6,785.8     | -310.1       | 6,792.8                 | 0.00                    | 0.00                   | 0.00                  |
| 18,500.0                         | 90.64           | 179.79      | 11,742.4              | -6,885.8     | -309.8       | 6,892.7                 | 0.00                    | 0.00                   | 0.00                  |
| 18,600.0                         | 90.64           | 179.79      | 11,741.3              | -6,985.7     | -309.4       | 6,992.6                 | 0.00                    | 0.00                   | 0.00                  |
| 18,700.0                         | 90.64           | 179.79      | 11,740.2              | -7,085.7     | -309.1       | 7,092.5                 | 0.00                    | 0.00                   | 0.00                  |
| 18,800.0                         | 90.64           | 179.79      | 11,739.1              | -7,185.7     | -308.7       | 7,192.4                 | 0.00                    | 0.00                   | 0.00                  |
| 18,900.0                         | 90.64           | 179.79      | 11,738.0              | -7,285.7     | -308.3       | 7,292.2                 | 0.00                    | 0.00                   | 0.00                  |
| 19,000.0                         | 90.64           | 179.79      | 11,736.8              | -7,385.7     | -308.0       | 7,392.1                 | 0.00                    | 0.00                   | 0.00                  |
| 19,075.2                         | 90.64           | 179.79      | 11,736.0              | -7,460.9     | -307.7       | 7,467.2                 | 0.00                    | 0.00                   | 0.00                  |
| BHL: 330 FSL & 2310 FWL (Sec 35) |                 |             |                       |              |              |                         |                         |                        |                       |

## Planning Report

|                  |                                  |                                     |  |
|------------------|----------------------------------|-------------------------------------|--|
| <b>Database:</b> | Hobbs                            | <b>Local Co-ordinate Reference:</b> | Site Armstrong 26/35 W0KN Fed Com #3H  |
| <b>Company:</b>  | Mewbourne Oil Company            | <b>TVD Reference:</b>               | WELL @ 3366.0usft (Original Well Elev) |
| <b>Project:</b>  | Eddy County, New Mexico NAD 83   | <b>MD Reference:</b>                | WELL @ 3366.0usft (Original Well Elev) |
| <b>Site:</b>     | Armstrong 26/35 W0KN Fed Com #3H | <b>North Reference:</b>             | Grid                                   |
| <b>Well:</b>     | SL: 2500 FSL & 2645 FWL (Sec 26) | <b>Survey Calculation Method:</b>   | Minimum Curvature                      |
| <b>Wellbore:</b> | BHL: 330 FSL & 2310 FWL (Sec 35) |                                     |  |
| <b>Design:</b>   | Design #1                        |                                     |  |

| Design Targets   |                  |                 |               |                 |                 |                    |                   |            |              |
|--|------------------|-----------------|---------------|-----------------|-----------------|--------------------|-------------------|------------|--------------|
| Target Name<br>- hit/miss target<br>- Shape                    | Dip Angle<br>(°) | Dip Dir.<br>(°) | TVD<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Northing<br>(usft) | Easting<br>(usft) | Latitude   | Longitude    |
| SL: 2500 FSL & 2645 Fv<br>- plan hits target center<br>- Point | 0.00             | 0.00            | 0.0           | 0.0             | 0.0             | 400,931.90         | 722,321.70        | 32.1008926 | -103.7488544 |
| KOP: 2500 FSL & 2310<br>- plan hits target center<br>- Point   | 0.00             | 0.00            | 11,337.0      | -1.0            | -334.6          | 400,930.90         | 721,987.10        | 32.1008949 | -103.7499349 |
| FTP: 2318 FSL & 2310 F<br>- plan hits target center<br>- Point | 0.00             | 0.00            | 11,711.9      | -183.0          | -333.9          | 400,748.90         | 721,987.75        | 32.1003946 | -103.7499360 |
| BHL: 330 FSL & 2310 Fv<br>- plan hits target center<br>- Point | 0.00             | 0.00            | 11,736.0      | -7,460.9        | -307.7          | 393,471.00         | 722,014.00        | 32.0803885 | -103.7499783 |
| PPP3: 0 FNL & 2310 Fv<br>- plan hits target center<br>- Point  | 0.00             | 0.00            | 11,791.4      | -2,501.0        | -325.6          | 398,430.90         | 721,996.11        | 32.0940227 | -103.7499495 |
| PPP2: 1324 FSL & 2310<br>- plan hits target center<br>- Point  | 0.00             | 0.00            | 11,806.2      | -1,177.0        | -330.4          | 399,754.90         | 721,991.34        | 32.0976622 | -103.7499418 |

# Armstrong 26/35 W0KN Fed Com #3H



Intent ☐ As Drilled ☐

|                |                |             |
|----------------|----------------|-------------|
| API #          |                |             |
| Operator Name: | Property Name: | Well Number |

Kick Off Point (KOP)

|          |         |          |       |     |           |          |      |          |        |
|----------|---------|----------|-------|-----|-----------|----------|------|----------|--------|
| UL       | Section | Township | Range | Lot | Feet      | From N/S | Feet | From E/W | County |
| Latitude |         |          |       |     | Longitude |          |      |          | NAD    |

First Take Point (FTP)

|          |         |          |       |     |           |          |      |          |        |
|----------|---------|----------|-------|-----|-----------|----------|------|----------|--------|
| UL       | Section | Township | Range | Lot | Feet      | From N/S | Feet | From E/W | County |
| Latitude |         |          |       |     | Longitude |          |      |          | NAD    |

Last Take Point (LTP)

|          |         |          |       |     |           |          |      |          |        |
|----------|---------|----------|-------|-----|-----------|----------|------|----------|--------|
| UL       | Section | Township | Range | Lot | Feet      | From N/S | Feet | From E/W | County |
| Latitude |         |          |       |     | Longitude |          |      |          | NAD    |

Is this well the defining well for the Horizontal Spacing Unit? ☐

Is this well an infill well? ☐

If infill is yes please provide API if available, Operator Name and well number for Defining well for Horizontal Spacing Unit.

|                |                |             |
|----------------|----------------|-------------|
| API #          |                |             |
| Operator Name: | Property Name: | Well Number |

**Mewbourne Oil Company, Armstrong 26/35 W0KN Fed Com #3H**  
**Sec 26 & 35, T25S, R31E**  
**SL: 2500' FSL & 2645' FWL (Sec 26)**  
**BHL: 330' FSL & 2310' FWL (Sec 35)**

**1. Geologic Formations**

|               |         |                               |      |
|---------------|---------|-------------------------------|------|
| TVD of target | 11,814' | Pilot hole depth              | NA   |
| MD at TD:     | 19,075' | Deepest expected fresh water: | 315' |

**Basin**

| Formation                        | Depth (TVD)<br>from KB | Water/Mineral Bearing/<br>Target Zone? | Hazards* |
|----------------------------------|------------------------|--|----------|
| Quaternary Fill                  | Surface                |  |          |
| Rustler                          | 1015                   |  |          |
| Top of Salt                      | 1390                   |  |          |
| Base of Salt                     | 4250                   |  |          |
| Delaware (Lamar)                 | 4325                   |  |          |
| Bell Canyon                      | 4350                   |  |          |
| Cherry Canyon                    | 5299                   |  |          |
| Manzanita Marker                 | 5498                   |  |          |
| Brushy Canyon                    |                        |  |          |
| Bone Spring                      | 8324                   | Oil/Gas                                |          |
| 1 <sup>st</sup> Bone Spring Sand | 9557                   |  |          |
| 2 <sup>nd</sup> Bone Spring Sand | 9950                   |  |          |
| 3 <sup>rd</sup> Bone Spring Sand | 11217                  |  |          |
| Abo                              |                        |  |          |
| Wolfcamp                         | 11667                  | Target Zone                            |          |
| Devonian                         |                        |  |          |
| Fusselman                        |                        |  |          |
| Ellenburger                      |                        |  |          |
| Granite Wash                     |                        |  |          |

\*H2S, water flows, loss of circulation, abnormal pressures, etc.

**Mewbourne Oil Company, Armstrong 26/35 W0KN Fed Com #3H**  
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## 2. Casing Program

| Hole Size                 | Casing Interval |        | Csg. Size | Weight (lbs) | Grade  | Conn.              | SF Collapse        | SF Burst | SF Jt Tension | SF Body Tension |
|---------------------------|-----------------|--------|-----------|--------------|--------|--------------------|--------------------|----------|---------------|-----------------|
|                           | From            | To     |           |              |        |                    |                    |          |               |                 |
| 17.5"                     | 0'              | 1100'  | 13.375"   | 48           | H40    | STC                | 1.53               | 3.44     | 6.10          | 10.25           |
| 12.25"                    | 0'              | 3452'  | 9.625"    | 36           | J55    | LTC                | 1.13               | 1.96     | 2.90          | 3.61            |
| 12.25"                    | 3452'           | 4250'  | 9.625"    | 40           | L80    | LTC                | 1.40               | 2.60     | 22.78         | 28.70           |
| 8.75"                     | 0'              | 12097' | 7"        | 26           | HCP110 | LTC                | 1.34               | 1.70     | 2.20          | 2.64            |
| 6.125"                    | 11343'          | 19075' | 4.5"      | 13.5         | P110   | LTC                | 1.46               | 1.69     | 3.24          | 4.04            |
| BLM Minimum Safety Factor |                 |        |           | 1.125        | 1      | 1.6 Dry<br>1.8 Wet | 1.6 Dry<br>1.8 Wet |          |               |                 |

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

Must have table for contingency casing

|  | Y or N |
|--|--------|
| Is casing new? If used, attach certification as required in Onshore Order #1   | Y      |
| Is casing API approved? If no, attach casing specification sheet.  | Y      |
| Is premium or uncommon casing planned? If yes attach casing specification sheet.   | N      |
| Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria). | Y      |
| Will the pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?                             | Y      |
| Is well located within Capitan Reef?   | Y      |
| If yes, does production casing cement tie back a minimum of 50' above the Reef?  |        |
| Is well within the designated 4 string boundary.   |        |
| Is well located in SOPA but not in R-111-P?  | N      |
| If yes, are the first 2 strings cemented to surface and 3 <sup>rd</sup> string cement tied back 500' into previous casing?                       |        |
| Is well located in R-111-P and SOPA?   | N      |
| If yes, are the first three strings cemented to surface?   |        |
| Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?   |        |
| Is well located in high Cave/Karst?  | N      |



**Mewbourne Oil Company, Armstrong 26/35 W0KN Fed Com #3H**  
**Sec 26 & 35, T25S, R31E**  
**SL: 2500' FSL & 2645' FWL (Sec 26)**  
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|  |          |
|--|----------|
| If yes, are there two strings cemented to surface?                                     |          |
| (For 2 string wells) If yes, is there a contingency casing if lost circulation occurs? |          |
|  |          |
| Is well located in critical Cave/Karst?  | <b>N</b> |
| If yes, are there three strings cemented to surface?                                   |          |

### 3. Cementing Program

| Casing              | # Sks | Wt.<br>lb/<br>gal | Yld<br>ft3/<br>sack | H <sub>2</sub> O<br>gal/<br>sk | 500#<br>Comp.<br>Strength<br>(hours) | Slurry Description   |
|---------------------|-------|-------------------|---------------------|--------------------------------|--------------------------------------|--|
| Surf.               | 600   | 12.5              | 2.12                | 11                             | 10                                   | Lead: Class C + Salt + Gel + Extender + LCM  |
|                     | 200   | 14.8              | 1.34                | 6.3                            | 8                                    | Tail: Class C + Retarder   |
| Inter.              | 650   | 12.5              | 2.12                | 11                             | 10                                   | Lead: Class C + Salt + Gel + Extender + LCM  |
|                     | 200   | 14.8              | 1.34                | 6.3                            | 8                                    | Tail: Class C + Retarder   |
| Prod.<br>Stg 1      | 370   | 12.5              | 2.12                | 11                             | 9                                    | Lead: Class C + Gel + Retarder + Defoamer + Extender                                       |
|                     | 400   | 15.6              | 1.18                | 5.2                            | 10                                   | Tail: Class H + Retarder + Fluid Loss + Defoamer   |
| ECP/DV Tool @ 5498' |       |                   |                     |                                |                                      |  |
| Prod.<br>Stg 2      | 70    | 12.5              | 2.12                | 11                             | 10                                   | Lead: Class C + Salt + Gel + Extender + LCM  |
|                     | 100   | 14.8              | 1.34                | 6.3                            | 8                                    | Tail: Class C + Retarder   |
| Liner               | 310   | 11.2              | 2.97                | 18                             | 16                                   | Class C + Salt + Gel + Fluid Loss + Retarder + Dispersant + Defoamer + Anti-Settling Agent |

A copy of cement test will be available on location at time of cement job providing pump times & compressive strengths.

| Casing String | TOC    | % Excess |
|---------------|--------|----------|
| Surface       | 0'     | 100%     |
| Intermediate  | 0'     | 25%      |
| Production    | 4050'  | 25%      |
| Liner         | 11343' | 25%      |

**Mewbourne Oil Company, Armstrong 26/35 W0KN Fed Com #3H**  
**Sec 26 & 35, T25S, R31E**  
**SL: 2500' FSL & 2645' FWL (Sec 26)**  
**BHL: 330' FSL & 2310' FWL (Sec 35)**

**4. Pressure Control Equipment**

| BOP installed and tested before drilling which hole? | Size?   | System Rated WP | Type       | ✓ | Tested to: |
|--|---------|-----------------|------------|---|------------|
| 12-1/4"  | 13-5/8" | 5M              | Annular    | X | 2,500#     |
|  |         |                 | Blind Ram  | X | 5,000#     |
|  |         |                 | Pipe Ram   | X |            |
|  |         |                 | Double Ram |   |            |
|  |         |                 | Other*     |   |            |

\*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

|   |  |
|---|--|
| X | Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i. |
|---|--|

**Mewbourne Oil Company, Armstrong 26/35 W0KN Fed Com #3H**  
**Sec 26 & 35, T25S, R31E**  
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|          |  |                                       |
|----------|--|---------------------------------------|
| <b>Y</b> | A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.  |                                       |
|          | <b>N</b>   | Are anchors required by manufacturer? |
| <b>Y</b> | A multibowl wellhead is being used. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. <ul style="list-style-type: none"> <li>Provide description here: See attached schematic.</li> </ul> |                                       |

## 5. Mud Program

| TVD   |       | Type            | Weight (ppg) | Viscosity | Water Loss |
|-------|-------|-----------------|--------------|-----------|------------|
| From  | To    |                 |              |           |            |
| 0     | 1100  | FW Gel          | 8.6-8.8      | 28-34     | N/C        |
| 1100  | 4250  | Saturated Brine | 10.0         | 28-34     | N/C        |
| 4250  | 11814 | Cut Brine       | 8.6-9.5      | 28-34     | N/C        |
| 11736 | 11814 | OBM             | 10.0-12.0    | 30-40     | <10cc      |

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times. MW up to 13.0 ppg may be required for shale control. The highest MW needed to balance formation pressure is expected to be 12.0 ppg.

|   |                             |
|---|-----------------------------|
| What will be used to monitor the loss or gain of fluid? | Pason/PVT/Visual Monitoring |
|---|-----------------------------|

## 6. Logging and Testing Procedures

| Logging, Coring and Testing. |  |
|------------------------------|--|
| <b>X</b>                     | Will run GR/CNL from KOP (11,343') to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM. |
|                              | No Logs are planned based on well control or offset log information.   |
|                              | Drill stem test? If yes, explain   |
|                              | Coring? If yes, explain  |

**Mewbourne Oil Company, Armstrong 26/35 W0KN Fed Com #3H**

**Sec 26 & 35, T25S, R31E**

**SL: 2500' FSL & 2645' FWL (Sec 26)**

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| Additional logs planned |           | Interval            |
|-------------------------|-----------|---------------------|
| X                       | Gamma Ray | 11,343' (KOP) to TD |
|                         | Density   |                     |
|                         | CBL       |                     |
|                         | Mud log   |                     |
|                         | PEX       |                     |

## 7. Drilling Conditions

| Condition                  | Specify what type and where? |
|----------------------------|------------------------------|
| BH Pressure at deepest TVD | 7372 psi                     |
| Abnormal Temperature       | No                           |

Mitigation measure for abnormal conditions. Describe. **Lost circulation material/sweeps/mud scavengers in surface hole. Weighted mud for possible over-pressure in Wolfcamp formation.**

|  |                                |
|--|--------------------------------|
| Hydrogen Sulfide (H <sub>2</sub> S) monitors will be installed prior to drilling out the surface shoe. If H <sub>2</sub> S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM. |                                |
|  | H <sub>2</sub> S is present    |
| X  | H <sub>2</sub> S Plan attached |

## 8. Other facets of operation

Is this a walking operation? If yes, describe.

**Mewbourne Oil Company, Armstrong 26/35 W0KN Fed Com #3H**

**Sec 26 & 35, T25S, R31E**

**SL: 2500' FSL & 2645' FWL (Sec 26)**

**BHL: 330' FSL & 2310' FWL (Sec 35)**

Will be pre-setting casing? If yes, describe.

Attachments

\_\_\_ Directional Plan

\_\_\_ Other, describe

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
811 S. First St., Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Submit Original  
to Appropriate  
District Office

## GAS CAPTURE PLAN

Date: 1-15-19

☒ Original

Operator & OGRID No.: Mewbourne Oil Company - 14744

☐ Amended - Reason for Amendment: \_\_\_\_\_

This Gas Capture Plan outlines actions to be taken by the Operator to reduce well/production facility flaring/venting for new completion (new drill, recomple to new zone, re-frac) activity.

*Note: Form C-129 must be submitted and approved prior to exceeding 60 days allowed by Rule (Subsection A of 19.15.18.12 NMAC).*

### Well(s)/Production Facility – Name of facility

The well(s) that will be located at the production facility are shown in the table below.

| Well Name                        | API | Well Location (ULSTR) | Footages             | Expected MCF/D | Flared or Vented | Comments          |
|----------------------------------|-----|-----------------------|----------------------|----------------|------------------|-------------------|
| Armstrong 26/35 W0KN Fed Com #3H |     | K - 26- 25S - 31E     | 2500 FSL & 2645' FWL | 0              | NA               | ONLINE AFTER FRAC |
|                                  |     |                       |                      |                |                  |                   |

### Gathering System and Pipeline Notification

Well(s) will be connected to a production facility after flowback operations are complete, if gas transporter system is in place. The gas produced from production facility is dedicated to Western and will be connected to Western low/high pressure gathering system located in EDDY County, New Mexico. It will require 3,400 ' of pipeline to connect the facility to low/high pressure gathering system. Mewbourne Oil Company provides (periodically) to Western a drilling, completion and estimated first production date for wells that are scheduled to be drilled in the foreseeable future. In addition, Mewbourne Oil Company and Western have periodic conference calls to discuss changes to drilling and completion schedules. Gas from these wells will be processed at Western Processing Plant located in Sec. 36, Blk. 58 T1S, Culberson County, Texas. The actual flow of the gas will be based on compression operating parameters and gathering system pressures.

### Flowback Strategy

After the fracture treatment/completion operations, well(s) will be produced to temporary production tanks and gas will be flared or vented. During flowback, the fluids and sand content will be monitored. When the produced fluids contain minimal sand, the wells will be turned to production facilities. Gas sales should start as soon as the wells start flowing through the production facilities, unless there are operational issues on Western system at that time. Based on current information, it is Operator's belief the system can take this gas upon completion of the well(s).

Safety requirements during cleanout operations from the use of underbalanced air cleanout systems may necessitate that sand and non-pipeline quality gas be vented and/or flared rather than sold on a temporary basis.

### Alternatives to Reduce Flaring

Below are alternatives considered from a conceptual standpoint to reduce the amount of gas flared.

- Power Generation – On lease
  - Only a portion of gas is consumed operating the generator, remainder of gas will be flared
- Compressed Natural Gas – On lease
  - Gas flared would be minimal, but might be uneconomical to operate when gas volume declines
- NGL Removal – On lease
  - Plants are expensive, residue gas is still flared, and uneconomical to operate when gas volume declines