

# HIGH CAVEKARST

Form 3160-3  
(March 2012)

OCD Artesia  
**NM OIL CONSERVATION**  
ARTESIA DISTRICT

ATS-15-580

FORM APPROVED  
OMB No. 1004-0137  
Expires October 31, 2014

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

MAR 29 2016

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7. If Unit or CA Agreement, Name and No.	
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		8. Lease Name and Well No. (316088) Owl Draw 27 W2NC Fed Com #2H	
2. Name of Operator Mewbourne Oil Company		9. API Well No. 30015 43684	
3a. Address PO Box 5270 Hobbs, NM 88241	3b. Phone No. (include area code) 575-393-5905	10. Field and Pool, or Exploratory WC D15 52627 28A 90017	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 170' FSL & 2230' FWL, Sec 27 T26S R27E At proposed prod. zone 330' FNL & 2310' FWL, Sec 27 T26S R27E		11. Sec., T. R. M. or Blk. and Survey or Area Sec. 27 T26S R27E	
14. Distance in miles and direction from nearest town or post office* 14 miles from Malaga, NM		12. County or Parish Eddy	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 170'	16. No. of acres in lease 840 acres	17. Spacing Unit dedicated to this well 320	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 80' - Owl Draw 27/22 B2NC Fed Com #1H	19. Proposed Depth 10,006' - TVD 14,548' - MD	20. BLM/BIA Bond No. on file NM1693 nationwide, NMB-00919	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3176' - GL	22. Approximate date work will start* 06/08/2015	23. Estimated duration 60 days	

**NORTH DODGE LOCATION**

### 24. Attachments

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

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

25. Signature <i>Bradley Bishop</i>	Name (Printed/Typed) Bradley Bishop	Date 04/08/2015
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Title

Approved by (Signature) <b>Steve Caffey</b>	Name (Printed/Typed)	Date <b>MAR 24 2016</b>
Title <b>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 States any false, fictitious or fraudulent statements or representations or agency of the United States.

(Continued on page 2)

NSL approval required prior to placing well on production

Instructions on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Approval Subject to General Requirements  
& Special Stipulations Attached

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**District I**  
1425 N. Franch Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720

**District II**  
611 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9725

**District III**  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6173

**District IV**  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

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

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

MAR 29 2016

☐ AMENDED REPORT

RECEIVED

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30015 43684	<sup>2</sup> Pool Code 9B 017	<sup>3</sup> Pool Name W2NC Wolfcamp (GAS)
<sup>4</sup> Property Code 316068	<sup>5</sup> Property Name Owl Draw 27 W2NC Fed Com	<sup>6</sup> Well Number 2H
<sup>7</sup> OGRID No. 14744	<sup>8</sup> Operator Name MEWBOURNE OIL COMPANY	<sup>9</sup> Elevation 3176'

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	27	26-S	27-E		170	SOUTH	2230	WEST	EDDY

<sup>11</sup> 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
C	27	26-S	27-E		330	NORTH	2310	WEST	EDDY

<sup>12</sup> Dedicated Acres	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No.
320			NSL Pending

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><b>GEODETIC DATA</b> NAD 27 GRID - NM EAST SURFACE LOCATION N 36594.6 E 547971.3 LAT: 32.0613854° N LONG: 104.7857421° W</p> <p><b>CORNER DATA</b></p> <p>A: BRASS CAP 1941 N 365819.1 E 545743.5</p> <p>B: BRASS CAP 1941 N 371116.5 E 545692.4</p> <p>C: BRASS CAP 1941 N 371111.5 E 548334.1</p> <p>D: BRASS CAP 1941 N 371107.1 E 550977.5</p> <p>E: BRASS CAP 1941 N 368468.7 E 550999.3</p> <p>F: BRASS CAP 1941 N 365832.2 E 551021.2</p> <p>G: BRASS CAP 1941 N 365825.7 E 548381.1</p> <p>SEE DETAIL "A"</p> <p>2230'</p> <p>170'</p>	<p><b><sup>16</sup> 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 neither owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature: <u>Bradley Bishop</u> Date: <u>4-8-15</u></p> <p>Printed Name: <u>Bradley Bishop</u></p> <p>Email Address: _____</p> <p><b><sup>17</sup> 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>Date of Survey: <u>9/19/13</u></p> <p>Signature and Seal of Professional Surveyor: <u>Robert M. Howett</u></p> <p>19680</p> <p>Certificate Number</p>
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## Mewbourne Oil Company

PO Box 5270  
Hobbs, NM 88241  
(575) 393-5905

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 6 day of APRIL, 2015.

Name: Robin Terrell

Signature:  R. Terrell

Position Title: Hobbs District Manager

Address: PO Box 5270, Hobbs NM 88241

Telephone: 575-393-5905

E-mail: rterrell@mewbourne.com

Mewbourne Oil Company, Owl Draw 27 W2NC Fed Com #2H  
 Sec 27, T26S, R27E  
 SL: 170' FSL & 2230' FWL  
 BHL: 330' FNL & 2310' FWL

**1. Geologic Formations**

TVD of target	10006'	Pilot hole depth	NA
MD at TD:	14548'	Deepest expected fresh water:	50'

**Basin**

Formation	Depth (TVD) from KB	Water/Mineral Bearing/ Target Zone?	Hazards
Quaternary Fill	Surface		
Rustler	350	Water	
Top of Salt	475	Salt	
Tansill	2100		
Lamar	2180	Oil	
Bell Canyon	2215	Oil	
Cherry Canyon			
Manzanita Marker			
Brushy Canyon			
Bone Spring	5760	Oil/Gas	
1 <sup>st</sup> Bone Spring Sand			
2 <sup>nd</sup> Bone Spring Sand			
3 <sup>rd</sup> Bone Spring Sand			
Abo			
Wolfcamp	8805	Target Zone	
Devonian			
Fusselman			
Ellenburger			
Granite Wash			

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

Mewbourne Oil Company, Owl Draw 27 W2NC Fed Com #2H  
 Sec 27, T26S, R27E  
 SL: 170' FSL & 2230' FWL  
 BHL: 330' FNL & 2310' FWL

## 2. Casing Program

See  
OOA

Hole Size	Casing Interval		Csg Size	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
	From	To							
17.5"	0	375	13.375"	48	H40	STC	3079	8.87	17.89
12.25"	0	<del>2170</del> 2040	9.625"	36	J55	LTC	1.79	3.12	5.80
8.75"	0	9433	7"	26	HCP110	LTC	1.59	2.03	2.58
8.75"	9433	10333	7"	26	HCP110	BTC	1.50	1.91	35.47
6.125"	9433	14548	4.5"	13.5	P110	LTC	2.05	2.39	4.88
BLM Minimum Safety Factor							1.125	1	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?	N
If yes, are the first three strings cemented to surface?	
Is 2 <sup>nd</sup> string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	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?	

Mewbourne Oil Company, Owl Draw 27 W2NC Fed Com #2H

Sec 27, T26S, R27E

SL: 170' FSL & 2230' FWL

BHL: 330' FNL & 2310' FWL

### 3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft <sup>3</sup> /sack	H <sub>2</sub> O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surf.	390	14.8	1.34	6.3	8	Class C + 0.005pps Static Free + 1% CaCl <sub>2</sub> + 0.25 pps CelloFlake + 0.005 gps FP-6L
Inter.	275	12.5	2.12	11	10	Lead: Class C (35:65:4) + 5% Sodium Chloride + 5#/sk LCM + 0.25lb/sk Cello-Flake
	200	14.8	1.34	6.3	8	Tail: Class C + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
Prod. <i>See COA</i>	520	12.5	2.12	11	9	Lead: 60:40:0 Class C + 15.00 lb/sk BA-90 + 4.00% MPS-5 + 3.00% SMS + 5.00% A-10 + 1.00% BA-10A + 0.80% ASA-301 + 2.90% R-21 + 8.00 lb/sk LCM-1 + 0.005 lb/sk Static Free
	400	15.6	1.18	5.2	10	Tail: Class H + 0.65% FL-52 + 0.10% R-3 + 0.005 lb/sk Static Free
Liner <i>See COA</i>	205	11.2	2.97	17	16	Class C (60:40:0) + 4% MPA5 + 1.2% BA10A + 10#/sk BA90 + 5%A10 + 0.65%ASA301 + 1.5% SMS + 1.2%R21

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

Casing String	TOC	% Excess
Surface	0'	100%
Intermediate	0'	25%
Production	<del>1970</del> 200' tie back (rows)	25%
Liner	9433'	25%

Mewbourne Oil Company, Owl Draw 27 W2NC Fed Com #2H  
 Sec 27, T26S, R27E  
 SL: 170' FSL & 2230' FWL  
 BHL: 330' FNL & 2310' FWL

4. Pressure Control Equipment

	Variance: None
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BOP installed and tested before drilling which hole?	Size?	System Rated WP	Type	✓	Tested to:
12-1/4"	13-5/8"	3M	Annular	X	1250#
			Blind Ram		
			Pipe Ram		
			Double Ram		
			Other*		
8-3/4"	11"	5M	Annular	X	2500#
			Blind Ram	X	5000#
			Pipe Ram	X	
			Double Ram		
			Other*		
6-1/8"	11"	5M	Annular	X	2500#
			Blind Ram	X	5000#
			Pipe Ram	X	
			Double Ram		
			Other*		

\*Specify if additional ram is utilized.

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

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

X	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
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Mewbourne Oil Company, Owl Draw 27 W2NC Fed Com #2H

Sec 27, T26S, R27E

SL: 170' FSL & 2230' FWL

BHL: 330' FNL & 2310' FWL

	Variance: None
N	<p>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.</p> <ul style="list-style-type: none"> <li>Provide description here</li> </ul> <p>See attached schematic.</p>

### 5. Mud Program

Depth		Type	Weight(ppg)	Viscosity	Water Loss
From	To				
0	375	FW Gel	8.6-8.8	28-34	N/C
375	2170 <del>2040</del>	Saturated Brine	10.0	28-34	N/C
2170	9433	Cut Brine	8.5-9.3	28-34	N/C
9433	14548	FW w/Polymer	8.5-13.0	30-40	<20cc

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times.

What will be used to monitor the loss or gain of fluid?	PVT/Pason/Visual Monitoring
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### 6. Logging and Testing Procedures

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

Additional logs planned	Interval
X Gamma Ray	9433'(KOP) to TD
Density	
CBL	
Mud log	
PEX	



Mewbourne Oil Company, Owl Draw 27 W2NC Fed Com #2H  
 Sec 27, T26S, R27E  
 SL: 170' FSL & 2230' FWL  
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**7. Drilling Conditions**

Condition	Specify what type and where?
BH Pressure at deepest TVD	4303 psi
Abnormal Temperature	No

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

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
	H2S is present
X	H2S Plan attached

**8. Other facets of operation**

Is this a walking operation? If yes, describe. **No**

Will be pre-setting casing? If yes, describe. **No**

Attachments

\_\_\_ Directional Plan

\_\_\_ Other, describe

# **Mewbourne Oil Company**

Eddy County, New Mexico

Owl Draw 27 W2NC Fed Com #2H

Sec 27, T26S, R27E

SL: 170' FSL & 2230' FWL

BHL: 330' FNL & 2310' FWL

Plan: Design #1

## **Standard Planning Report**

18 March, 2015

# Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Owl Draw 27, W2NC Fed Com #2H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3196.0usft (Original Well Elev)
Project:	Eddy County (New Mexico)	MD Reference:	WELL @ 3196.0usft (Original Well Elev)
Site:	Owl Draw 27, W2NC Fed Com #2H	North Reference:	Grid
Well:	Sec 27, T26S, R27E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL: 330' FNL & 2310' FWL		
Design:	Design #1		

Project:	Eddy County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site: Owl Draw 27, W2NC Fed Com #2H					
Site Position:		Northing:	365,994.60 usft	Latitude:	32° 0' 22.098 N
From:	Map	Easting:	547,971.30 usft	Longitude:	104° 10' 42.868 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.08

Well:	Sec 27, T26S, R27E					
Well Position	+N/-S	0.0 usft	Northing:	365,994.60 usft	Latitude:	32° 0' 22.098 N
	+E/-W	0.0 usft	Easting:	547,971.30 usft	Longitude:	104° 10' 42.868 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	3,196.0 usft	Ground Level:	3,176.0 usft

Wellbore	BHL: 330' FNL & 2310' FWL				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(T)	(T)	(nT)
	IGRF200510	12/31/2009	8.01	59.93	48,594

Design					Design #1					
Audit Notes:										
Version:		Phase:		PROTOTYPE			Tie On Depth:		0.0	
Vertical Section:		Depth From (TVD)		+N/-S		+E/-W		Direction		
		(usft)		(usft)		(usft)		(R)		
		0.0		0.0		0.0		0.41		

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(T)	(T)	Depth	(usft)	(usft)	Rate	Rate	Rate	(T)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
9,433.0	0.00	0.00	9,433.0	0.0	0.0	0.00	0.00	0.00	0.00	
10,333.1	90.00	0.41	10,006.0	573.0	4.1	10.00	10.00	0.00	0.41	
14,547.7	90.00	0.41	10,006.0	4,787.5	34.4	0.00	0.00	0.00	0.00	BHL: 330 FNL & 2310

# Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Owl Draw 27 W2NC Fed Com #2H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3196.0usft (Original Well Elev)
Project:	Eddy County New Mexico	MD Reference:	WELL @ 3196.0usft (Original Well Elev)
Site:	Owl Draw 27 W2NC Fed Com #2H	North Reference:	Grid
Well:	Sec 27 T26S R27E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL 330' FNL & 2310' FWL		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
SL: 170 FSL & 2230 FWL										
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	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00	

# Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Owl Draw 27 W2NC Fed Com #2H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3196.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	MD Reference:	WELL @ 3196.0usft (Original Well Elev)
Site:	Owl Draw 27 W2NC Fed Com #2H	North Reference:	Grid
Well:	Sec 27 T26S R27E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL 330 FNL & 2310 FWL		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N-S (usft)	E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00	
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,200.0	0.00	0.00	9,200.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,300.0	0.00	0.00	9,300.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,400.0	0.00	0.00	9,400.0	0.0	0.0	0.0	0.00	0.00	0.00	
9,433.0	0.00	0.00	9,433.0	0.0	0.0	0.0	0.00	0.00	0.00	
KOP @ 9433										
9,500.0	6.70	0.41	9,499.8	3.9	0.0	3.9	10.00	10.00	0.00	
9,600.0	16.70	0.41	9,597.6	24.2	0.2	24.2	10.00	10.00	0.00	
9,700.0	26.70	0.41	9,690.4	61.1	0.4	61.1	10.00	10.00	0.00	
9,800.0	36.70	0.41	9,775.4	113.6	0.8	113.6	10.00	10.00	0.00	
9,871.9	43.89	0.41	9,830.2	160.0	1.2	160.0	10.00	10.00	0.00	
First Take Point: 330 FSL & 2231 FWL										
9,900.0	46.70	0.41	9,850.0	180.0	1.3	180.0	10.00	10.00	0.00	
10,000.0	56.70	0.41	9,911.9	258.4	1.9	258.4	10.00	10.00	0.00	
10,100.0	66.70	0.41	9,959.3	346.3	2.5	346.3	10.00	10.00	0.00	
10,200.0	76.69	0.41	9,990.6	441.1	3.2	441.1	10.00	10.00	0.00	

# Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Owl Draw 27, W2NC, Fed Com #2H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3196.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	MD Reference:	WELL @ 3196.0usft (Original Well Elev)
Site:	Owl Draw 27, W2NC, Fed Com #2H	North Reference:	Grid
Well:	Sec 27, T26S, R27E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL 330' FNL & 2310' FWL		
Design:	Design #1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
10,300.0	86.69	0.41	10,005.0	539.9	3.9	540.0	10.00	10.00	0.00	
10,333.1	90.00	0.41	10,006.0	573.0	4.1	573.0	9.99	9.99	0.00	
ILP: 750' FSL & 2232' FWL										
10,400.0	90.00	0.41	10,006.0	639.9	4.6	639.9	0.00	0.00	0.00	
10,500.0	90.00	0.41	10,006.0	739.9	5.3	739.9	0.00	0.00	0.00	
10,600.0	90.00	0.41	10,006.0	839.9	6.0	839.9	0.00	0.00	0.00	
10,700.0	90.00	0.41	10,006.0	939.9	6.8	939.9	0.00	0.00	0.00	
10,800.0	90.00	0.41	10,006.0	1,039.9	7.5	1,039.9	0.00	0.00	0.00	
10,900.0	90.00	0.41	10,006.0	1,139.9	8.2	1,139.9	0.00	0.00	0.00	
11,000.0	90.00	0.41	10,006.0	1,239.9	8.9	1,239.9	0.00	0.00	0.00	
11,100.0	90.00	0.41	10,006.0	1,339.9	9.6	1,339.9	0.00	0.00	0.00	
11,200.0	90.00	0.41	10,006.0	1,439.9	10.4	1,439.9	0.00	0.00	0.00	
11,300.0	90.00	0.41	10,006.0	1,539.9	11.1	1,539.9	0.00	0.00	0.00	
11,400.0	90.00	0.41	10,006.0	1,639.9	11.8	1,639.9	0.00	0.00	0.00	
11,500.0	90.00	0.41	10,006.0	1,739.9	12.5	1,739.9	0.00	0.00	0.00	
11,600.0	90.00	0.41	10,006.0	1,839.9	13.2	1,839.9	0.00	0.00	0.00	
11,700.0	90.00	0.41	10,006.0	1,939.9	14.0	1,939.9	0.00	0.00	0.00	
11,800.0	90.00	0.41	10,006.0	2,039.9	14.7	2,039.9	0.00	0.00	0.00	
11,900.0	90.00	0.41	10,006.0	2,139.9	15.4	2,139.9	0.00	0.00	0.00	
12,000.0	90.00	0.41	10,006.0	2,239.9	16.1	2,239.9	0.00	0.00	0.00	
12,100.0	90.00	0.41	10,006.0	2,339.9	16.8	2,339.9	0.00	0.00	0.00	
12,200.0	90.00	0.41	10,006.0	2,439.9	17.5	2,439.9	0.00	0.00	0.00	
12,300.0	90.00	0.41	10,006.0	2,539.9	18.3	2,539.9	0.00	0.00	0.00	
12,400.0	90.00	0.41	10,006.0	2,639.9	19.0	2,639.9	0.00	0.00	0.00	
12,500.0	90.00	0.41	10,006.0	2,739.9	19.7	2,739.9	0.00	0.00	0.00	
12,600.0	90.00	0.41	10,006.0	2,839.9	20.4	2,839.9	0.00	0.00	0.00	
12,700.0	90.00	0.41	10,006.0	2,939.9	21.1	2,939.9	0.00	0.00	0.00	
12,800.0	90.00	0.41	10,006.0	3,039.9	21.9	3,039.9	0.00	0.00	0.00	
12,900.0	90.00	0.41	10,006.0	3,139.9	22.6	3,139.9	0.00	0.00	0.00	
13,000.0	90.00	0.41	10,006.0	3,239.8	23.3	3,239.9	0.00	0.00	0.00	
13,100.0	90.00	0.41	10,006.0	3,339.8	24.0	3,339.9	0.00	0.00	0.00	
13,200.0	90.00	0.41	10,006.0	3,439.8	24.7	3,439.9	0.00	0.00	0.00	
13,300.0	90.00	0.41	10,006.0	3,539.8	25.5	3,539.9	0.00	0.00	0.00	
13,400.0	90.00	0.41	10,006.0	3,639.8	26.2	3,639.9	0.00	0.00	0.00	
13,500.0	90.00	0.41	10,006.0	3,739.8	26.9	3,739.9	0.00	0.00	0.00	
13,600.0	90.00	0.41	10,006.0	3,839.8	27.6	3,839.9	0.00	0.00	0.00	
13,700.0	90.00	0.41	10,006.0	3,939.8	28.3	3,939.9	0.00	0.00	0.00	
13,800.0	90.00	0.41	10,006.0	4,039.8	29.1	4,039.9	0.00	0.00	0.00	
13,900.0	90.00	0.41	10,006.0	4,139.8	29.8	4,139.9	0.00	0.00	0.00	
14,000.0	90.00	0.41	10,006.0	4,239.8	30.5	4,239.9	0.00	0.00	0.00	
14,100.0	90.00	0.41	10,006.0	4,339.8	31.2	4,339.9	0.00	0.00	0.00	
14,200.0	90.00	0.41	10,006.0	4,439.8	31.9	4,439.9	0.00	0.00	0.00	
14,300.0	90.00	0.41	10,006.0	4,539.8	32.6	4,539.9	0.00	0.00	0.00	
14,400.0	90.00	0.41	10,006.0	4,639.8	33.4	4,639.9	0.00	0.00	0.00	
14,500.0	90.00	0.41	10,006.0	4,739.8	34.1	4,739.9	0.00	0.00	0.00	
14,547.7	90.00	0.41	10,006.0	4,787.5	34.4	4,787.6	0.00	0.00	0.00	
BHL: 330 FNL & 2310 FWL										

# Planning Report

Database:	Hobbs	Local Co-ordinate Reference:	Site Owl Draw 27, W2NC Fed Com #2H
Company:	Mewbourne Oil Company	TVD Reference:	WELL @ 3198.0usft (Original Well Elev)
Project:	Eddy County, New Mexico	MD Reference:	WELL @ 3198.0usft (Original Well Elev)
Site:	Owl Draw 27, W2NC Fed Com #2H	North Reference:	Grid
Well:	Sec 27, T26S, R27E	Survey Calculation Method:	Minimum Curvature
Wellbore:	BHL 330 FNL & 2310 FWL		
Design:	Design #1		

Design Targets									
Target Name									
hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
SL: 170 FSL & 2230 FW - plan hits target center - Point	0.00	0.01	0.0	0.0	0.0	365,994.60	547,971.30	32° 0' 22.098 N	104° 10' 42.868 W
KOP @ 9433 - plan hits target center - Point	0.00	0.01	9,433.0	0.0	0.0	365,994.60	547,971.30	32° 0' 22.098 N	104° 10' 42.868 W
First Take Point: 330 FSL - plan hits target center - Point	0.00	0.00	9,830.2	160.0	1.2	366,154.60	547,972.50	32° 0' 23.682 N	104° 10' 42.851 W
BHL: 330 FNL & 2310 F - plan hits target center - Point	0.00	0.00	10,006.0	4,787.5	34.4	370,782.12	548,005.73	32° 1' 9.478 N	104° 10' 42.388 W
LP: 750 FSL & 2232 FW - plan hits target center - Point	0.00	0.00	10,006.0	573.0	4.1	366,567.60	547,975.40	32° 0' 27.769 N	104° 10' 42.810 W

## **SURFACE USE PLAN OF OPERATIONS**

### **MEWBOURNE OIL COMPANY**

Owl Draw 27 W2NC Fed Com #2H

170 FSL & 2230 FWL (SHL)

Sec. 27 – T26S-R27E

Eddy County, New Mexico

### **Introduction**

This plan is submitted with Form 3160-3, Application for Permit to Drill, Covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved, and the procedures to be followed in restoring the surface so that a complete appraisal can be made of the environmental impact associated with the proposed operations.

### **1. Existing Roads**

- a. The existing access road route to the proposed project is depicted on **Exhibit 3E**. Improvements to the driving surface will be done where necessary. No new surface disturbance will be done, unless otherwise noted in the New or Reconstructed Access Roads section of this surface use plan.
- b. The existing oil and gas roads utilized to access the proposed project will be maintained by crowning, clearing ditches, and fixing potholes. All existing structures on the entire access route such as cattle guards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use.
- c. Mewbourne Oil Co. will cooperate with other operators in the maintenance of lease roads, it is anticipated that MOC will blade & water the lease roads 3 times per year.

### **2. New or Reconstructed Access Roads**

- a. An access road will be needed for this proposed project. See the survey plat(s) for the location of the access road.
- b. The length of access road needed to be constructed for this proposed project is about 2,893.08'.
- c. The access road will be 14 feet wide and will be constructed with 6 inches of compacted caliche. A 25 foot wide area would be needed to construct the road.
- d. When the road travels on fairly level ground, the road will be crowned and ditched with a 2% slope from the tip of the road crown to the edge of the driving surface. The ditches will be 3 feet wide with 3:1 slopes.
- e. The access road will be constructed with a ditch on each side of the road.
- f. The maximum grade for the access road will be 5 percent.
- g. If the road is longer than 1,000 feet, turnouts will be constructed with an interval of 1,000 feet. Turnouts will be intervisible and will be 10 feet wide and 100 feet long.



- h. Low water crossings will be constructed where drainages cross the access road.
- i. Construction of new or reconstructed roads, on surface under the jurisdiction of the Bureau of Land Management will include ditching, draining, crowning and capping or sloping and dipping the roadbed as necessary to provide a well-drained and safe road.
- j. An appropriately sized cattle guard will be installed where the proposed access road crosses a fence line.
- k. A BLM right-of-way grant is needed for the construction of this access road and one will be acquired prior to construction.
- l. Lead-off ditches will be constructed for the proposed access road, but will not extend more than 15 feet outside the road edge.

### **3. Location of Existing Wells**

- a. Exhibit 4, 4A of the APD depicts all known wells within a one mile radius of the proposed well.

### **4. Location of Existing and/or Proposed Production Facilities**

- a. All permanent, lasting more than 6 months, above ground structures including but not limited to pumpjacks, storage tanks, pipeline risers, meter housing, etc. that are not subject to safety requirements will be painted a non-reflective paint color that blends in with the surrounding landscape. The paint color will be one of the colors from the BLM Standard Environmental Colors chart selected by the BLM authorized officer.
- b. All proposed production facilities that are located on the well pad will be strategically placed to allow for maximum interim reclamation, recontouring, and revegetation of the well location.
- c. Production from the proposed well will be located on the North edge of this location.
- d. If any plans change regarding the production facility or other infrastructure (pipeline, electric line, etc.), we will submit a sundry notice or right of way (if applicable) prior to installation of construction.
- e. An electric line will be applied for through a sundry notice or BLM right of way at a later date.

### **5. Location and Types of Water**

- a. The well will be drilled with a combination of fresh water and brine water based mud systems. The water will be obtained from commercial suppliers in the area and/or hauled to the location by transport trucks over existing and proposed roads as identified above in this surface use plan. Water from the commercial suppliers

will be supplied from the Brantley water station located in NW/NE of Sec 14 T26S R26E, Eddy Co.

## **6. Construction Materials**

- a. Construction material that will be used to build the well pad and road will be caliche.
- b. The construction contractor will be solely responsible for securing construction materials required for this operation and paying any royalties that may be required on those materials.
- c. Obtaining caliche: One way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well site. A caliche permit will be obtained from BLM prior to obtaining caliche. Amount of caliche will vary for each pad. The procedure below has been approved by BLM personnel:
  - i. The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.
  - ii. An approximate 160' X 160' area is used within the proposed well site to remove caliche.
  - iii. Subsoil is removed and stockpiled within the surveyed well pad.
  - iv. When caliche is found, material will be stock piled within the pad site to build the location and road.
  - v. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.
  - vi. Once well is drilled, the stock piled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced.
  - vii. Neither caliche, nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in the Well Site Layout or survey plat.

In the event that no caliche is found onsite, caliche will be hauled in from a BLM, state, or private mineral pit. A BLM mineral material permit will be acquired prior to obtaining any mineral material from BLM pits or land.

**Caliche for this well pad will be hauled from a private pit in Sec. 23 T26S T26E.**

Construction will consist of using the following equipment: Dozer, grader/blade, backhoe, roller, water trucks & dump trucks. Dozer will level the location stockpiling topsoil on the specified edge of the location. Dump trucks will haul material to location. Dozer & Blade will spread material evenly across location.

Location will be leveled & rolled with blade & roller. Backhoe will be used to install the 8' x 10' cellar. Average timeline for the construction of locations will be 10-14 days after APD approval. **Straw wattles will be installed along the North & West side of existing well pad.**

## **7. Methods of Handling Waste**

- a. The well will be drilled utilizing a closed loop system. Drill cuttings will be properly contained in steel tanks (20 yard roll off bins.) and taken to an NMOCD approved disposal facility listed below.
- b. Drilling fluids and produced oil and water from the well during completion operations will be stored safely in closed containers (20 yard roll off bins) and disposed of properly in an NMOCD approved disposal facility listed below.
- c. Garbage and trash produced during drilling and completion operations will be collected in trash containers (enclosed trash trailers) and disposed of properly at a state approved site. All trash on and around the well site will be collected for disposal.
- d. All human waste and grey water from drilling and completion operations will be properly contained in a 2,000 gallon plastic container and disposed of properly at the City of Carlsbad Water Treatment facility.
- e. After drilling and completion operations, trash, chemicals, salts, frac sand and other waste material will be removed and disposed of properly at the said facilities. NMOCD approved waste disposal locations are CRI or Lea Land, both facilities are located on HWY 62/180, Sec. 27 T20S R32E.
- f. SWD proposed location are as follows: Kentzel 42 SWD #1 (MOC), TXL 11 West SWD #1 (MOC), TXL 33 SWD #1 (MOC). Saltwater will be truck hauled to these locations using lease roads & county roads.

## **8. Ancillary Facilities**

- a. No ancillary facilities will be needed for this proposed project.

## **9. Well Site Layout**

- a. The proposed drilling pad to be built was staked and surveyed by a professional surveyor. The attached survey plat of the well site depicts the drilling pad layout as staked.
- b. A title of a well site diagram is **Exhibit 5**. This diagram depicts the rig layout.
- c. In areas to be heavily disturbed, the top 6 inches of soil material, will be stripped and stockpiled on the perimeter of the well location to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. Topsoil will be clearly

segregated and stored separately from subsoils. Contaminated soil will not be stockpiled, but properly treated and handled prior to topsoil salvaging.

## **10. Plans for Surface Reclamation**

Within 90 days of cessation of drilling and completion operations, all equipment not necessary for production operations will be removed. The location will be cleaned of all trash and junk to assure the well site is left as aesthetically pleasing as reasonably possible.

### **a. Interim Reclamation (well pad)**

- i. Interim reclamation will be performed on the well site after the well is drilled and completed. **Exhibit 6** depicts the location and dimensions of the planned interim reclamation for the well site.
- ii. The well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production.
- iii. In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
- iv. The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the area back to the original contour. The interim cut and fill slopes prior to re-seeding will not be steeper than a 3:1 ratio, unless the adjacent native topography is steeper. Note: Constructed slopes may be much steeper during drilling, but will be recontoured to the above ratios during interim reclamation.
- v. Topsoil will be evenly respread and aggressively revegetated over the entire disturbed area not needed for all-weather operations including cuts & fills. To seed the area, the proper BLM seed mixture, free of noxious weeds, will be used. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
- vi. Proper erosion-control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.
- vii. The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion and invasive/noxious weeds are controlled.

### **b. Final Reclamation (well pad, buried pipelines, etc.)**

- i. Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment.
- ii. All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
- iii. All disturbed areas, including roads, pipelines, pads, production facilities, and interim reclaimed areas will be recontoured to the contour existing prior to initial construction or a contour that blends indistinguishably with the surrounding landscape. Topsoil that was spread over the interim reclamation areas will be stockpiled prior to recontouring. The topsoil will be redistributed evenly over the entire disturbed site to ensure successful revegetation.
- iv. After all the disturbed areas have been properly prepared, the areas will be seeded with the proper BLM seed mixture, free of noxious weeds. Final seedbed preparation will consist of contour cultivating to a depth of 4 to 6 inches within 24 hours prior to seeding, dozer tracking, or other imprinting in order to break the soil crust and create seed germination micro-sites.
- v. Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding area.
- vi. All unused equipment and structures including pipelines, electric line poles, tanks, etc. that serviced the well will be removed.
- vii. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion and invasive/noxious weeds are controlled.

#### **11. Surface Ownership**

- a. The surface ownership of the proposed project is federal.

#### **12. Other Information**

- a. No other information is needed at this time.

#### **13. Operator's Representative**

- a. Through APD approval, drilling, completion and production operations:

**Robin Terrell, District Manager**  
Mewbourne Oil Company  
PO Box 5270  
Hobbs, NM 88241  
575-393-5905

Hydrogen Sulfide Drilling Operations Plan  
**Mewbourne Oil Company**  
Owl Draw 27 W2NC Fed Com #2H  
170' FSL & 2230' FWL  
Sec. 27 T26S R27E  
Eddy, County, NM

**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 MOC will follow Onshore Order 6 and install 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. 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**

Lea County Sheriff's Office	911 or 575-396-3611
Ambulance Service	911 or 575-885-2111
Carlsbad Fire Dept	911 or 575-885-2111
Closest Medical Facility - Columbia Medical Center of Carlsbad	575-492-5000

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

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

**Notes Regarding Blowout Preventer**

**Mewbourne Oil Company**

Owl Draw 27 W2NC Fed Com #2H

170' FSL & 2230' FWL

Sec. 27 T26S R27E

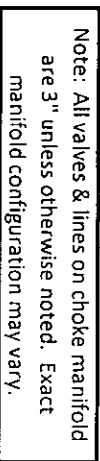
Eddy, County, NM

- I. Drilling nipple (bell nipple) to be constructed so that it can be removed without the use of a welder through the opening of the rotary table, with minimum internal diameter equal to blowout preventer bore.
- II. Blowout preventer and all fittings must be in good condition with a minimum 3000 psi working pressure on 9 5/8" and 7" casing.
- III. Safety valve must be available on the rig floor at all times with proper connections to install in the drill string. Valve must be full bore with minimum 3000 psi working pressure.
- IV. Equipment through which bit must pass shall be at least as large as internal diameter of the casing.
- V. A kelly cock shall be installed on the kelly at all times.

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



Exhibit 2  
Owl Draw 27 W2NC Fed Com #2H



# 11" 5M BOPE & Closed Loop Equipment Schematic

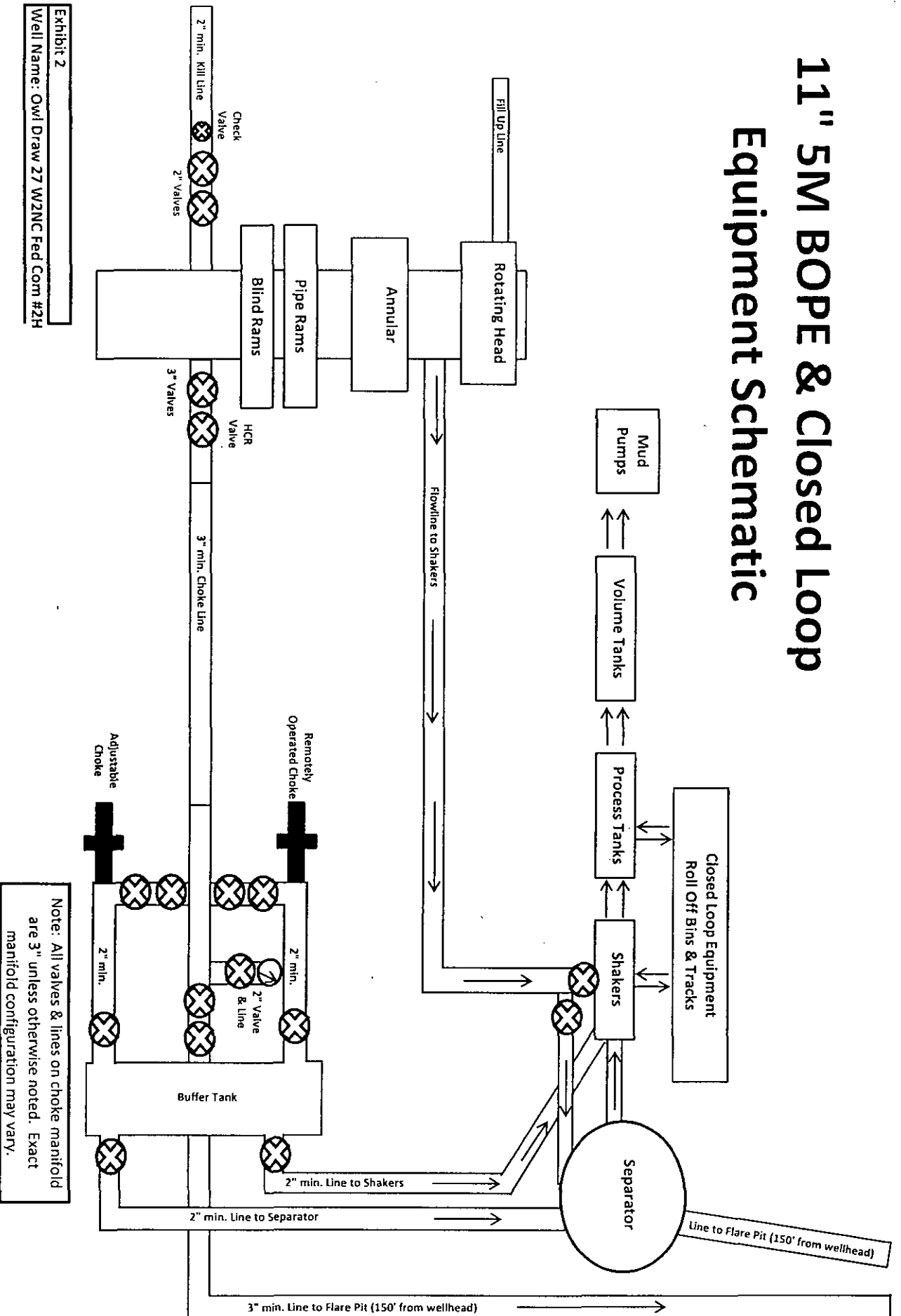
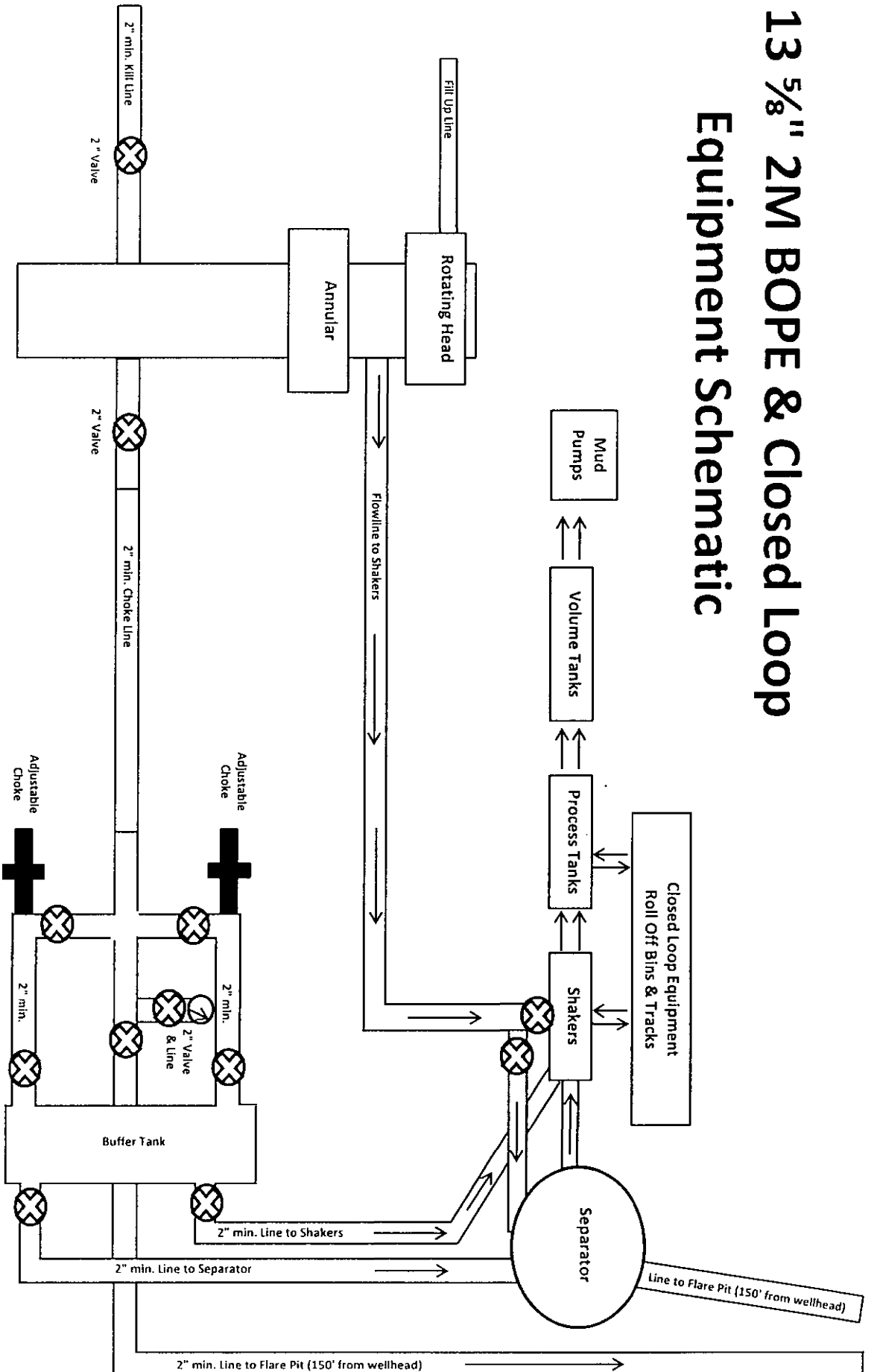


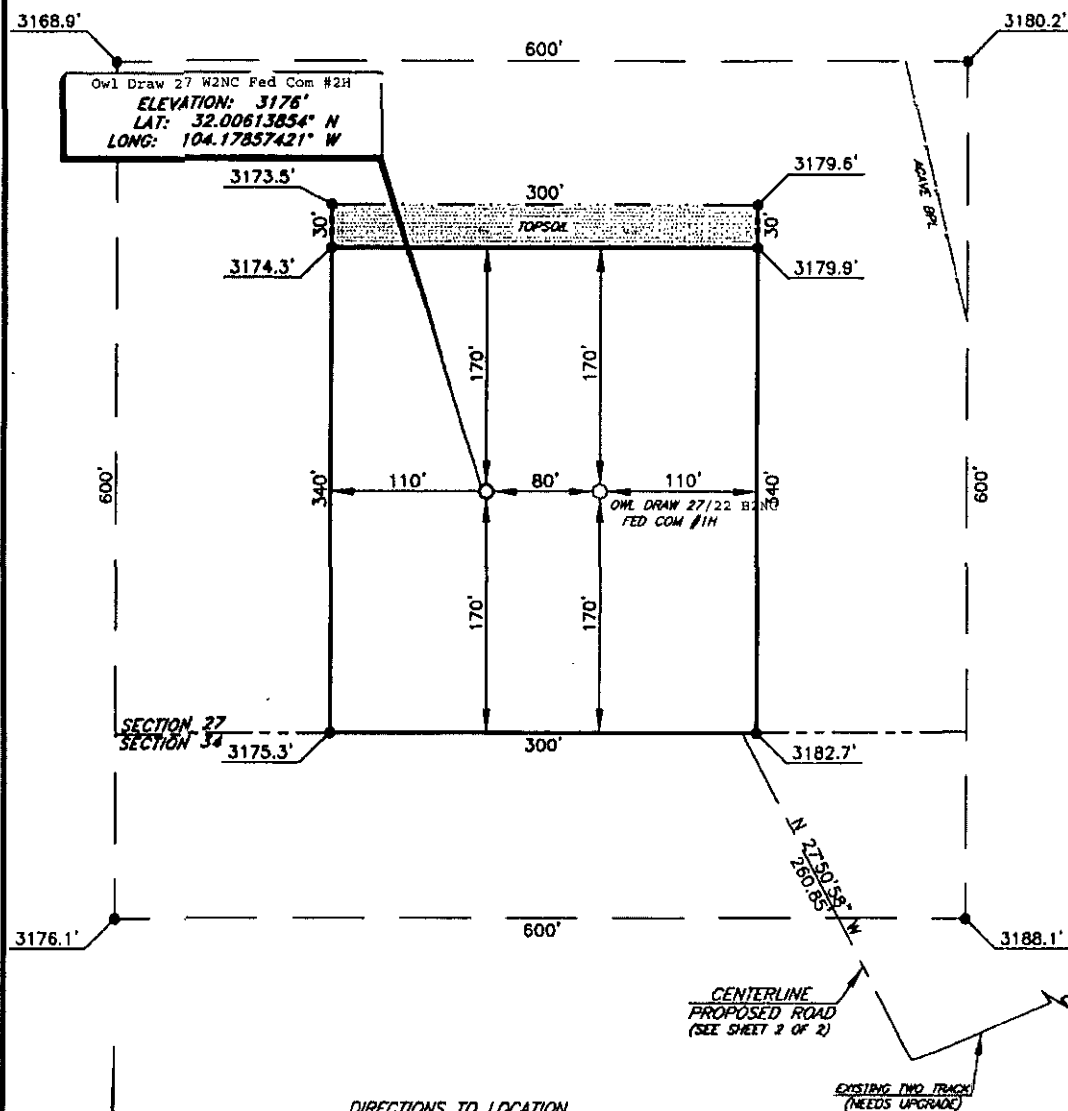
Exhibit 2  
Well Name: Owl Draw 27 W2NC Fed Com #2H

Exhibit 2A
Owl Draw 27 W2NC Fed Com #2H



# MEWBOURNE OIL COMPANY

Owl Draw 27 W2NC Fed Com #2H  
(170' FSL & 2230' FWL)  
Section 27, T-26-S, R-27-E,  
N. M. P. M., Eddy Co., New Mexico



## DIRECTIONS TO LOCATION

From the intersection U.S. Hwy. #285 and CR-724 (Whites City):

Go West on CR-724 approx. 3.0 miles.

Turn left on a lease road and go South approx. 4.4 miles.

Turn right and go West approx. 3.0 miles to proposed road survey.

Follow road survey Northwest approx. 0.4 mile to the Northwest corner of the Owl Draw 27 PA proposed well pad.

Go Northeast approx. 218 feet following proposed road survey.

Turn left and go Southwest approx. 0.8 mile to another road survey.

Turn right and follow road survey approx. 0.2 mile North to this location.

SCALE: 1" = 100'  
0 50 100  
BEARINGS ARE  
HAD 27 GRID - NM EAST  
DISTANCES ARE  
GROUND.

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NO.	REVISION	DATE
JOB NO.:	LS130384	
DWG. NO.:	130384PAD	

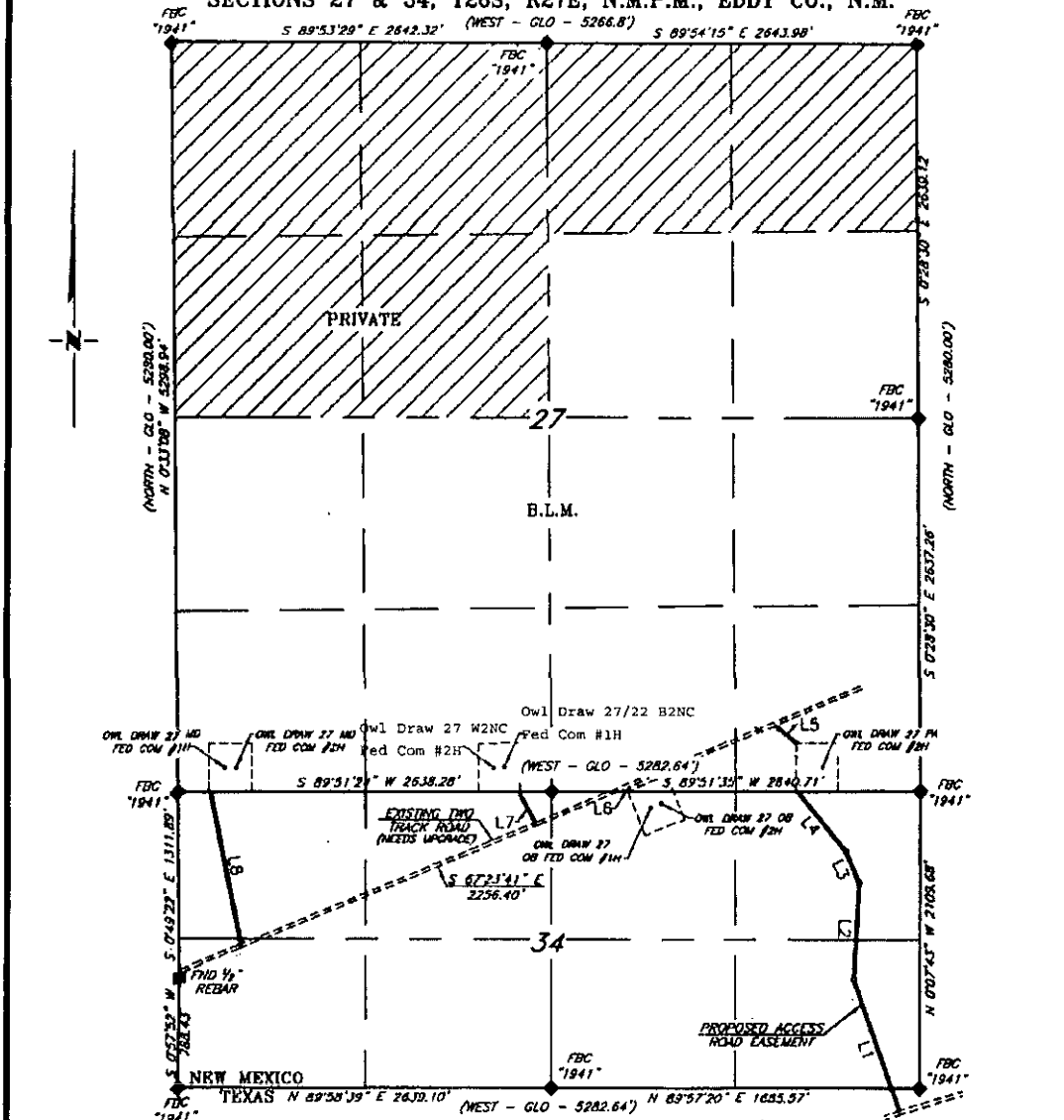
PROSPERITY CONSULTANTS, LLC



308 W. Broadway St., Hobbs, NM 88240 | Firm No.: TX 10193838 NM 4655451 | (575) 964-8200

SCALE: 1"=100'
DATE: 9/19/13
SURVEYED BY: GB/SM
DRAWN BY: AF
APPROVED BY: RH
SHEET : 1 OF 2

**MEWBOURNE OIL COMPANY  
PROPOSED ACCESS ROAD EASEMENT FOR OWL DRAW WELLS  
SECTIONS 27 & 34, T28S, R27E, N.M.P.M., EDDY CO., N.M.**



**LINE TABLE**

LINE	BEARING	DISTANCE
L1	N 89°55'59" E	953.48'
L2	N 02°55'30" E	684.52'
L3	N 22°59'21" W	245.65'
L4	N 39°53'13" W	542.13'
L5	S 50°51'05" E	206.45'
L6	S 35°40'48" E	39.92'
L7	N 27°50'58" W	260.85'
L8	N 11°17'37" W	1114.84'

SCALE: 1" = 1000'  
0 500 1000

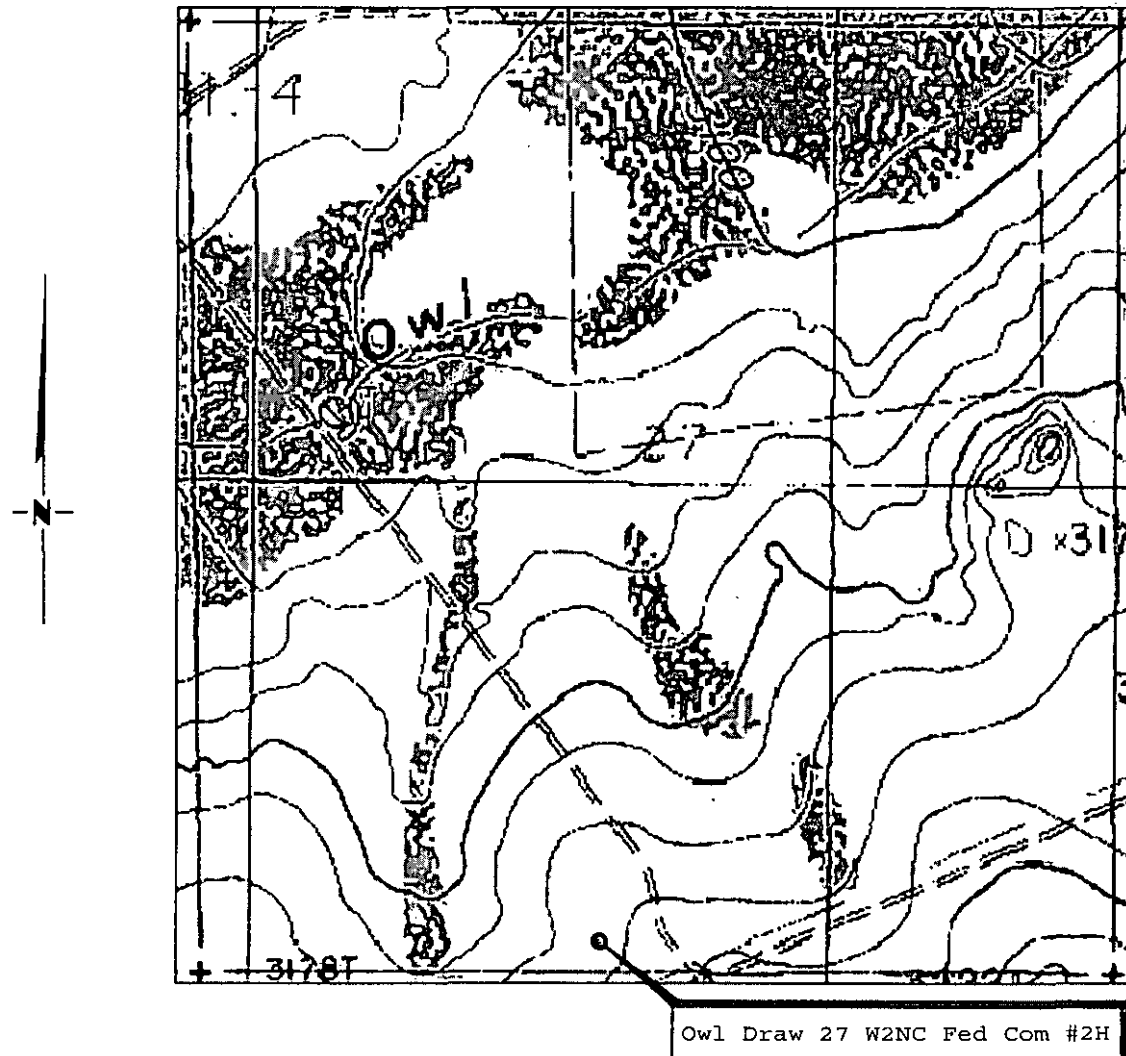
BEARINGS: NAD 27 GRID-NM EAST  
DISTANCES: HORIZ. GROUND

LEGEND  
( ) RECORD DATA  
◆ FBC\*\*\*\* FOUND BRASS CAP "YEAR"  
■ FOUND MONUMENT  
— PROPOSED ROAD  
--- EXISTING TWO TRACK ROAD

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NO. REVISION DATE JOB NO.: LS130493 DWG. NO.: 130493RD			PROSPERITY CONSULTANTS, LLC  2251 Double Creek Drive, Suite 602, Round Rock, Texas 78664 o (512) 992-2087 f (512) 251-2518	SCALE: 1" = 1000' DATE: 8/19/13 SURVEYED BY: GB/SM DRAWN BY: AF APPROVED BY: LWB SHEET : 1 OF 1
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# LOCATION VERIFICATION MAP



**SECTION 27, TWP. 26 SOUTH, RGE. 27 EAST,  
N. M. P. M., EDDY COUNTY, NEW MEXICO**

OPERATOR: Mewbourne Oil Company  
LEASE: Owl Draw 27 W2NC Fed Com  
WELL NO.: 2H  
ELEVATION: 3176'

LOCATION: 170' FSL & 2230' FWL  
CONTOUR INTERVAL: 10'  
USGS TOPO. SOURCE MAP:  
Cottonwood Hills, NM (Prov. Ed. 1985)

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NO.	REVISION	DATE
JOB NO.: LS130384		
DWG. NO.: 130384LVM		

PROSPERITY CONSULTANTS, LLC

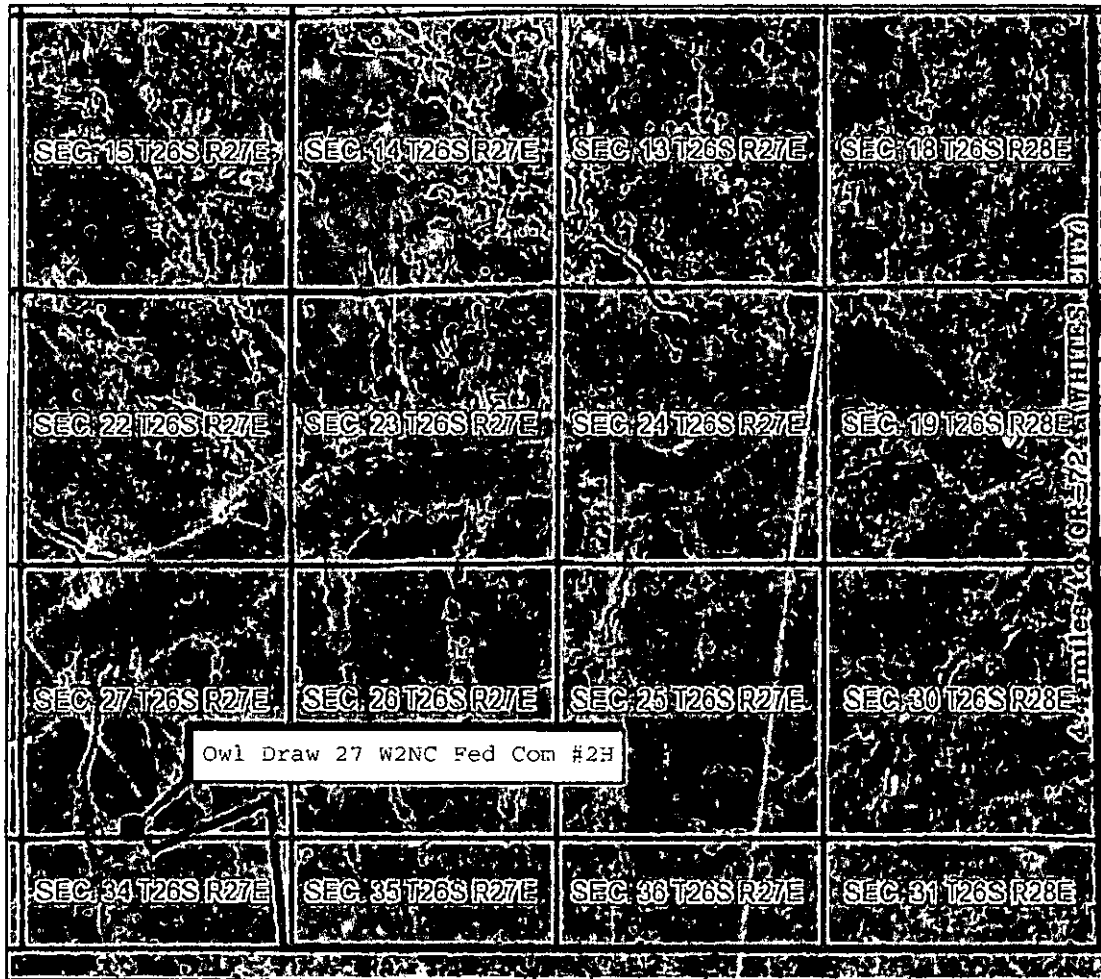


308 W. Broadway St., Hobbs, NM 88240 | Firm No. TX 10193838 NM 4655451 | (575) 964-8200

SCALE: 1"=1000'  
DATE: 9/19/13  
SURVEYED BY: GB/SM  
DRAWN BY: AF  
APPROVED BY: LWB  
SHEET : 1 OF 1

## VICINITY MAP

NOT TO SCALE



SECTION 27, TWP. 26 SOUTH, RGE. 27 EAST,  
N. M. P. M., EDDY COUNTY, NEW MEXICO

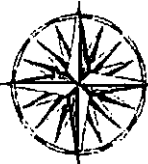
OPERATOR: Mewbourne Oil Company  
LEASE: Owl Draw 27 W2NC Fed Com  
WELL NO.: 2H

LOCATION: 170' FSL & 2230' FWL  
ELEVATION: 3176'

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NO.	REVISION	DATE
JOB NO.: LS130384		
DWG. NO.: 130384VM		

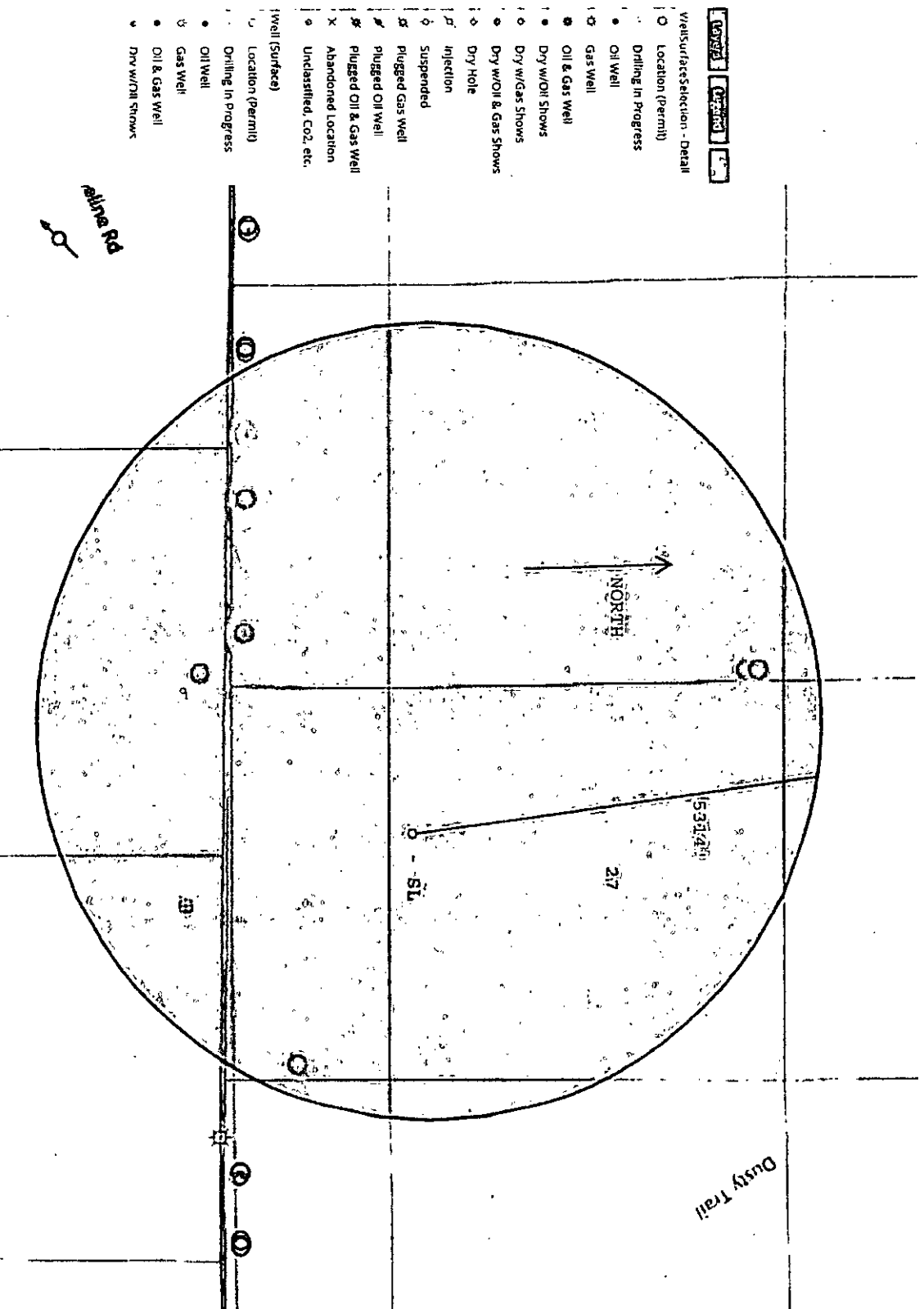
PROSPERITY CONSULTANTS, LLC



308 W. Broadway St., Hobbs, NM 88240 | Firm No. TX 10193838 NM 4655451 | (575) 964-8200

SCALE: 1"=1000'  
DATE: 9/19/13  
SURVEYED BY: GB/SM  
DRAWN BY: AF  
APPROVED BY: LWB  
SHEET : 1 OF 1

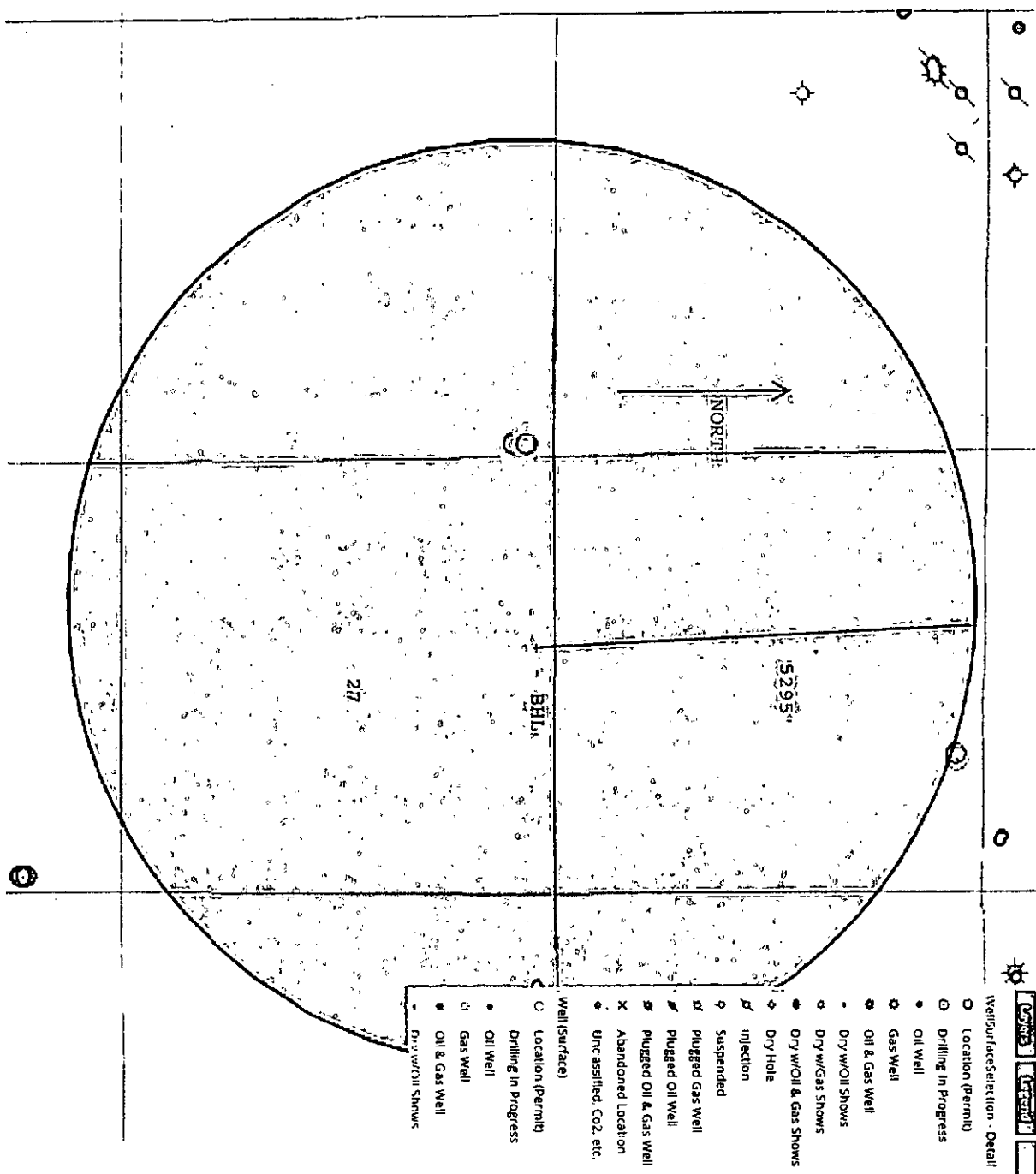
# EXISTING WELL - ONE MILE RADIUS



OWL Draw 27 W2NC Fed Com #2H - SL - 170' FSL & 2230' FWL, Sec 27 T26S R27E, Eddy Co. NM

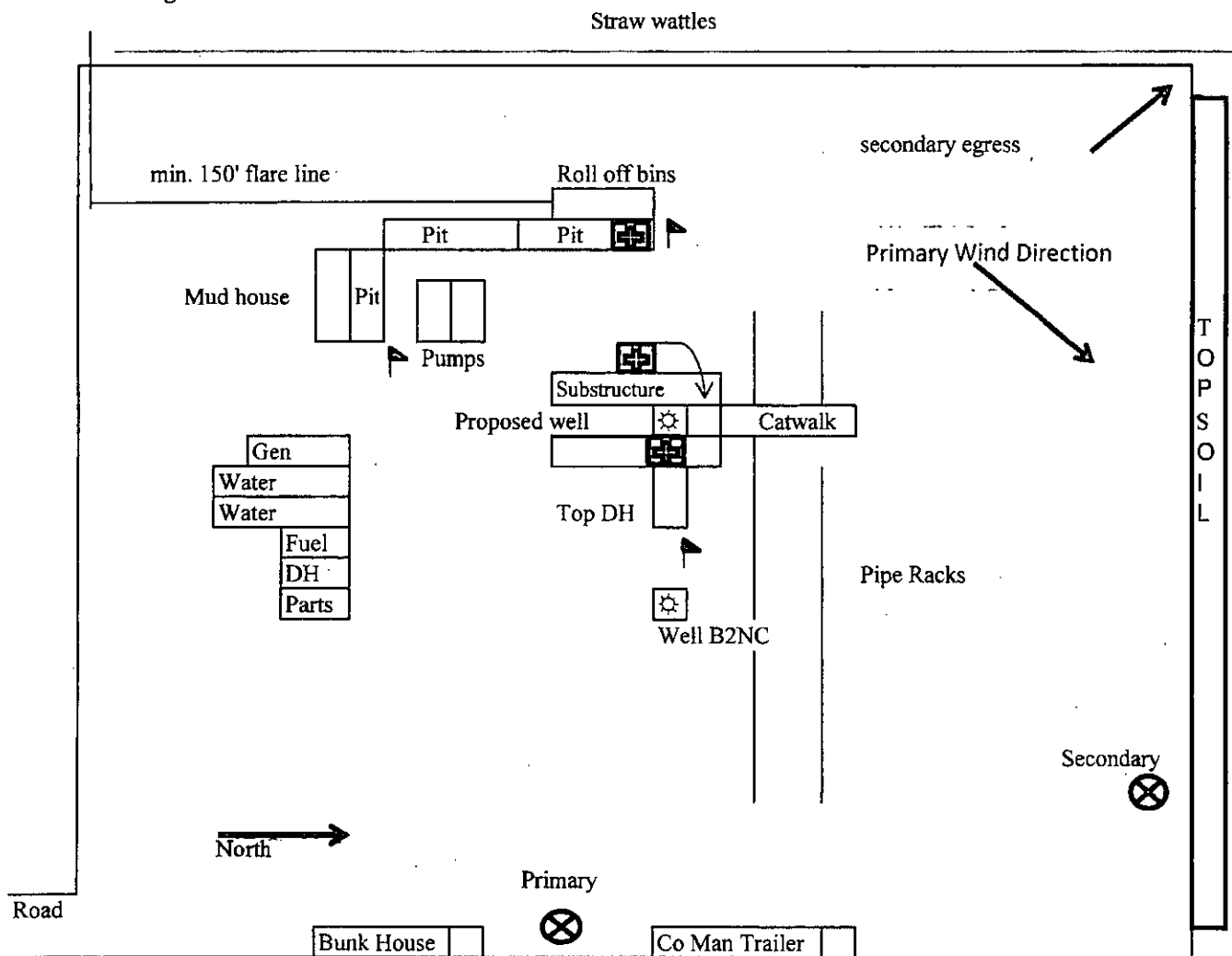


# EXISTING WELL - 1 MILE RADIUS



OWL Draw 27 W2NC Fed Com #2H - BHL - 330' FNL & 2310' FWL, Sec 27 T26S R27E, Eddy Co. NM

# H2S Diagram



⊗ = Safety Stations

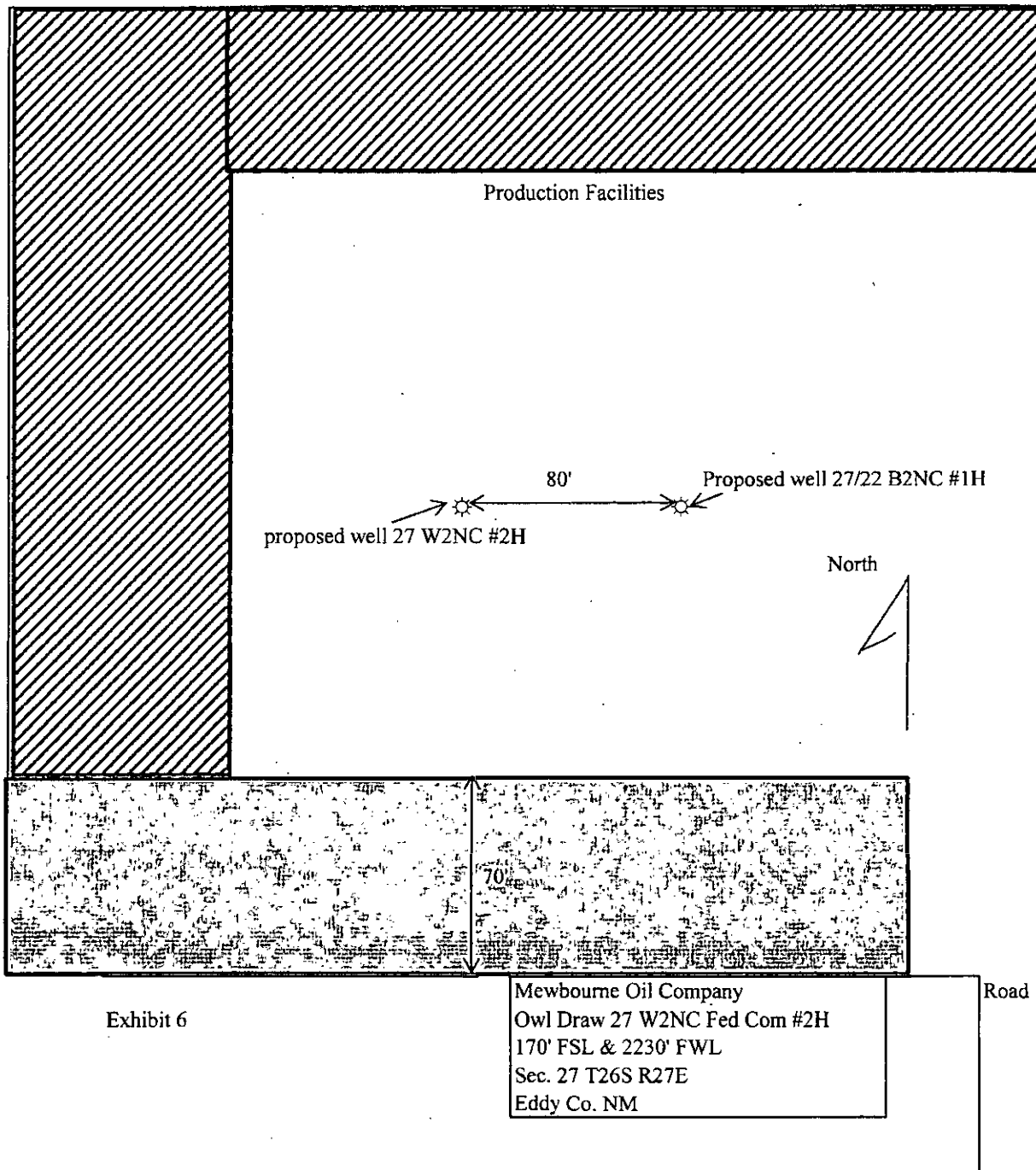
⊞ = H2S Monitors

▲ = Wind Markers

⊞ = Warning Signs

Exhibit 5

Mewbourne Oil Company  
Owl Draw 27 W2NC Fed Com #2H  
170' FSL & 2230' FWL  
Sec. 27 T26S R27E  
Eddy County, NM



## PECOS DISTRICT CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	Mewbourne Oil Company
<b>LEASE NO.:</b>	NMNM-114971
<b>WELL NAME &amp; NO.:</b>	Owl Draw 27 W2NC Fed Com 2H
<b>SURFACE HOLE FOOTAGE:</b>	0170' FSL & 2230' FWL
<b>BOTTOM HOLE FOOTAGE:</b>	0330' FNL & 2310' FWL
<b>LOCATION:</b>	Section 27, T. 26 S., R 27 E., NMPM
<b>COUNTY:</b>	Eddy 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**
  - Cave/Karst
  - Communitization Agreement
- ☐ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - Cement Requirements
  - High Cave/Karst
  - Logging Requirements
  - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Electric Lines
- ☐ **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)

At the time of the federal biological review, there were no raptor or songbird nests or defended territories within 200 meters of the proposed project. Pursuant to the Migratory Bird Treaty Act, the applicant shall either secure a qualified biologist to survey the affected area within a week prior to construction to confirm that the area is not being defended OR begin construction after any young have fledged, typically by the end of September, or after the adults have abandoned the nest. Hazing is not authorized.

### **Cave and Karst**

**\*\*** 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.)

**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 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, situate 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 high 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.

### **Communitization Agreement**

· The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.

· If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.

· In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.



## **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**

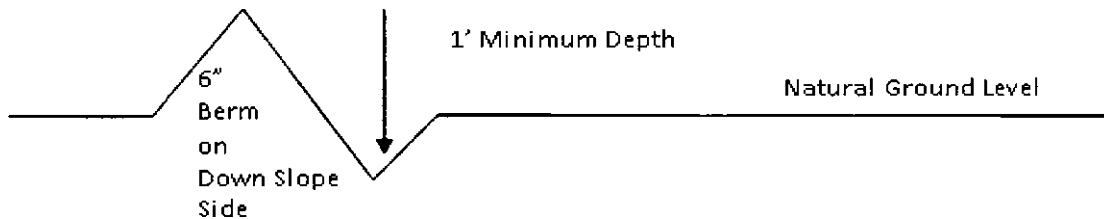
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

**Drainage**

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

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

#### **Cattleguards**

An appropriately sized cattleguard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattleguards 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 cattleguards 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

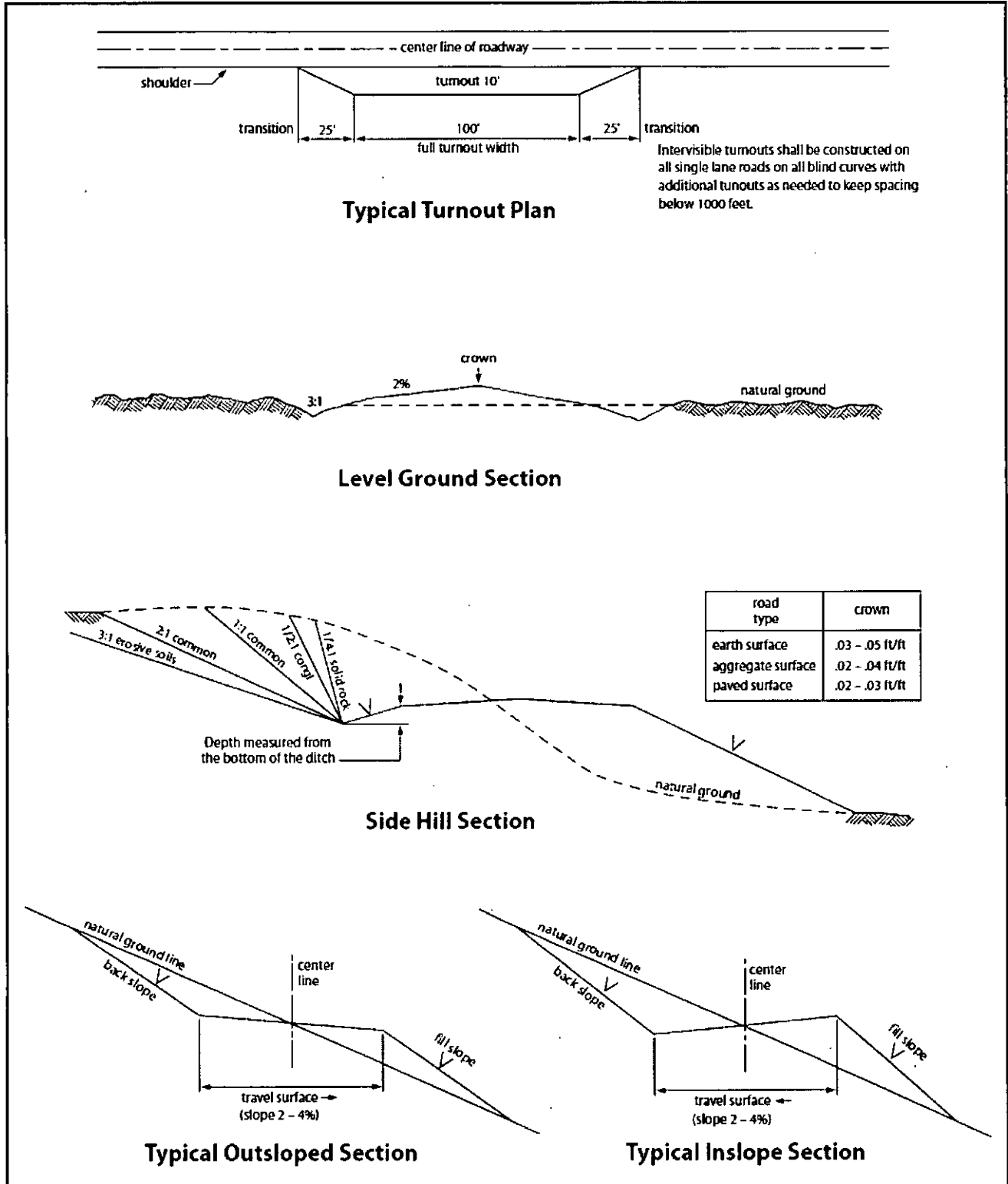


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

## **VII. DRILLING**

### **A. DRILLING OPERATIONS REQUIREMENTS**

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

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

☒ **Eddy County**

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

1. **Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**
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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
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 is located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies.**

### **B. CASING**

**Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.**

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

**Wait on cement (WOC) for Water Basin:**

After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.

**No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.**

**High Cave/Karst**

**Possibility of water flows in the Salado and Castile.**

**Possibility of lost circulation in the Delaware.**

**Abnormal pressure may be encountered within the 3<sup>rd</sup> Bone Spring Sandstone and all subsequent formations.**

**A MINIMUM OF TWO CASING STRINGS CEMENTED TO SURFACE IS REQUIRED IN HIGH CAVE/KARST AREAS. THE CEMENT MUST BE IN A SOLID SHEATH. THEREFORE, ONE INCH OPERATIONS ARE NOT SUFFICIENT TO PROTECT CAVE KARST RESOURCES. A CASING DESIGN THAT HAS A ONE INCH JOB PERFORMED DOES NOT COUNT AS A SOLID SHEATH. IF THE PRIMARY CEMENT JOB ON THE SURFACE CASING DOES NOT CIRCULATE, THEN THE NEXT TWO CASING STRINGS MUST BE CEMENTED TO SURFACE.**

1. The 13-3/8 inch surface casing shall be set at approximately 375 feet and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing, which shall be set at approximately 2040 feet (Lamar Limestone), is:

☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

**Formation below the 9-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

**Centralizers required through the curve and a minimum of one every other joint.**

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

☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Excess calculates to 22% - Additional cement may be required.**

**Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

4. The minimum required fill of cement behind the 4-1/2 inch production Liner is:

☒ Cement as proposed. Operator shall provide method of verification. **Excess calculates to 23% - Additional cement may be required.**

5. 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 53.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M) psi**.

- a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
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. 5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.**
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
  - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
  - d. The results of the test shall be reported to the appropriate BLM office.
  - e. 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.**
  - f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test



plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

- g. 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.

#### **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.

#### **F. WASTE MATERIAL AND FLUIDS**

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

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

**JAM 031716**

### **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.

##### **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).

### **B. ELECTRIC LINES**

#### **STANDARD STIPULATIONS FOR OVERHEAD ELECTRIC DISTRIBUTION LINES**

A copy of the grant and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.
4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.
5. Power lines shall be constructed and designed in accordance to standards outlined in "Suggested Practices for Avian Protection on Power lines: The State of the Art in 2006" Edison Electric Institute, APLIC, and the California Energy Commission 2006 . The holder shall assume the burden and expense of proving that pole designs not shown in the above publication deter raptor perching, roosting, and nesting. Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

Raptor deterrence will consist of but not limited to the following: triangle perch discouragers shall be placed on each side of the cross arms and a nonconductive perching deterrence shall be placed on all vertical poles that extend past the cross arms.

6. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

7. The BLM serial number assigned to this authorization shall be posted in a permanent, conspicuous manner where the power line crosses roads and at all serviced facilities. Numbers will be at least two inches high and will be affixed to the pole nearest the road crossing and at the facilities served.

8. Upon cancellation, relinquishment, or expiration of this grant, the holder shall comply with those abandonment procedures as prescribed by the Authorized Officer.

9. All surface structures (poles, lines, transformers, etc.) shall be removed within 180 days of abandonment, relinquishment, or termination of use of the serviced facility or facilities or within 180 days of abandonment, relinquishment, cancellation, or expiration of this grant, whichever comes first. This will not apply where the power line extends service to an active, adjoining facility or facilities.

10. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the Authorized Officer. Holder 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 will be made by the Authorized Officer to determine appropriate actions to prevent the loss of significant cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the Authorized Officer after consulting with the holder.

11. Special Stipulations:

- For reclamation remove poles, lines, transformer, etc. and dispose of properly. Fill in any holes from the poles removed.

## **IX. 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).

## **X. 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 4, for Gypsum 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:

Species	lb/acre
Alkali Sacaton ( <i>Sporobolus airoides</i> )	1.0
DWS□Four-wing saltbush ( <i>Atriplex canescens</i> )	5.0
DWS: DeWinged Seed	

\*Pounds of pure live seed:

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