

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 checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER 1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other 1c. Type of Completion: <input type="checkbox"/> Hydraulic Fracturing <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No. NMNM019619 6. If Indian, Allottee or Tribe Name 7. If Unit or CA Agreement, Name and No. 8. Lease Name and Well No. ARMSTRONG 26/35 W0JO FED COM 4H 9. API Well No. 30 015 47612
2. Name of Operator MEWBOURNE OIL COMPANY 3a. Address PO Box 5270 Hobbs NM 88240 3b. Phone No. (include area code) (575)393-5905		10. Field and Pool, or Exploratory WELCH / PURPLE SAGE WOLFCAMP G 11. Sec., T. R. M. or Blk. and Survey or Area SEC 26 / T25S / R31E / NMP
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NWSE / 2500 FSL / 2615 FEL / LAT 32.1008927 / LONG -103.7486387 At proposed prod. zone SWSE / 330 FSL / 1650 FEL / LAT 32.0803976 / LONG -103.7455755		12. County or Parish EDDY 13. State NM
14. Distance in miles and direction from nearest town or post office* 25 miles		15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 330 feet 16. No of acres in lease 520 17. Spacing Unit dedicated to this well 240
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 50 feet 19. Proposed Depth 11743 feet / 19102 feet 20. BLM/BIA Bond No. in file FED: NM1693		21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3338 feet 22. Approximate date work will start* 03/16/2019 23. Estimated duration 60 days
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.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office). | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be requested by the BLM. |
|---|---|

25. Signature (Electronic Submission) Title	Name (Printed/Typed) Office CARLSBAD	Date 03/12/2019
Approved by (Signature) (Electronic Submission) Title Assistant Field Manager Lands & Minerals	Name (Printed/Typed) Cody Layton / Ph: (575)234-5959 Office CARLSBAD	Date 10/09/2020

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

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.

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

Will require a directional survey with the C-104

APPROVED WITH CONDITIONS

SL
(Continued on page 2)

KP 10/27/2020 GEO Review

*(Instructions on page 2)

Approval Date: 10/09/2020

Entered - KMS NMOC

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

¹ API Number 30 015 47612	² Pool Code 98220	³ Pool Name PURPLE SAGE; WOLFCAMP GAS
⁴ Property Code 329769	⁵ Property Name ARMSTRONG 26/35 WOJO FED COM	
⁷ OGRID NO. 14744	⁸ Operator Name MEWBOURNE OIL COMPANY	⁶ Well Number 4H
		⁹ Elevation 3338'

¹⁰ Surface Location

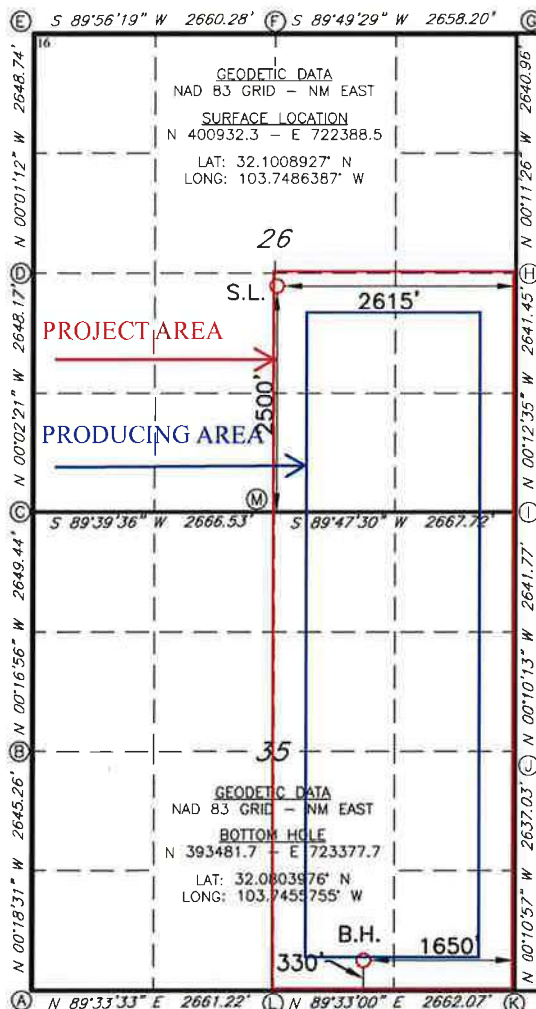
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet From the	East/West line	County
J	26	25S	31E		2500	SOUTH	2615	EAST	EDDY

¹¹ Bottom Hole Location If Different From Surface

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
0	35	25S	31E		330	SOUTH	1650	EAST	EDDY

¹² Dedicated Acres 480	¹³ Joint or Infill	¹⁴ Consolidation Code	¹⁵ Order No.
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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.



CORNER DATA
NAD 83 GRID - NM EAST

A: FOUND BRASS CAP "1939"
N 393123.4 - E 719706.3

B: FOUND BRASS CAP "1939"
N 395768.0 - E 719692.1

C: FOUND BRASS CAP "1939"
N 398416.8 - E 719679.1

D: FOUND BRASS CAP "1939"
N 401064.4 - E 719677.2

E: CALCULATED CORNER
N 403712.6 - E 719676.3

F: FOUND BRASS CAP "1939"
N 403715.4 - E 722336.0

G: FOUND BRASS CAP "1939"
N 403723.6 - E 724993.6

H: FOUND BRASS CAP "1939"
N 401083.2 - E 725002.4

I: FOUND BRASS CAP "1939"
N 398442.3 - E 725012.1

J: FOUND BRASS CAP "1939"
N 395801.2 - E 725019.9

K: FOUND BRASS CAP "1916"
N 393164.7 - E 725028.3

L: FOUND BRASS CAP "1939"
N 393143.8 - E 722366.9

M: FOUND BRASS CAP "1939"
N 398432.6 - E 722344.9

¹⁷ OPERATOR CERTIFICATION

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.

Signature: *Bradley Bishop* Date: **1-16-19**
Printed Name: **BRADLEY BISHOP**
E-mail Address: **BBISHOP@MEWBOURNE.COM**

¹⁸ SURVEYOR CERTIFICATION

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.

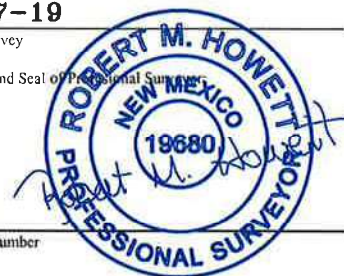
1-07-19

Date of Survey

Signature and Seal of Professional Surveyor

19680

Certificate Number



Job No.: **LS19010029**

Intent ☒ As Drilled ☐

API #

Operator Name: MEWBOURNE OIL COMPANY	Property Name: ARMSTRONG 26/35 W0JO FED COM	Well Number 4H
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Kick Off Point (KOP)

UL J	Section 26	Township 25S	Range 31E	Lot	Feet 2500	From N/S S	Feet 1650	From E/W E	County EDDY
Latitude 32.1008896					Longitude -103.7455255				NAD 83

First Take Point (FTP)

UL J	Section 26	Township 25S	Range 31E	Lot	Feet 2311	From N/S S	Feet 1650	From E/W E	County EDDY
Latitude 32.1003701					Longitude -103.7455268				NAD 83

Last Take Point (LTP)

UL O	Section 35	Township 25S	Range 31E	Lot	Feet 330	From N/S S	Feet 1650	From E/W E	County EDDY
Latitude 32.0803976					Longitude -103.7455755				NAD 83

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

Is this well an infill well? ☐ N

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
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KZ 06/29/2018

District I
1625 N. French Dr., Hobbs, NM 88240
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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: 1-16-19

☒ 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 WJO Fed Com #4H		J - 26- 25S - 31E	2500 FSL & 2615' FEL	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

PECOS DISTRICT

DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mewbourne Oil Company
LEASE NO.:	NMNM019619
WELL NAME & NO.:	Armstrong 26-35 W0JO Fed Com 4H
SURFACE HOLE FOOTAGE:	2500'/S & 2615'/E
BOTTOM HOLE FOOTAGE:	330'/S & 1650'/E
LOCATION:	Section 26, T.25 S., R.31 E., NMP
COUNTY:	Eddy County, New Mexico

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 3%, 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).
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 2nd 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



U.S. Department of the Interior
BUREAU OF LAND MANAGEMENT

Drilling Plan Data Report

10/09/2020

APD ID: 10400038094

Submission Date: 03/12/2019

Highlighted data reflects the most recent changes

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/35 W0JO FED COM

Well Type: OIL WELL

Well Number: 4H

Well Work Type: Drill

Show Final Text

Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
375548	UNKNOWN	3338	27	27		NONE	N
375549	RUSTLER	2323	1015	1015	ANHYDRITE, DOLOMITE	USEABLE WATER	N
375550	TOP SALT	1948	1390	1390	SALT	NONE	N
375551	BASE OF SALT	-781	4119	4119	SALT	NONE	N
375555	LAMAR	-987	4325	4325	LIMESTONE	NATURAL GAS, OIL	N
375552	BELL CANYON	-1012	4350	4350	SANDSTONE	NATURAL GAS, OIL	N
375556	CHERRY CANYON	-1961	5299	5299	SANDSTONE	NATURAL GAS, OIL	N
375553	MANZANITA	-2160	5498	5498		NONE	N
375557	BONE SPRING	-4986	8324	8324	LIMESTONE, SHALE	NATURAL GAS, OIL	N
375558	BONE SPRING 1ST	-6219	9557	9557	SANDSTONE	NATURAL GAS, OIL	N
375559	BONE SPRING 2ND	-6612	9950	9950	SANDSTONE	NATURAL GAS, OIL	N
375561	BONE SPRING 3RD	-7879	11217	11217	SANDSTONE	NATURAL GAS, OIL	N
375562	WOLFCAMP	-8329	11667	11667	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

Section 2 - Blowout Prevention

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/35 W0JO FED COM

Well Number: 4H

Pressure Rating (PSI): 10M

Rating Depth: 19102

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_10M_BOPE_Choke_Diagram_rev_1_15_19_20191021101508.xlsx
- Armstrong_26_35_W0KN_Fed_Com_3H_Flex_Line_Specs_20191021101509.pdf
- Armstrong_26_35_W0KN_Fed_Com_3H_Flex_Line_Specs_API_16C_20191021101509.pdf

BOP Diagram Attachment:

Armstrong_26_35_W0KN_Fed_Com_3H_10M_Annular_BOP_Variance_20191021101523.doc

Armstrong_26_35_W0KN_Fed_Com_3H_10M_BOPE_Schematic_w_5M_Annular_20191021101523.pdf

Armstrong_26_35_W0KN_Fed_Com_3H_10M_Multi_Bowl_WH_Running_Proc_20191021101527.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	12128	0	11805			12128	HCP-110	26	LT&C	1.34	1.71	DRY	2.2	DRY	2.63
4	LINER	6.125	4.5	NEW	API	N	11374	19102	11805	11743			7728	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 W0JO FED COM

Well Number: 4H

Casing Attachments

Casing ID: 1String Type: SURFACE

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Armstrong_26_35_W0JO_Fed_Com_4H_Csg_Assumptions_20190311100432.pdf

Casing ID: 2String Type: INTERMEDIATE

Inspection Document:

Spec Document:

Tapered String Spec:

Armstrong_26_35_W0JO_Fed_Com_4H_Intermediate_Tapered_String_Diagram_20190311100509.pdf

Casing Design Assumptions and Worksheet(s):

Armstrong_26_35_W0JO_Fed_Com_4H_Csg_Assumptions_20190311100532.pdf

Casing ID: 3String Type: PRODUCTION

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Armstrong_26_35_W0JO_Fed_Com_4H_Csg_Assumptions_20190311100653.pdf

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/35 W0JO FED COM

Well Number: 4H

Casing Attachments

Casing ID: 4String Type:LINER

Inspection Document:

Spec Document:

Tapered String Spec:

Casing Design Assumptions and Worksheet(s):

Armstrong_26_35_W0JO_Fed_Com_4H_Csg_Assumptions_20190311100759.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	9637	370	2.12	12.5	784	25	Class C	Gel, Retarder, Defoamer, Extender
PRODUCTION	Tail		9637	12128	400	1.18	15.6	472	25	Class H	Retarder, Fluid Loss, Defoamer
LINER	Lead		11374	19102	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 W0JO FED COM

Well Number: 4H

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	11805	WATER-BASED MUD	8.6	9.5							
11743	11805	OIL-BASED MUD	10	12							Mud wieght up to 13.0 ppg may be required for shale control. The highest mud weight needed to balance formation is expected to be 12.0 ppg.
0	1100	SPUD MUD	8.6	8.8							

Operator Name: MEWBOURNE OIL COMPANY

Well Name: ARMSTRONG 26/35 W0JO FED COM

Well Number: 4H

Section 6 - Test, Logging, Coring

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

GR/CNL will be run from KOP (11,374') to surface.

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

DS,GR,MWD,MUDLOG

Coring operation description for the well:

None

Section 7 - Pressure

Anticipated Bottom Hole Pressure: 7366

Anticipated Surface Pressure: 4772.86

Anticipated Bottom Hole Temperature(F): 165

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

Describe:

Contingency Plans geoharzards description:

Contingency Plans geohazards attachment:

Hydrogen Sulfide drilling operations plan required? YES

Hydrogen sulfide drilling operations plan:

Armstrong_26_35_W0JO_Fed_Com_4H_H2S_Plan_20190311101354.pdf

Section 8 - Other Information

Proposed horizontal/directional/multi-lateral plan submission:

Armstrong_26_35_W0JO_Fed_Com_4H_Dir_Plan_20190311101431.pdf

Armstrong_26_35_W0JO_Fed_Com_4H_Dir_Plot_20190311101432.pdf

Other proposed operations facets description:

Other proposed operations facets attachment:

Armstrong_26_35_W0JO_Fed_Com_4H_C101_20190311101453.pdf

Armstrong_26_35_W0JO_Fed_Com_4H_Drlg_Program_20190311101454.pdf

Other Variance attachment:

Mewbourne Oil Company, Armstrong 26/35 W0JO Fed Com #4H
Sec 26 & 35, T25S, R31E
SL: 2500' FSL & 2615' FEL (Sec 26)
BHL: 330' FSL & 1650' FEL (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'	12128'	7"	26	HCP110	LTC	1.34	1.71	2.20	2.63
6.125"	11374'	19102'	4.5"	13.5	P110	LTC	1.46	1.69	3.24	4.04
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 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 rd 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 nd 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 W0JO Fed Com #4H
Sec 26 & 35, T25S, R31E
SL: 2500' FSL & 2615' FEL (Sec 26)
BHL: 330' FSL & 1650' FEL (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
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12.25"	3452'	4250'	9.625"	40	L80	LTC	1.40	2.60	22.78	28.70
8.75"	0'	12128'	7"	26	HCP110	LTC	1.34	1.71	2.20	2.63
6.125"	11374'	19102'	4.5"	13.5	P110	LTC	1.46	1.69	3.24	4.04
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Is well located within Capitan Reef?	N
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Mewbourne Oil Company, Armstrong 26/35 W0JO Fed Com #4H
Sec 26 & 35, T25S, R31E
SL: 2500' FSL & 2615' FEL (Sec 26)
BHL: 330' FSL & 1650' FEL (Sec 35)

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Must have table for contingency casing

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Is casing new? If used, attach certification as required in Onshore Order #1	Y
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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?	
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Mewbourne Oil Company, Armstrong 26/35 W0JO Fed Com #4H
Sec 26 & 35, T25S, R31E
SL: 2500' FSL & 2615' FEL (Sec 26)
BHL: 330' FSL & 1650' FEL (Sec 35)

2. Casing Program

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(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 H₂S were found. MOC will have on location and working all H₂S 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 H₂S 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 H₂S 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

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

Mewbourne Oil Company	Hobbs District Office	575-393-5905
	Fax	575-397-6252
	2nd Fax	575-393-7259

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

Mewbourne Oil Company

Eddy County, New Mexico NAD 83

Armstrong 26/35 W0JO Fed Com #4H

SL: 2500 FSL & 2615 FEL (Sec 26)

Sec 26, T25S, R31E

BHL: 330 FSL & 1650 FEL (Sec 35)

Plan: Design #1

Standard Planning Report

05 March, 2019

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/35 W0JO Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3365.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3365.0usft (Original Well Elev)
Site:	Armstrong 26/35 W0JO Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FSL & 2615 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FSL & 1650 FEL (Sec 35)		
Design:	Design #1		

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

Site	Armstrong 26/35 W0JO Fed Com #4H			
Site Position:		Northing:	400,932.30 usft	Latitude: 32.1008927
From: Map		Easting:	722,388.50 usft	Longitude: -103.7486386
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.31 °

Well	SL: 2500 FSL & 2615 FEL (Sec 26)					
Well Position	+N/-S	0.0 usft	Northing:	400,932.30 usft	Latitude:	32.1008927
	+E/-W	0.0 usft	Easting:	722,388.50 usft	Longitude:	-103.7486386
Position Uncertainty		0.0 usft	Wellhead Elevation:	3,365.0 usft	Ground Level:	3,338.0 usft

Wellbore	BHL: 330 FSL & 1650 FEL (Sec 35)				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/4/2019	6.70	59.85	47,754

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	172.44

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,472.4	5.59	89.76	1,471.9	0.1	18.1	1.50	1.50	0.00	89.76	
11,002.0	5.59	89.76	10,956.1	4.0	945.9	0.00	0.00	0.00	0.00	
11,374.4	0.00	0.00	11,328.0	4.1	964.0	1.50	-1.50	0.00	180.00	KOP: 2500 FSL & 1650 FEL
12,128.0	90.51	179.81	11,805.0	-477.2	965.6	12.01	12.01	0.00	179.81	
19,101.7	90.51	179.81	11,743.0	-7,450.6	989.2	0.00	0.00	0.00	0.00	BHL: 330 FSL & 1650 FEL

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/35 W0JO Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3365.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3365.0usft (Original Well Elev)
Site:	Armstrong 26/35 W0JO Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FSL & 2615 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FSL & 1650 FEL (Sec 35)		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
SL: 2500 FSL & 2615 FEL (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	89.76	1,200.0	0.0	1.3	0.2	1.50	1.50	0.00
1,300.0	3.00	89.76	1,299.9	0.0	5.2	0.7	1.50	1.50	0.00
1,400.0	4.50	89.76	1,399.7	0.1	11.8	1.5	1.50	1.50	0.00
1,472.4	5.59	89.76	1,471.9	0.1	18.1	2.3	1.50	1.50	0.00
1,500.0	5.59	89.76	1,499.3	0.1	20.8	2.7	0.00	0.00	0.00
1,600.0	5.59	89.76	1,598.8	0.1	30.6	3.9	0.00	0.00	0.00
1,700.0	5.59	89.76	1,698.3	0.2	40.3	5.1	0.00	0.00	0.00
1,800.0	5.59	89.76	1,797.9	0.2	50.0	6.4	0.00	0.00	0.00
1,900.0	5.59	89.76	1,897.4	0.3	59.8	7.6	0.00	0.00	0.00
2,000.0	5.59	89.76	1,996.9	0.3	69.5	8.9	0.00	0.00	0.00
2,100.0	5.59	89.76	2,096.4	0.3	79.2	10.1	0.00	0.00	0.00
2,200.0	5.59	89.76	2,196.0	0.4	89.0	11.3	0.00	0.00	0.00
2,300.0	5.59	89.76	2,295.5	0.4	98.7	12.6	0.00	0.00	0.00
2,400.0	5.59	89.76	2,395.0	0.5	108.4	13.8	0.00	0.00	0.00
2,500.0	5.59	89.76	2,494.5	0.5	118.2	15.1	0.00	0.00	0.00
2,600.0	5.59	89.76	2,594.1	0.5	127.9	16.3	0.00	0.00	0.00
2,700.0	5.59	89.76	2,693.6	0.6	137.6	17.5	0.00	0.00	0.00
2,800.0	5.59	89.76	2,793.1	0.6	147.4	18.8	0.00	0.00	0.00
2,900.0	5.59	89.76	2,892.6	0.7	157.1	20.0	0.00	0.00	0.00
3,000.0	5.59	89.76	2,992.2	0.7	166.9	21.3	0.00	0.00	0.00
3,100.0	5.59	89.76	3,091.7	0.8	176.6	22.5	0.00	0.00	0.00
3,200.0	5.59	89.76	3,191.2	0.8	186.3	23.7	0.00	0.00	0.00
3,300.0	5.59	89.76	3,290.7	0.8	196.1	25.0	0.00	0.00	0.00
3,400.0	5.59	89.76	3,390.3	0.9	205.8	26.2	0.00	0.00	0.00
3,500.0	5.59	89.76	3,489.8	0.9	215.5	27.5	0.00	0.00	0.00
3,600.0	5.59	89.76	3,589.3	1.0	225.3	28.7	0.00	0.00	0.00
3,700.0	5.59	89.76	3,688.8	1.0	235.0	29.9	0.00	0.00	0.00
3,800.0	5.59	89.76	3,788.4	1.0	244.7	31.2	0.00	0.00	0.00
3,900.0	5.59	89.76	3,887.9	1.1	254.5	32.4	0.00	0.00	0.00
4,000.0	5.59	89.76	3,987.4	1.1	264.2	33.7	0.00	0.00	0.00
4,100.0	5.59	89.76	4,086.9	1.2	273.9	34.9	0.00	0.00	0.00
4,200.0	5.59	89.76	4,186.5	1.2	283.7	36.1	0.00	0.00	0.00
4,300.0	5.59	89.76	4,286.0	1.2	293.4	37.4	0.00	0.00	0.00
4,400.0	5.59	89.76	4,385.5	1.3	303.1	38.6	0.00	0.00	0.00
4,500.0	5.59	89.76	4,485.0	1.3	312.9	39.9	0.00	0.00	0.00
4,600.0	5.59	89.76	4,584.6	1.4	322.6	41.1	0.00	0.00	0.00
4,700.0	5.59	89.76	4,684.1	1.4	332.3	42.3	0.00	0.00	0.00
4,800.0	5.59	89.76	4,783.6	1.5	342.1	43.6	0.00	0.00	0.00
4,900.0	5.59	89.76	4,883.1	1.5	351.8	44.8	0.00	0.00	0.00
5,000.0	5.59	89.76	4,982.7	1.5	361.6	46.1	0.00	0.00	0.00
5,100.0	5.59	89.76	5,082.2	1.6	371.3	47.3	0.00	0.00	0.00

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/35 W0JO Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3365.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3365.0usft (Original Well Elev)
Site:	Armstrong 26/35 W0JO Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FSL & 2615 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FSL & 1650 FEL (Sec 35)		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,200.0	5.59	89.76	5,181.7	1.6	381.0	48.5	0.00	0.00	0.00	
5,300.0	5.59	89.76	5,281.2	1.7	390.8	49.8	0.00	0.00	0.00	
5,400.0	5.59	89.76	5,380.8	1.7	400.5	51.0	0.00	0.00	0.00	
5,500.0	5.59	89.76	5,480.3	1.7	410.2	52.3	0.00	0.00	0.00	
5,600.0	5.59	89.76	5,579.8	1.8	420.0	53.5	0.00	0.00	0.00	
5,700.0	5.59	89.76	5,679.3	1.8	429.7	54.7	0.00	0.00	0.00	
5,800.0	5.59	89.76	5,778.9	1.9	439.4	56.0	0.00	0.00	0.00	
5,900.0	5.59	89.76	5,878.4	1.9	449.2	57.2	0.00	0.00	0.00	
6,000.0	5.59	89.76	5,977.9	2.0	458.9	58.5	0.00	0.00	0.00	
6,100.0	5.59	89.76	6,077.4	2.0	468.6	59.7	0.00	0.00	0.00	
6,200.0	5.59	89.76	6,177.0	2.0	478.4	60.9	0.00	0.00	0.00	
6,300.0	5.59	89.76	6,276.5	2.1	488.1	62.2	0.00	0.00	0.00	
6,400.0	5.59	89.76	6,376.0	2.1	497.8	63.4	0.00	0.00	0.00	
6,500.0	5.59	89.76	6,475.5	2.2	507.6	64.7	0.00	0.00	0.00	
6,600.0	5.59	89.76	6,575.1	2.2	517.3	65.9	0.00	0.00	0.00	
6,700.0	5.59	89.76	6,674.6	2.2	527.1	67.1	0.00	0.00	0.00	
6,800.0	5.59	89.76	6,774.1	2.3	536.8	68.4	0.00	0.00	0.00	
6,900.0	5.59	89.76	6,873.6	2.3	546.5	69.6	0.00	0.00	0.00	
7,000.0	5.59	89.76	6,973.2	2.4	556.3	70.9	0.00	0.00	0.00	
7,100.0	5.59	89.76	7,072.7	2.4	566.0	72.1	0.00	0.00	0.00	
7,200.0	5.59	89.76	7,172.2	2.4	575.7	73.3	0.00	0.00	0.00	
7,300.0	5.59	89.76	7,271.7	2.5	585.5	74.6	0.00	0.00	0.00	
7,400.0	5.59	89.76	7,371.3	2.5	595.2	75.8	0.00	0.00	0.00	
7,500.0	5.59	89.76	7,470.8	2.6	604.9	77.1	0.00	0.00	0.00	
7,600.0	5.59	89.76	7,570.3	2.6	614.7	78.3	0.00	0.00	0.00	
7,700.0	5.59	89.76	7,669.8	2.7	624.4	79.5	0.00	0.00	0.00	
7,800.0	5.59	89.76	7,769.4	2.7	634.1	80.8	0.00	0.00	0.00	
7,900.0	5.59	89.76	7,868.9	2.7	643.9	82.0	0.00	0.00	0.00	
8,000.0	5.59	89.76	7,968.4	2.8	653.6	83.3	0.00	0.00	0.00	
8,100.0	5.59	89.76	8,067.9	2.8	663.3	84.5	0.00	0.00	0.00	
8,200.0	5.59	89.76	8,167.5	2.9	673.1	85.7	0.00	0.00	0.00	
8,300.0	5.59	89.76	8,267.0	2.9	682.8	87.0	0.00	0.00	0.00	
8,400.0	5.59	89.76	8,366.5	2.9	692.5	88.2	0.00	0.00	0.00	
8,500.0	5.59	89.76	8,466.0	3.0	702.3	89.5	0.00	0.00	0.00	
8,600.0	5.59	89.76	8,565.6	3.0	712.0	90.7	0.00	0.00	0.00	
8,700.0	5.59	89.76	8,665.1	3.1	721.8	91.9	0.00	0.00	0.00	
8,800.0	5.59	89.76	8,764.6	3.1	731.5	93.2	0.00	0.00	0.00	
8,900.0	5.59	89.76	8,864.1	3.2	741.2	94.4	0.00	0.00	0.00	
9,000.0	5.59	89.76	8,963.7	3.2	751.0	95.7	0.00	0.00	0.00	
9,100.0	5.59	89.76	9,063.2	3.2	760.7	96.9	0.00	0.00	0.00	
9,200.0	5.59	89.76	9,162.7	3.3	770.4	98.2	0.00	0.00	0.00	
9,300.0	5.59	89.76	9,262.2	3.3	780.2	99.4	0.00	0.00	0.00	
9,400.0	5.59	89.76	9,361.8	3.4	789.9	100.6	0.00	0.00	0.00	
9,500.0	5.59	89.76	9,461.3	3.4	799.6	101.9	0.00	0.00	0.00	
9,600.0	5.59	89.76	9,560.8	3.4	809.4	103.1	0.00	0.00	0.00	
9,700.0	5.59	89.76	9,660.3	3.5	819.1	104.4	0.00	0.00	0.00	
9,800.0	5.59	89.76	9,759.9	3.5	828.8	105.6	0.00	0.00	0.00	
9,900.0	5.59	89.76	9,859.4	3.6	838.6	106.8	0.00	0.00	0.00	
10,000.0	5.59	89.76	9,958.9	3.6	848.3	108.1	0.00	0.00	0.00	
10,100.0	5.59	89.76	10,058.4	3.6	858.0	109.3	0.00	0.00	0.00	
10,200.0	5.59	89.76	10,158.0	3.7	867.8	110.6	0.00	0.00	0.00	
10,300.0	5.59	89.76	10,257.5	3.7	877.5	111.8	0.00	0.00	0.00	
10,400.0	5.59	89.76	10,357.0	3.8	887.3	113.0	0.00	0.00	0.00	
10,500.0	5.59	89.76	10,456.5	3.8	897.0	114.3	0.00	0.00	0.00	

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/35 W0JO Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3365.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3365.0usft (Original Well Elev)
Site:	Armstrong 26/35 W0JO Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FSL & 2615 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FSL & 1650 FEL (Sec 35)		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,600.0	5.59	89.76	10,556.1	3.9	906.7	115.5	0.00	0.00	0.00	
10,700.0	5.59	89.76	10,655.6	3.9	916.5	116.8	0.00	0.00	0.00	
10,800.0	5.59	89.76	10,755.1	3.9	926.2	118.0	0.00	0.00	0.00	
10,900.0	5.59	89.76	10,854.6	4.0	935.9	119.2	0.00	0.00	0.00	
11,000.0	5.59	89.76	10,954.2	4.0	945.7	120.5	0.00	0.00	0.00	
11,002.0	5.59	89.76	10,956.1	4.0	945.9	120.5	0.00	0.00	0.00	
11,100.0	4.12	89.76	11,053.8	4.1	954.1	121.6	1.50	-1.50	0.00	
11,200.0	2.62	89.76	11,153.6	4.1	960.0	122.3	1.50	-1.50	0.00	
11,300.0	1.12	89.76	11,253.6	4.1	963.3	122.7	1.50	-1.50	0.00	
11,374.4	0.00	0.00	11,328.0	4.1	964.0	122.8	1.50	-1.50	0.00	
KOP: 2500 FSL & 1650 FEL (Sec 26)										
11,400.0	3.07	179.81	11,353.5	3.4	964.0	123.5	12.01	12.01	0.00	
11,500.0	15.08	179.81	11,452.1	-12.3	964.1	139.1	12.01	12.01	0.00	
11,600.0	27.09	179.81	11,545.2	-48.2	964.2	174.7	12.01	12.01	0.00	
11,700.0	39.10	179.81	11,628.9	-102.7	964.4	228.8	12.01	12.01	0.00	
11,800.0	51.11	179.81	11,699.3	-173.5	964.6	298.9	12.01	12.01	0.00	
11,814.5	52.85	179.81	11,708.2	-184.9	964.6	310.2	12.01	12.01	0.00	
FTP: 2311 FSL & 1650 FEL (Sec 26)										
11,900.0	63.13	179.81	11,753.5	-257.3	964.9	382.0	12.01	12.01	0.00	
12,000.0	75.14	179.81	11,789.1	-350.6	965.2	474.5	12.01	12.01	0.00	
12,100.0	87.15	179.81	11,804.4	-449.2	965.5	572.4	12.01	12.01	0.00	
12,128.0	90.51	179.81	11,805.0	-477.2	965.6	600.1	12.01	12.01	0.00	
12,200.0	90.51	179.81	11,804.4	-549.2	965.9	671.5	0.00	0.00	0.00	
12,300.0	90.51	179.81	11,803.5	-649.2	966.2	770.7	0.00	0.00	0.00	
12,400.0	90.51	179.81	11,802.6	-749.2	966.5	869.9	0.00	0.00	0.00	
12,500.0	90.51	179.81	11,801.7	-849.2	966.9	969.0	0.00	0.00	0.00	
12,600.0	90.51	179.81	11,800.8	-949.2	967.2	1,068.2	0.00	0.00	0.00	
12,700.0	90.51	179.81	11,799.9	-1,049.1	967.6	1,167.4	0.00	0.00	0.00	
12,800.0	90.51	179.81	11,799.0	-1,149.1	967.9	1,266.5	0.00	0.00	0.00	
12,900.0	90.51	179.81	11,798.1	-1,249.1	968.2	1,365.7	0.00	0.00	0.00	
13,000.0	90.51	179.81	11,797.2	-1,349.1	968.6	1,464.9	0.00	0.00	0.00	
13,100.0	90.51	179.81	11,796.4	-1,449.1	968.9	1,564.0	0.00	0.00	0.00	
13,200.0	90.51	179.81	11,795.5	-1,549.1	969.3	1,663.2	0.00	0.00	0.00	
13,300.0	90.51	179.81	11,794.6	-1,649.1	969.6	1,762.4	0.00	0.00	0.00	
13,400.0	90.51	179.81	11,793.7	-1,749.1	969.9	1,861.6	0.00	0.00	0.00	
13,500.0	90.51	179.81	11,792.8	-1,849.1	970.3	1,960.7	0.00	0.00	0.00	
13,600.0	90.51	179.81	11,791.9	-1,949.1	970.6	2,059.9	0.00	0.00	0.00	
13,700.0	90.51	179.81	11,791.0	-2,049.1	970.9	2,159.1	0.00	0.00	0.00	
13,800.0	90.51	179.81	11,790.1	-2,149.1	971.3	2,258.2	0.00	0.00	0.00	
13,900.0	90.51	179.81	11,789.2	-2,249.1	971.6	2,357.4	0.00	0.00	0.00	
14,000.0	90.51	179.81	11,788.4	-2,349.1	972.0	2,456.6	0.00	0.00	0.00	
14,100.0	90.51	179.81	11,787.5	-2,449.1	972.3	2,555.7	0.00	0.00	0.00	
14,146.2	90.51	179.81	11,787.1	-2,495.3	972.4	2,601.6	0.00	0.00	0.00	
PPP2: 0 FNL & 1650 FEL (Sec 35)										
14,200.0	90.51	179.81	11,786.6	-2,549.1	972.6	2,654.9	0.00	0.00	0.00	
14,300.0	90.51	179.81	11,785.7	-2,649.1	973.0	2,754.1	0.00	0.00	0.00	
14,400.0	90.51	179.81	11,784.8	-2,749.1	973.3	2,853.3	0.00	0.00	0.00	
14,500.0	90.51	179.81	11,783.9	-2,849.1	973.6	2,952.4	0.00	0.00	0.00	
14,600.0	90.51	179.81	11,783.0	-2,949.1	974.0	3,051.6	0.00	0.00	0.00	
14,700.0	90.51	179.81	11,782.1	-3,049.1	974.3	3,150.8	0.00	0.00	0.00	
14,800.0	90.51	179.81	11,781.2	-3,149.1	974.7	3,249.9	0.00	0.00	0.00	
14,900.0	90.51	179.81	11,780.4	-3,249.0	975.0	3,349.1	0.00	0.00	0.00	
15,000.0	90.51	179.81	11,779.5	-3,349.0	975.3	3,448.3	0.00	0.00	0.00	

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/35 W0JO Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3365.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3365.0usft (Original Well Elev)
Site:	Armstrong 26/35 W0JO Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FSL & 2615 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FSL & 1650 FEL (Sec 35)		
Design:	Design #1		

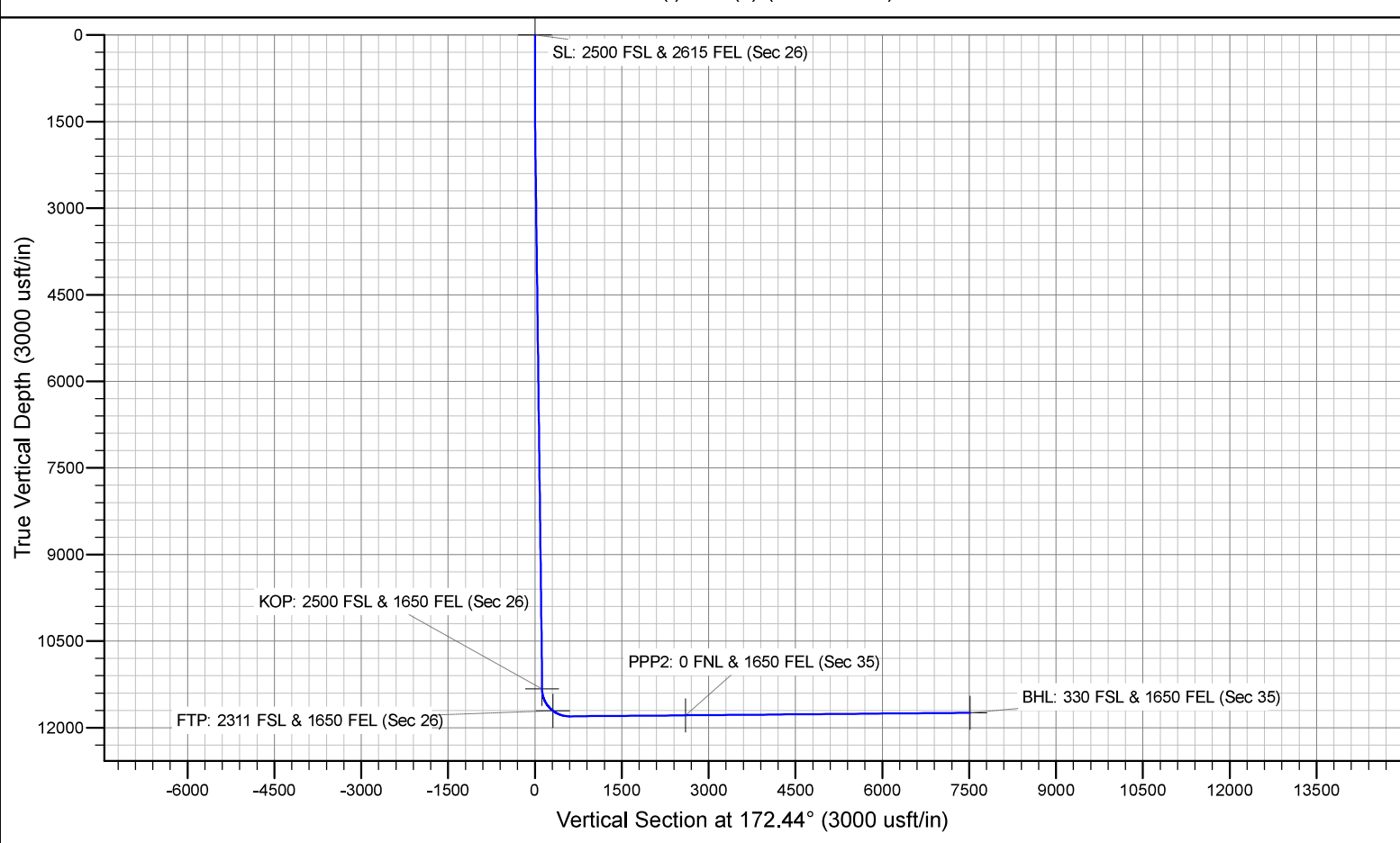
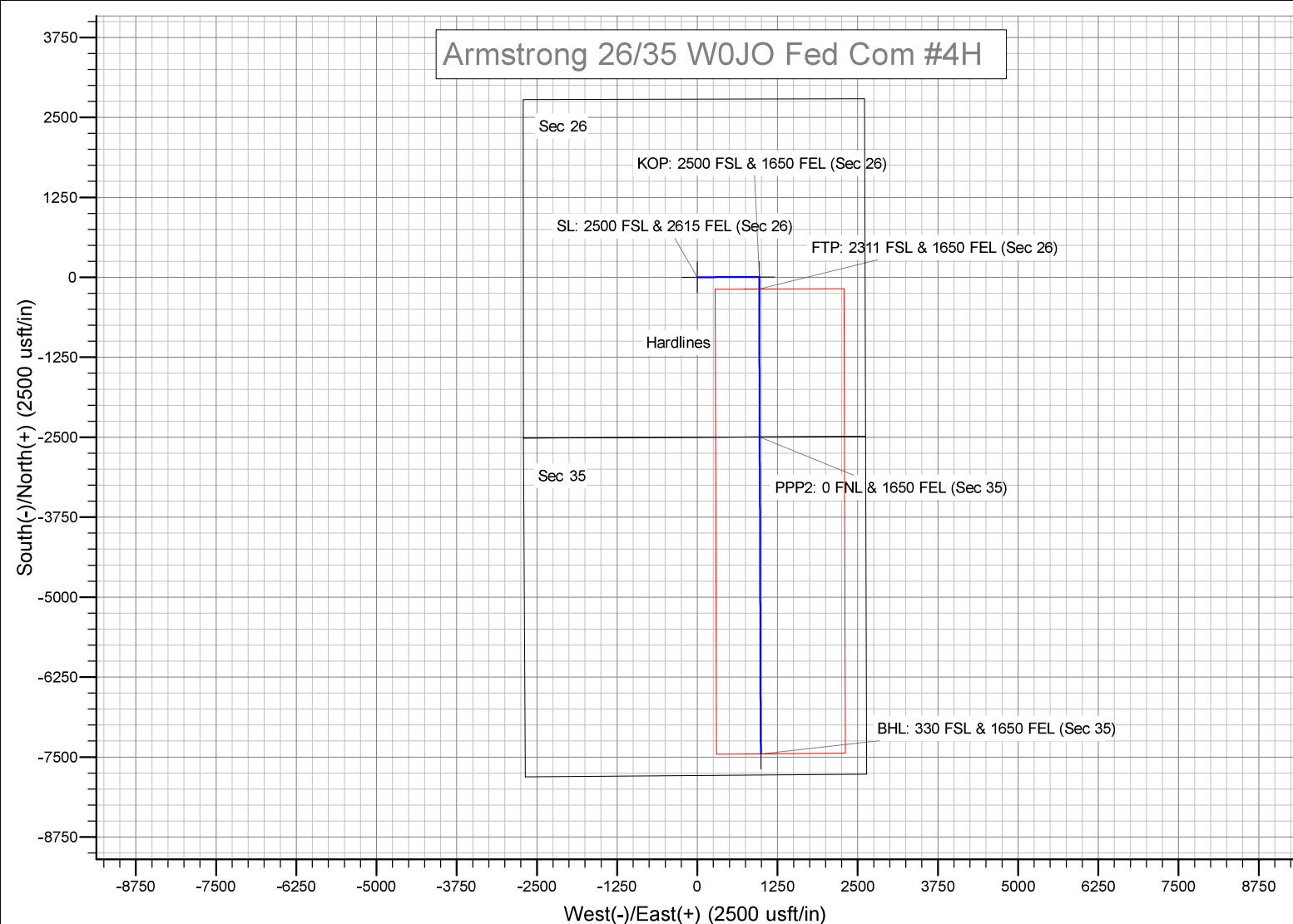
Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,100.0	90.51	179.81	11,778.6	-3,449.0	975.7	3,547.4	0.00	0.00	0.00	
15,200.0	90.51	179.81	11,777.7	-3,549.0	976.0	3,646.6	0.00	0.00	0.00	
15,300.0	90.51	179.81	11,776.8	-3,649.0	976.3	3,745.8	0.00	0.00	0.00	
15,400.0	90.51	179.81	11,775.9	-3,749.0	976.7	3,845.0	0.00	0.00	0.00	
15,500.0	90.51	179.81	11,775.0	-3,849.0	977.0	3,944.1	0.00	0.00	0.00	
15,600.0	90.51	179.81	11,774.1	-3,949.0	977.4	4,043.3	0.00	0.00	0.00	
15,700.0	90.51	179.81	11,773.2	-4,049.0	977.7	4,142.5	0.00	0.00	0.00	
15,800.0	90.51	179.81	11,772.4	-4,149.0	978.0	4,241.6	0.00	0.00	0.00	
15,900.0	90.51	179.81	11,771.5	-4,249.0	978.4	4,340.8	0.00	0.00	0.00	
16,000.0	90.51	179.81	11,770.6	-4,349.0	978.7	4,440.0	0.00	0.00	0.00	
16,100.0	90.51	179.81	11,769.7	-4,449.0	979.1	4,539.1	0.00	0.00	0.00	
16,200.0	90.51	179.81	11,768.8	-4,549.0	979.4	4,638.3	0.00	0.00	0.00	
16,300.0	90.51	179.81	11,767.9	-4,649.0	979.7	4,737.5	0.00	0.00	0.00	
16,400.0	90.51	179.81	11,767.0	-4,749.0	980.1	4,836.7	0.00	0.00	0.00	
16,500.0	90.51	179.81	11,766.1	-4,849.0	980.4	4,935.8	0.00	0.00	0.00	
16,600.0	90.51	179.81	11,765.2	-4,949.0	980.7	5,035.0	0.00	0.00	0.00	
16,700.0	90.51	179.81	11,764.4	-5,049.0	981.1	5,134.2	0.00	0.00	0.00	
16,800.0	90.51	179.81	11,763.5	-5,149.0	981.4	5,233.3	0.00	0.00	0.00	
16,900.0	90.51	179.81	11,762.6	-5,249.0	981.8	5,332.5	0.00	0.00	0.00	
17,000.0	90.51	179.81	11,761.7	-5,349.0	982.1	5,431.7	0.00	0.00	0.00	
17,100.0	90.51	179.81	11,760.8	-5,448.9	982.4	5,530.8	0.00	0.00	0.00	
17,200.0	90.51	179.81	11,759.9	-5,548.9	982.8	5,630.0	0.00	0.00	0.00	
17,300.0	90.51	179.81	11,759.0	-5,648.9	983.1	5,729.2	0.00	0.00	0.00	
17,400.0	90.51	179.81	11,758.1	-5,748.9	983.4	5,828.4	0.00	0.00	0.00	
17,500.0	90.51	179.81	11,757.2	-5,848.9	983.8	5,927.5	0.00	0.00	0.00	
17,600.0	90.51	179.81	11,756.4	-5,948.9	984.1	6,026.7	0.00	0.00	0.00	
17,700.0	90.51	179.81	11,755.5	-6,048.9	984.5	6,125.9	0.00	0.00	0.00	
17,800.0	90.51	179.81	11,754.6	-6,148.9	984.8	6,225.0	0.00	0.00	0.00	
17,900.0	90.51	179.81	11,753.7	-6,248.9	985.1	6,324.2	0.00	0.00	0.00	
18,000.0	90.51	179.81	11,752.8	-6,348.9	985.5	6,423.4	0.00	0.00	0.00	
18,100.0	90.51	179.81	11,751.9	-6,448.9	985.8	6,522.5	0.00	0.00	0.00	
18,200.0	90.51	179.81	11,751.0	-6,548.9	986.2	6,621.7	0.00	0.00	0.00	
18,300.0	90.51	179.81	11,750.1	-6,648.9	986.5	6,720.9	0.00	0.00	0.00	
18,400.0	90.51	179.81	11,749.2	-6,748.9	986.8	6,820.1	0.00	0.00	0.00	
18,500.0	90.51	179.81	11,748.3	-6,848.9	987.2	6,919.2	0.00	0.00	0.00	
18,600.0	90.51	179.81	11,747.5	-6,948.9	987.5	7,018.4	0.00	0.00	0.00	
18,700.0	90.51	179.81	11,746.6	-7,048.9	987.8	7,117.6	0.00	0.00	0.00	
18,800.0	90.51	179.81	11,745.7	-7,148.9	988.2	7,216.7	0.00	0.00	0.00	
18,900.0	90.51	179.81	11,744.8	-7,248.9	988.5	7,315.9	0.00	0.00	0.00	
19,000.0	90.51	179.81	11,743.9	-7,348.9	988.9	7,415.1	0.00	0.00	0.00	
19,100.0	90.51	179.81	11,743.0	-7,448.9	989.2	7,514.3	0.00	0.00	0.00	
19,101.7	90.51	179.81	11,743.0	-7,450.6	989.2	7,516.0	0.00	0.00	0.00	
BHL: 330 FSL & 1650 FEL (Sec 35)										

Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Armstrong 26/35 W0JO Fed Com #4H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3365.0usft (Original Well Elev)
Project:	Eddy County, New Mexico NAD 83	MD Reference:	WELL @ 3365.0usft (Original Well Elev)
Site:	Armstrong 26/35 W0JO Fed Com #4H	North Reference:	Grid
Well:	SL: 2500 FSL & 2615 FEL (Sec 26)	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330 FSL & 1650 FEL (Sec 35)		
Design:	Design #1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
SL: 2500 FSL & 2615 FE - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	400,932.30	722,388.50	32.1008927	-103.7486386
KOP: 2500 FSL & 1650 - plan hits target center - Point	0.00	0.00	11,328.0	4.1	964.0	400,936.40	723,352.50	32.1008896	-103.7455255
FTP: 2311 FSL & 1650 F - plan hits target center - Point	0.00	0.00	11,708.3	-184.9	964.6	400,747.40	723,353.14	32.1003701	-103.7455268
BHL: 330 FSL & 1650 FI - plan hits target center - Point	0.00	0.00	11,743.0	-7,450.6	989.2	393,481.70	723,377.70	32.0803976	-103.7455753
PPP2: 0 FNL & 1650 FE - plan hits target center - Point	0.00	0.00	11,787.1	-2,495.3	972.4	398,437.00	723,360.95	32.0940191	-103.7455422

Armstrong 26/35 W0JO Fed Com #4H



Mewbourne Oil Company, Armstrong 26/35 W0JO Fed Com #4H
Sec 26 & 35, T25S, R31E
SL: 2500' FSL & 2615' FEL (Sec 26)
BHL: 330' FSL & 1650' FEL (Sec 35)

1. Geologic Formations

TVD of target	11,805'	Pilot hole depth	NA
MD at TD:	19,102'	Deepest expected fresh water:	315'

Basin

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ 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 st Bone Spring Sand	9557		
2 nd Bone Spring Sand	9950		
3 rd 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 W0JO Fed Com #4H
Sec 26 & 35, T25S, R31E
SL: 2500' FSL & 2615' FEL (Sec 26)
BHL: 330' FSL & 1650' FEL (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'	12128'	7"	26	HCP110	LTC	1.34	1.71	2.20	2.63
6.125"	11374'	19102'	4.5"	13.5	P110	LTC	1.46	1.69	3.24	4.04
BLM Minimum Safety Factor							1.125	1	1.6 Dry 1.8 Wet	1.6 Dry 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 rd 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 nd 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 W0JO Fed Com #4H

Sec 26 & 35, T25S, R31E

SL: 2500' FSL & 2615' FEL (Sec 26)

BHL: 330' FSL & 1650' FEL (Sec 35)

3. Cementing Program

Casing	# Sk	Wt. lb/ gal	Yld ft3/ sack	H ₂ O gal/ sk	500# Comp. Strength (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. 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. 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	11374'	25%

Mewbourne Oil Company, Armstrong 26/35 W0JO Fed Com #4H
Sec 26 & 35, T25S, R31E
SL: 2500' FSL & 2615' FEL (Sec 26)
BHL: 330' FSL & 1650' FEL (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.
Y	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.
N	Are anchors required by manufacturer?
Y	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. • Provide description here: See attached schematic.

5. Mud Program

Mewbourne Oil Company, Armstrong 26/35 W0JO Fed Com #4H

Sec 26 & 35, T25S, R31E

SL: 2500' FSL & 2615' FEL (Sec 26)

BHL: 330' FSL & 1650' FEL (Sec 35)

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	11805	Cut Brine	8.6-9.5	28-34	N/C
11743	11805	OBM	10.0-13.0	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.

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.	
X	Will run GR/CNL from KOP (11,374') 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

Additional logs planned		Interval
X	Gamma Ray	11,374' (KOP) to TD
	Density	
	CBL	
	Mud log	
	PEX	

Mewbourne Oil Company, Armstrong 26/35 W0JO Fed Com #4H
Sec 26 & 35, T25S, R31E
SL: 2500' FSL & 2615' FEL (Sec 26)
BHL: 330' FSL & 1650' FEL (Sec 35)

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7366 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 (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S 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.	
	H2S is present
X	H2S Plan attached

8. Other facets of operation

Is this a walking operation? If yes, describe.
 Will be pre-setting casing? If yes, describe.

Attachments

___ Directional Plan
 ___ Other, describe