

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 type="checkbox"/> Oil Well <input checked="" 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. <b>NMNM0543748</b>
		6. If Indian, Allottee or Tribe Name
		7. If Unit or CA Agreement, Name and No.
		8. Lease Name and Well No. <b>FORTY NINER RIDGE UNIT 113H</b>
2. Name of Operator <b>MEWBOURNE OIL COMPANY</b>		9. API Well No. <b>30-015-47441</b>
3a. Address <b>PO Box 5270 Hobbs NM 88240</b>	3b. Phone No. (include area code) <b>(575)393-5905</b>	10. Field and Pool, or Exploratory <b>CORRAL DRAW BONE SPRING / CORR.</b>
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface <b>SWSE / 10 FSL / 2005 FEL / LAT 32.2832252 / LONG -103.8667545</b> At proposed prod. zone <b>NWNE / 330 FNL / 2310 FEL / LAT 32.3113971 / LONG -103.8677725</b>		11. Sec., T, R, M, or Blk. and Survey or Area <b>SEC 22 / T23S / R30E / NMP</b>
14. Distance in miles and direction from nearest town or post office* <b>30 miles</b>		12. County or Parish <b>EDDY</b>
		13. State <b>NM</b>
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) <b>320 feet</b>	16. No of acres in lease <b>240</b>	17. Spacing Unit dedicated to this well <b>160</b>
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>50 feet</b>	19. Proposed Depth <b>12158 feet / 22167 feet</b>	20. BLM/BIA Bond No. in file <b>FED: NM1693</b>
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>3270 feet</b>	22. Approximate date work will start* <b>08/05/2019</b>	23. Estimated duration <b>60 days</b>
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 (Electronic Submission)	Name (Printed/Typed) <b>Bradley Bishop / Ph: (575)393-5905</b>	Date <b>06/26/2019</b>
Title <b>Regulatory</b>		
Approved by (Signature) (Electronic Submission)	Name (Printed/Typed) <b>Cody Layton / Ph: (575)234-5959</b>	Date <b>08/27/2020</b>
Title <b>Assistant Field Manager Lands &amp; Minerals</b>		
Office <b>CARLSBAD</b>		

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.



## INSTRUCTIONS

GENERAL: This form is designed for submitting proposals to perform certain well operations, as indicated on Federal and Indian lands and leases for action by appropriate Federal agencies, pursuant to applicable Federal laws and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local, area, or regional procedures and practices, either are shown below or will be issued by, or may be obtained from local Federal offices.

ITEM I: If the proposal is to redrill to the same reservoir at a different subsurface location or to a new reservoir, use this form with appropriate notations. Consult applicable Federal regulations concerning subsequent work proposals or reports on the well.

ITEM 4: Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult local Federal offices for specific instructions.

ITEM 14: Needed only when location of well cannot readily be found by road from the land or lease description. A plat, or plats, separate or on the reverse side, showing the roads to, and the surveyed location of, the well, and any other required information, should be furnished when required by Federal agency offices.

ITEMS 15 AND 18: If well is to be, or has been directionally drilled, give distances for subsurface location of hole in any present or objective productive zone.

ITEM 22: Consult applicable Federal regulations, or appropriate officials, concerning approval of the proposal before operations are started.

ITEM 24: If the proposal will involve hydraulic fracturing operations, you must comply with 43 CFR 3162.3-3, including providing information about the protection of usable water. Operators should provide the best available information about all formations containing water and their depths. This information could include data and interpretation of resistivity logs run on nearby wells. Information may also be obtained from state or tribal regulatory agencies and from local BLM offices.

## NOTICES

The Privacy Act of 1974 and regulation in 43 CFR 2.48( d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 25 U.S.C. 396; 43 CFR 3160

PRINCIPAL PURPOSES: The information will be used to: (1) process and evaluate your application for a permit to drill a new oil, gas, or service well or to reenter a plugged and abandoned well; and (2) document, for administrative use, information for the management, disposal and use of National Resource Lands and resources including (a) analyzing your proposal to discover and extract the Federal or Indian resources encountered; (b) reviewing procedures and equipment and the projected impact on the land involved; and (c) evaluating the effects of the proposed operation on the surface and subsurface water and other environmental impacts.

ROUTINE USE: Information from the record and/or the record will be transferred to appropriate Federal, State, and local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecution, in connection with congressional inquiries and for regulatory responsibilities.

EFFECT OF NOT PROVIDING INFORMATION: Filing of this application and disclosure of the information is mandatory only if you elect to initiate a drilling or reentry operation on an oil and gas lease.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM connects this information to a new evaluation of the technical, safety, and environmental factors involved with drilling for oil and/or gas on Federal and Indian oil and gas leases. This information will be used to analyze and approve applications. Response to this request is mandatory only if the operator elects to initiate drilling or reentry operations on an oil and gas lease. The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

**BURDEN HOURS STATEMENT:** Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Connection Clearance Officer (WO-630), 1849 C Street, N.W., Mail Stop 401 LS, Washington, D.C. 20240.

## Additional Operator Remarks

### Location of Well

1. SHL: SWSE / 10 FSL / 2005 FEL / TWSP: 23S / RANGE: 30E / SECTION: 22 / LAT: 32.2832252 / LONG: -103.8667545 ( TVD: 0 feet, MD: 0 feet )  
PPP: SWSE / 330 FSL / 2310 FEL / TWSP: 23S / RANGE: 30E / SECTION: 22 / LAT: 32.2841085 / LONG: -103.8677446 ( TVD: 12100 feet, MD: 12231 feet )  
PPP: SWSE / 0 FSL / 2310 FEL / TWSP: 23S / RANGE: 30E / SECTION: 15 / LAT: 32.2977483 / LONG: -103.8677585 ( TVD: 12158 feet, MD: 17201 feet )  
PPP: SWNE / 2645 FNL / 2310 FEL / TWSP: 23S / RANGE: 30E / SECTION: 15 / LAT: 32.3050245 / LONG: -103.867766 ( TVD: 12158 feet, MD: 19849 feet )  
BHL: NWNE / 330 FNL / 2310 FEL / TWSP: 23S / RANGE: 30E / SECTION: 15 / LAT: 32.3113971 / LONG: -103.8677725 ( TVD: 12158 feet, MD: 22167 feet )

### BLM Point of Contact

Name: Tenille Ortiz  
Title: Legal Instruments Examiner  
Phone: 5752342224  
Email: tortiz@blm.gov

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## **Review and Appeal Rights**

A person contesting a decision shall request a State Director review. This request must be filed within 20 working days of receipt of the Notice with the appropriate State Director (see 43 CFR 3165.3). The State Director review decision may be appealed to the Interior Board of Land Appeals, 801 North Quincy Street, Suite 300, Arlington, VA 22203 (see 43 CFR 3165.4). Contact the above listed Bureau of Land Management office for further information.

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**PECOS DISTRICT  
SURFACE USE  
CONDITIONS OF APPROVAL  
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**FORTY NINER RIDGE UNIT 113H**

Surface Hole Location: 10' FSL & 2005' FEL, Section 22, T. 23 S., R. 30 E.

Bottom Hole Location: 330' FNL & 2310' FEL, Section 15, T. 23 S, R 30 E.

**FORTY NINER RIDGE UNIT 114H**

Surface Hole Location:40' FSL & 2005' FEL, Section 22, T. 23 S., R. 30 E.

Bottom Hole Location: 330' FNL & 1650' FEL, Section 15, T. 23 S, R 30 E.

**FORTY NINER RIDGE UNIT 115H**

Surface Hole Location: 70' FSL & 2005' FEL, Section 22, T. 23 S., R. 30 E.

Bottom Hole Location: 330' FNL & 1800' FEL, Section 15, T. 23 S, R 30 E.

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- General Provisions**
- Permit Expiration**
- Archaeology, Paleontology, and Historical Sites**
- Noxious Weeds**
- Special Requirements**
  - Cave/Karst
  - Watershed
- Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- Road Section Diagram**
- Production (Post Drilling)**
  - Well Structures & Facilities
- Interim Reclamation**
- Final Abandonment & Reclamation**

## **I. GENERAL PROVISIONS**

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## **II. PERMIT EXPIRATION**

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## **III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES**

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## **IV. NOXIOUS WEEDS**

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for

acceptable weed control methods, which include following EPA and BLM requirements and policies.

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

### **Cave and Karst Conditions of Approval for APDs**

\*\* Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

#### **Cave/Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production:

##### **Construction:**

In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

##### **No Blasting:**

No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

##### **Pad Berming:**

- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g., caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

- Following a rain event, all fluids will be vacuumed off of the pad and hauled off-site and disposed at a proper disposal facility.

### **Tank Battery Liners and Berms:**

Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing, or equivalent, to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

### **Leak Detection System:**

A method of detecting leaks is required. The method could incorporate gauges to measure loss, siting valves and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

### **Automatic Shut-off Systems:**

Automatic shut off, check valves, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

### **Cave/Karst Subsurface Mitigation**

The following stipulations will be applied to protect cave/karst and ground water concerns:

#### **Rotary Drilling with Fresh Water:**

Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

#### **Directional Drilling:**

Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

#### **Lost Circulation:**

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator.



The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

### **Abandonment Cementing:**

Upon well abandonment in cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

### **Pressure Testing:**

Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

### **Watershed**

1. The proposed routes for both the powerline and surface flowlines will not be bladed.
2. Containment berms will be constructed around both tank battery production facilities designed to hold fluids. The containment berms will be constructed with compacted material capable of holding 1½ time the capacity of the largest tank.
3. Topsoil will be stockpiled on the pads to enhance future reclamation.
4. A closed loop drilling system will be used.
5. To prevent any spills from leaving the pads, a two foot berm shall be built inside the fence on each pad.
6. Straw wattles shall be placed completely around the disturbed areas of all pads and along all fences to reduce erosion in this sensitive karst area.
7. Drainage turnouts shall have straw wattles installed.
8. Drainage turnouts along the access road shall not lead to sinkholes.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

## **B. TOPSOIL**

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

## **C. CLOSED LOOP SYSTEM**

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

## **D. FEDERAL MINERAL MATERIALS PIT**

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

## **E. WELL PAD SURFACING**

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

## **F. EXCLOSURE FENCING (CELLARS & PITS)**

### **Exclosure Fencing**

The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

## **G. ON LEASE ACCESS ROADS**

### **Road Width**

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

### **Surfacing**

Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

### **Crowning**

Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

### **Ditching**

Ditching shall be required on both sides of the road.

### **Turnouts**

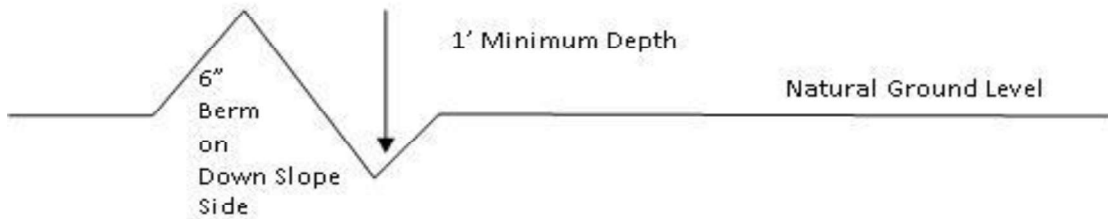
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

### **Drainage**

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill out-sloping and in-sloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

### Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

#### Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$400 \text{ foot road with } 4\% \text{ road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

#### Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

#### Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

#### Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

**Construction Steps**

1. Salvage topsoil
2. Construct road

3. Redistribute topsoil
4. Revegetate slopes

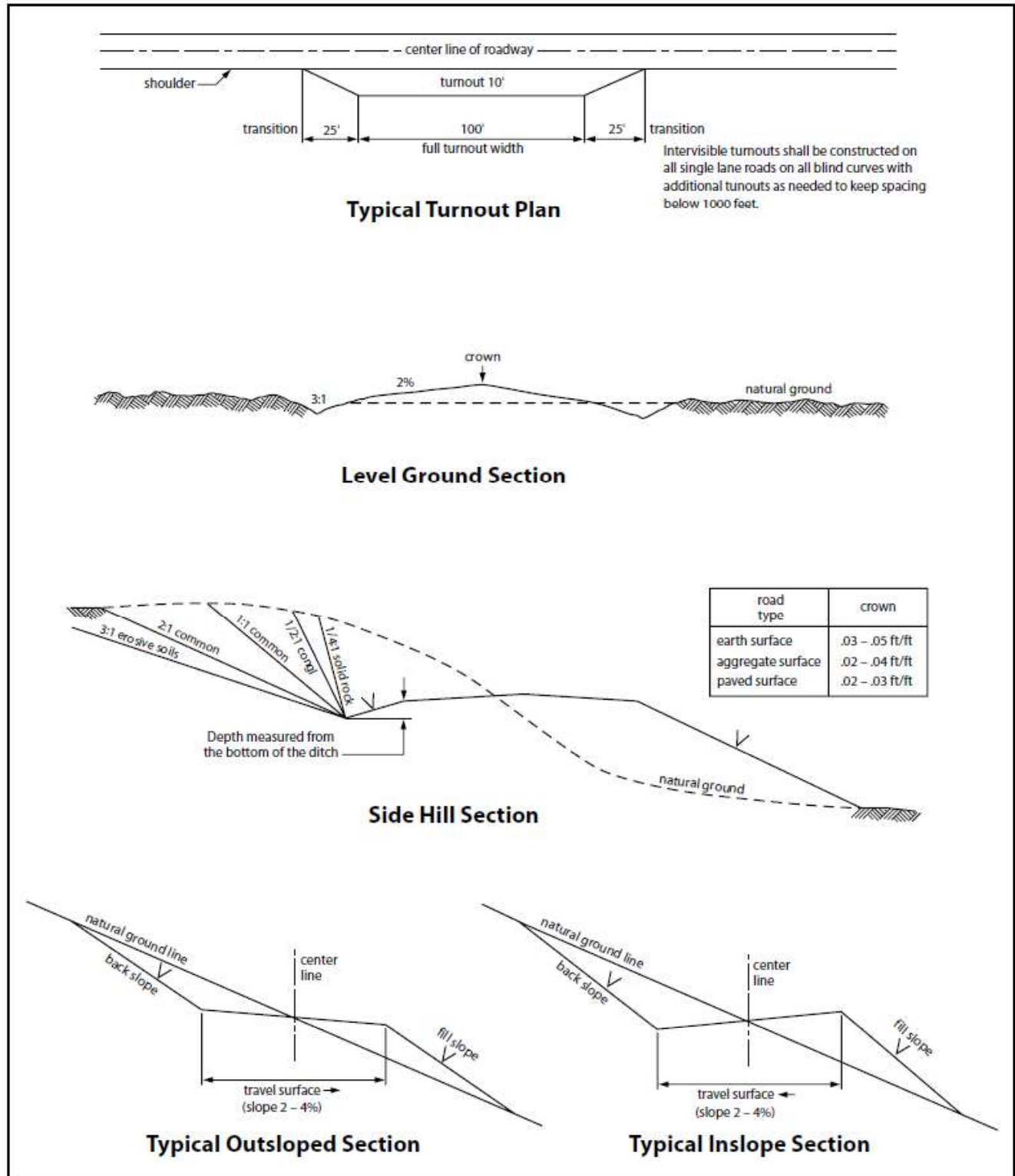


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## VII. PRODUCTION (POST DRILLING)

### A. WELL STRUCTURES & FACILITIES

#### **Placement of Production Facilities**

Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

#### **Exclosure Netting (Open-top Tanks)**

Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

#### **Chemical and Fuel Secondary Containment and Exclosure Screening**

The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

#### **Open-Vent Exhaust Stack Exclosures**

The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production

equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

### **Containment Structures**

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

### **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

## **VIII. INTERIM RECLAMATION**

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

## **IX. FINAL ABANDONMENT & RECLAMATION**

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).



## Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)\* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed\* per acre:

<u>Species</u>	<u>lb/acre</u>
Sand dropseed ( <i>Sporobolus cryptandrus</i> )	1.0
Sand love grass ( <i>Eragrostis trichodes</i> )	1.0
Plains bristlegrass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

### **X. Potash Resources**

Lessees must comply with the 2012 Secretarial Potash Order. The Order is designed to manage the efficient development of oil, gas, and potash resources. Section 6 of the Order provides general provisions which must be followed to minimize conflict between the industries and ensure the safety of operations. To minimize impacts to potash resources, the proposed well is confined within the boundaries of the established Section 8 Drill Island.

Operator Name: MEWBOURNE OIL COMPANY

Well Name: FORTY NINER RIDGE UNIT

Well Number: 113H

Is the proposed well in an area containing other mineral resources? USEABLE WATER,NATURAL GAS,OIL

Is the proposed well in a Helium production area? N Use Existing Well Pad? NO New surface disturbance?

Type of Well Pad: MULTIPLE WELL

Multiple Well Pad Name: FORTY NINER RIDGE UNIT

Number: 3

Well Class: HORIZONTAL

Number of Legs: 1

Well Work Type: Drill

Well Type: CONVENTIONAL GAS WELL

Describe Well Type:

Well sub-Type: APPRAISAL

Describe sub-type:

Distance to town: 30 Miles

Distance to nearest well: 50 FT

Distance to lease line: 320 FT

Reservoir well spacing assigned acres Measurement: 160 Acres

Well plat: FortyNinerRidgeUnit113H\_wellplat\_20190605105329.pdf

Well work start Date: 08/05/2019

Duration: 60 DAYS

### Section 3 - Well Location Table

Survey Type: RECTANGULAR

Describe Survey Type:

Datum: NAD83

Vertical Datum: NAVD88

Survey number:

Reference Datum:

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
SHL Leg #1	10	FSL	2005	FEL	23S	30E	22	Aliquot SWSE	32.2832252	-103.8667545	EDD Y	NEW MEXI CO	NEW MEXI CO	S	STATE	3270	0	0	
KOP Leg #1	10	FSL	2310	FEL	23S	30E	22	Aliquot SWSE	32.2832242	-103.8677437	EDD Y	NEW MEXI CO	NEW MEXI CO	S	STATE	-8315	11591	11585	
PPP Leg #1-1	2645	FNL	2310	FEL	23S	30E	15	Aliquot SWNE	32.3050245	-103.867766	EDD Y	NEW MEXI CO	NEW MEXI CO	F	NMNM 0543748	-8888	19849	12158	

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** FORTY NINER RIDGE UNIT

**Well Number:** 113H

Wellbore	NS-Foot	NS Indicator	EW-Foot	EW Indicator	Twsp	Range	Section	Aliquot/Lot/Tract	Latitude	Longitude	County	State	Meridian	Lease Type	Lease Number	Elevation	MD	TVD	Will this well produce from this lease?
PPP Leg #1-2	0	FSL	2310	FEL	23S	30E	15	Aliquot SWSE	32.2977483	-103.8677585	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 0531277	-8888	17201	12158	
PPP Leg #1-3	330	FSL	2310	FEL	23S	30E	22	Aliquot SWSE	32.2841085	-103.8677446	EDD Y	NEW MEXICO	NEW MEXICO	S	STATE	-8830	12231	12100	
EXIT Leg #1	330	FNL	2310	FEL	23S	30E	15	Aliquot NWNE	32.3113971	-103.8677725	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 0543748	-8888	22167	12158	
BHL Leg #1	330	FNL	2310	FEL	23S	30E	15	Aliquot NWNE	32.3113971	-103.8677725	EDD Y	NEW MEXICO	NEW MEXICO	F	NMNM 0543748	-8888	22167	12158	



**APD ID:** 10400042538

**Submission Date:** 06/26/2019

Highlighted data reflects the most recent changes

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** FORTY NINER RIDGE UNIT

**Well Number:** 113H

[Show Final Text](#)

**Well Type:** CONVENTIONAL GAS WELL

**Well Work Type:** Drill

## Section 1 - Geologic Formations

Formation ID	Formation Name	Elevation	True Vertical Depth	Measured Depth	Lithologies	Mineral Resources	Producing Formation
471472	UNKNOWN	3270	27	27		NONE	N
471484	TOP SALT	2795	475	475	SALT	NONE	N
471473	BOTTOM SALT	-280	3550	3550	SALT	NONE	N
471480	LAMAR	-505	3775	3775	LIMESTONE	NATURAL GAS, OIL	N
471476	BELL CANYON	-535	3805	3805	SANDSTONE	NATURAL GAS, OIL	N
471477	CHERRY CANYON	-1435	4705	4705	SANDSTONE	NATURAL GAS, OIL	N
471478	MANZANITA	-1605	4875	4875	LIMESTONE	NATURAL GAS, OIL	N
481559	BASAL ANHYDRITE	-2725	5995	5995	ANHYDRITE	NATURAL GAS, OIL	N
471471	BONE SPRING	-4380	7650	7650	LIMESTONE, SHALE	NATURAL GAS, OIL	N
471474	BONE SPRING 1ST	-5380	8650	8650	SANDSTONE	NATURAL GAS, OIL	N
471475	BONE SPRING 2ND	-6085	9355	9355	SANDSTONE	NATURAL GAS, OIL	N
471482	BONE SPRING 3RD	-7230	10500	10500	SANDSTONE	NATURAL GAS, OIL	N
471479	WOLFCAMP	-7680	10950	10950	LIMESTONE, SANDSTONE, SHALE	NATURAL GAS, OIL	Y

## Section 2 - Blowout Prevention

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** FORTY NINER RIDGE UNIT

**Well Number:** 113H

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

**Rating Depth:** 22167

**Equipment:** Annular, Pipe Rams, Blind Rams

**Requesting Variance?** YES

**Variance request:** Request variance for the use of a flexible choke line from the BOP to Choke Manifold. Anchors not required by manufacturer. A multi-bowl wellhead will be 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:**

Forty\_Niner\_Ridge\_Unit\_\_113H\_10M\_BOPE\_Choke\_Diagram\_rev\_1\_15\_19\_20190919091253.xlsx

Forty\_Niner\_Ridge\_Unit\_\_113H\_Flex\_Line\_Specs\_API\_16C\_20190919091254.pdf

Forty\_Niner\_Ridge\_Unit\_\_113H\_Flex\_Line\_Specs\_20190919091255.pdf

**BOP Diagram Attachment:**

Forty\_Niner\_Ridge\_Unit\_\_113H\_10M\_Multi\_Bowl\_WH\_Running\_Proc\_20190919091318.pdf

Forty\_Niner\_Ridge\_Unit\_\_113H\_10M\_BOPE\_Schematic\_w\_5M\_Annular\_20190930085004.pdf

Forty\_Niner\_Ridge\_Unit\_\_113H\_10M\_Annular\_BOP\_Variance\_20190930085012.doc

### 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	425	0	425	3270	2845	425	H-40	48	ST&C	3.87	8.7	DRY	26.52	DRY	15.78
2	INTERMEDIATE	12.25	9.625	NEW	API	N	0	3700	0	3700	3270	-430	3700	J-55	36	LT&C	1.13	1.96	DRY	3.38	DRY	4.2
3	PRODUCTION	8.75	7.0	NEW	API	N	0	12300	0	12126	3270	-8856	12300	HCP-110	26	LT&C	1.32	1.68	DRY	2.17	DRY	2.6
4	LINER	6.125	4.5	NEW	API	N	11590	22167	11590	12158	-8320	-8888	10577	P-110	13.5	LT&C	1.41	1.64	DRY	2.37	DRY	2.95

### Casing Attachments

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** FORTY NINER RIDGE UNIT

**Well Number:** 113H

### Casing Attachments

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Forty\_Niner\_Ridge\_Unit\_113H\_CA\_20190619064604.pdf

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Forty\_Niner\_Ridge\_Unit\_113H\_CA\_20190619090553.pdf

---

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Forty\_Niner\_Ridge\_Unit\_113H\_CA\_20190619070027.pdf

---

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** FORTY NINER RIDGE UNIT

**Well Number:** 113H

### Casing Attachments

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

**Inspection Document:**

**Spec Document:**

**Tapered String Spec:**

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

Forty\_Niner\_Ridge\_Unit\_113H\_CA\_20190619070037.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	237	160	2.12	12.5	340	100	Class C	Salt, Gel, Extender, LCM
SURFACE	Tail		237	425	200	1.34	14.8	268	100	Class C	Retarder
INTERMEDIATE	Lead		0	3019	560	2.12	12.5	1187	25	Class C	Salt, Gel, Extender, LCM
INTERMEDIATE	Tail		3019	3700	200	1.34	14.8	268	25	Class C	Retarder
PRODUCTION	Lead	4875	3500	4170	60	2.12	12.5	127	25	Class C	Salt, Gel, Extendor, LCM
PRODUCTION	Tail		4170	4875	100	1.34	14.8	134	25	Class H	Retarder, Fluid Loss, Defoamer
PRODUCTION	Lead	4875	4875	9805	440	2.12	12.5	933	25	Class C	Salt, Gel, Extender, LCM
PRODUCTION	Tail		9805	12300	400	1.18	15.6	472	25	Class C	Retarder, LCM, Defoamer
LINER	Lead		11590	22167	425	2.97	11.2	1250	25	Class C	Salt, Gel, Fluid Loss, Retarder, Dispersant, Defoamer, Anti-Settling Agent

**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** FORTY NINER RIDGE UNIT

**Well Number:** 113H

### 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
0	425	SPUD MUD	8.6	8.8							
425	3700	SALT SATURATED	10	10							
3700	1212 6	WATER-BASED MUD	8.6	9.5							
1212 6	1215 8	OIL-BASED MUD	10	12							

### Section 6 - Test, Logging, Coring

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

Will run GR/CNL from KOP (11590') to surface.

Will run MWD GR from KOP (11590') to TD.

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

CNL,DS,GR,MWD,MUDLOG

**Coring operation description for the well:**

None



**Operator Name:** MEWBOURNE OIL COMPANY

**Well Name:** FORTY NINER RIDGE UNIT

**Well Number:** 113H

## Section 7 - Pressure

**Anticipated Bottom Hole Pressure:** 7586

**Anticipated Surface Pressure:** 4911.24

**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:**

H2S\_Plan\_20190619095503.doc

## Section 8 - Other Information

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

Forty\_Niner\_Ridge\_Unit\_\_113H\_Dir\_plot\_20190621124334.pdf

Forty\_Niner\_Ridge\_Unit\_\_113H\_Dir\_plan\_20190621124334.pdf

**Other proposed operations facets description:**

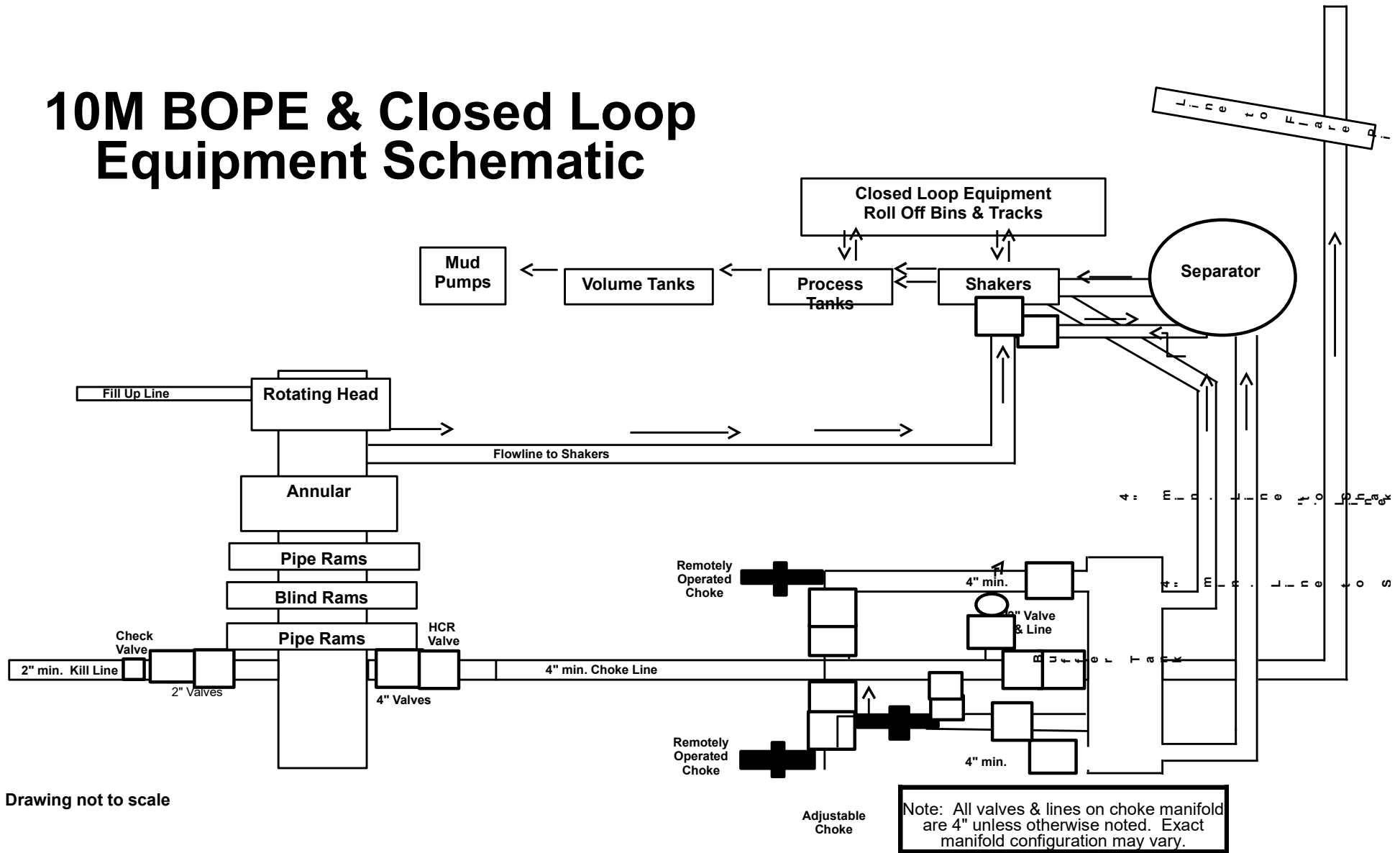
**Other proposed operations facets attachment:**

Forty\_Niner\_Ridge\_Unit\_\_113H\_20190619095823.pdf

Forty\_Niner\_Ridge\_Unit\_113H\_Drlg\_Program\_20190919091659.docx

**Other Variance attachment:**

# 10M BOPE & Closed Loop Equipment Schematic



Drawing not to scale

Note: All valves & lines on choke manifold are 4" unless otherwise noted. Exact manifold configuration may vary.



**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:	Moosa 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 :	<i>Moosa Naqvi</i>

Production:	PRODUCTION
Date :	8/20/2018
Signature :	<i>[Signature]</i>

Form PTC - 01 Rev.0 2





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 :  
 Date :  
 Signature :

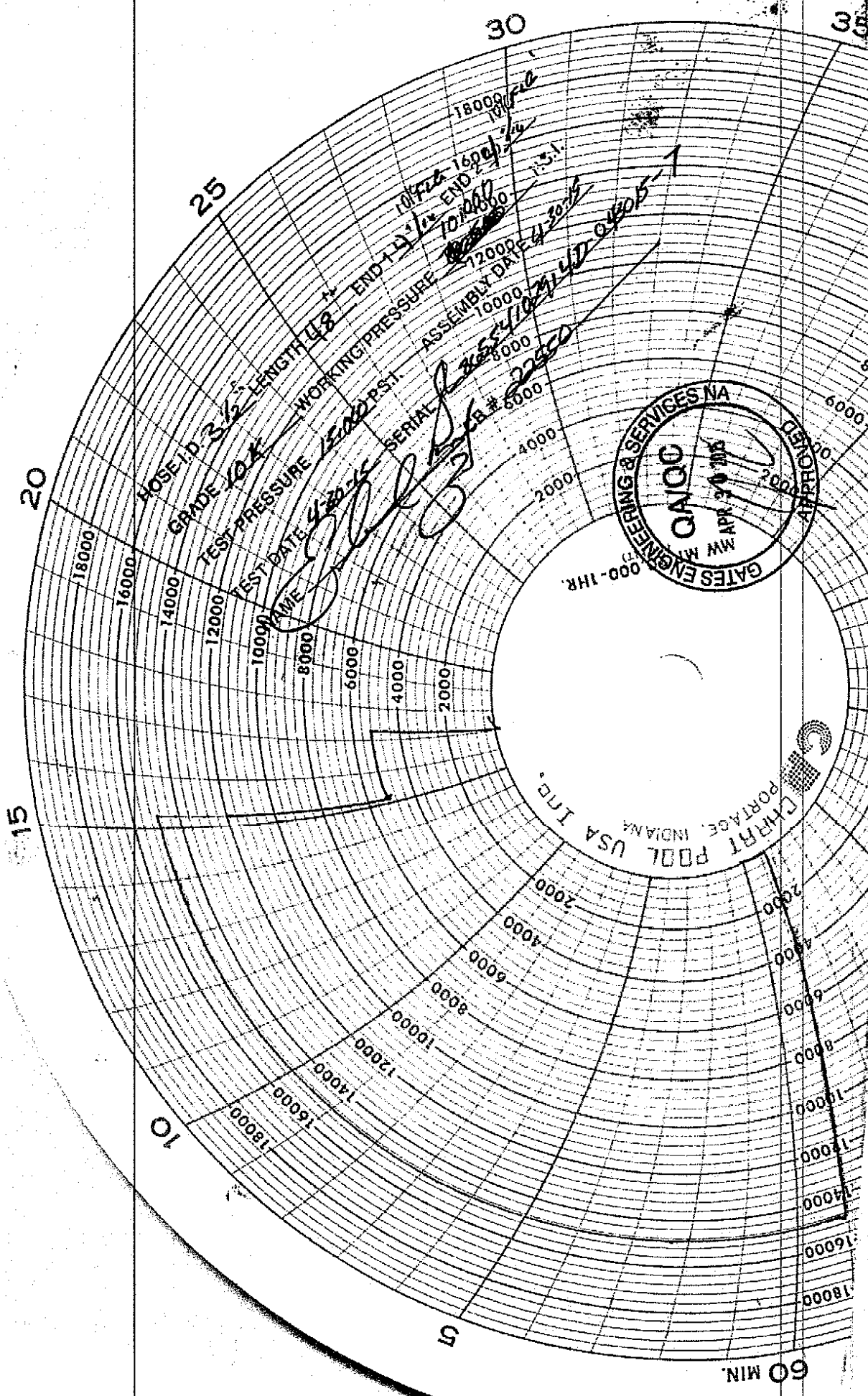
QUALITY
4/30/2015
<i>Justin Cropper</i>

Production:  
 Date :  
 Signature :

PRODUCTION
4/30/2015
<i>Justin Cropper</i>

Form-PTC - 01 Rev.02





ROSE ID: 312  
GRADE: 10K  
LENGTH: 48"  
END-TL: 10/22/12  
SERIAL: 225510  
R#: 6000  
TEST PRESSURE: 15000  
WORKING PRESSURE: 10000  
ASSEMBLY DATE: 10/20/12  
TEST DATE: 4/20/15

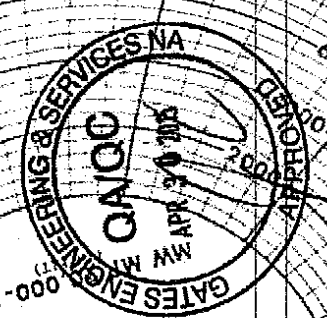


CHART POOL USA INC.  
PORTAGE, INDIANA

60 MIN

## 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'	425'	13.375"	48	H40	STC	3.87	8.7	15.78	26.52
12.25"	0'	3700'	9.625"	36	J55	LTC	1.13	1.94	3.51	4.26
8.75"	0'	12300'	7"	26	P110	LTC	1.24	1.65	2.05	2.6
6.125"	11590'	22167'	4.5"	13.5	P110	LTC	1.69	1.96	2.37	2.96
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 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	Y
If yes, are the first three strings cemented to surface?	Y
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	Y
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(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?	

## 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'	425'	13.375"	48	H40	STC	3.87	8.7	15.78	26.52
12.25"	0'	3700'	9.625"	36	J55	LTC	1.13	1.94	3.51	4.26
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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
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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?	Y
If yes, are the first three strings cemented to surface?	Y
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	Y
Is well located in high Cave/Karst?	Y
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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
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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 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	Y
If yes, are the first three strings cemented to surface?	Y
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	Y
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(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?	



## 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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17.5"	0'	425'	13.375"	48	H40	STC	3.87	8.7	15.78	26.52
12.25"	0'	3700'	9.625"	36	J55	LTC	1.13	1.94	3.51	4.26
8.75"	0'	12300'	7"	26	P110	LTC	1.24	1.65	2.05	2.6
6.125"	11590'	22167'	4.5"	13.5	P110	LTC	1.69	1.96	2.37	2.96
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 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	Y
If yes, are the first three strings cemented to surface?	Y
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	Y
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(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>

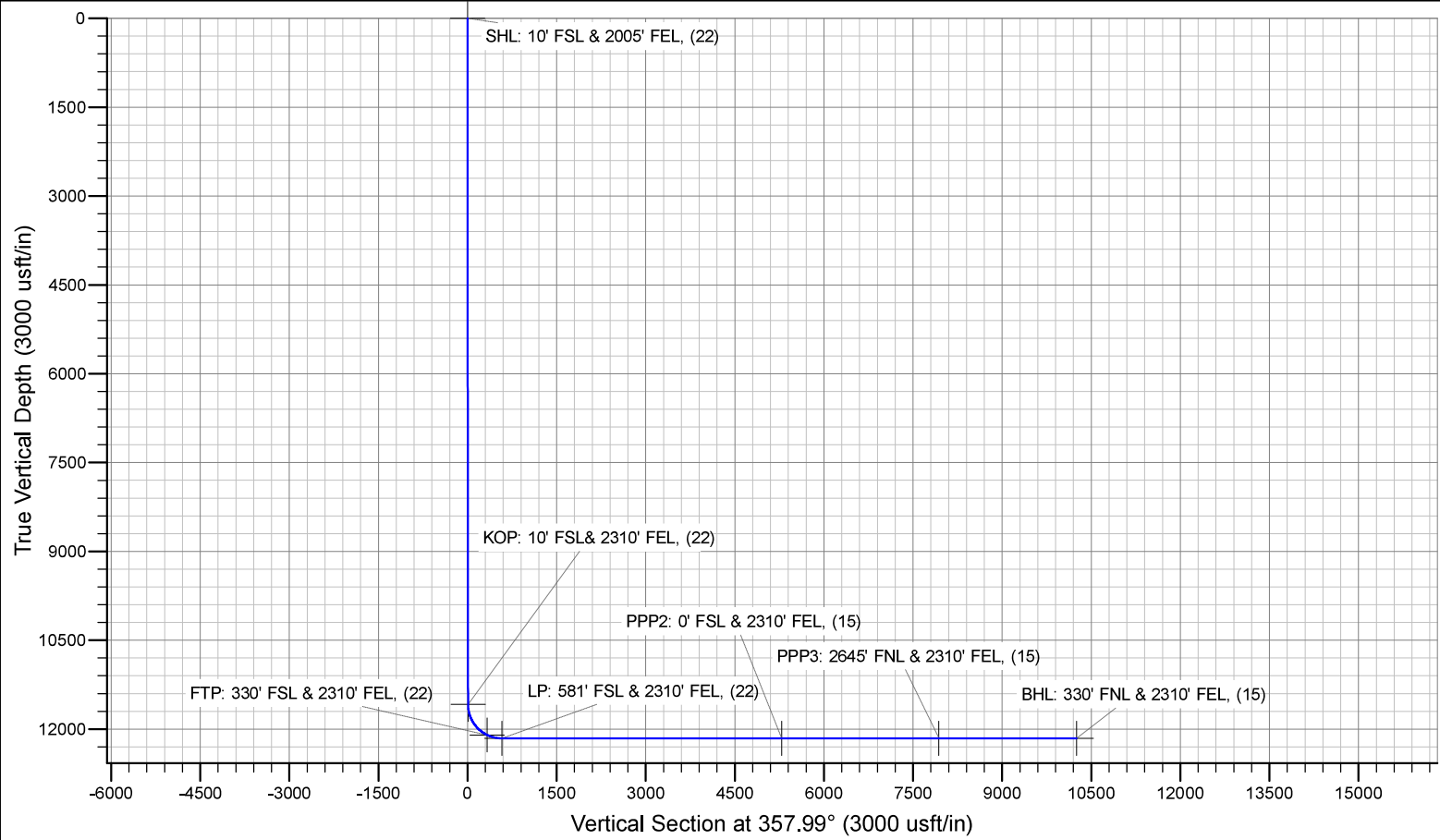
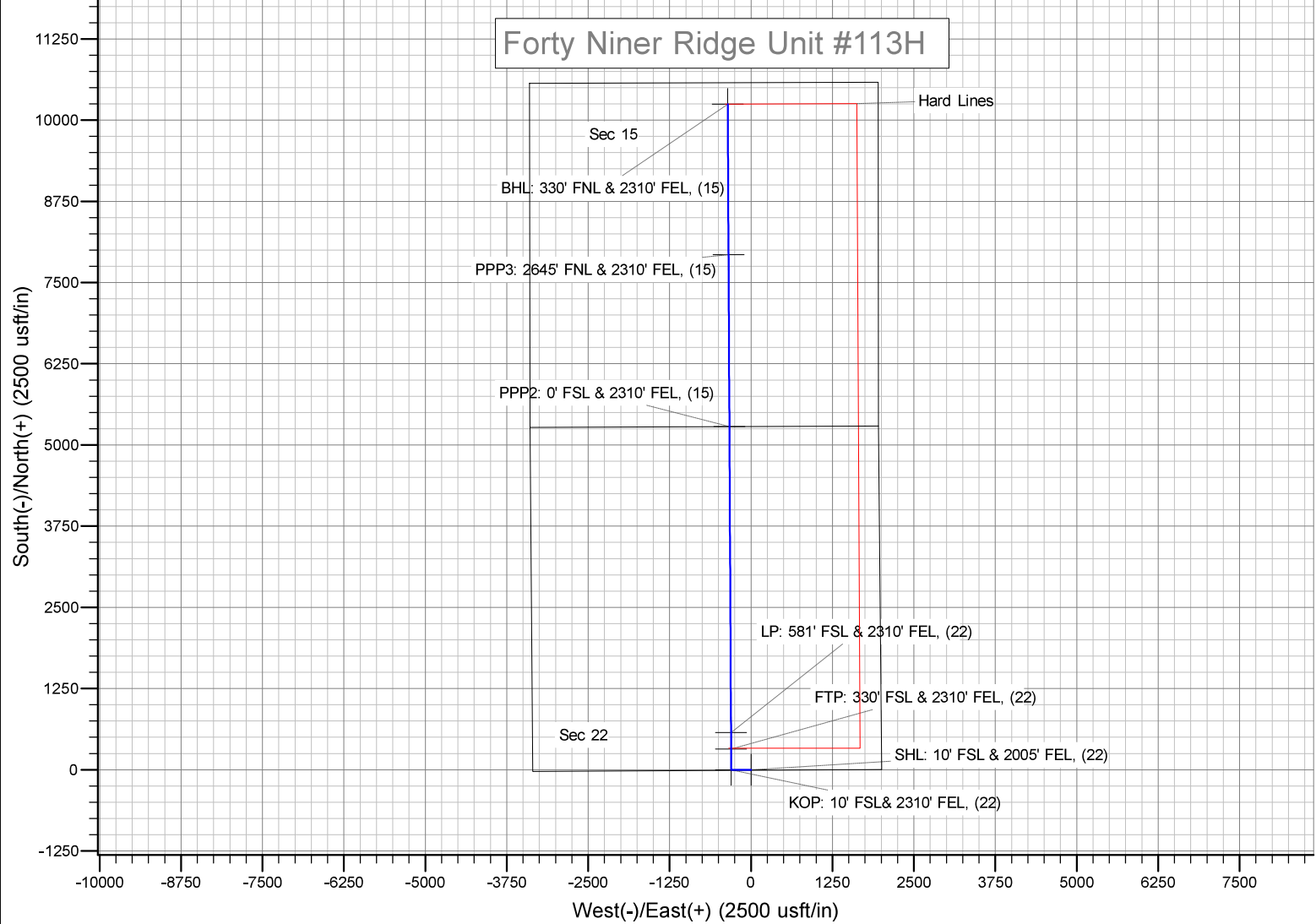
<b>District Manager</b>	<b>Robin Terrell</b>	<b>575-390-4816</b>
<b>Drilling Superintendent</b>	<b>Frosty Lathan</b>	<b>575-390-4103</b>
	<b>Bradley Bishop</b>	<b>575-390-6838</b>

**Drilling Foreman**

**Wesley Noseff**

**575-441-0729**

# Forty Niner Ridge Unit #113H



# **Mewbourne Oil Company**

**Eddy County, New Mexico NAD 83**

**Forty Niner Ridge Unit #113H**

**Sec 22, T23S, R30E**

**SHL: 10' FSL & 2005' FEL, Sec 22**

**BHL: 330' FNL & 2310' FEL, Sec 15**

**Plan: Design #1**

## **Standard Planning Report**

**21 June, 2019**

## Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge Unit #113H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge Unit #113H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 22, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FNL & 2310' FEL, Sec 15		
<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		

<b>Site</b>	Forty Niner Ridge Unit #113H				
<b>Site Position:</b>	<b>Northing:</b>	467,083.70 usft	<b>Latitude:</b>	32.2832252	
<b>From:</b> Map	<b>Easting:</b>	685,525.70 usft	<b>Longitude:</b>	-103.8667545	
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.25 °

<b>Well</b>	Sec 22, T23S, R30E					
<b>Well Position</b>	<b>+N-S</b>	0.0 usft	<b>Northing:</b>	467,083.70 usft	<b>Latitude:</b>	32.2832252
	<b>+E-W</b>	0.0 usft	<b>Easting:</b>	685,525.70 usft	<b>Longitude:</b>	-103.8667545
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>	3,297.0 usft	<b>Ground Level:</b>	3,270.0 usft

<b>Wellbore</b>	BHL: 330' FNL & 2310' FEL, Sec 15				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/31/2019	6.74	59.99	47,828

<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	357.99

<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	
3,775.0	0.00	0.00	3,775.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,927.4	2.29	269.68	3,927.4	0.0	-3.0	1.50	1.50	0.00	269.68	
11,438.7	2.29	269.68	11,432.7	-1.7	-302.7	0.00	0.00	0.00	0.00	
11,591.1	0.00	0.00	11,585.0	-1.7	-305.7	1.50	-1.50	0.00	180.00	KOP: 10' FSL & 2310'
12,491.1	90.00	359.70	12,158.0	571.3	-308.7	10.00	10.00	0.00	-0.30	
22,167.3	90.00	359.70	12,158.0	10,247.3	-359.1	0.00	0.00	0.00	0.00	BHL: 330' FNL & 2310'

Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge Unit #113H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge Unit #113H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 22, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FNL & 2310' FEL, Sec 15		
<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
<b>SHL: 10' FSL &amp; 2005' FEL, (22)</b>									
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	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,775.0	0.00	0.00	3,775.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.38	269.68	3,800.0	0.0	-0.1	0.0	1.50	1.50	0.00
3,900.0	1.88	269.68	3,900.0	0.0	-2.0	0.1	1.50	1.50	0.00
3,927.4	2.29	269.68	3,927.4	0.0	-3.0	0.1	1.50	1.50	0.00
4,000.0	2.29	269.68	3,999.9	0.0	-5.9	0.2	0.00	0.00	0.00
4,100.0	2.29	269.68	4,099.8	-0.1	-9.9	0.3	0.00	0.00	0.00
4,200.0	2.29	269.68	4,199.7	-0.1	-13.9	0.4	0.00	0.00	0.00
4,300.0	2.29	269.68	4,299.7	-0.1	-17.9	0.5	0.00	0.00	0.00
4,400.0	2.29	269.68	4,399.6	-0.1	-21.9	0.6	0.00	0.00	0.00
4,500.0	2.29	269.68	4,499.5	-0.1	-25.9	0.8	0.00	0.00	0.00
4,600.0	2.29	269.68	4,599.4	-0.2	-29.9	0.9	0.00	0.00	0.00
4,700.0	2.29	269.68	4,699.3	-0.2	-33.9	1.0	0.00	0.00	0.00
4,800.0	2.29	269.68	4,799.3	-0.2	-37.8	1.1	0.00	0.00	0.00
4,900.0	2.29	269.68	4,899.2	-0.2	-41.8	1.2	0.00	0.00	0.00
5,000.0	2.29	269.68	4,999.1	-0.3	-45.8	1.4	0.00	0.00	0.00



## Planning Report

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<b>Wellbore:</b>	BHL: 330' FNL & 2310' FEL, Sec 15		
<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)	
5,100.0	2.29	269.68	5,099.0	-0.3	-49.8	1.5	0.00	0.00	0.00	
5,200.0	2.29	269.68	5,198.9	-0.3	-53.8	1.6	0.00	0.00	0.00	
5,300.0	2.29	269.68	5,298.9	-0.3	-57.8	1.7	0.00	0.00	0.00	
5,400.0	2.29	269.68	5,398.8	-0.3	-61.8	1.8	0.00	0.00	0.00	
5,500.0	2.29	269.68	5,498.7	-0.4	-65.8	1.9	0.00	0.00	0.00	
5,600.0	2.29	269.68	5,598.6	-0.4	-69.8	2.1	0.00	0.00	0.00	
5,700.0	2.29	269.68	5,698.5	-0.4	-73.7	2.2	0.00	0.00	0.00	
5,800.0	2.29	269.68	5,798.5	-0.4	-77.7	2.3	0.00	0.00	0.00	
5,900.0	2.29	269.68	5,898.4	-0.5	-81.7	2.4	0.00	0.00	0.00	
6,000.0	2.29	269.68	5,998.3	-0.5	-85.7	2.5	0.00	0.00	0.00	
6,100.0	2.29	269.68	6,098.2	-0.5	-89.7	2.6	0.00	0.00	0.00	
6,200.0	2.29	269.68	6,198.2	-0.5	-93.7	2.8	0.00	0.00	0.00	
6,300.0	2.29	269.68	6,298.1	-0.5	-97.7	2.9	0.00	0.00	0.00	
6,400.0	2.29	269.68	6,398.0	-0.6	-101.7	3.0	0.00	0.00	0.00	
6,500.0	2.29	269.68	6,497.9	-0.6	-105.7	3.1	0.00	0.00	0.00	
6,600.0	2.29	269.68	6,597.8	-0.6	-109.6	3.2	0.00	0.00	0.00	
6,700.0	2.29	269.68	6,697.8	-0.6	-113.6	3.3	0.00	0.00	0.00	
6,800.0	2.29	269.68	6,797.7	-0.7	-117.6	3.5	0.00	0.00	0.00	
6,900.0	2.29	269.68	6,897.6	-0.7	-121.6	3.6	0.00	0.00	0.00	
7,000.0	2.29	269.68	6,997.5	-0.7	-125.6	3.7	0.00	0.00	0.00	
7,100.0	2.29	269.68	7,097.4	-0.7	-129.6	3.8	0.00	0.00	0.00	
7,200.0	2.29	269.68	7,197.4	-0.7	-133.6	3.9	0.00	0.00	0.00	
7,300.0	2.29	269.68	7,297.3	-0.8	-137.6	4.1	0.00	0.00	0.00	
7,400.0	2.29	269.68	7,397.2	-0.8	-141.6	4.2	0.00	0.00	0.00	
7,500.0	2.29	269.68	7,497.1	-0.8	-145.5	4.3	0.00	0.00	0.00	
7,600.0	2.29	269.68	7,597.0	-0.8	-149.5	4.4	0.00	0.00	0.00	
7,700.0	2.29	269.68	7,697.0	-0.9	-153.5	4.5	0.00	0.00	0.00	
7,800.0	2.29	269.68	7,796.9	-0.9	-157.5	4.6	0.00	0.00	0.00	
7,900.0	2.29	269.68	7,896.8	-0.9	-161.5	4.8	0.00	0.00	0.00	
8,000.0	2.29	269.68	7,996.7	-0.9	-165.5	4.9	0.00	0.00	0.00	
8,100.0	2.29	269.68	8,096.6	-0.9	-169.5	5.0	0.00	0.00	0.00	
8,200.0	2.29	269.68	8,196.6	-1.0	-173.5	5.1	0.00	0.00	0.00	
8,300.0	2.29	269.68	8,296.5	-1.0	-177.5	5.2	0.00	0.00	0.00	
8,400.0	2.29	269.68	8,396.4	-1.0	-181.4	5.3	0.00	0.00	0.00	
8,500.0	2.29	269.68	8,496.3	-1.0	-185.4	5.5	0.00	0.00	0.00	
8,600.0	2.29	269.68	8,596.2	-1.1	-189.4	5.6	0.00	0.00	0.00	
8,700.0	2.29	269.68	8,696.2	-1.1	-193.4	5.7	0.00	0.00	0.00	
8,800.0	2.29	269.68	8,796.1	-1.1	-197.4	5.8	0.00	0.00	0.00	
8,900.0	2.29	269.68	8,896.0	-1.1	-201.4	5.9	0.00	0.00	0.00	
9,000.0	2.29	269.68	8,995.9	-1.1	-205.4	6.1	0.00	0.00	0.00	
9,100.0	2.29	269.68	9,095.8	-1.2	-209.4	6.2	0.00	0.00	0.00	
9,200.0	2.29	269.68	9,195.8	-1.2	-213.4	6.3	0.00	0.00	0.00	
9,300.0	2.29	269.68	9,295.7	-1.2	-217.3	6.4	0.00	0.00	0.00	
9,400.0	2.29	269.68	9,395.6	-1.2	-221.3	6.5	0.00	0.00	0.00	
9,500.0	2.29	269.68	9,495.5	-1.3	-225.3	6.6	0.00	0.00	0.00	
9,600.0	2.29	269.68	9,595.4	-1.3	-229.3	6.8	0.00	0.00	0.00	
9,700.0	2.29	269.68	9,695.4	-1.3	-233.3	6.9	0.00	0.00	0.00	
9,800.0	2.29	269.68	9,795.3	-1.3	-237.3	7.0	0.00	0.00	0.00	
9,900.0	2.29	269.68	9,895.2	-1.3	-241.3	7.1	0.00	0.00	0.00	
10,000.0	2.29	269.68	9,995.1	-1.4	-245.3	7.2	0.00	0.00	0.00	
10,100.0	2.29	269.68	10,095.0	-1.4	-249.3	7.3	0.00	0.00	0.00	
10,200.0	2.29	269.68	10,195.0	-1.4	-253.2	7.5	0.00	0.00	0.00	
10,300.0	2.29	269.68	10,294.9	-1.4	-257.2	7.6	0.00	0.00	0.00	
10,400.0	2.29	269.68	10,394.8	-1.5	-261.2	7.7	0.00	0.00	0.00	

Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge Unit #113H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge Unit #113H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 22, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FNL & 2310' FEL, Sec 15		
<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)	
10,500.0	2.29	269.68	10,494.7	-1.5	-265.2	7.8	0.00	0.00	0.00	
10,600.0	2.29	269.68	10,594.6	-1.5	-269.2	7.9	0.00	0.00	0.00	
10,700.0	2.29	269.68	10,694.6	-1.5	-273.2	8.0	0.00	0.00	0.00	
10,800.0	2.29	269.68	10,794.5	-1.5	-277.2	8.2	0.00	0.00	0.00	
10,900.0	2.29	269.68	10,894.4	-1.6	-281.2	8.3	0.00	0.00	0.00	
11,000.0	2.29	269.68	10,994.3	-1.6	-285.2	8.4	0.00	0.00	0.00	
11,100.0	2.29	269.68	11,094.3	-1.6	-289.1	8.5	0.00	0.00	0.00	
11,200.0	2.29	269.68	11,194.2	-1.6	-293.1	8.6	0.00	0.00	0.00	
11,300.0	2.29	269.68	11,294.1	-1.7	-297.1	8.8	0.00	0.00	0.00	
11,400.0	2.29	269.68	11,394.0	-1.7	-301.1	8.9	0.00	0.00	0.00	
11,438.7	2.29	269.68	11,432.7	-1.7	-302.7	8.9	0.00	0.00	0.00	
11,500.0	1.37	269.68	11,493.9	-1.7	-304.6	9.0	1.50	-1.50	0.00	
11,591.1	0.00	0.00	11,585.0	-1.7	-305.7	9.0	1.50	-1.50	0.00	
<b>KOP: 10' FSL &amp; 2310' FEL, (22)</b>										
11,600.0	0.89	359.70	11,593.9	-1.6	-305.7	9.1	10.00	10.00	0.00	
11,650.0	5.89	359.70	11,643.8	1.3	-305.7	12.0	10.00	10.00	0.00	
11,700.0	10.89	359.70	11,693.3	8.6	-305.8	19.3	10.00	10.00	0.00	
11,750.0	15.89	359.70	11,741.9	20.2	-305.8	30.9	10.00	10.00	0.00	
11,800.0	20.89	359.70	11,789.3	36.0	-305.9	46.7	10.00	10.00	0.00	
11,850.0	25.89	359.70	11,835.2	55.8	-306.0	66.5	10.00	10.00	0.00	
11,900.0	30.89	359.70	11,879.2	79.6	-306.1	90.2	10.00	10.00	0.00	
11,950.0	35.89	359.70	11,920.9	107.1	-306.3	117.7	10.00	10.00	0.00	
12,000.0	40.89	359.70	11,960.1	138.1	-306.4	148.8	10.00	10.00	0.00	
12,050.0	45.89	359.70	11,996.4	172.5	-306.6	183.1	10.00	10.00	0.00	
12,100.0	50.89	359.70	12,029.6	209.8	-306.8	220.4	10.00	10.00	0.00	
12,150.0	55.89	359.70	12,059.4	249.9	-307.0	260.5	10.00	10.00	0.00	
12,200.0	60.89	359.70	12,085.6	292.5	-307.2	303.1	10.00	10.00	0.00	
12,231.0	63.99	359.70	12,100.0	320.0	-307.4	330.6	10.00	10.00	0.00	
<b>FTP: 330' FSL &amp; 2310' FEL, (22)</b>										
12,250.0	65.89	359.70	12,108.0	337.2	-307.5	347.8	10.00	10.00	0.00	
12,300.0	70.89	359.70	12,126.4	383.7	-307.7	394.2	10.00	10.00	0.00	
12,350.0	75.89	359.70	12,140.7	431.6	-308.0	442.1	10.00	10.00	0.00	
12,400.0	80.89	359.70	12,150.8	480.5	-308.2	491.0	10.00	10.00	0.00	
12,450.0	85.89	359.70	12,156.5	530.2	-308.5	540.7	10.00	10.00	0.00	
12,491.2	90.00	359.70	12,158.0	571.3	-308.7	581.8	9.99	9.99	0.00	
<b>LP: 581' FSL &amp; 2310' FEL, (22)</b>										
12,500.0	90.00	359.70	12,158.0	580.1	-308.7	590.6	0.00	0.00	0.00	
12,600.0	90.00	359.70	12,158.0	680.1	-309.3	690.6	0.00	0.00	0.00	
12,700.0	90.00	359.70	12,158.0	780.1	-309.8	790.5	0.00	0.00	0.00	
12,800.0	90.00	359.70	12,158.0	880.1	-310.3	890.5	0.00	0.00	0.00	
12,900.0	90.00	359.70	12,158.0	980.1	-310.8	990.4	0.00	0.00	0.00	
13,000.0	90.00	359.70	12,158.0	1,080.1	-311.3	1,090.4	0.00	0.00	0.00	
13,100.0	90.00	359.70	12,158.0	1,180.1	-311.9	1,190.3	0.00	0.00	0.00	
13,200.0	90.00	359.70	12,158.0	1,280.1	-312.4	1,290.3	0.00	0.00	0.00	
13,300.0	90.00	359.70	12,158.0	1,380.1	-312.9	1,390.3	0.00	0.00	0.00	
13,400.0	90.00	359.70	12,158.0	1,480.1	-313.4	1,490.2	0.00	0.00	0.00	
13,500.0	90.00	359.70	12,158.0	1,580.1	-313.9	1,590.2	0.00	0.00	0.00	
13,600.0	90.00	359.70	12,158.0	1,680.1	-314.5	1,690.1	0.00	0.00	0.00	
13,700.0	90.00	359.70	12,158.0	1,780.1	-315.0	1,790.1	0.00	0.00	0.00	
13,800.0	90.00	359.70	12,158.0	1,880.1	-315.5	1,890.0	0.00	0.00	0.00	
13,900.0	90.00	359.70	12,158.0	1,980.1	-316.0	1,990.0	0.00	0.00	0.00	
14,000.0	90.00	359.70	12,158.0	2,080.1	-316.5	2,089.9	0.00	0.00	0.00	
14,100.0	90.00	359.70	12,158.0	2,180.1	-317.1	2,189.9	0.00	0.00	0.00	

## Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge Unit #113H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge Unit #113H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 22, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FNL & 2310' FEL, Sec 15		
<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)	
14,200.0	90.00	359.70	12,158.0	2,280.1	-317.6	2,289.9	0.00	0.00	0.00	
14,300.0	90.00	359.70	12,158.0	2,380.1	-318.1	2,389.8	0.00	0.00	0.00	
14,400.0	90.00	359.70	12,158.0	2,480.1	-318.6	2,489.8	0.00	0.00	0.00	
14,500.0	90.00	359.70	12,158.0	2,580.1	-319.2	2,589.7	0.00	0.00	0.00	
14,600.0	90.00	359.70	12,158.0	2,680.1	-319.7	2,689.7	0.00	0.00	0.00	
14,700.0	90.00	359.70	12,158.0	2,780.1	-320.2	2,789.6	0.00	0.00	0.00	
14,800.0	90.00	359.70	12,158.0	2,880.1	-320.7	2,889.6	0.00	0.00	0.00	
14,900.0	90.00	359.70	12,158.0	2,980.1	-321.2	2,989.5	0.00	0.00	0.00	
15,000.0	90.00	359.70	12,158.0	3,080.1	-321.8	3,089.5	0.00	0.00	0.00	
15,100.0	90.00	359.70	12,158.0	3,180.1	-322.3	3,189.4	0.00	0.00	0.00	
15,200.0	90.00	359.70	12,158.0	3,280.1	-322.8	3,289.4	0.00	0.00	0.00	
15,300.0	90.00	359.70	12,158.0	3,380.1	-323.3	3,389.4	0.00	0.00	0.00	
15,400.0	90.00	359.70	12,158.0	3,480.1	-323.8	3,489.3	0.00	0.00	0.00	
15,500.0	90.00	359.70	12,158.0	3,580.1	-324.4	3,589.3	0.00	0.00	0.00	
15,600.0	90.00	359.70	12,158.0	3,680.1	-324.9	3,689.2	0.00	0.00	0.00	
15,700.0	90.00	359.70	12,158.0	3,780.1	-325.4	3,789.2	0.00	0.00	0.00	
15,800.0	90.00	359.70	12,158.0	3,880.1	-325.9	3,889.1	0.00	0.00	0.00	
15,900.0	90.00	359.70	12,158.0	3,980.1	-326.4	3,989.1	0.00	0.00	0.00	
16,000.0	90.00	359.70	12,158.0	4,080.1	-327.0	4,089.0	0.00	0.00	0.00	
16,100.0	90.00	359.70	12,158.0	4,180.1	-327.5	4,189.0	0.00	0.00	0.00	
16,200.0	90.00	359.70	12,158.0	4,280.1	-328.0	4,289.0	0.00	0.00	0.00	
16,300.0	90.00	359.70	12,158.0	4,380.1	-328.5	4,388.9	0.00	0.00	0.00	
16,400.0	90.00	359.70	12,158.0	4,480.1	-329.1	4,488.9	0.00	0.00	0.00	
16,500.0	90.00	359.70	12,158.0	4,580.1	-329.6	4,588.8	0.00	0.00	0.00	
16,600.0	90.00	359.70	12,158.0	4,680.1	-330.1	4,688.8	0.00	0.00	0.00	
16,700.0	90.00	359.70	12,158.0	4,780.1	-330.6	4,788.7	0.00	0.00	0.00	
16,800.0	90.00	359.70	12,158.0	4,880.1	-331.1	4,888.7	0.00	0.00	0.00	
16,900.0	90.00	359.70	12,158.0	4,980.1	-331.7	4,988.6	0.00	0.00	0.00	
17,000.0	90.00	359.70	12,158.0	5,080.1	-332.2	5,088.6	0.00	0.00	0.00	
17,100.0	90.00	359.70	12,158.0	5,180.1	-332.7	5,188.6	0.00	0.00	0.00	
17,200.0	90.00	359.70	12,158.0	5,280.1	-333.2	5,288.5	0.00	0.00	0.00	
17,201.9	90.00	359.70	12,158.0	5,282.0	-333.2	5,290.4	0.00	0.00	0.00	
<b>PPP2: 0' FSL &amp; 2310' FEL, (15)</b>										
17,300.0	90.00	359.70	12,158.0	5,380.1	-333.7	5,388.5	0.00	0.00	0.00	
17,400.0	90.00	359.70	12,158.0	5,480.1	-334.3	5,488.4	0.00	0.00	0.00	
17,500.0	90.00	359.70	12,158.0	5,580.1	-334.8	5,588.4	0.00	0.00	0.00	
17,600.0	90.00	359.70	12,158.0	5,680.1	-335.3	5,688.3	0.00	0.00	0.00	
17,700.0	90.00	359.70	12,158.0	5,780.1	-335.8	5,788.3	0.00	0.00	0.00	
17,800.0	90.00	359.70	12,158.0	5,880.1	-336.3	5,888.2	0.00	0.00	0.00	
17,900.0	90.00	359.70	12,158.0	5,980.1	-336.9	5,988.2	0.00	0.00	0.00	
18,000.0	90.00	359.70	12,158.0	6,080.1	-337.4	6,088.2	0.00	0.00	0.00	
18,100.0	90.00	359.70	12,158.0	6,180.1	-337.9	6,188.1	0.00	0.00	0.00	
18,200.0	90.00	359.70	12,158.0	6,280.1	-338.4	6,288.1	0.00	0.00	0.00	
18,300.0	90.00	359.70	12,158.0	6,380.1	-339.0	6,388.0	0.00	0.00	0.00	
18,400.0	90.00	359.70	12,158.0	6,480.1	-339.5	6,488.0	0.00	0.00	0.00	
18,500.0	90.00	359.70	12,158.0	6,580.1	-340.0	6,587.9	0.00	0.00	0.00	
18,600.0	90.00	359.70	12,158.0	6,680.1	-340.5	6,687.9	0.00	0.00	0.00	
18,700.0	90.00	359.70	12,158.0	6,780.1	-341.0	6,787.8	0.00	0.00	0.00	
18,800.0	90.00	359.70	12,158.0	6,880.1	-341.6	6,887.8	0.00	0.00	0.00	
18,900.0	90.00	359.70	12,158.0	6,980.1	-342.1	6,987.8	0.00	0.00	0.00	
19,000.0	90.00	359.70	12,158.0	7,080.1	-342.6	7,087.7	0.00	0.00	0.00	
19,100.0	90.00	359.70	12,158.0	7,180.1	-343.1	7,187.7	0.00	0.00	0.00	
19,200.0	90.00	359.70	12,158.0	7,280.1	-343.6	7,287.6	0.00	0.00	0.00	
19,300.0	90.00	359.70	12,158.0	7,380.1	-344.2	7,387.6	0.00	0.00	0.00	

## Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge Unit #113H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge Unit #113H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 22, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FNL & 2310' FEL, Sec 15		
<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)
19,400.0	90.00	359.70	12,158.0	7,480.1	-344.7	7,487.5	0.00	0.00	0.00
19,500.0	90.00	359.70	12,158.0	7,580.1	-345.2	7,587.5	0.00	0.00	0.00
19,600.0	90.00	359.70	12,158.0	7,680.1	-345.7	7,687.4	0.00	0.00	0.00
19,700.0	90.00	359.70	12,158.0	7,780.1	-346.2	7,787.4	0.00	0.00	0.00
19,800.0	90.00	359.70	12,158.0	7,880.1	-346.8	7,887.4	0.00	0.00	0.00
19,849.0	90.00	359.70	12,158.0	7,929.0	-347.0	7,936.3	0.00	0.00	0.00
<b>PPP3: 2645' FNL &amp; 2310' FEL, (15)</b>									
19,900.0	90.00	359.70	12,158.0	7,980.0	-347.3	7,987.3	0.00	0.00	0.00
20,000.0	90.00	359.70	12,158.0	8,080.0	-347.8	8,087.3	0.00	0.00	0.00
20,100.0	90.00	359.70	12,158.0	8,180.0	-348.3	8,187.2	0.00	0.00	0.00
20,200.0	90.00	359.70	12,158.0	8,280.0	-348.9	8,287.2	0.00	0.00	0.00
20,300.0	90.00	359.70	12,158.0	8,380.0	-349.4	8,387.1	0.00	0.00	0.00
20,400.0	90.00	359.70	12,158.0	8,480.0	-349.9	8,487.1	0.00	0.00	0.00
20,500.0	90.00	359.70	12,158.0	8,580.0	-350.4	8,587.0	0.00	0.00	0.00
20,600.0	90.00	359.70	12,158.0	8,680.0	-350.9	8,687.0	0.00	0.00	0.00
20,700.0	90.00	359.70	12,158.0	8,780.0	-351.5	8,787.0	0.00	0.00	0.00
20,800.0	90.00	359.70	12,158.0	8,880.0	-352.0	8,886.9	0.00	0.00	0.00
20,900.0	90.00	359.70	12,158.0	8,980.0	-352.5	8,986.9	0.00	0.00	0.00
21,000.0	90.00	359.70	12,158.0	9,080.0	-353.0	9,086.8	0.00	0.00	0.00
21,100.0	90.00	359.70	12,158.0	9,180.0	-353.5	9,186.8	0.00	0.00	0.00
21,200.0	90.00	359.70	12,158.0	9,280.0	-354.1	9,286.7	0.00	0.00	0.00
21,300.0	90.00	359.70	12,158.0	9,380.0	-354.6	9,386.7	0.00	0.00	0.00
21,400.0	90.00	359.70	12,158.0	9,480.0	-355.1	9,486.6	0.00	0.00	0.00
21,500.0	90.00	359.70	12,158.0	9,580.0	-355.6	9,586.6	0.00	0.00	0.00
21,600.0	90.00	359.70	12,158.0	9,680.0	-356.1	9,686.6	0.00	0.00	0.00
21,700.0	90.00	359.70	12,158.0	9,780.0	-356.7	9,786.5	0.00	0.00	0.00
21,800.0	90.00	359.70	12,158.0	9,880.0	-357.2	9,886.5	0.00	0.00	0.00
21,900.0	90.00	359.70	12,158.0	9,980.0	-357.7	9,986.4	0.00	0.00	0.00
22,000.0	90.00	359.70	12,158.0	10,080.0	-358.2	10,086.4	0.00	0.00	0.00
22,100.0	90.00	359.70	12,158.0	10,180.0	-358.7	10,186.3	0.00	0.00	0.00
22,167.3	90.00	359.70	12,158.0	10,247.3	-359.1	10,253.6	0.00	0.00	0.00
<b>BHL: 330' FNL &amp; 2310' FEL, (15)</b>									

## Planning Report

<b>Database:</b>	Hobbs	<b>Local Co-ordinate Reference:</b>	Site Forty Niner Ridge Unit #113H
<b>Company:</b>	Mewbourne Oil Company	<b>TVD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Project:</b>	Eddy County, New Mexico NAD 83	<b>MD Reference:</b>	WELL @ 3298.0usft (Original Well Elev)
<b>Site:</b>	Forty Niner Ridge Unit #113H	<b>North Reference:</b>	Grid
<b>Well:</b>	Sec 22, T23S, R30E	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	BHL: 330' FNL & 2310' FEL, Sec 15		
<b>Design:</b>	Design #1		

Design Targets										
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)			
- Shape										
SHL: 10' FSL & 2005' FE - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	467,083.70	685,525.70	32.2832252	-103.8667545	
KOP: 10' FSL & 2310' FE - plan hits target center - Point	0.00	0.00	11,585.0	-1.7	-305.7	467,082.00	685,220.00	32.2832242	-103.8677437	
FTP: 330' FSL & 2310' F - plan hits target center - Point	0.00	0.00	12,100.0	320.0	-307.4	467,403.70	685,218.32	32.2841085	-103.8677446	
BHL: 330' FNL & 2310' F - plan hits target center - Point	0.00	0.00	12,158.0	10,247.3	-359.1	477,331.00	685,166.60	32.3113971	-103.8677725	
PPP3: 2645' FNL & 2310' F - plan hits target center - Point	0.00	0.00	12,158.0	7,929.0	-347.0	475,012.70	685,178.67	32.3050245	-103.8677660	
LP: 581' FSL & 2310' FE - plan hits target center - Point	0.00	0.00	12,158.0	571.3	-308.7	467,655.00	685,217.00	32.2847993	-103.8677453	
PPP2: 0' FSL & 2310' FE - plan hits target center - Point	0.00	0.00	12,158.0	5,282.0	-333.2	472,365.70	685,192.47	32.2977483	-103.8677585	

**Mewbourne Oil Company**  
**Forty Niner Ridge Unit #113H**  
**Secs. 22, T23S, R30E**  
**SL: 10' FSL & 2005' FEL (22)**  
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**1. Geologic Formations**

TVD of target	12158'	Pilot hole depth	NA
MD at TD:	22167'	Deepest expected fresh water:	300'

**Basin**

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards*
Quaternary Fill	Surface		
Rustler			
Salado			
Salt Top	475		
Base Salt	3550		
Lamar	3775	Oil/Gas	
Bell Canyon	3805	Oil/Gas	
Cherry Canyon	4705	Oil/Gas	
Manzanita	4875		
Brushy Canyon	5995	Oil/Gas	
Bone Springs	7650	Oil/Gas	
1 <sup>st</sup> Bone Spring	8650	Oil/Gas	
2 <sup>nd</sup> Bone Spring	9355	Oil/Gas	
3 <sup>rd</sup> Bone Spring	10500	Oil/Gas	
Abo			
Wolfcamp	10950	Target Zone	
Devonian			
Fusselman			
Ellenburger			
Granite Wash			

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

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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'	425'	13.375"	48	H40	STC	3.87	8.7	15.78	26.52
12.25"	0'	3700'	9.625"	36	J55	LTC	1.13	1.94	3.51	4.26
8.75"	0'	12300'	7"	26	P110	LTC	1.24	1.65	2.05	2.6
6.125"	11590'	22167'	4.5"	13.5	P110	LTC	1.69	1.96	2.37	2.96
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 <sup>rd</sup> string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	Y
If yes, are the first three strings cemented to surface?	Y

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Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	Y
Is well located in high Cave/Karst?	Y
If yes, are there two strings cemented to surface?	Y
(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?	

### 3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft3/sack	H <sub>2</sub> O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	155	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.	575	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	440	12.5	2.12	11	9	Lead: Class C + Salt + Gel + Extender + LCM
	400	15.6	1.18	5.2	10	Tail: Class H + Retarder + Fluid Loss + Defoamer
ECP/DV tool @ 4875'						
Prod. Stg 2	601.	12.5	2.12	11	9	Lead: Class C + Salt + Gel + Extender + LCM
	100	14.8	1.34	6.3	8	Tail: Class C + Retarder
Liner	425	11.2	2.97	18	16	Class H + 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	0'	25%
Liner	11590'	25%



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**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"	10M	Annular	X	5000#
			Blind Ram	X	10000#
			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
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**Mewbourne Oil Company**  
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	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.
<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**

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From	To				
0'	425'	FW Gel	8.6-8.8	28-34	N/C
425'	3700'	Saturated Brine	10.0	28-34	N/C
3700'	12126'	Cut Brine	8.6-9.5	28-34	N/C
12126'	12158'	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. 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
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**6. Logging and Testing Procedures**

Logging, Coring and Testing.	
<b>X</b>	Will run GR/CNL from KOP (11591') 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.

**Mewbourne Oil Company**  
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	Drill stem test? If yes, explain
	Coring? If yes, explain

	Additional logs planned	Interval
X	Gamma Ray	11591' (KOP) to TD
	Density	
	CBL	
	Mud log	
	PEX	

**7. Drilling Conditions**

Condition	Specify what type and where?
BH Pressure at deepest TVD	7587 psi
Abnormal Temperature	No

Mitigation measure for abnormal conditions. Describe. **Lost circulation material/sweeps/mud scavengers in surface hole.**

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.

**Mewbourne Oil Company  
Forty Niner Ridge Unit #113H  
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SL: 10' FSL & 2005' FEL (22)  
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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: 5-30-19

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
Forty Niner Ridge Unit #113H		O 22- 23S - 30E	10' FSL & 2005' 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