

OCD-HOBBS

Form 3160-3  
(April 2004)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

Split Estate

APPLICATION FOR PERMIT TO DRILL OR REENTER

FORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. <b>NM-89873</b>	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name	
2. Name of Operator <b>Mewbourne Oil Company</b> <b>14744</b>		7. If Unit or CA Agreement, Name and No	
3a. Address <b>PO Box 5270 Hobbs, NM 88240</b>		8. Lease Name and Well No. <b>Paloma 21 Federal Com #1</b>	
3b. Phone No. (include area code) <b>505-393-5905</b>		9. API Well No. <b>30-025-38817</b>	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface <b>660' FSL &amp; 660' FWL Unit M</b> At proposed prod zone <b>Lea County Controlled Water Basin</b>		10. Field and Pool, or Exploratory <b>Osudo Morrow North</b>	
11. Sec., T R. M. or Blk. and Survey or Area <b>Sec 21-T20S-R36E</b>		12. County or Parish <b>Lea</b>	
14. Distance in miles and direction from nearest town or post office* <b>30 miles SW of Hobbs, NM</b>		13. State <b>NM</b>	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drg. unit line, if any) <b>660'</b>	16. No. of acres in lease <b>640</b>	17. Spacing Unit dedicated to this well <b>640'</b>	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. <b>2490'</b>	19. Proposed Depth <b>11600'</b>	20. BLM/BIA Bond No. on file <b>NM1693, Nationwide</b>	
21. Elevations (Show whether DF, KDB, RT, GL., etc.) <b>3613' GL</b>	22. Approximate date work will start* <b>02/02/2008</b>	23. Estimated duration <b>45</b>	

24. Attachments

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

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

25. Signature <i>Jackie Lathan</i>	Name (Printed/Typed) <b>Jackie Lathan</b>	Date <b>1/2/2008</b>
Title <b>Hobbs Regulatory</b>		

Approved by (Signature) <i>/s/ Don Peterson</i>	Name (Printed/Typed) <b>/s/ Don Peterson</b>	Date <b>MAR 17 2008</b>
Title <b>FOR FIELD MANAGER</b>		
Office <b>CARLSBAD FIELD OFFICE</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.

APPROVAL FOR TWO YEARS

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

\*(Instructions on page 2)

RECEIVED

MAR 19 2008

HOBBS OCD

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

**Mewbourne Oil Company**

**Paloma 21 Federal Com #1**

**660' FSL & 660' FWL**

**Section 21-T20S-R36E**

**Lea County, New Mexico**

**January 2, 2008**

Mewbourne Oil Company has an agreement with Clay Cooper for surface disturbance for location, road, pipeline and Right-of-Ways. If you have any questions, please call Mickey Young at 505-393-5905.

Thank You,  
Jackie Lathan  
Hobbs Regulatory

**United States Department of the Interior  
Bureau of Land Management  
Roswell Field Office  
2909 West Second Street  
Roswell, New Mexico 88201-1287**

**Statement Accepting Responsibility for Operations**

Operator Name: Mewbourne Oil Company  
Street or Box: P.O. Box 5270  
City, State: Hobbs, New Mexico  
Zip Code: 88241

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted of the leased land or portion thereof, as described below.

Lease Number: Lease Number #NM-89873

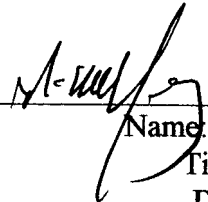
Legal Description of Land: 660' FSL & 660' FWL, Unit M, of Sec 21-T20S-R36E  
Lea County, New Mexico

Formation (if applicable): Morrow

Bond Coverage: \$150,000

BLM Bond File: NM1693, Nationwide

Authorized Signature: \_\_\_\_\_

  
Name: NM (Micky) Young  
Title: District Manager  
Date: January 2, 2008

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised October 12, 2005

Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

**OIL CONSERVATION DIVISION**  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>3D-025-38817</b>	Pool Code <b>8216D</b>	Pool Name <b>Osuda Morrow North</b>
Property Code <b>37D65</b>	Property Name <b>PALOMA "21" FEDERAL COM</b>	Well Number <b>1</b>
GRID No. <b>14744</b>	Operator Name <b>MEWBOURNE OIL COMPANY</b>	Elevation <b>3613'</b>

Surface Location

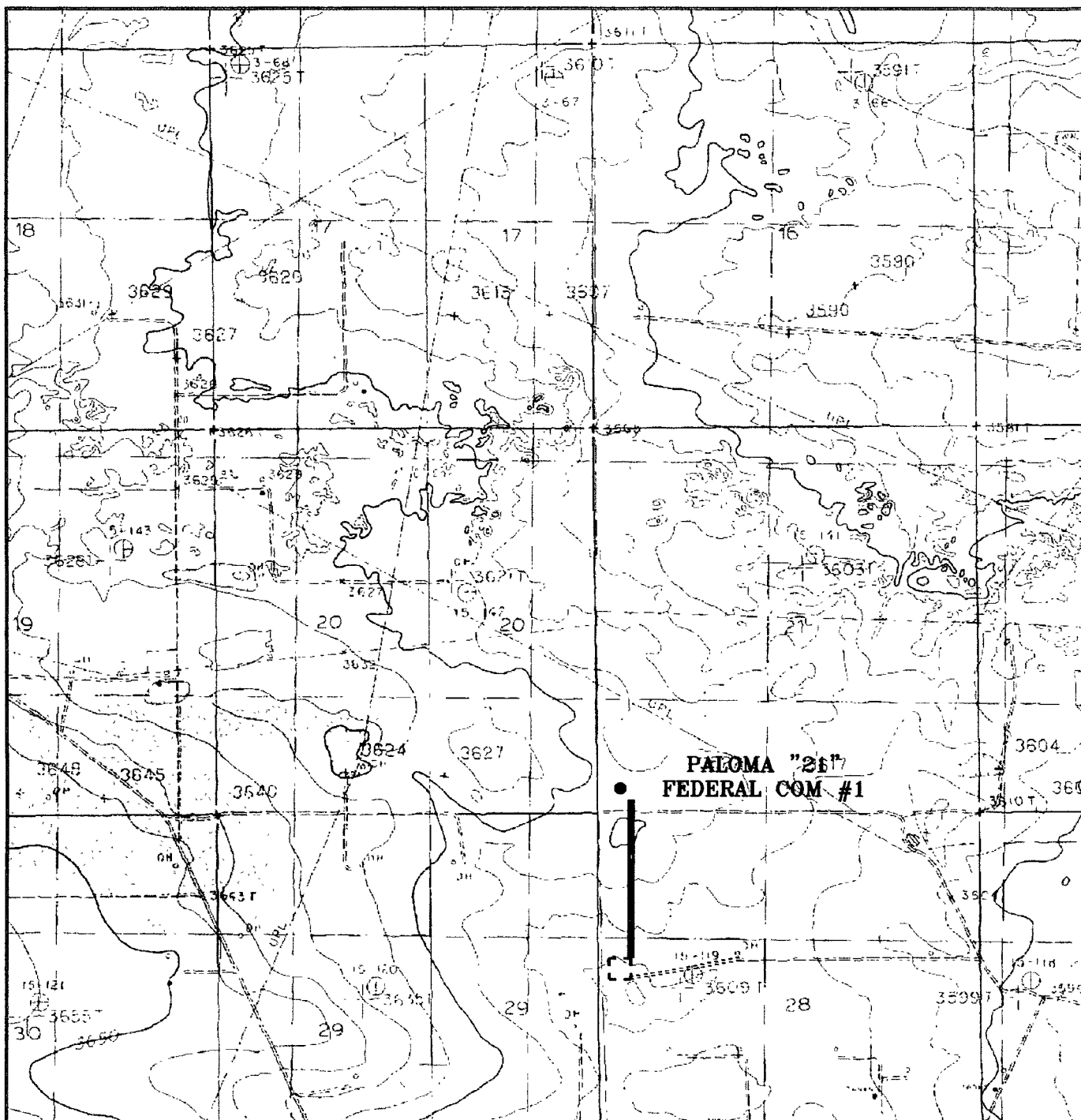
UL or lot No. <b>M</b>	Section <b>21</b>	Township <b>20 S</b>	Range <b>36 E</b>	Lot Idn	Feet from the <b>660</b>	North/South line <b>SOUTH</b>	Feet from the <b>660</b>	East/West line <b>WEST</b>	County <b>LEA</b>
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Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County				
<table border="1"> <tr> <td>Dedicated Acres <b>640</b></td> <td>Joint or Infill</td> <td>Consolidation Code</td> <td>Order No.</td> </tr> </table>										Dedicated Acres <b>640</b>	Joint or Infill	Consolidation Code	Order No.
Dedicated Acres <b>640</b>	Joint or Infill	Consolidation Code	Order No.										

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>Lat.: N32°33'11.24" Long.: W103°21'55.25" N.: 566293.741 E.: 798261.241 (NAD-27)</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Jackie Lathan</i> 1/10/08 Signature Date</p> <p><b>Jackie Lathan</b> Printed Name</p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>DECEMBER 21, 2007 Date Surveyed</p> <p><i>[Signature]</i> Signature &amp; Seal Professional Surveyor</p> <p>7977 No. 18995</p> <p>Certificate No. <i>[Signature]</i> 7977</p> <p><b>BASIN SURVEYS</b></p>



**PALOMA "21" FEDERAL COM #1**  
 Located 660' FSL and 660' FWL  
 Section 21, Township 20 South, Range 36 East,  
 N.M.P.M., Lea County, New Mexico.



focused on excellence  
in the oilfield

P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (505) 393-7316 - Office  
 (505) 392-3074 - Fax  
 basinsurveys.com

W.O. Number. 18965T JMS

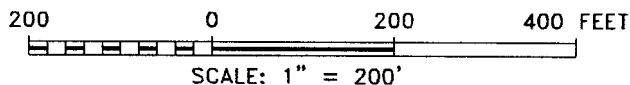
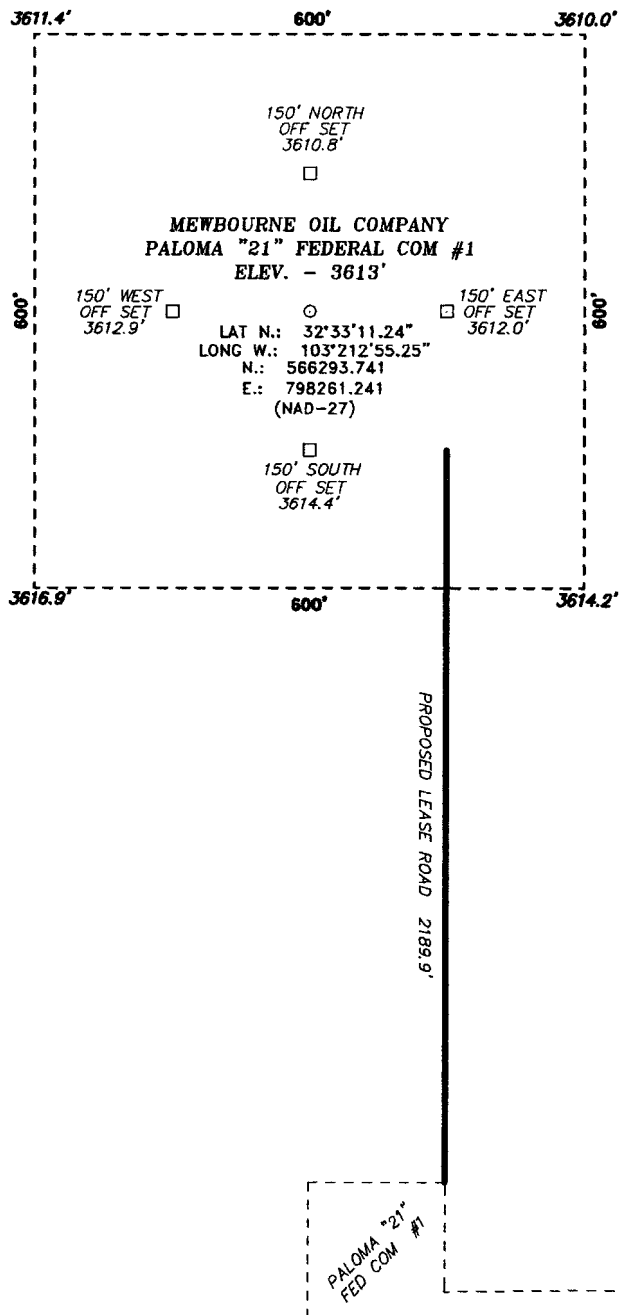
Survey Date. 12-21-2007

Scale: 1" = 2000'

Date: 12-24-2007

**MEWBOURNE  
OIL CO.**

**SECTION 21, TOWNSHIP 20 SOUTH, RANGE 36 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.**



**DRIVING DIRECTIONS:**

FROM THE JUNCTION MADDOX, AND TUFFY COOPER, GO WEST 0.9 MILES TO HOUSE, CONTINUE WEST 1.9 MILES WEST TO LEASE ROAD, GO 0.2 MILES NORTHWEST; THENCE 0.7 MILES WEST TO DRY HOLE, FROM DRY HOLE GO WEST 0.2 MILES TO PALOMA 28 #1 LOCATION AND PROPOSED LEASE ROAD.

**MEWBOURNE OIL COMPANY**

REF: PALOMA "21" FEDERAL COM #1 / WELL PAD TOPO

THE PALOMA "21" FEDERAL COM #1 LOCATED 660'  
FROM THE SOUTH LINE AND 660' FROM THE WEST LINE OF  
SECTION 21, TOWNSHIP 20 SOUTH, RANGE 36 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO.

**BASIN SURVEYS** P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 18965

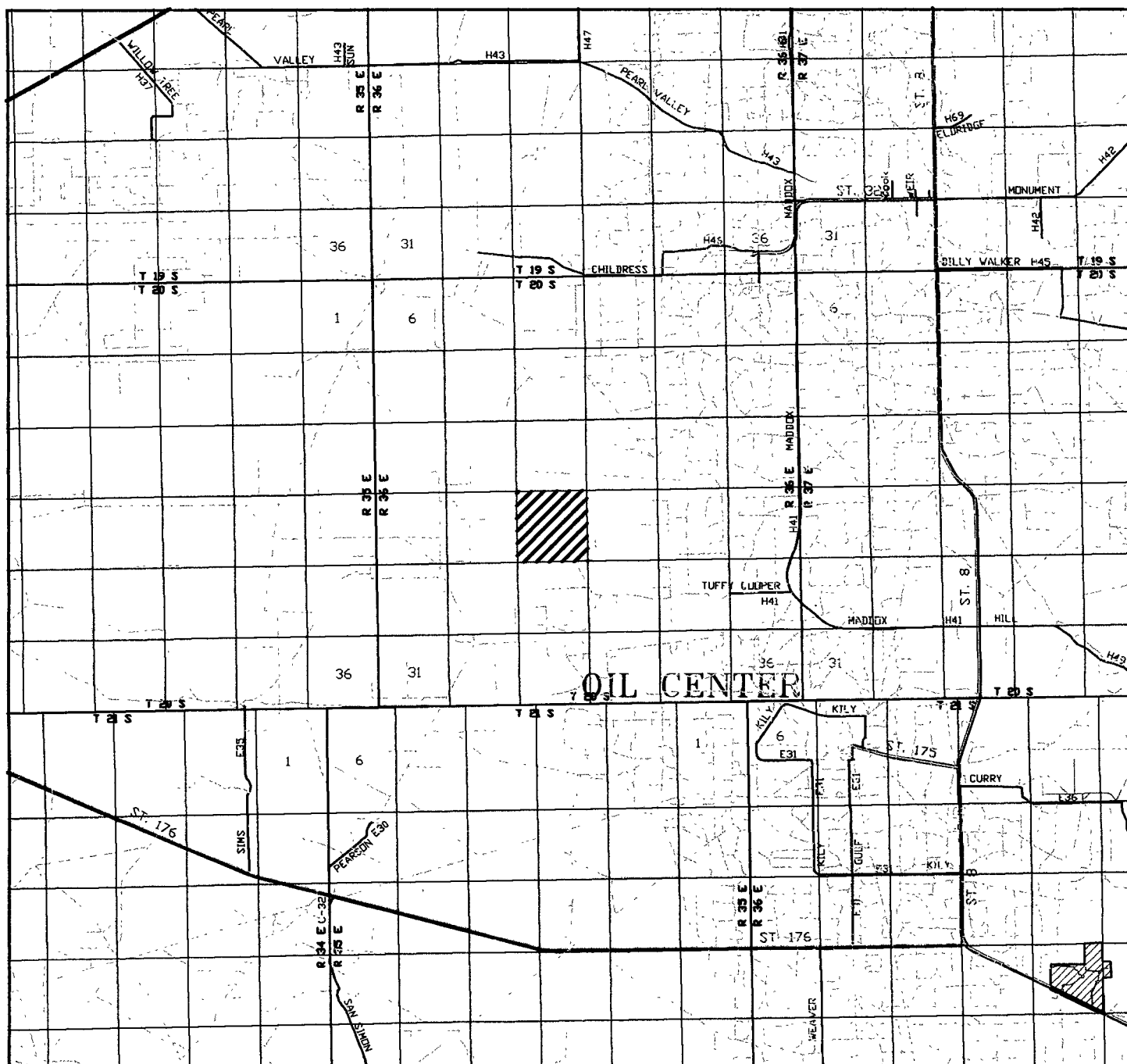
Drawn By: J. SMALL

Date: 12-24-2007

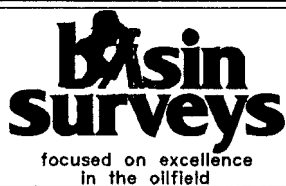
Disk: JMS 18965W

Survey Date: 12-21-2007

Sheet 1 of 1 Sheets



PALOMA "21" FEDERAL COM #1  
 Located 660' FSL and 660' FWL  
 Section 21, Township 20 South, Range 36 East,  
 N.M.P.M., Lea County, New Mexico.



P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (505) 393-7316 - Office  
 (505) 392-3074 - Fax  
 basinsurveys.com

W.O. Number: 18965TR JMS

Survey Date: 12-21-2007

Scale: 1" = 2 MILES

Date: 12-24-2007

MEWBOURNE  
 OIL CO.

**Drilling Program**  
**Mewbourne Oil Company**  
**Paloma 21 Federal Com #1**  
**660' FSL & 660' FWL of Sec 21-T20S-R36E**  
**Lea County, New Mexico**

**1. The estimated top of geological markers are as follows:**

*Yates	3450'	*Wolfcamp	9800'
*Delaware	5300'	*Strawn	10350'
*Bone Springs	7300'	*Atoka	10800'
		*Morrow	11150'

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

Water	Fresh water will be protected by setting surface casing at 1700' And cement to surface.
Hydrocarbons	Oil and Gas are anticipated in the above (*) Formations. These zones Will protected by setting casing and cementing as necessary.

**3. Pressure control equipment:**

A 2000 psi WP Annular BOP will be installed on the 13 3/8" surface casing. A 5000# WP Double Ram BOP and 3000# WP Annular will be installed after running 9 5/8" casing. Pressure tests will be conducted prior to drilling out under all casing strings. Testing of 2000# annular will be done with done with rig pump. BOP controls will be installed prior to drilling under surface casing and will remain in use until completion of drilling operations. BOP's will be inspected and operated as recommended in Onshore Order #2 to insure mechanical integrity and the inspection will be recorded on the daily drilling report.

see  
Schematic  
for BOP

Kelly cock and a sub equipped with a full opening valve sized to fit the drill pipe and collars will be available on the rig floor in the open position when the kelly is not in use.

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

**A. Casing Program:**

<u>Hole Size</u>	<u>Casing</u>	<u>Wt/Ft.</u>	<u>Grade</u>	<u>Depth</u>	<u>Jt Type</u>
17 1/2"	13 3/8" (new)	54.50#	J55	0-1730'	ST&C
12 1/4"	9 5/8" (new)	40#	N80	0-100'	LT&C
	9 5/8" (new)	40#	J55	100'-4000'	LT&C
	9 5/8" (new)	40#	HCK55	4000'-5100'	LT&C
8 1/4"	5 1/2" (new)	17#	HCP110	0-3000'	LT&C
	5 1/2" (new)	17#	N80	3000'-6000'	LT&C
	5 1/2" (new)	17#	HCP110	6000'-TD	LT&C

Minimum casing design factors: Collapse 1.2, Burst 1.1, Tensile strength 2.0.



## B. Cementing Program

- i. Surface Casing: 500 sacks Class C light cement containing 1/2#/sk celloflake, 5#/sk gilsonite, 2% CaCl. Yield at 1.98 cuft/sk. 200 sks class c cement containing 2% CaCl. Yield at 1.34 cuft/sk. Cement circulated to surface.
- ii. Intermediate Casing: 1500 sacks Class C light (35:65:6) containing 5#/sk gilsonite. Yield at 1.98 cuft/sk. 400 sacks Class C cement containing 2% CaCl. Yield at 1.34 cuft/sk. Cement circulated to surface.
- iii. Production Casing: 500 sacks Class H cement containing fluid loss additive, friction reducer additive, compressive strength enhancer, and NaCl. Yield at 1.28 cuft/sk. Shallower productive zones may be protected by utilizing a multiple stage cementing tool in the production casing below potentially productive zones and cementing with a light cement slurry. Cement to tie back 200' into previous casing string.

Additional  
Cement  
needed →

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

## 5. Mud Program:

<u>Interval</u>	<u>Type System</u>	<u>Weight</u>	<u>Viscosity</u>	<u>Fluid Loss</u>
0'-1730'	FW spud mud	8.6-9.4	32-34	NA
1730'-5100'	Brine Water	10.0-10.2	28-30	NA
5100'-10800'	Cut Brine	8.4-9.4	28-30	NA
10800'-TD	BW/Starch	9.4-9.8	30-40	8-15

(Note: Any Weight Above 8.6 #/gallon would be to hold back Wolfcamp shale, rather than abnormal BHP.)

## 6. Evaluation Program:

Samples:	10' samples from intermediate to TD
Logging:	Compensated density and dual laterlog from intermediate casing to TD.
Coring:	As needed for evaluation
Drill Stem Tests:	As needed for evaluation

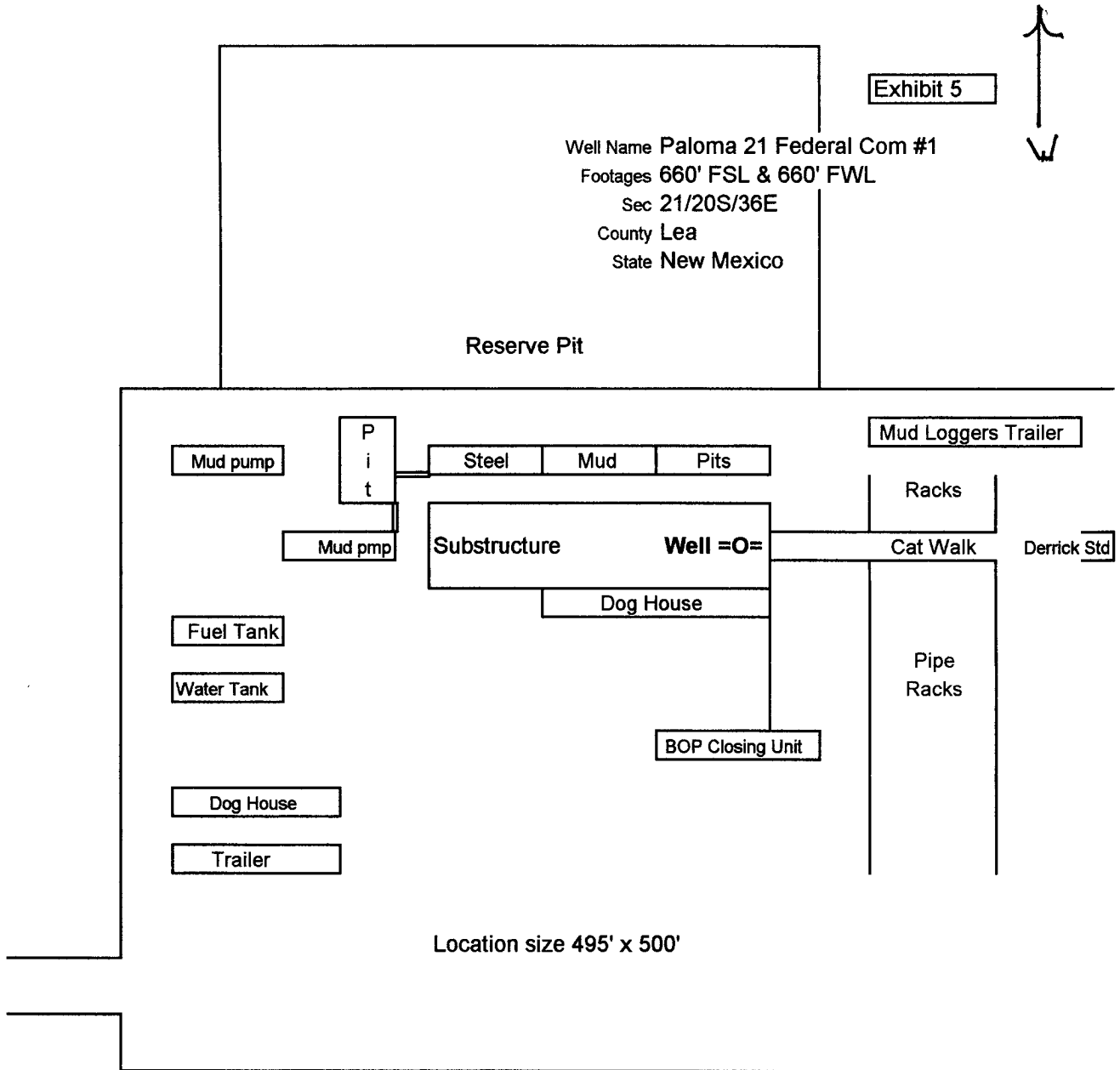
## 7. Downhole Conditions

Zones of abnormal pressure:	None anticipated
Zones of lost circulation:	Anticipated in surface and intermediate holes
Maximum bottom hole temperature:	180 degree F
Maximum bottom hole pressure:	9.0 lbs/gal gradient or less

## 8. Anticipated Starting Date:

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

# Mewbourne Oil Company



Rig Location Schematic

## Notes Regarding Blowout Preventer

### **Mewbourne Oil Company**

Paloma 21 Federal Com #1

660' FSL & 660' FWL

Section 21-T20S-R36E

Lea County, New Mexico

1. Drilling nipple (bell nipple) to be constructed so that it can be removed without the use of a welder through the opening of the rotary table, with minimum internal diameter equal to blowout preventer bore.
2. Blowout preventer and all fittings must be in good condition with a minimum 5000 PSI working pressure.
3. Safety valve must be available on rig floor at all times with proper connections to install in the drill string. Valve must be full bore with minimum 5000 PSI working pressure.
4. Equipment through which bit must pass shall be at least as large as internal diameter of the casing.
5. A Kelly cock shall be installed on the Kelly at all times.
6. Blowout preventer closing equipment to include an accumulator of at least 40 gallon capacity, two independent sources of pressure on closing unit, and meet all other API specifications.

Mewbourne Oil Company  
BOP Schematic for  
12 1/4" Hole

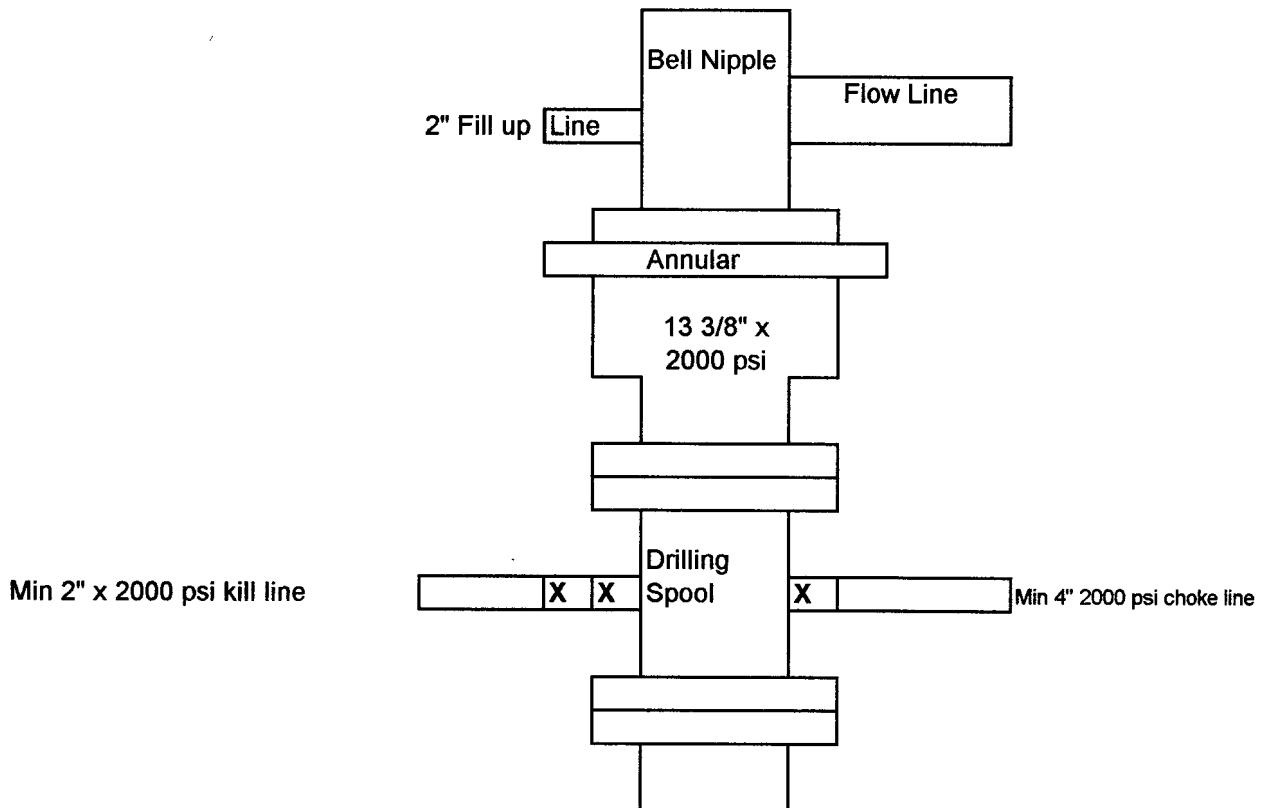


Exhibit #2

Paloma 21 Federal Com #1  
660' FSL & 660' FWL  
21/20S/36E  
Lea  
New Mexico

Mewbourne Oil Company  
 BOP Schematic for  
 8 3/4" or 7 7/8" Hole

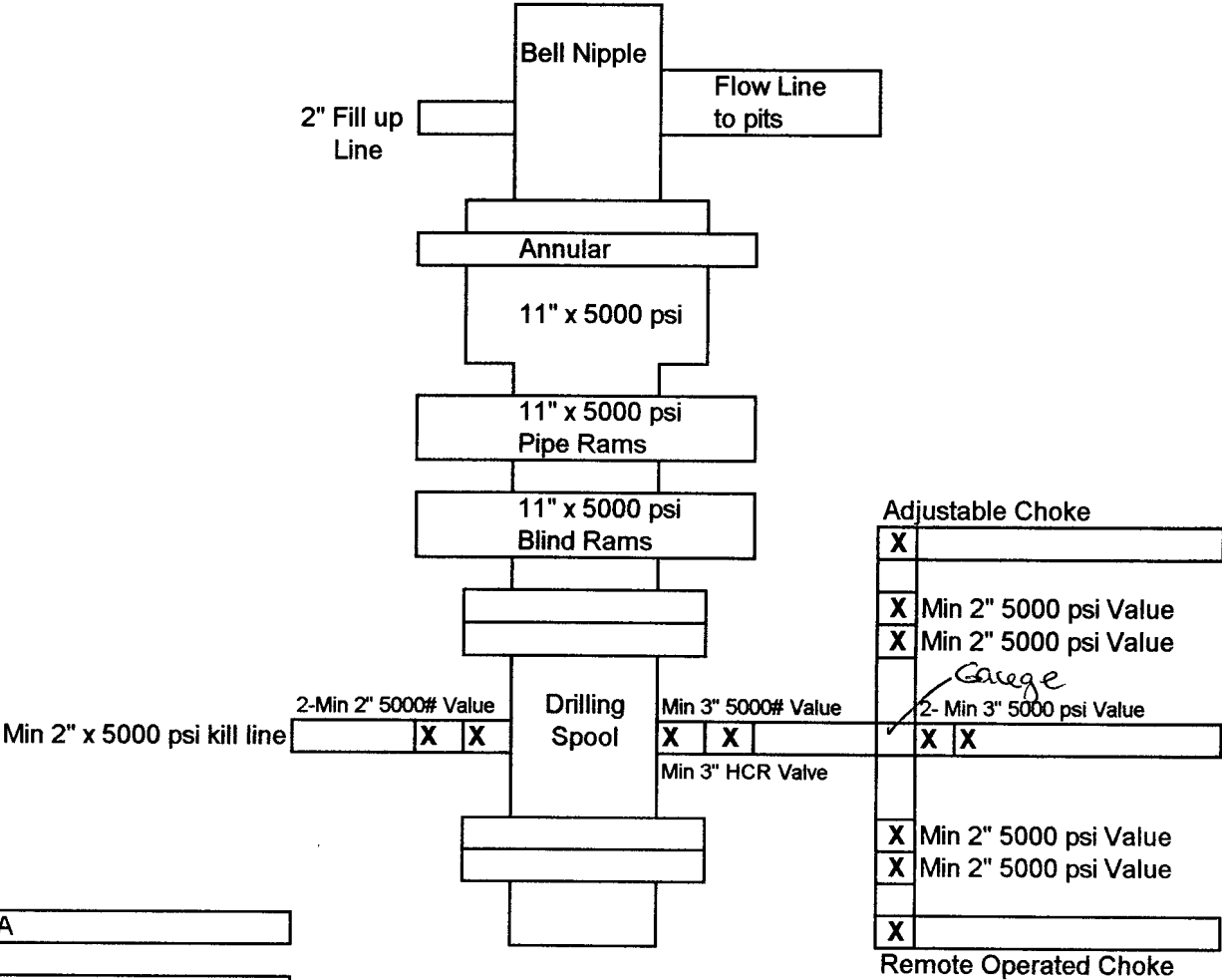


Exhibit #2A

Paloma 21 Federal Com #1  
 660' FSL & 660' FWL  
 21/20S/36E  
 Lea  
 New Mexico

# Proposed Production Facilities Schematic

**Mewbourne Oil Company**

**Exhibit # 6**

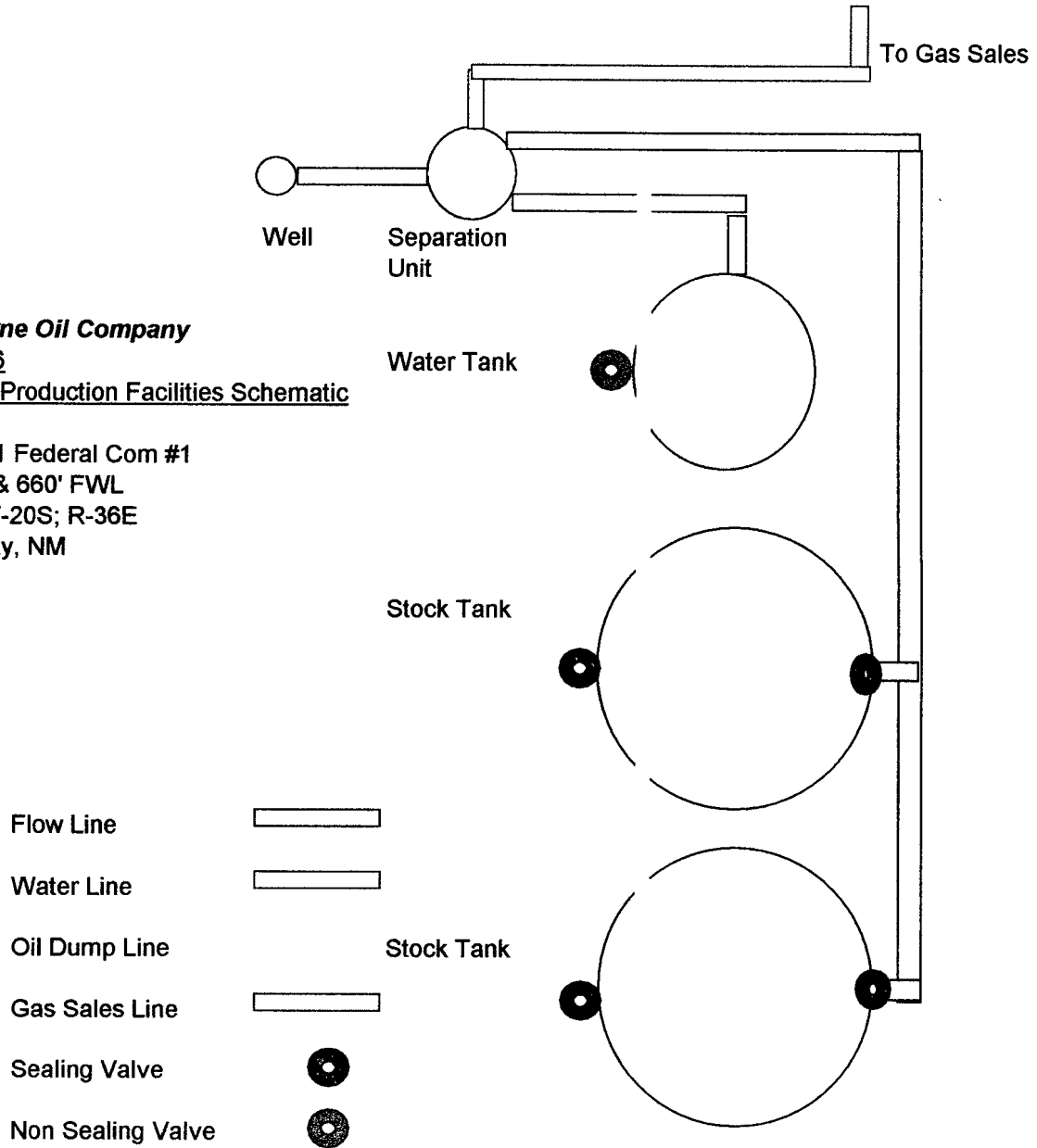
**Proposed Production Facilities Schematic**

Paloma 21 Federal Com #1

660' FSL & 660' FWL

Sec. 21; T-20S; R-36E

Lea County, NM



## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Mewbourne Oil Company
LEASE NO.:	NM-89873
WELL NAME & NO.:	1-Paloma 21 Federal Com
SURFACE HOLE FOOTAGE:	660' FSL & 660' FWL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 21, T. 20 S., R 36 E., NMPM
COUNTY:	Lea County, New Mexico

### TABLE OF CONTENTS

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**
  - Lesser Prairie Chicken
- ☐ **Construction**
  - Notification
  - Topsoil
  - Reserve Pit
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
- ☐ **Production (Post Drilling)**
- ☐ **Reserve Pit Closure/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)**

Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 15 through June 15 annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Hobbs Field Station at (505) 393-3612 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**

There is no measurable soil on this well pad to stockpile. No topsoil stockpile is required.

### **C. RESERVE PITS**

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

The reserve pit shall be constructed 120' X 120' on the West side of the well pad.

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

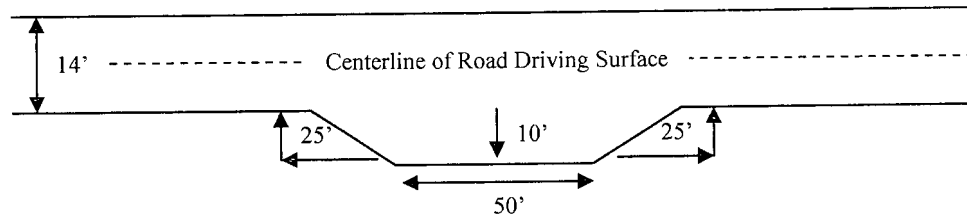
The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

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

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (505) 234-5972.

### Standard Turnout – Plan View

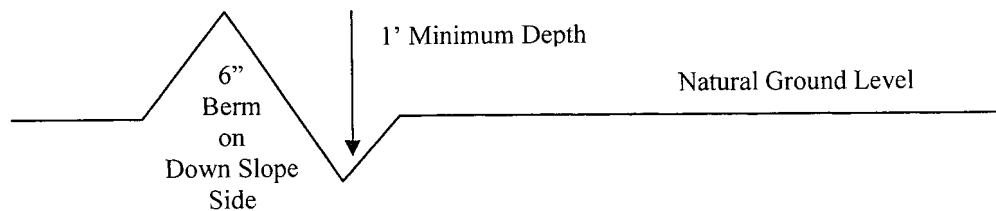


### Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, 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:

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

### Culvert Installations

Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

### Cattleguards

An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

## **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. 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 thirty (30) 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 be constructed on all blind curves. Turnouts shall conform to the following diagram:

Any existing cattleguard(s) on the access road 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 cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

**Fence Requirement**

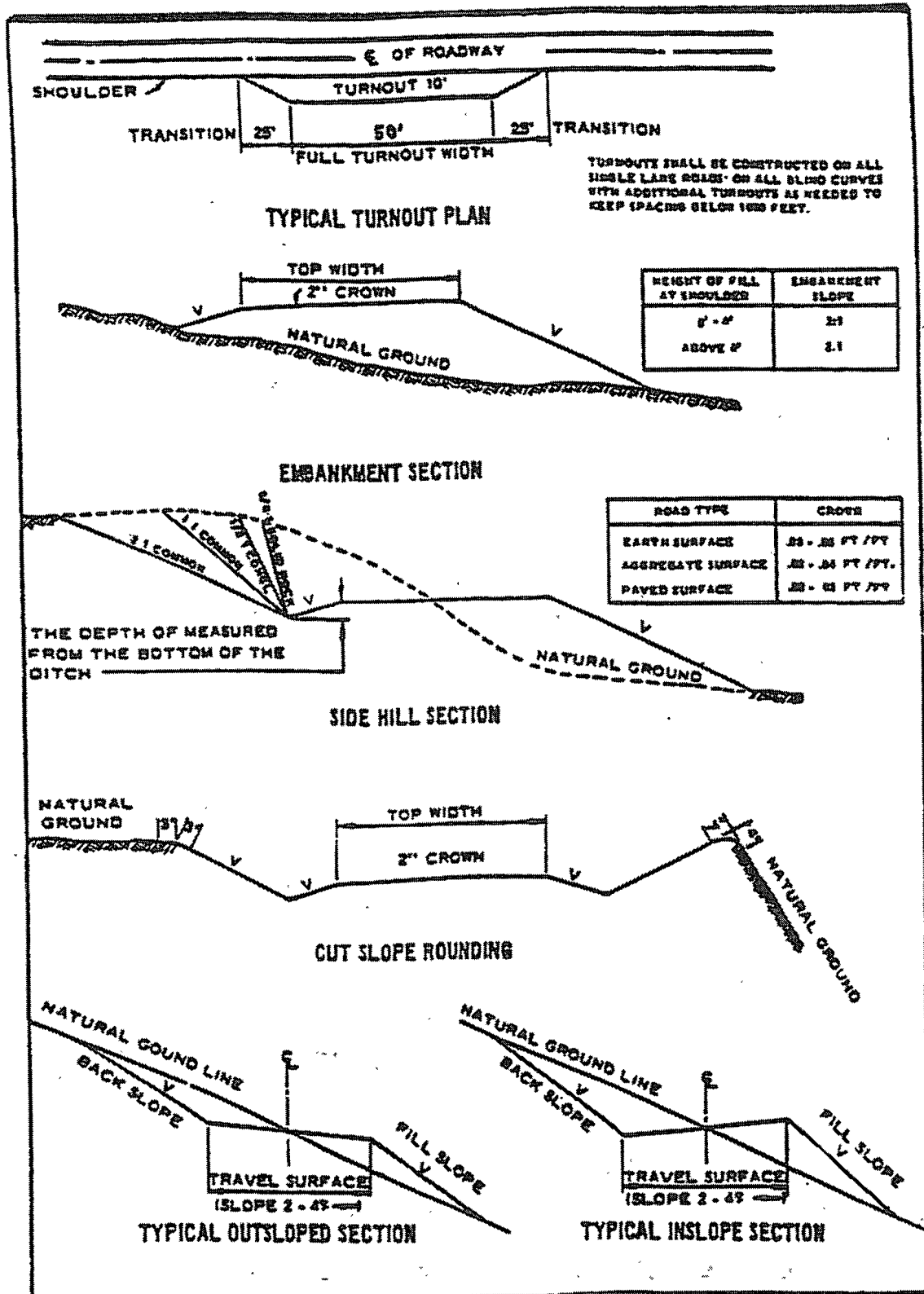
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

**Public Access**

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

Figure 1 – Cross Sections and Plans For Typical Road Sections



## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

- a. Spudding well
- b. Setting and/or Cementing of all casing strings
- c. BOPE tests

☒ **Lea County**

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(575) 393-3612

1. **Although there are no measured amounts of Hydrogen Sulfide reported, it is always a potential hazard. Operator should be prepared to encounter Hydrogen Sulfide in the Wolfcamp and Canyon formations. If Hydrogen Sulfide is encountered, please provide measured values to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

### B. CASING

#### **NO ¼" WASHED PEA GRAVEL PERMITTED FOR REMEDIAL OR FALL BACK REMEDIAL.**

1. The 13-3/8 inch surface casing shall be set **at approximately 1730 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

- b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement). **Please provide WOC times to inspector for cement slurries.**
- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial action will be done prior to drilling out that string.

**Possible lost circulation in the Capitan Reef if encountered and also in the Delaware and Bone Spring formations.**

**Possible high pressure gas zones in the Wolfcamp and the Pennsylvanian section.**

- 2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing is:

- ☒ Cement to surface. If cement does not circulate see B.1.a-d above.  
**Casing to be set at approximately 5100' in the Lamar Limestone separating the salt and Artesia group. Please provide WOC times to inspector for cement slurries.**

**Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Report results on subsequent sundry that describes intermediate casing and cementing.**

- 3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

- ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Additional cement is required to reach the required tie-back.**

- 4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

## **C. PRESSURE CONTROL**

- 1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.



2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi**.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8"** intermediate casing shoe shall be **5000 (5M) psi**. **Annular preventer is to be rated to 5000 psi as shown on schematic.**
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. The tests shall be done by an independent service company.
  - b. The results of the test shall be reported to the appropriate BLM office.
  - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
  - d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.
  - e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation **if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days**. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.
  - f. A variance to test the surface casing and BOP/BOPE to the reduced pressure of **1000** psi with the rig pumps is approved.

#### **D. DRILLING MUD**

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

#### **E. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

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## **VIII. 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.

#### **Containment Structures**

The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

#### **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, Munsell Soil Color Chart # 5Y 4/2

## **IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE**

### **A. INTERIM RECLAMATION**

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting 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.

At the time reserve pits are to be reclaimed, operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions 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 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.

### **B. RESERVE PIT CLOSURE**

The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

## Seed Mixture for LPC Sand/Shinnery 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>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

\*\*Four-winged Saltbush 5lbs/A

\* This can be used around well pads and other areas where caliche cannot be removed.

\*Pounds of pure live seed:

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

## **X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS**

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.