

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7. Unit or CA Agreement Name and No.	
1b. Type of Well <input checked="" type="checkbox"/> Oil Well <input 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. Ross Draw 8 Fed 7H <38727>	
2. Name of Operator EOG Resources Inc. <7377>		9. API Well No. 30-015- 42264	
3a. Address P.O. Box 2267 Midland, Texas 79702		10. Field and Pool, or Exploratory Jennings; Bone Spring <97860>	
3b. Phone No. (include area code) 432-686-3689		11. Sec., T., R., M., or Blk. and Survey or Area Sec 8, T26S, R31E	
4. Location of Well (Report location clearly and in accordance with any State requirements)* At surface 333' FNL & 553' FWL, NWNW (D)  At proposed prod. zone 230' FSL & 620' FWL, SWSW (M)			
14. Distance in miles and direction from nearest town or post office* +/- 48 miles NW from Jal NM		12. County or Parish Eddy	13. State NM
15. Distance from proposed* location to nearest property or lease line, ft. 230' BHL, 330' Take Points (Also to nearest drg. unit line, if any)		16. No. of Acres in lease 2201.36	17. Spacing Unit dedicated to this well 160 acres
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 30' to 8H Quad Pad		19. Proposed Depth 8555 V - 13405 M	20. BLM/BIA Bond No. on file NM 2308
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3278' GL		22. Approximate date work will start* 05/01/14	23. Estimated duration 30 days

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

25. Signature 	Name (Printed/Typed) Stan Wagner	Date 11/11/2013
Title Regulatory Analyst		
Approved by (Signautre) /S/ STEPHEN J. CAFFEY	Name (Printed/Typed)	Date MAR 21 2014
Title FIELD MANAGER	Office CARLSBAD FIELD OFFICE	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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

(Continued on page 2)

Carlsbad Controlled Water Basin

Approval Subject to General Requirements  
& Special Stipulations Attached

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

## OPERATOR CERTIFICATION

**Ross Draw 8 Fed #7H**

I 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 that presently 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 18<sup>th</sup> day of November, 2013.

Name: Roger Motley

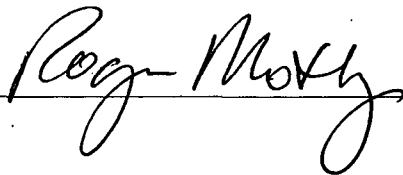
Position: Sr. Lease Operations ROW Representative

Address: P.O. Box 2267, Midland, TX 79705

Telephone: (432) 686-3642

Email: roger\_motley@eogresources.com

Signed

A handwritten signature in cursive script, reading "Roger Motley", is written over a horizontal line.

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

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

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

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-015- <b>42264</b>	<sup>2</sup> Pool Code 97860	<sup>3</sup> Pool Name Jennings; Bone Spring, West
<sup>4</sup> Property Code 38727	<sup>5</sup> Property Name ROSS DRAW 8 FED	
<sup>7</sup> OGRID No. 7377	<sup>8</sup> Operator Name EOG RESOURCES, INC.	<sup>6</sup> Well Number #7H  <sup>9</sup> Elevation 3278'

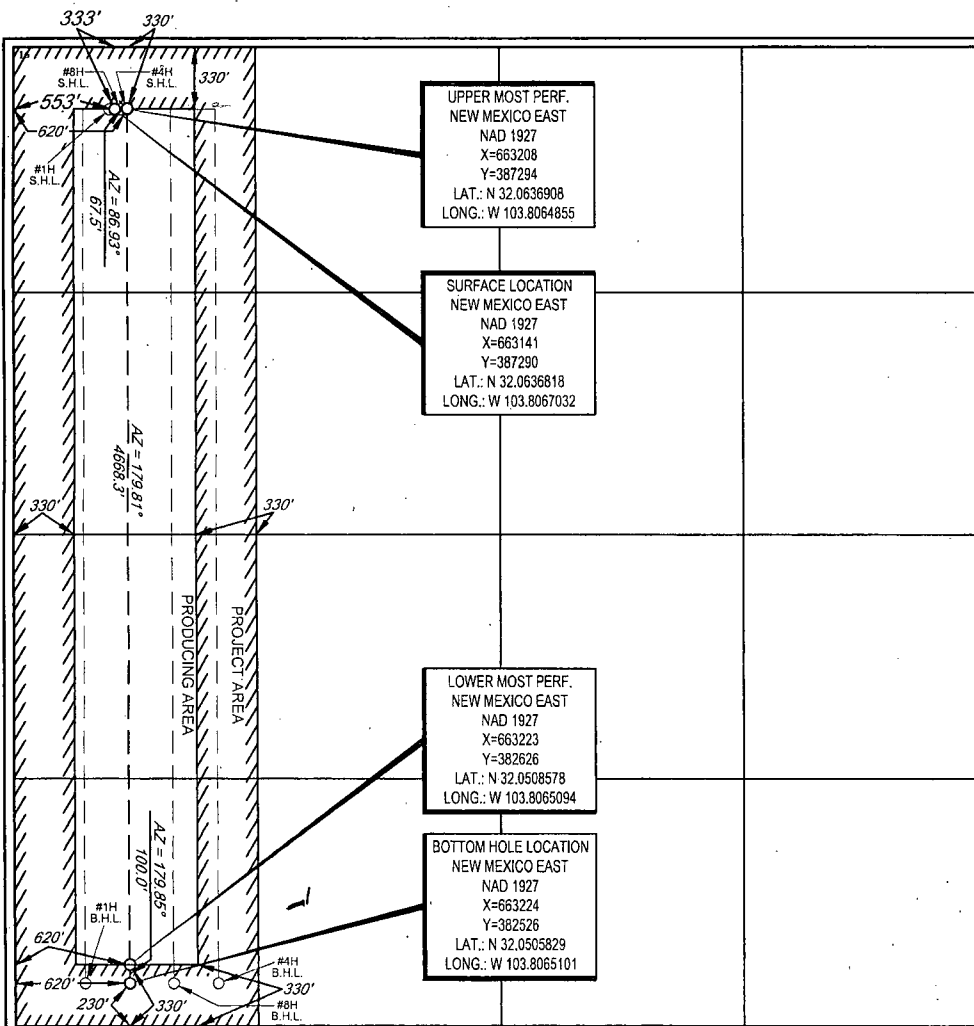
<sup>10</sup>Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	8	26-S	31-E	-	333'	NORTH	553'	WEST	EDDY

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
M	8	26-S	31-E	-	230'	SOUTH	620'	WEST	EDDY

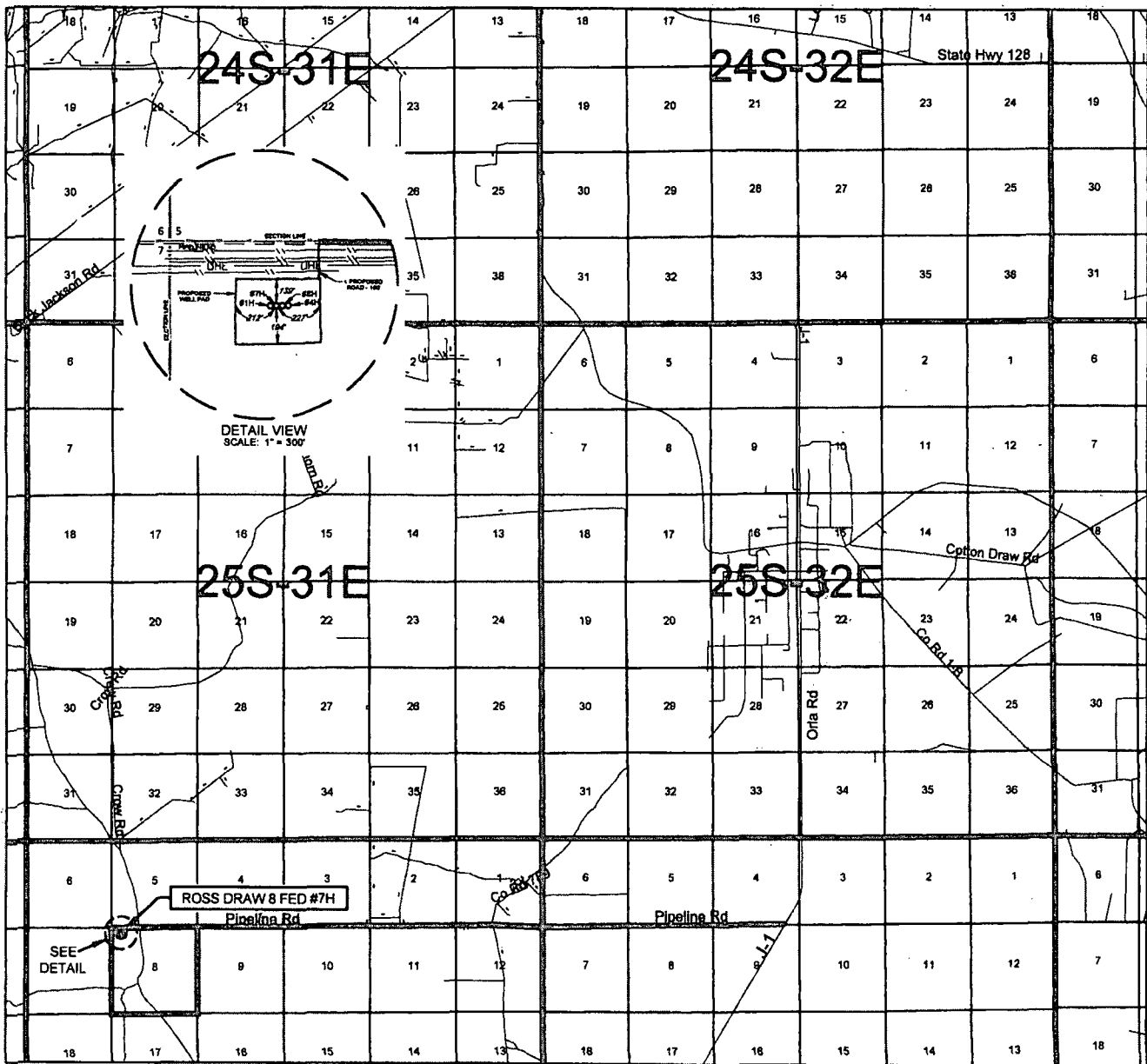
<sup>12</sup> Dedicated Acres 160	<sup>13</sup> Joint or Infill	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No. 13405 3-21
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No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.



<sup>17</sup> OPERATOR CERTIFICATION	
I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.	
Signature <i>Stan Wagner</i>	Date 11/5/13
Printed Name Stan Wagner	
E-mail Address	
<sup>18</sup> SURVEYOR CERTIFICATION	
I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true to the best of my belief.	
Date of Survey 9/5/2013	Signature and Seal of Professional Surveyor <i>Michael Brown</i>
Certificate Number 18329	

# EXHIBIT 2 VICINITY MAP



— = Existing Road  
— = Access Route

LEASE NAME & WELL NO.: ROSS DRAW 8 FED #7H

SECTION 8 TWP 26-S RGE 31-E SURVEY N.M.P.M.  
COUNTY EDDY STATE NM  
DESCRIPTION 333' FNL & 553' FWL

DISTANCE & DIRECTION FROM INT. OF NM-18 N & NM-128,  
GO WEST ON NM-128 W ±30.0 MILES, THENCE SOUTH (LEFT) ON CR.1/  
J-1/ORLA RD. ±10.5 MILES, THENCE WEST (RIGHT) ON PIPELINE RD.  
±7.8 MILES TO A POINT ±160 FEET NORTH OF THE LOCATION.

THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY, AND DATA PROVIDED BY EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREON ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE OF THE NORTH AMERICAN DATUM 1927, U.S. SURVEY FEET.

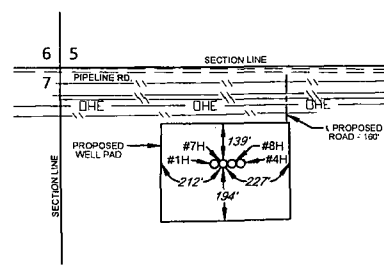
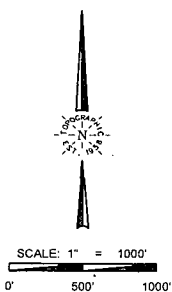
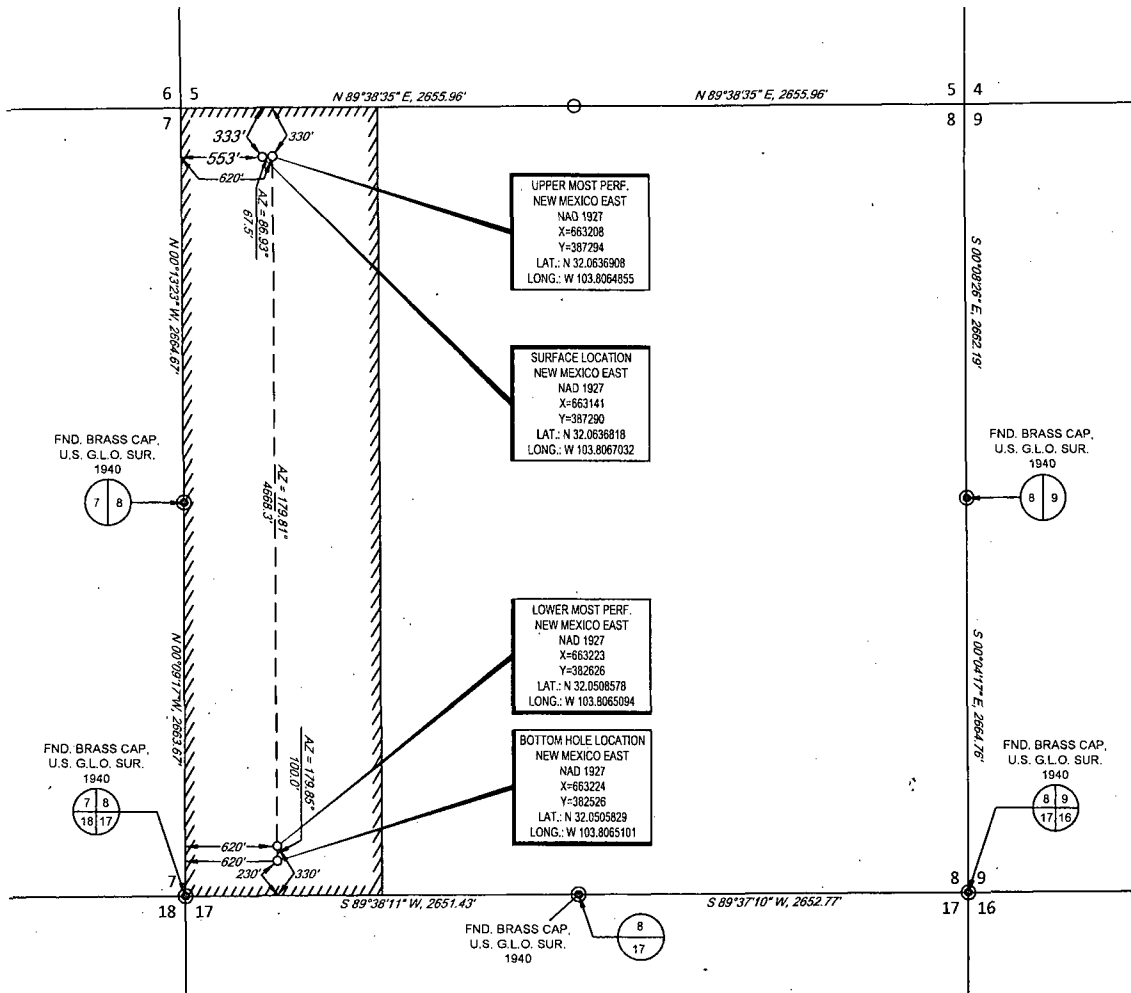


**TOPOGRAPHIC**  
LOYALTY INNOVATION LEGACY

1400 EVERMAN PARKWAY, Ste. 197 • FT. WORTH, TEXAS 76140  
TELEPHONE: (817) 744-7512 • FAX (817) 744-7548  
2803 NORTH BIG SPRING • MIDLAND, TEXAS 79705  
TELEPHONE: (432) 882-1653 OR (800) 767-1653 • FAX (432) 682-1743  
WWW.TOPOGRAPHIC.COM

**EXHIBIT 2A**

SECTION 8, TOWNSHIP 26 SOUTH, RANGE 31 EAST, N.M.P.M.  
EDDY COUNTY, NEW MEXICO



DETAIL VIEW  
SCALE: 1" = 500'

LEASE NAME & WELL NO.: ROSS DRAW 8 FED #7H

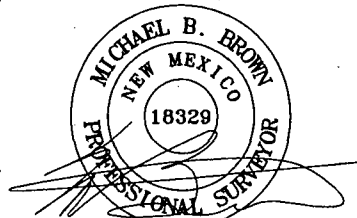
SECTION 8 TWP 26-S RGE 31-E SURVEY N.M.P.M.  
COUNTY EDDY STATE NM  
DESCRIPTION 333' FNL & 553' FWL

DISTANCE & DIRECTION FROM INT. OF NM-128 N & NM-128,  
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THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.

ORIGINAL DOCUMENT SIZE: 8.5" X 14"



Michael Blake Brown, P.S. No. 18329  
DECEMBER 5, 2013

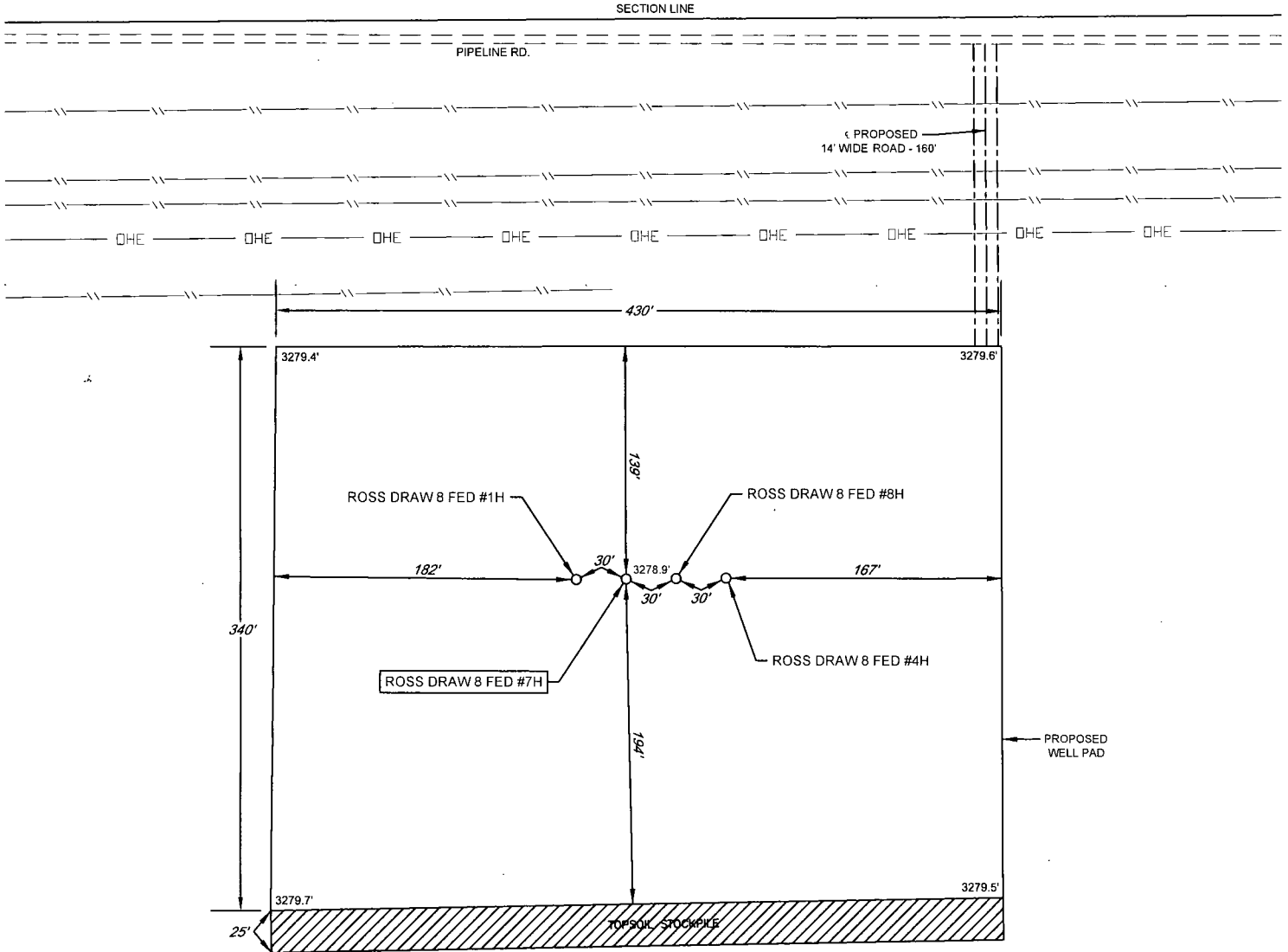
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# EXHIBIT 2B

SECTION 8, TOWNSHIP 26 SOUTH, RANGE 31 EAST, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

DETAIL VIEW  
SCALE: 1" = 100'



## LEGEND

- ROAD WAY
- SECTION LINE
- EXISTING PIPELINE
- FENCE LINE

LEASE NAME & WELL NO.: ROSS DRAW 8 FED #7H  
#7H LATITUDE N 32.0636818 #7H LONGITUDE W 103.8067032



SCALE: NTS

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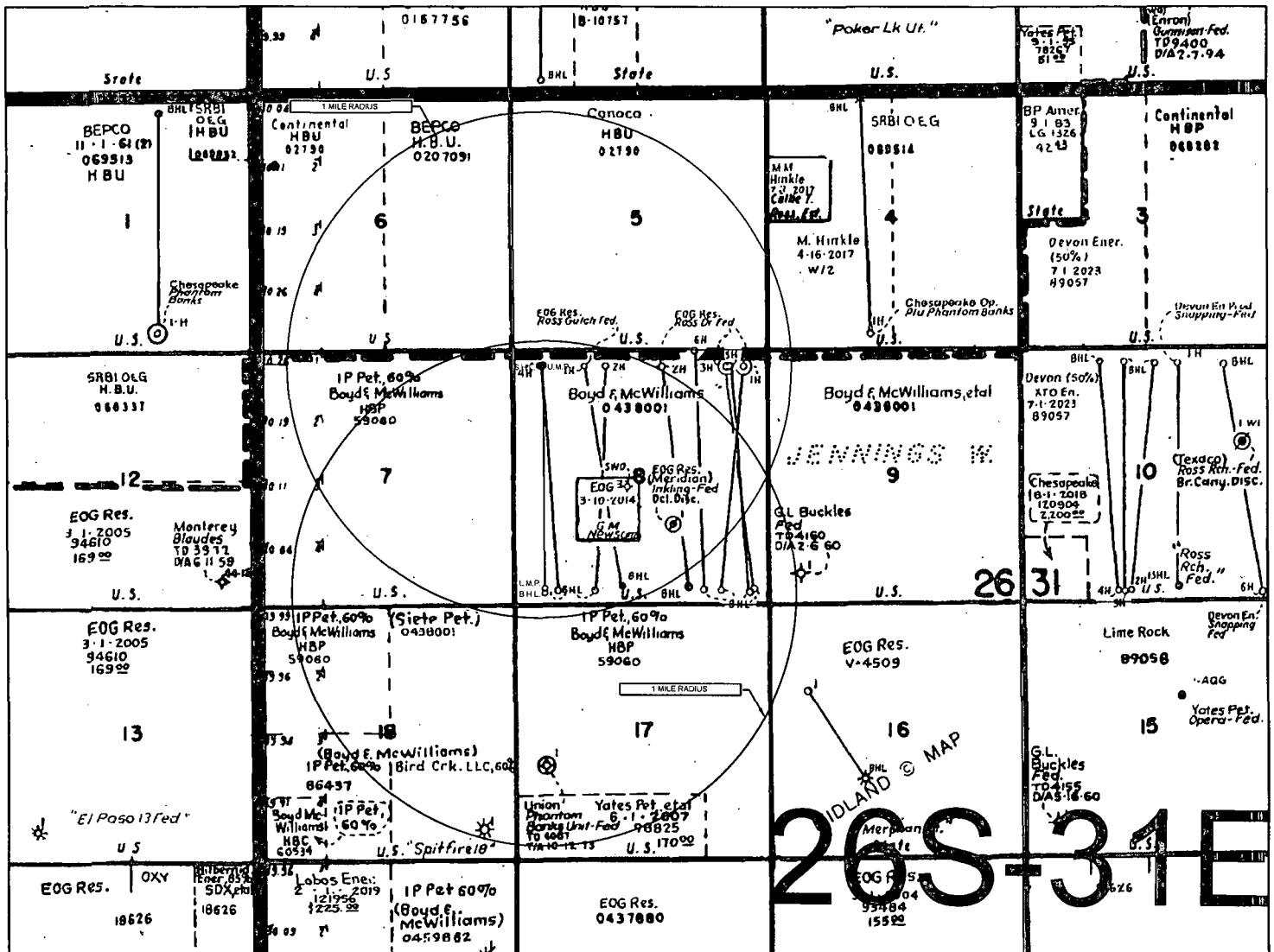


**TOPOGRAPHIC**  
LOYALTY. INNOVATION. LEGACY

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ORIGINAL DOCUMENT SIZE: 8.5" X 11"

SECTION 8, TOWNSHIP 26 SOUTH, RANGE 31 EAST, N.M.P.M.  
EDDY COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: ROSS DRAW 8 FED #7H  
#7H LATITUDE N 32.0636818 #7H LONGITUDE W 103.8067032

### LEGEND

== == == == ROAD WAY  
— — — — SECTION LINE  
--- --- EXISTING PIPELINE  
— X — FENCE LINE

SCALE: NTS

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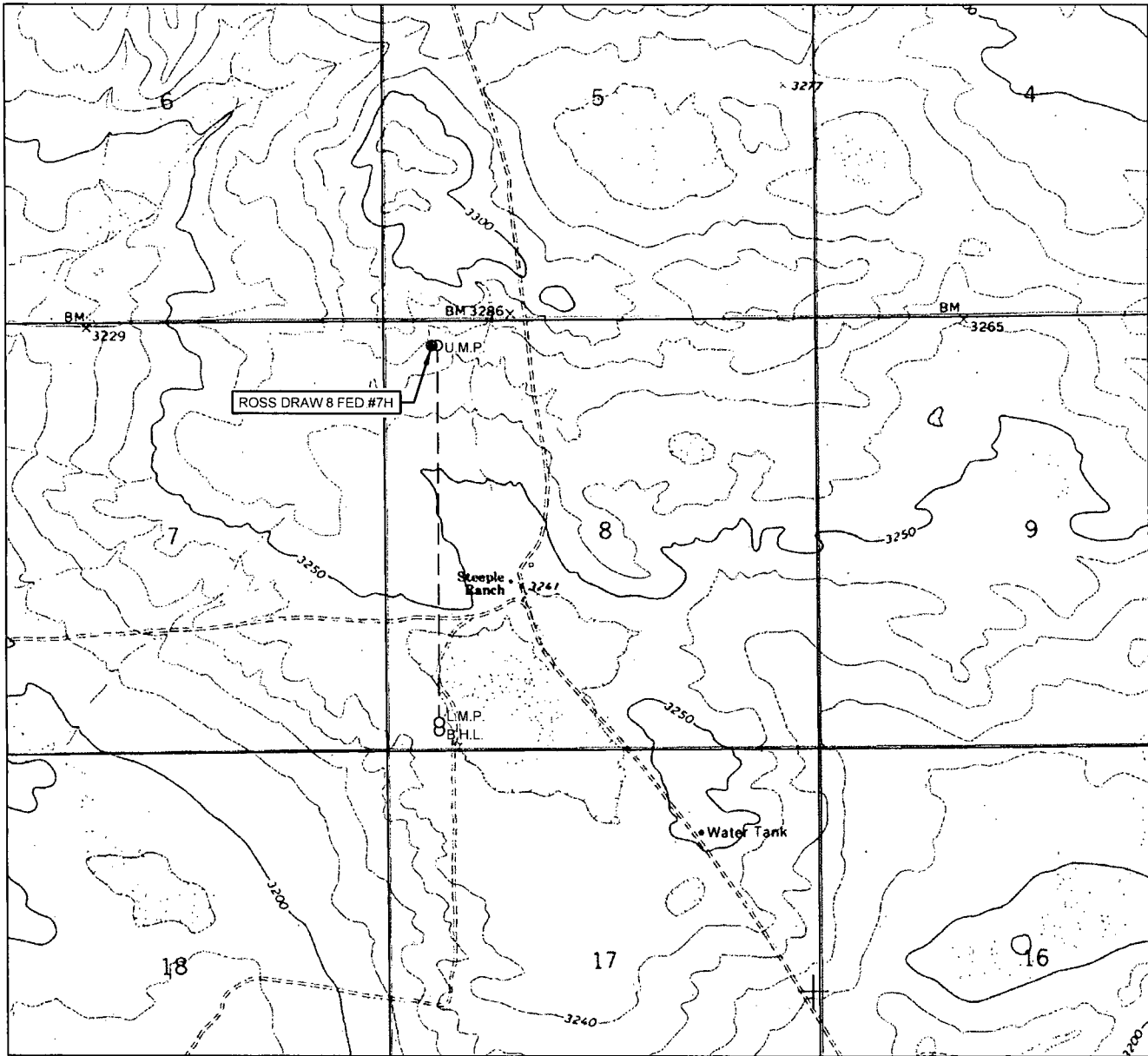
ORIGINAL DOCUMENT SIZE: 8.5" X 11"



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# LOCATION & ELEVATION VERIFICATION MAP



LEASE NAME & WELL NO.: ROSS DRAW 8 FED #7H

SECTION 8 TWP 26-S RGE 31-E SURVEY N.M.P.M.  
 COUNTY EDDY STATE NM ELEVATION 3278'  
 DESCRIPTION 333' FNL & 553' FWL

LATITUDE N 32.0636818 LONGITUDE W 103.8067032



SCALE: 1" = 2000'  
 0' 1000' 2000'

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 2903 NORTH BIG SPRING • MIDLAND, TEXAS 79705  
 TELEPHONE: (432) 682-1653 OR (800) 767-1653 • FAX (432) 682-1743  
 TEXAS FIRM REGISTRATION NO. 10042500  
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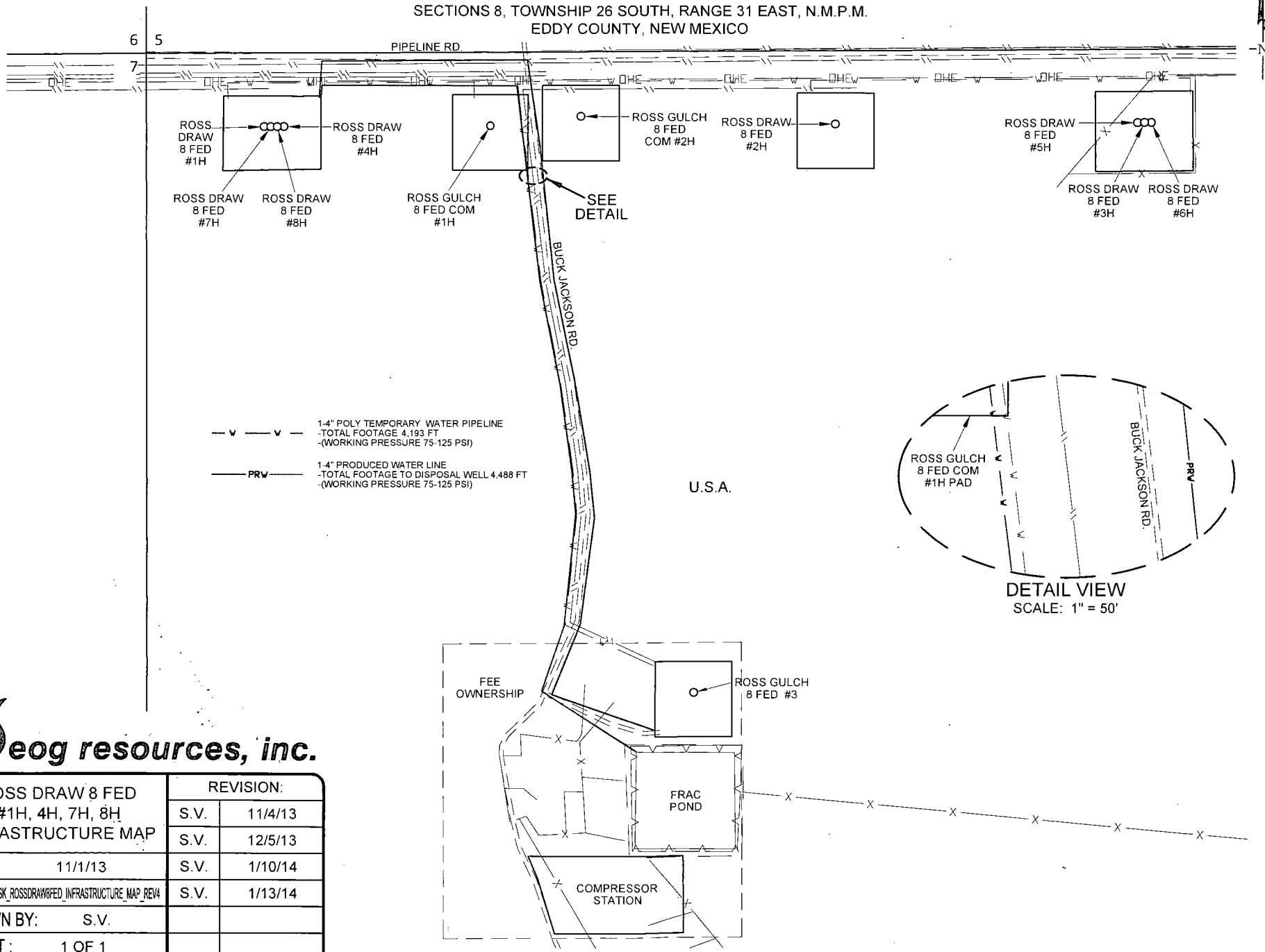


SCALE 1" = 600'

0' 300' 600'

# EXHIBIT 5 SKETCH

SECTIONS 8, TOWNSHIP 26 SOUTH, RANGE 31 EAST, N.M.P.M.  
EDDY COUNTY, NEW MEXICO



**Geog resources, inc.**

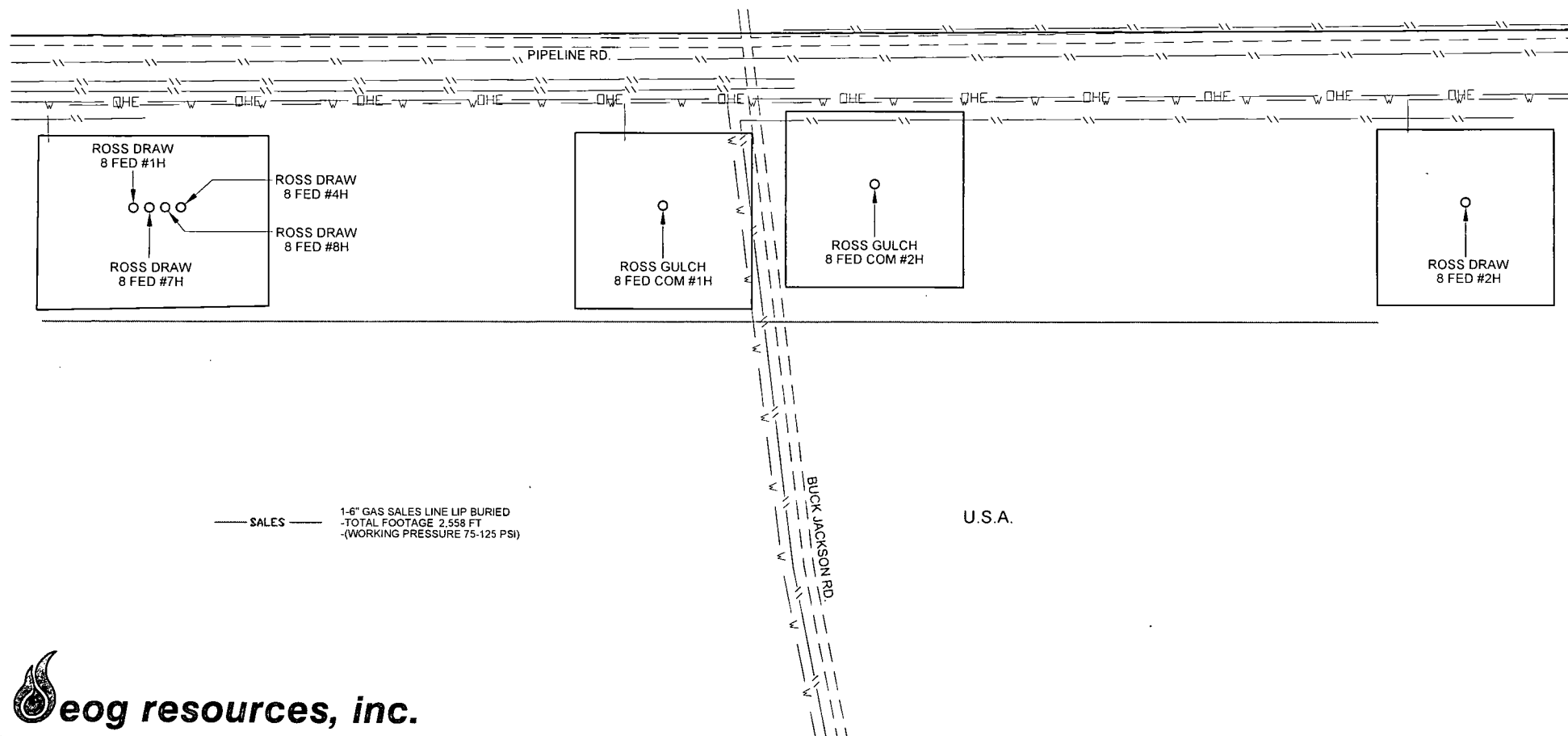
ROSS DRAW 8 FED #1H, 4H, 7H, 8H INFRASTRUCTURE MAP	REVISION:	
	S.V.	11/4/13
	S.V.	12/5/13
DATE: 11/1/13	S.V.	1/10/14
FILE: SK_ROSSDRAW8FED_INFRASTRUCTURE_MAP_REV4	S.V.	1/13/14
DRAWN BY: S.V.		
SHEET: 1 OF 1		

SCALE 1" = 300'

0' 150' 300'

# EXHIBIT 5A SKETCH

SECTIONS 8, TOWNSHIP 26 SOUTH, RANGE 31 EAST, N.M.P.M.  
EDDY COUNTY, NEW MEXICO



ROSS DRAW 8 FED #1H, 4H, 7H, 8H GAS SALES	REVISION:	
	INT	DATE
DATE: 01/13/14		
FILE: SK_ROSSDRAW8FED_GAS_SALES		
DRAWN BY: S.V.		
SHEET: 1 OF 1		

**EOG RESOURCES, INC.**  
**ROSS DRAW 8 FED NO. 7H**

**1. GEOLOGIC NAME OF SURFACE FORMATION:**

Permian

**2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:**

Rustler	1,365'
Top of Salt	1,750'
Base of Salt / Lamar	3,780'
Bell Canyon	4,020'
Cherry Canyon	4,930'
Brushy Canyon	6,260'
Bone Spring Lime	7,950'
TD	8,555'

**3. ESTIMATED DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS:**

Upper Permian Sands	0- 400'	Fresh Water
Brushy Canyon	6,260'	Oil
Bone Spring Lime	7,950'	Oil

No other Formations are expected to give up oil, gas or fresh water in measurable quantities. Surface fresh water sands will be protected by setting 13.375" casing at 1400' and circulating cement back to surface.

**4. CASING PROGRAM - NEW**

Hole Size	Interval	Csg OD	Weight	Grade	Conn	DF <sub>min</sub> Collapse	DF <sub>min</sub> Burst	DF <sub>min</sub> Tension
17.5"	0 - 1400'	13.375"	54.5#	J55	STC	1.125	1.25	1.60
12.25"	0-4000'	9.625"	40#	J55	LTC	1.125	1.25	1.60
8.75"	0'-13,405'	5.500"	17#	P110 or HCP110	LTC	1.125	1.25	1.60

**EOG RESOURCES, INC.  
ROSS DRAW 8 FED NO. 7H**

**Cementing Program:**

Depth	No. Sacks	Wt. lb/gal	Yld Ft <sup>3</sup> /ft	Mix Water Gal/sk	Slurry Description
1400'	600	13.5	1.73	9.13	Lead: Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% CaCl <sub>2</sub> + 0.25 lb/sk Cello-Flake (TOC @ surface)
	300.	14.8	1.34	6.34	Tail: Class C + 0.005 pps Static Free + 2% CaCl <sub>2</sub> + 0.25 pps CelloFlake + 0.005 gps FP-6L
4,000'	600	12.7	2.22	12.38	Lead: Class 'C' + 1.50% R-3 + 0.25 lb/sk Cello-Flake + 2.0% Sodium Metasilicate + 10% Salt + 0.005 lb/sk Static Free (TOC @ surface)
	200	14.8	1.32	6.26	Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
13,405'	300	10.8	3.67	21.4	Lead: 60:40:0 Class 'C' + 15.00 lb/sk BA-90 + 4.00% MPA-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 (TOC @ 3500')
	225	11.8	2.38	13.25	Middle: 50:50:10 Class 'H' + 0.80% FL-52 + 0.45% ASA-301 + 0.40% SMS + 2.00% Salt + 3.00 lb/sx LCM-1 + 0.20% R-21 + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free
	1300	14.2	1.28	5.75	Tail: 50:50:2 Class 'H' + 0.65% FL-52 + 0.20% CD-32 + 0.15% SMS + 2.00% Salt + 0.10% R-3 + 0.005 lb/sk Static Free

Note: Cement volumes based on bit size plus at least 25% excess in the open hole plus 10% excess in the cased-hole overlap section.

**5. MINIMUM SPECIFICATIONS FOR PRESSURE CONTROL:**

Variance is requested to use a co-flex line between the BOP and choke manifold (instead of using a 4" OD steel line).

The minimum blowout preventer equipment (BOPE) shown in Exhibit #1 will consist of a double ram-type (10,000 psi WP) preventer and an annular preventer (5000-psi WP). Both units will be hydraulically operated and the ram-type will be equipped with blind rams on bottom and drill pipe rams on top. All BOPE will be tested in accordance with Onshore Oil & Gas order No. 2.

3000 psi BOPE is adequate for this application. Due to the 3000 psi BOPE requirement no FIT tests are planned.

Before drilling out of the surface casing, the ram-type BOP and accessory equipment will be tested to 2000/ 250 psig and the annular preventer to 2000/ 250 psig. The surface casing will be tested to 1500 psi for 30 minutes.

**EOG RESOURCES, INC.**  
**ROSS DRAW 8 FED NO. 7H**

Before drilling out of the intermediate casing, the ram-type BOP and accessory equipment will be tested to 3000/ 250 psig and the annular preventer to 3000/ 250 psig. The intermediate casing will be tested to 2000 psi for 30 minutes.

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.

A hydraulically operated choke will be installed prior to drilling out of the intermediate casing shoe.

**6. CLOSED LOOP SYSTEM, OPERATION, MAINTENANCE & CLOSURE**

Operator will operate and maintain a closed loop drilling system as follows:

- (A) All drilling fluids used will be recycled, reused or reclaimed.
- (B) Excess or unused fluid shall be disposed of at division approved facilities.
- (C) No hazardous waste shall be knowingly discharged into the closed loop system.
- (D) If a leak develops in any of the closed loop tanks, all liquid shall be removed from the effected tank within 48 hours and any damage shall be repaired prior to putting the tank back into service.
- (E) A level measuring device shall be utilized to monitor catch tank levels, so that excess fluid can be removed appropriately, utilizing a re-circulating pump or vacuum truck.
- (F) Surface water run-on shall be bermed and/ or collected and disposed of at a division approved facility.
- (G) A skimmer system shall be utilized on catch tanks, circulating tanks and over-flow tanks as needed to collect oil.
- (H) Drill cuttings shall be disposed of in steel cuttings bins (catch tanks) on the drilling pad (behind the steel mud tanks). The bin and cuttings shall be hauled to a division approved facility by an approved transporter. Cuttings shall be removed, and the bin will be returned to the drilling site for re-use.
- (I) Remaining drilling fluids shall be hauled off by approved transports to a division approved disposal facility. Water produced during completion shall be put in storage tanks and disposed of at a division approved facility. Oil and condensate produced shall be put in storage tanks and sold or put in a sales pipeline.
- (J) Within 120 days after the drilling and completion of the well, the location area shall be reduced as determined by the operator to the minimum area necessary to safely and effective operate the well. The reclaimed location area shall be restored to the condition that existed prior to oil and gas operations.

**EOG RESOURCES, INC.**  
**ROSS DRAW 8 FED NO. 7H**

**7. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:**

The applicable depths and properties of the drilling fluid systems are as follows.

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0 – 1400'	Fresh Water Gel	8.6-8.8	28-34	N/c
1400' – 4,000'	Saturated Brine	10.0-10.2	28-34	N/c
4,000' – 8,085'	Fresh Water	8.4-8.6	28-34	N/c
8,085' – 13,405'	Cut Brine Water	9.0-9.5	28-34	N/c
Lateral				

An electronic pit volume totalizer (PVT) will be utilized on the circulating system, to monitor pit volume, flow rate, pump pressure and stroke rate.

**8. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT:**

- (A) A kelly cock will be kept in the drill string at all times.
- (B) A full opening drill pipe-stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.
- (C) H<sub>2</sub>S monitoring and detection equipment will be utilized from surface casing point to TD.

**9. LOGGING, TESTING AND CORING PROGRAM:**

*See COA* Open-hole logs are not planned for this well.

GR-CCL Will be run in cased hole during completions phase of operations.

**10. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:**

The estimated bottom-hole temperature (BHT) at TD is 146 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 3704 psig. No hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. No major loss circulation zones have been reported in offsetting wells.

**11. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:**

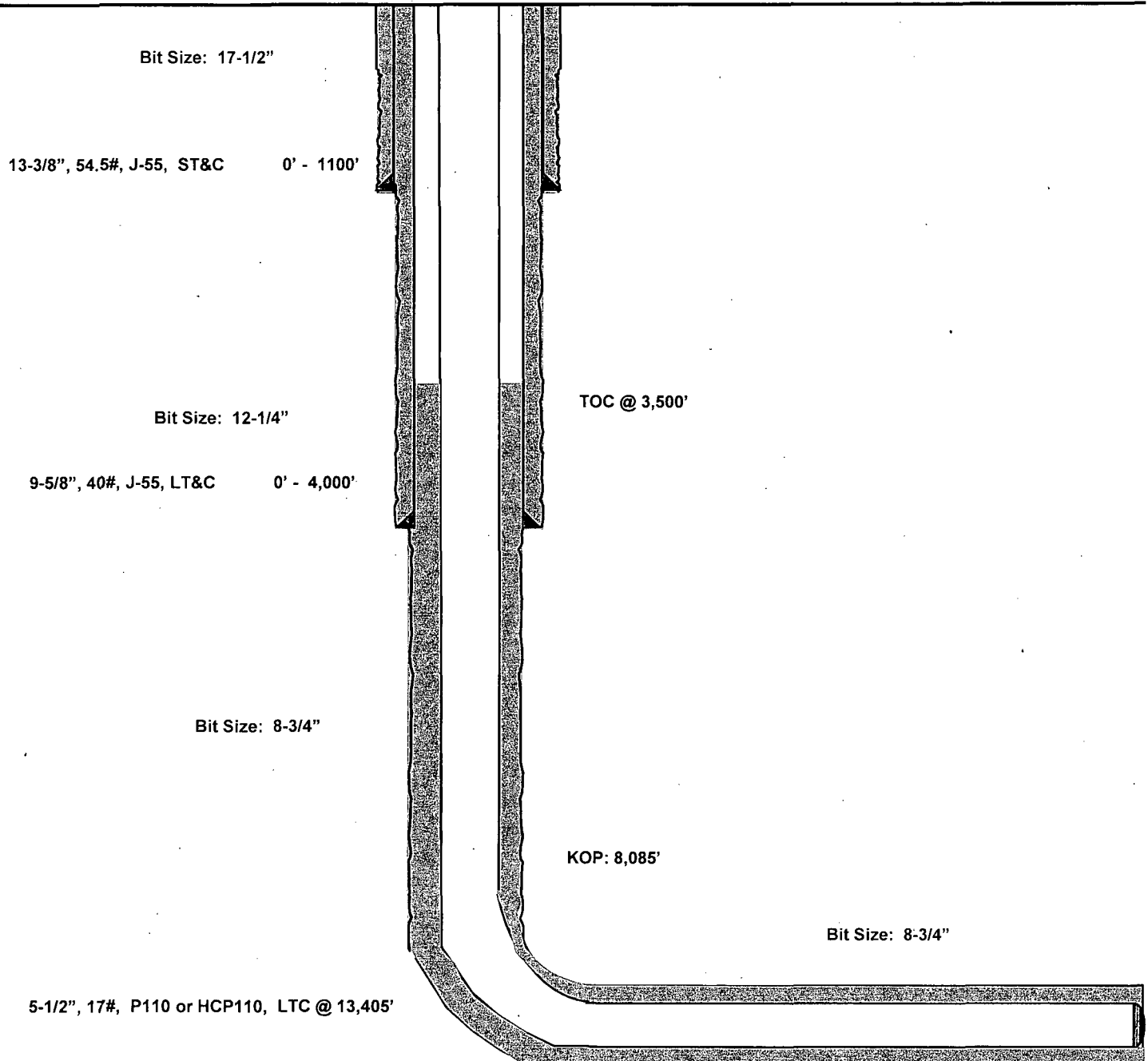
The drilling operation should be finished in approximately one month. If the well is productive, an additional 60-90 days will be required for completion and testing before a decision is made to install permanent facilities.

Ross Draw 8 Fed #7H  
Eddy County, New Mexico  
Proposed Wellbore

333' FNL  
553' FWL  
Section 8  
T-26-S, R-31-E

API: 30-015-\*\*\*\*\*

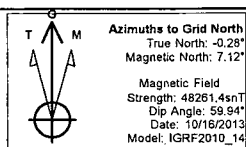
KB: 3,308'  
GL: 3,278'



Lateral:  
13,405' MD, 8,555' TVD  
Upper Most Perf:  
330' FNL & 620' FWL  
Lower Most Perf:  
330' FSL & 620' FWL  
BH Location: 230' FSL & 620' FWL  
Section 8  
T-26-S, R-31-E

**Project: Eddy County, NM (NAD27 NME)**  
**Site: Ross Draw 8 Fed**  
**Well: Ross Draw 8 Fed 7H**  
**Wellbore: Wellbore #1**  
**Plan: Plan#1 101613**  
**Rig: Cactus Rig No. 123**

PROJECT DETAILS: Eddy County, NM (NAD27 NME)	
Geodetic System:	US State Plane 1927 (Exact solution)
Datum:	NAD 1927 (NADCON CONUS)
Ellipsoid:	Clarke 1866
Zone:	New Mexico East 3001
System Datum:	Mean Sea Level
Location North:	Grid



**PHOENIX**  
TECHNOLOGY SERVICE

Ground Level: 3278.00

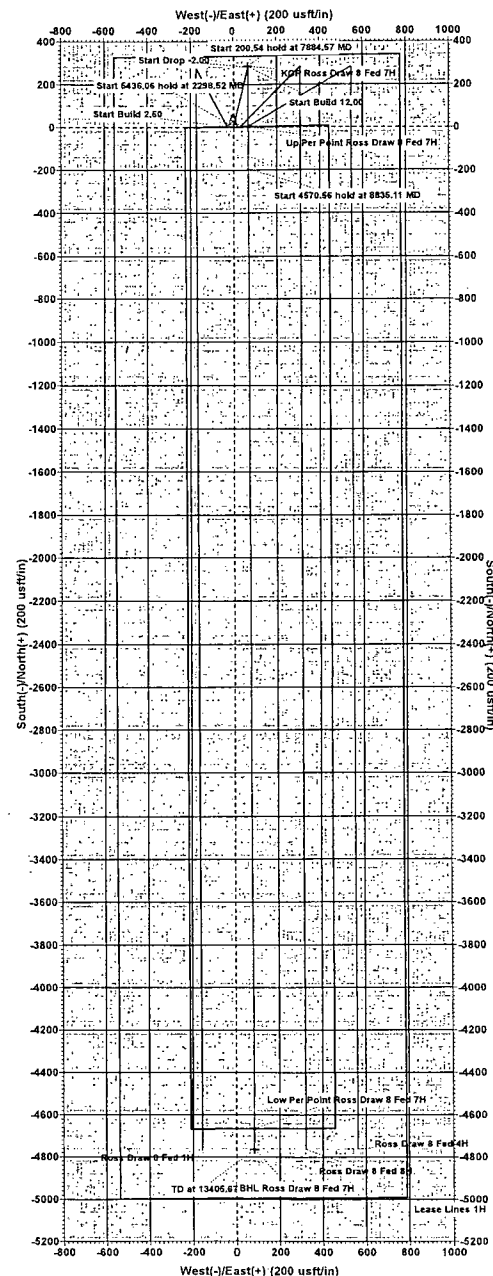
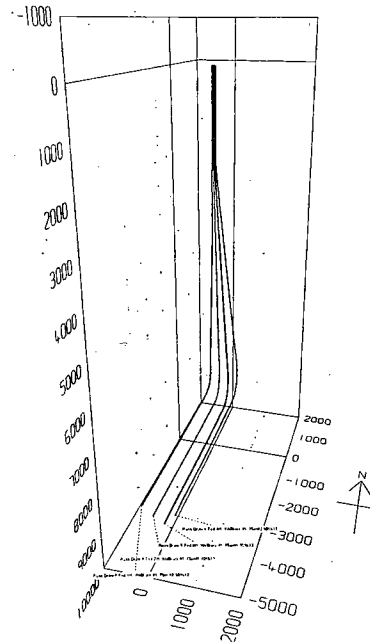
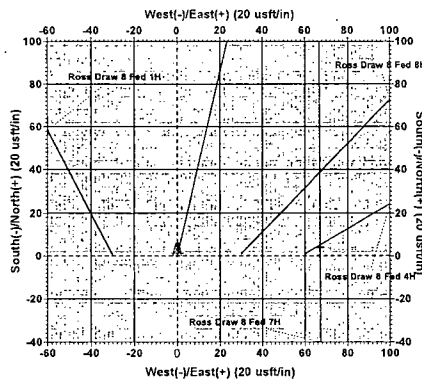
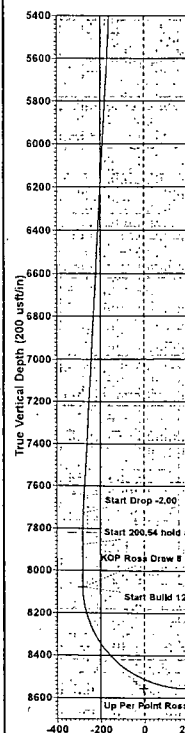
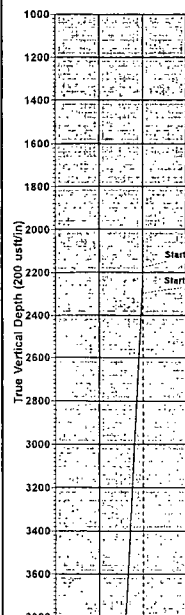
Northing	Easting	Latitude	Longitude
387290.00	663141.00	32° 3' 49.25286 N	103° 48' 24.12711 W

TVD	MD	Annotation
2178.52	2178.52	Start Build 2.50
2298.46	2298.52	Start 5436.06 hold at 2298.52 MD
7727.07	7734.57	Start Drop -2.00
7877.00	7884.57	Start 200.54 hold at 7884.57 MD
8077.54	8085.11	Start Build 12.00
8555.00	8835.11	Start 4570.56 hold at 8835.11 MD
8555.00	13405.67	TD at 13405.67

No formation data is available

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
KOP Ross Draw 8 Fed 7H	8077.54	284.00	66.00	387574.00	663207.00	Point
BHL Ross Draw 8 Fed 7H	8555.00	-4764.00	83.00	382526.00	663224.00	Point
Low Per Point Ross Draw 8 Fed 7H	8555.00	-4664.00	82.00	382626.00	663223.00	Point
Up Per Point Ross Draw 8 Fed 7H	8555.00	4.00	67.00	387294.00	663208.00	Point

MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22178.52	0.00	0.00	2178.52	0.00	0.00	0.00	0.00	0.00
32298.52	3.00	13.08	2298.46	3.06	0.71	2.50	13.08	-3.05
47734.57	3.00	13.08	7727.07	280.18	65.11	0.00	0.00	-279.00
57884.57	6.00	0.00	7877.00	284.00	66.00	2.00	180.00	-282.81
88045.11	0.00	0.00	8077.54	284.00	65.00	0.00	0.00	-81.81
78935.11	90.00	179.81	8555.00	-193.48	67.61	12.00	179.81	194.61
83405.67	90.00	179.81	8555.00	-4764.00	83.00	0.00	0.00	4764.72







## **EOG Resources**

**Eddy County, NM (NAD27 NME)**

**Ross Draw 8 Fed**

**Ross Draw 8 Fed 7H**

**Wellbore #1**

**Plan: Plan#1 101613**

## **Standard Survey Report**

**17 October, 2013**

<b>Company:</b>	EOG Resources	<b>Local Co-ordinate Reference:</b>	Well Ross Draw 8 Fed 7H
<b>Project:</b>	Eddy County, NM (NAD27 NME)	<b>TVD Reference:</b>	WELL @ 3308.00usft (Original Well Elev. +)
<b>Site:</b>	Ross Draw 8 Fed	<b>MD Reference:</b>	WELL @ 3308.00usft (Original Well Elev. +)
<b>Well:</b>	Ross Draw 8 Fed 7H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan#1 101613	<b>Database:</b>	Compass 5000 GCR DB

<b>Project:</b>	Eddy County, NM (NAD27 NME)		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

<b>Site:</b>	Ross Draw 8 Fed		
<b>Site Position:</b>		<b>Northing:</b>	387,290.50 usft
<b>From:</b>	Map	<b>Easting:</b>	663,109.60 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	32° 3' 49.25933 N
		<b>Longitude:</b>	103° 48' 24.49197 W
		<b>Grid Convergence:</b>	0.28 °

<b>Well:</b>	Ross Draw 8 Fed 7H		
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b> 387,290.00 usft
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b> 663,141.00 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>	usft
		<b>Latitude:</b>	32° 3' 49.25287 N
		<b>Longitude:</b>	103° 48' 24.12711 W
		<b>Ground Level:</b>	3,278.00 usft

<b>Wellbore:</b>	Wellbore #1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>
			(°)
	IGRF2010_14	10/16/13	7.40
			(°)
			59.94
			48,261

<b>Design:</b>	Plan#1 101613		
<b>Audit Notes:</b>			
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b> 0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			179.00

<b>Survey Tool Program</b>	<b>Date</b> 10/17/13		
<b>From</b>	<b>To</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>
(usft)	(usft)		
0.00	13,405.67	Plan#1 101613 (Wellbore #1)	MWD
			MWD - Standard

<b>Planned Survey</b>										
<b>Measured Depth</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical Depth</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Vertical Section</b>	<b>Dogleg Rate</b>	<b>Build Rate</b>	<b>Turn Rate</b>	
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	

<b>Company:</b>	EOG Resources	<b>Local/Co-ordinate Reference:</b>	Well-Ross Draw 8 Fed 7H
<b>Project:</b>	Eddy County, NM (NAD27 NME)	<b>TVD Reference:</b>	WELL @ 3308.00usft (Original Well Elev +)
<b>Site:</b>	Ross Draw 8 Fed	<b>MD Reference:</b>	WELL @ 3308.00usft (Original Well Elev +)
<b>Well:</b>	Ross Draw 8 Fed 7H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan#1-101613	<b>Database:</b>	Compass 5000 GCR DB

## 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)
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,178.52	0.00	0.00	2,178.52	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.50									
2,200.00	0.54	13.08	2,200.00	0.10	0.02	-0.10	2.50	2.50	0.00
2,298.52	3.00	13.08	2,298.46	3.06	0.71	-3.05	2.50	2.50	0.00
Start 5436.06 hold at 2298.52 MD									
2,300.00	3.00	13.08	2,299.94	3.13	0.73	-3.12	0.00	0.00	0.00
2,400.00	3.00	13.08	2,399.81	8.23	1.91	-8.20	0.00	0.00	0.00
2,500.00	3.00	13.08	2,499.67	13.33	3.10	-13.27	0.00	0.00	0.00
2,600.00	3.00	13.08	2,599.53	18.43	4.28	-18.35	0.00	0.00	0.00
2,700.00	3.00	13.08	2,699.40	23.53	5.47	-23.43	0.00	0.00	0.00
2,800.00	3.00	13.08	2,799.26	28.62	6.65	-28.50	0.00	0.00	0.00
2,900.00	3.00	13.08	2,899.12	33.72	7.84	-33.58	0.00	0.00	0.00
3,000.00	3.00	13.08	2,998.98	38.82	9.02	-38.66	0.00	0.00	0.00
3,100.00	3.00	13.08	3,098.85	43.92	10.21	-43.73	0.00	0.00	0.00
3,200.00	3.00	13.08	3,198.71	49.01	11.39	-48.81	0.00	0.00	0.00
3,300.00	3.00	13.08	3,298.57	54.11	12.58	-53.89	0.00	0.00	0.00
3,400.00	3.00	13.08	3,398.44	59.21	13.76	-58.96	0.00	0.00	0.00
3,500.00	3.00	13.08	3,498.30	64.31	14.94	-64.04	0.00	0.00	0.00
3,600.00	3.00	13.08	3,598.16	69.41	16.13	-69.11	0.00	0.00	0.00
3,700.00	3.00	13.08	3,698.02	74.50	17.31	-74.19	0.00	0.00	0.00
3,800.00	3.00	13.08	3,797.89	79.60	18.50	-79.27	0.00	0.00	0.00
3,900.00	3.00	13.08	3,897.75	84.70	19.68	-84.34	0.00	0.00	0.00
4,000.00	3.00	13.08	3,997.61	89.80	20.87	-89.42	0.00	0.00	0.00
4,100.00	3.00	13.08	4,097.48	94.89	22.05	-94.50	0.00	0.00	0.00
4,200.00	3.00	13.08	4,197.34	99.99	23.24	-99.57	0.00	0.00	0.00
4,300.00	3.00	13.08	4,297.20	105.09	24.42	-104.65	0.00	0.00	0.00
4,400.00	3.00	13.08	4,397.07	110.19	25.61	-109.72	0.00	0.00	0.00
4,500.00	3.00	13.08	4,496.93	115.29	26.79	-114.80	0.00	0.00	0.00
4,600.00	3.00	13.08	4,596.79	120.38	27.98	-119.88	0.00	0.00	0.00
4,700.00	3.00	13.08	4,696.65	125.48	29.16	-124.95	0.00	0.00	0.00
4,800.00	3.00	13.08	4,796.52	130.58	30.35	-130.03	0.00	0.00	0.00
4,900.00	3.00	13.08	4,896.38	135.68	31.53	-135.11	0.00	0.00	0.00

<b>Company:</b>	EOG Resources	<b>Local Co-ordinate Reference:</b>	Well Ross Draw 8 Fed 7H
<b>Project:</b>	Eddy County, NM (NAD27/NME)	<b>TVD Reference:</b>	WELL @ 3308.00usft (Original Well Elev +)
<b>Site:</b>	Ross Draw 8 Fed	<b>MD Reference:</b>	WELL @ 3308.00usft (Original Well Elev +)
<b>Well:</b>	Ross Draw 8 Fed 7H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Plan#1 101613	<b>Database:</b>	Compass 5000 GCR/DB

## 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)
5,000.00	3.00	13.08	4,996.24	140.77	32.72	-140.18	0.00	0.00	0.00
5,100.00	3.00	13.08	5,096.11	145.87	33.90	-145.26	0.00	0.00	0.00
5,200.00	3.00	13.08	5,195.97	150.97	35.08	-150.34	0.00	0.00	0.00
5,300.00	3.00	13.08	5,295.83	156.07	36.27	-155.41	0.00	0.00	0.00
5,400.00	3.00	13.08	5,395.69	161.17	37.45	-160.49	0.00	0.00	0.00
5,500.00	3.00	13.08	5,495.56	166.26	38.64	-165.56	0.00	0.00	0.00
5,600.00	3.00	13.08	5,595.42	171.36	39.82	-170.64	0.00	0.00	0.00
5,700.00	3.00	13.08	5,695.28	176.46	41.01	-175.72	0.00	0.00	0.00
5,800.00	3.00	13.08	5,795.15	181.56	42.19	-180.79	0.00	0.00	0.00
5,900.00	3.00	13.08	5,895.01	186.65	43.38	-185.87	0.00	0.00	0.00
6,000.00	3.00	13.08	5,994.87	191.75	44.56	-190.95	0.00	0.00	0.00
6,100.00	3.00	13.08	6,094.74	196.85	45.75	-196.02	0.00	0.00	0.00
6,200.00	3.00	13.08	6,194.60	201.95	46.93	-201.10	0.00	0.00	0.00
6,300.00	3.00	13.08	6,294.46	207.04	48.12	-206.18	0.00	0.00	0.00
6,400.00	3.00	13.08	6,394.32	212.14	49.30	-211.25	0.00	0.00	0.00
6,500.00	3.00	13.08	6,494.19	217.24	50.49	-216.33	0.00	0.00	0.00
6,600.00	3.00	13.08	6,594.05	222.34	51.67	-221.40	0.00	0.00	0.00
6,700.00	3.00	13.08	6,693.91	227.44	52.85	-226.48	0.00	0.00	0.00
6,800.00	3.00	13.08	6,793.78	232.53	54.04	-231.56	0.00	0.00	0.00
6,900.00	3.00	13.08	6,893.64	237.63	55.22	-236.63	0.00	0.00	0.00
7,000.00	3.00	13.08	6,993.50	242.73	56.41	-241.71	0.00	0.00	0.00
7,100.00	3.00	13.08	7,093.37	247.83	57.59	-246.79	0.00	0.00	0.00
7,200.00	3.00	13.08	7,193.23	252.92	58.78	-251.86	0.00	0.00	0.00
7,300.00	3.00	13.08	7,293.09	258.02	59.96	-256.94	0.00	0.00	0.00
7,400.00	3.00	13.08	7,392.95	263.12	61.15	-262.02	0.00	0.00	0.00
7,500.00	3.00	13.08	7,492.82	268.22	62.33	-267.09	0.00	0.00	0.00
7,600.00	3.00	13.08	7,592.68	273.32	63.52	-272.17	0.00	0.00	0.00
7,700.00	3.00	13.08	7,692.54	278.41	64.70	-277.24	0.00	0.00	0.00
7,734.57	3.00	13.08	7,727.07	280.18	65.11	-279.00	0.00	0.00	0.00
Start Drop -2.00									
7,800.00	1.69	13.08	7,792.44	282.78	65.72	-281.60	2.00	-2.00	0.00
7,884.57	0.00	0.00	7,877.00	284.00	66.00	-282.81	2.00	-2.00	-15.47
Start 200.54 hold at 7884.57 MD									
7,900.00	0.00	0.00	7,892.43	284.00	66.00	-282.81	0.00	0.00	0.00
8,000.00	0.00	0.00	7,992.43	284.00	66.00	-282.81	0.00	0.00	0.00
8,085.11	0.00	0.00	8,077.54	284.00	66.00	-282.81	0.00	0.00	0.00
Start Build 12.00									
8,100.00	1.79	179.81	8,092.42	283.77	66.00	-282.58	12.00	12.00	0.00
8,200.00	13.79	179.81	8,191.32	270.24	66.05	-269.05	12.00	12.00	0.00
8,300.00	25.79	179.81	8,285.25	236.45	66.16	-235.26	12.00	12.00	0.00
8,400.00	37.79	179.81	8,370.09	183.87	66.34	-182.69	12.00	12.00	0.00
8,500.00	49.79	179.81	8,442.15	114.80	66.57	-113.63	12.00	12.00	0.00
8,600.00	61.79	179.81	8,498.28	32.26	66.85	-31.09	12.00	12.00	0.00
8,700.00	73.79	179.81	8,536.01	-60.15	67.16	61.31	12.00	12.00	0.00

Company:	EOG Resources	Local Co-ordinate Reference:	Well Ross Draw 8 Fed 7H
Project:	Eddy County, NM (NAD27-NME)	TVD Reference:	WELL @ 3308.00usft (Original Well Elev +)
Site:	Ross Draw- 8 Fed	MD Reference:	WELL @ 3308.00usft (Original Well Elev +)
Well:	Ross Draw 8 Fed 7H	North Reference:	Grid:
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan#1 101613	Database:	Compass 5000 GCR DB

## 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)
8,800.00	85.79	179.81	8,553.71	-158.39	67.49	159.54	12.00	12.00	0.00
8,835.11	90.00	179.81	8,555.00	-193.46	67.61	194.61	12.00	12.00	0.00
Start 4570.56 hold at 8835.11 MD									
8,900.00	90.00	179.81	8,555.00	-258.35	67.83	259.50	0.00	0.00	0.00
9,000.00	90.00	179.81	8,555.00	-358.35	68.16	359.49	0.00	0.00	0.00
9,100.00	90.00	179.81	8,555.00	-458.35	68.50	459.48	0.00	0.00	0.00
9,200.00	90.00	179.81	8,555.00	-558.35	68.84	559.47	0.00	0.00	0.00
9,300.00	90.00	179.81	8,555.00	-658.35	69.17	659.46	0.00	0.00	0.00
9,400.00	90.00	179.81	8,555.00	-758.35	69.51	759.45	0.00	0.00	0.00
9,500.00	90.00	179.81	8,555.00	-858.35	69.85	859.44	0.00	0.00	0.00
9,600.00	90.00	179.81	8,555.00	-958.35	70.18	959.43	0.00	0.00	0.00
9,700.00	90.00	179.81	8,555.00	-1,058.35	70.52	1,059.42	0.00	0.00	0.00
9,800.00	90.00	179.81	8,555.00	-1,158.35	70.86	1,159.41	0.00	0.00	0.00
9,900.00	90.00	179.81	8,555.00	-1,258.35	71.19	1,259.40	0.00	0.00	0.00
10,000.00	90.00	179.81	8,555.00	-1,358.35	71.53	1,359.39	0.00	0.00	0.00
10,100.00	90.00	179.81	8,555.00	-1,458.35	71.87	1,459.38	0.00	0.00	0.00
10,200.00	90.00	179.81	8,555.00	-1,558.35	72.20	1,559.37	0.00	0.00	0.00
10,300.00	90.00	179.81	8,555.00	-1,658.35	72.54	1,659.36	0.00	0.00	0.00
10,400.00	90.00	179.81	8,555.00	-1,758.34	72.88	1,759.35	0.00	0.00	0.00
10,500.00	90.00	179.81	8,555.00	-1,858.34	73.21	1,859.34	0.00	0.00	0.00
10,600.00	90.00	179.81	8,555.00	-1,958.34	73.55	1,959.33	0.00	0.00	0.00
10,700.00	90.00	179.81	8,555.00	-2,058.34	73.89	2,059.32	0.00	0.00	0.00
10,800.00	90.00	179.81	8,555.00	-2,158.34	74.23	2,159.31	0.00	0.00	0.00
10,900.00	90.00	179.81	8,555.00	-2,258.34	74.56	2,259.30	0.00	0.00	0.00
11,000.00	90.00	179.81	8,555.00	-2,358.34	74.90	2,359.29	0.00	0.00	0.00
11,100.00	90.00	179.81	8,555.00	-2,458.34	75.24	2,459.28	0.00	0.00	0.00
11,200.00	90.00	179.81	8,555.00	-2,558.34	75.57	2,559.27	0.00	0.00	0.00
11,300.00	90.00	179.81	8,555.00	-2,658.34	75.91	2,659.26	0.00	0.00	0.00
11,400.00	90.00	179.81	8,555.00	-2,758.34	76.25	2,759.25	0.00	0.00	0.00
11,500.00	90.00	179.81	8,555.00	-2,858.34	76.58	2,859.24	0.00	0.00	0.00
11,600.00	90.00	179.81	8,555.00	-2,958.34	76.92	2,959.23	0.00	0.00	0.00
11,700.00	90.00	179.81	8,555.00	-3,058.34	77.26	3,059.22	0.00	0.00	0.00
11,800.00	90.00	179.81	8,555.00	-3,158.34	77.59	3,159.21	0.00	0.00	0.00
11,900.00	90.00	179.81	8,555.00	-3,258.34	77.93	3,259.20	0.00	0.00	0.00
12,000.00	90.00	179.81	8,555.00	-3,358.34	78.27	3,359.19	0.00	0.00	0.00
12,100.00	90.00	179.81	8,555.00	-3,458.34	78.60	3,459.18	0.00	0.00	0.00
12,200.00	90.00	179.81	8,555.00	-3,558.33	78.94	3,559.17	0.00	0.00	0.00
12,300.00	90.00	179.81	8,555.00	-3,658.33	79.28	3,659.16	0.00	0.00	0.00
12,400.00	90.00	179.81	8,555.00	-3,758.33	79.61	3,759.15	0.00	0.00	0.00
12,500.00	90.00	179.81	8,555.00	-3,858.33	79.95	3,859.14	0.00	0.00	0.00
12,600.00	90.00	179.81	8,555.00	-3,958.33	80.29	3,959.13	0.00	0.00	0.00
12,700.00	90.00	179.81	8,555.00	-4,058.33	80.62	4,059.12	0.00	0.00	0.00
12,800.00	90.00	179.81	8,555.00	-4,158.33	80.96	4,159.11	0.00	0.00	0.00

Company:	EOG Resources	Local Co-ordinate Reference:	Well: Ross Draw 8 Fed 7H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	WELL @ 3308.00usft (Original Well Elev +)
Site:	Ross Draw, 8 Fed	MD Reference:	WELL @ 3308.00usft (Original Well Elev +)
Well:	Ross Draw: 8 Fed 7H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Plan#1 101613	Database:	Compass 5000 GCR DB

## 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)
12,900.00	90.00	179.81	8,555.00	-4,258.33	81.30	4,259.10	0.00	0.00	0.00
13,000.00	90.00	179.81	8,555.00	-4,358.33	81.63	4,359.09	0.00	0.00	0.00
13,100.00	90.00	179.81	8,555.00	-4,458.33	81.97	4,459.08	0.00	0.00	0.00
13,200.00	90.00	179.81	8,555.00	-4,558.33	82.31	4,559.07	0.00	0.00	0.00
13,300.00	90.00	179.81	8,555.00	-4,658.33	82.64	4,659.06	0.00	0.00	0.00
13,400.00	90.00	179.81	8,555.00	-4,758.33	82.98	4,759.05	0.00	0.00	0.00
13,405.67	90.00	179.81	8,555.00	-4,764.00	83.00	4,764.72	0.00	0.00	0.00
TD at 13405.67									

## Design Targets

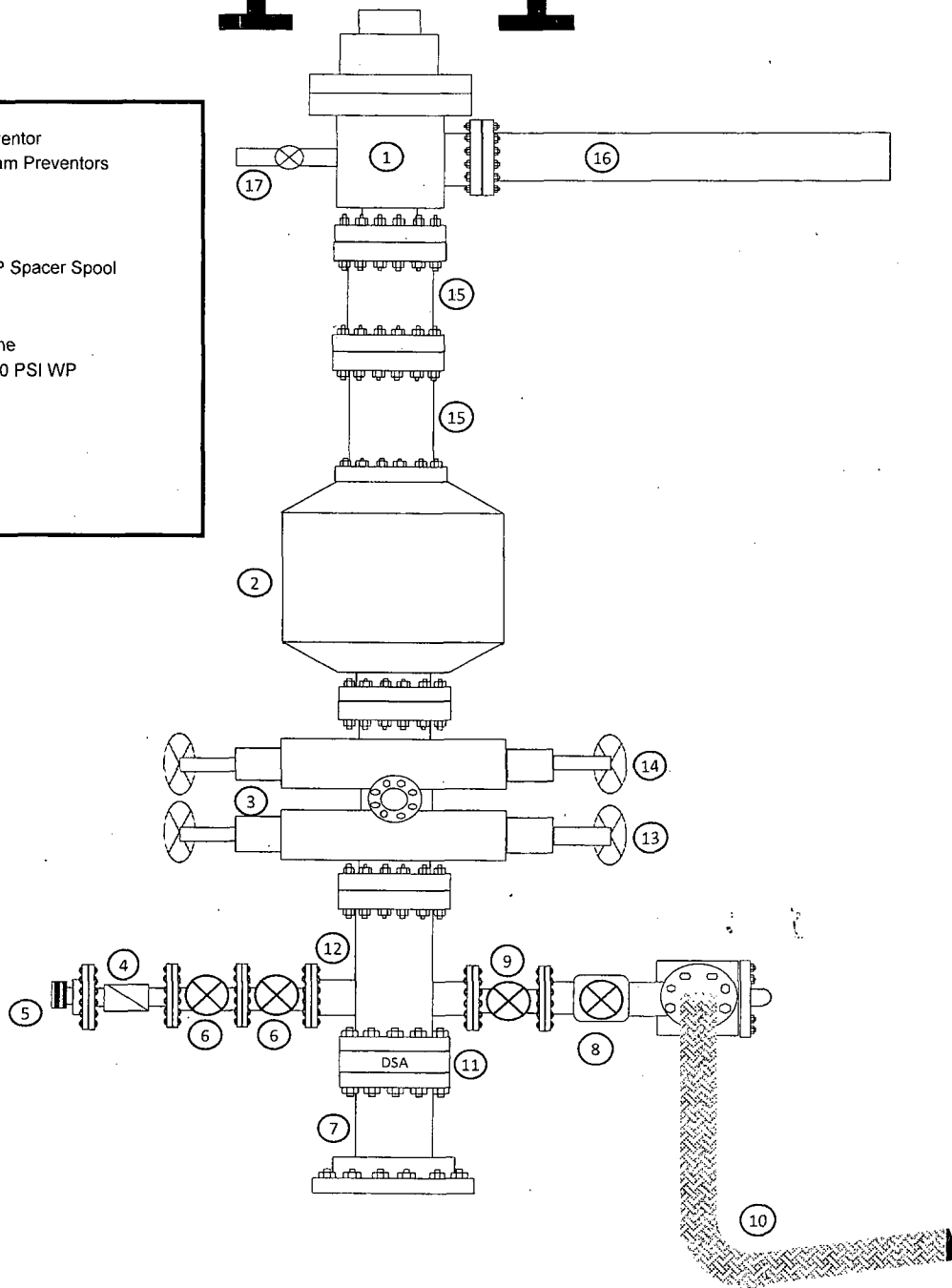
Target Name	hit/miss target Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
KOP Ross Draw 8 Fed 7	- plan hits target center - Point	0.00	0.01	8,077.54	284.00	66.00	387,574.00	663,207.00	32° 3' 52.06020 N	103° 48' 23.34404 W
BHL Ross Draw 8 Fed 7	- plan hits target center - Point	0.00	0.00	8,555.00	-4,764.00	83.00	382,526.00	663,224.00	32° 3' 2.10323 N	103° 48' 23.43278 W
Low Per Point Ross Draw	- plan misses target center by 0.66usft at 13305.67usft MD (8555.00 TVD, -4664.00 N, 82.66 E) - Point	0.00	0.00	8,555.00	-4,664.00	82.00	382,626.00	663,223.00	32° 3' 3.09290 N	103° 48' 23.43873 W
Up Per Point Ross Draw	- plan misses target center by 39.22usft at 8647.69usft MD (8518.69 TVD, -10.82 N, 66.99 E) - Point	0.00	0.00	8,555.00	4.00	67.00	387,294.00	663,208.00	32° 3' 49.28921 N	103° 48' 23.34830 W

## Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
2179	2179	0	0	Start Build 2.50
2299	2298	3	1	Start 5436.06 hold at 2298.52 MD
7735	7727	280	65	Start Drop -2.00
7885	7877	284	66	Start 200.54 hold at 7884.57 MD
8085	8078	284	66	Start Build 12.00
8835	8555	-193	68	Start 4570.56 hold at 8835.11 MD
13,406	8555	-4764	83	TD at 13405.67

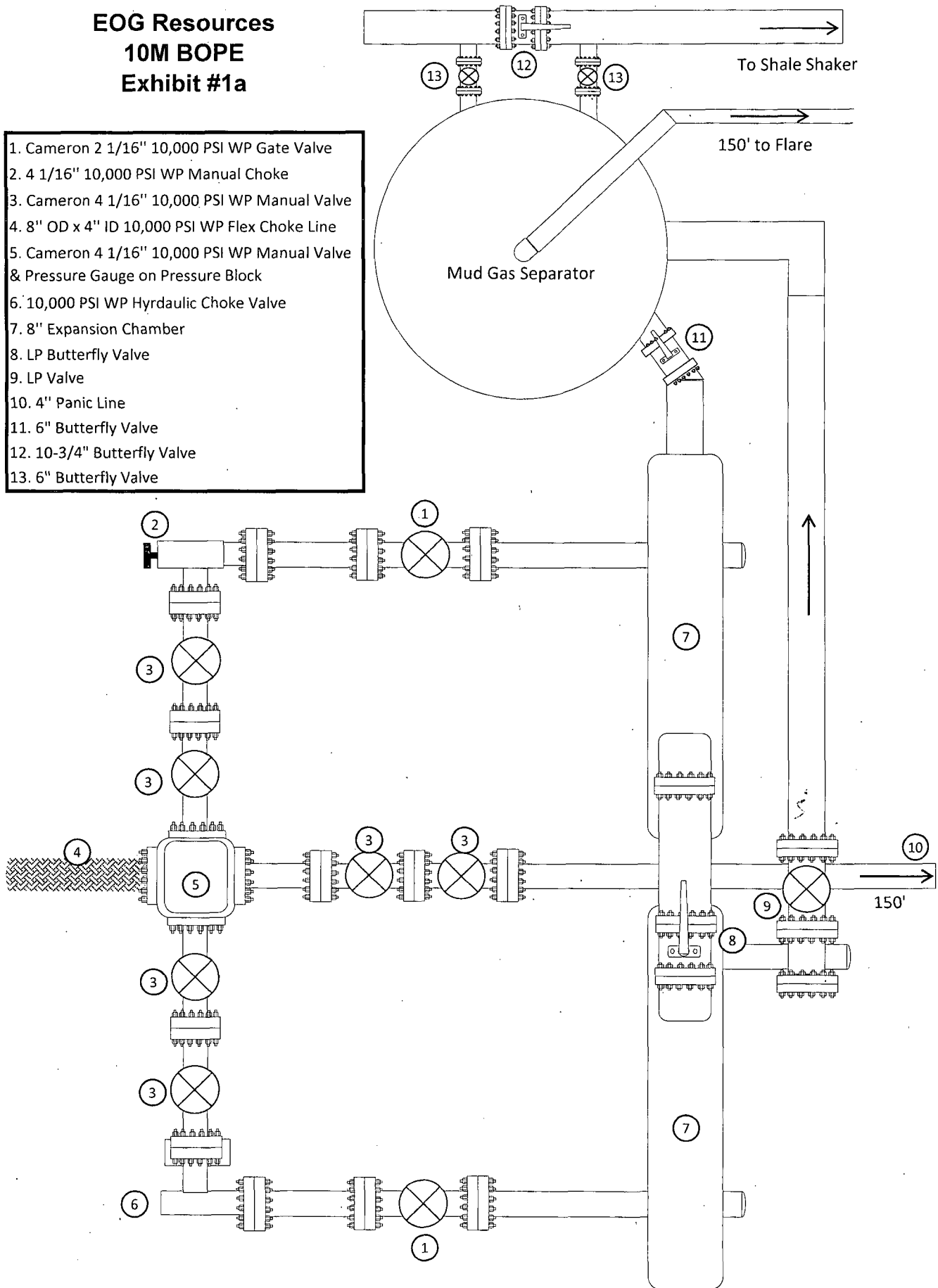
Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

## Rig Floor



**EOG Resources  
10M BOPE  
Exhibit #1a**

1. Cameron 2 1/16" 10,000 PSI WP Gate Valve
2. 4 1/16" 10,000 PSI WP Manual Choke
3. Cameron 4 1/16" 10,000 PSI WP Manual Valve
4. 8" OD x 4" ID 10,000 PSI WP Flex Choke Line
5. Cameron 4 1/16" 10,000 PSI WP Manual Valve & Pressure Gauge on Pressure Block
6. 10,000 PSI WP Hydraulic Choke Valve
7. 8" Expansion Chamber
8. LP Butterfly Valve
9. LP Valve
10. 4" Panic Line
11. 6" Butterfly Valve
12. 10-3/4" Butterfly Valve
13. 6" Butterfly Valve





**Manufacturer: Midwest Hose & Specialty**

**Serial Number: SN#90067**

**Length: 35'**

**Size: OD = 8" ID = 4"**

**Ends: Flanges Size: 4-1/16"**

**WP Rating: 10,000 psi    Anchors required by manufacturer: No**

**MIDWEST**  
**HOSE AND SPECIALTY INC.**

<b>INTERNAL HYDROSTATIC TEST REPORT</b>			
<b>Customer:</b> CACTUS		<b>P.O. Number:</b> RIG #123 Asset # M10761	
<b>HOSE SPECIFICATIONS</b>			
<b>Type:</b> CHOKER LINE		<b>Length:</b> 35'	
<b>I.D.</b> 4" INCHES		<b>O.D.</b> 8" INCHES	
<b>WORKING PRESSURE</b>  10,000 PSI	<b>TEST PRESSURE</b>  15,000 PSI	<b>BURST PRESSURE</b>  PSI	
<b>COUPLINGS</b>			
<b>Type of End Fitting</b> 4 1/16 10K FLANGE			
<b>Type of Coupling:</b> SWEDGED		<b>MANUFACTURED BY</b> MIDWEST HOSE & SPECIALTY	
<b>PROCEDURE</b>			
<i>Hose assembly pressure tested with water at ambient temperature.</i>			
<b>TIME HELD AT TEST PRESSURE</b>  1 MIN.		<b>ACTUAL BURST PRESSURE:</b>  0 PSI	
<b>COMMENTS:</b> SN#90067 M10761 Hose is covered with stainless steel armour cover and wrapped with fire resistant vermiculite coated fiberglass insulation rated for 1500 degrees complete with lifting eyes			
<b>Date:</b> 6/6/2011	<b>Tested By:</b> BOBBY FINK		<b>Approved:</b> MENDI JACKSON



Midwest Hose  
& Specialty, Inc.

## Internal Hydrostatic Test Graph

Replaces Form 10-10-10

Customer: CACTUS

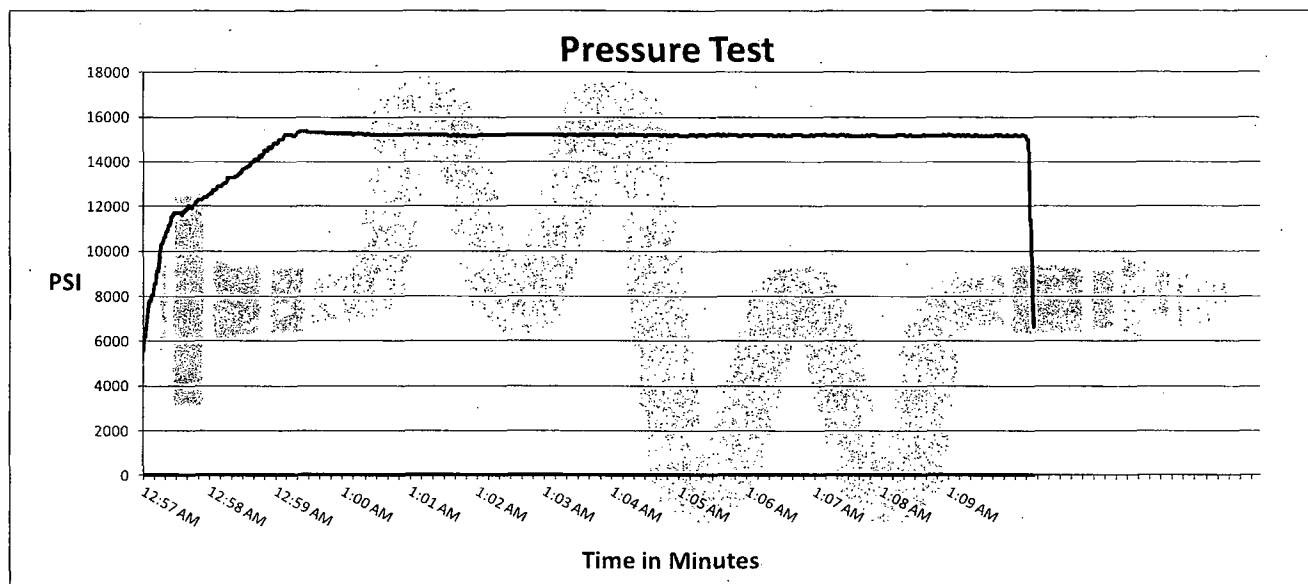
SALES ORDER# 90067

### Hose Specifications

<u>Hose Type</u>	<u>Length</u>
C & K	35'
<u>I.D.</u>	<u>O.D.</u>
4"	8"
<u>Working Pressure</u>	<u>Burst Pressure</u>
10000 PSI	Standard Safety Multiplier Applies

### Verification

<u>Type of Fitting</u>	<u>Coupling Method</u>
4 1/16 10K	Swage
<u>Die Size</u>	<u>Final O.D.</u>
6.62"	6.68"
<u>Hose Serial #</u>	<u>Hose Assembly Serial #</u>
	90067



Test Pressure  
15000 PSI

Time Held at Test Pressure  
11 1/4 Minutes

Actual Burst Pressure

Peak Pressure  
15439 PSI

**Comments:** Hose assembly pressure tested with water at ambient temperature.

**Tested By:** Bobby Fink

**Approved By:** Mendi Jackson

*Bobby Fink*

*Mendi Jackson*

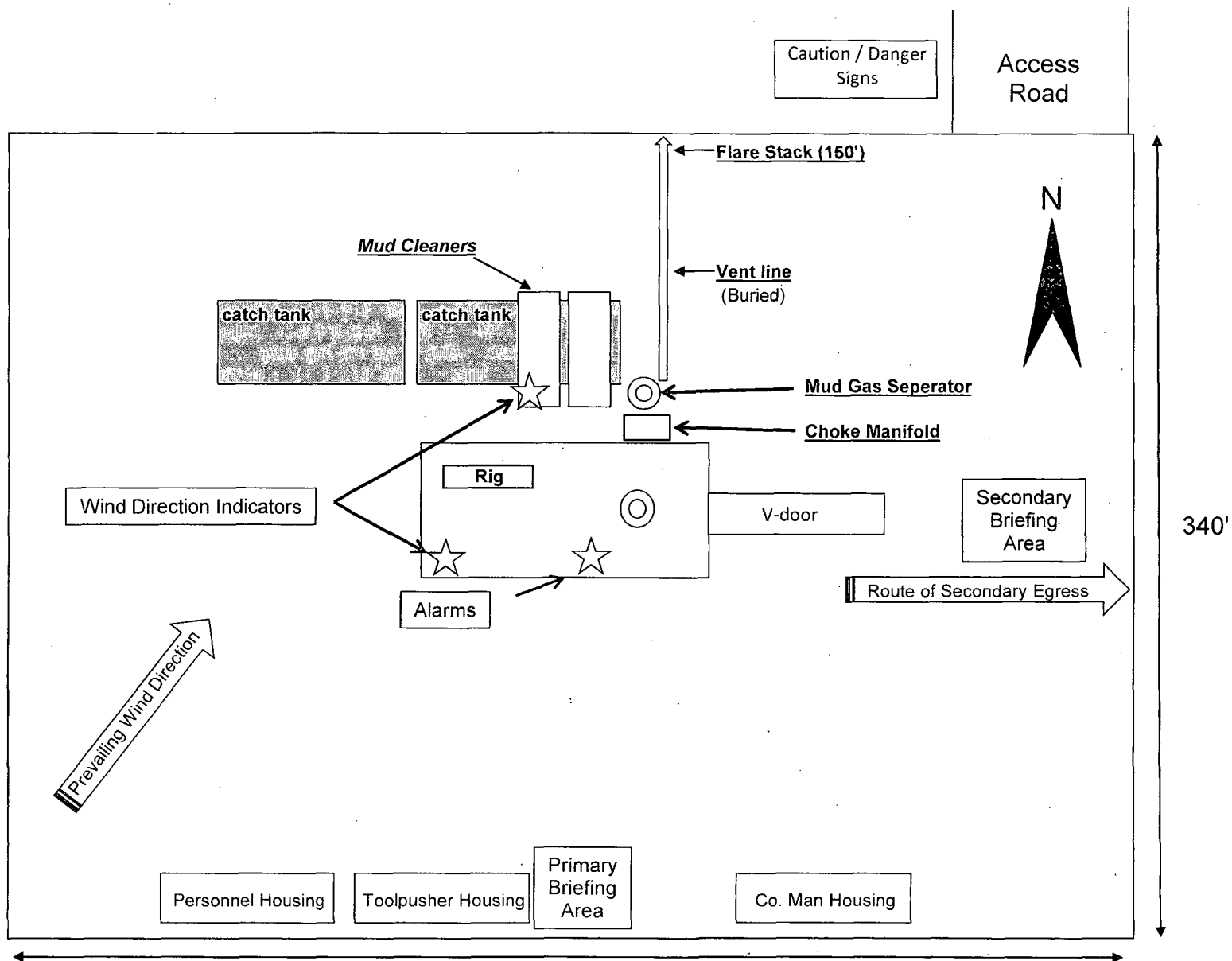


Exhibit 4  
EOG Resources  
Ross Draw 8 Fed #7H

Well Site Diagram

**EOG RESOURCES, INC.**  
**ROSS DRAW 8 FED #7H**

**Hydrogen Sulfide Plan Summary**

- A. All personnel shall receive proper H<sub>2</sub>S training in accordance with Onshore Order III.C.3.a.
- B. Briefing Area: two perpendicular areas will be designated by signs and readily accessible.
- C. Required Emergency Equipment:

- Well control equipment
  - a. Flare line 150' from wellhead to be ignited by flare gun.
  - b. Choke manifold with a remotely operated choke.
  - c. Mud/gas separator

- Protective equipment for essential personnel.

Breathing apparatus:

- a. Rescue Packs (SCBA) — 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
- b. Work/Escapes packs — 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
- c. Emergency Escape Packs — 4 packs shall be stored in the doghouse for emergency evacuation.

Auxiliary Rescue Equipment:

- a. Stretcher
- b. Two OSHA full body harness
- c. 100 ft 5/8 inch OSHA approved rope
- d. 1-20# class ABC fire extinguisher

- H<sub>2</sub>S detection and monitoring equipment:

The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible @ 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: Rig floor / Bell nipple / End of flow line or where well bore fluid is being discharged.

(Gas sample tubes will be stored in the safety trailer)

- Visual warning systems.

- a. One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
- b. A colored condition flag will be on display, reflecting the current condition at the site at the time.
- c. Two wind socks will be placed in strategic locations, visible from all angles.

**EOG RESOURCES, INC.**  
**ROSS DRAW 8 FED #7H**

- **Mud program:**  
The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to surface. The operator will have the necessary mud products to minimize hazards while drilling in H<sub>2</sub>S bearing zones.
- **Metallurgy:**  
All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.
- **Communication:**  
Communication will be via cell phones and land lines where available.

**EOG RESOURCES, INC.  
ROSS DRAW 8 FED #7H**

**Emergency Assistance Telephone List**

**PUBLIC SAFETY:** **911 or**

Eddy County Sheriff's Department	(575) 887-7551
Kent Waller	
Fire Department:	
Carlsbad	(575) 885-3125
Artesia	(575) 746-5050
Hospitals:	
Carlsbad	(575) 887-4121
Artesia	(575) 748-3333
Hobbs	(575) 392-1979
Dept. of Public Safety/Carlsbad	(575) 748-9718
Highway Department	(575) 885-3281
New Mexico Oil Conservation	(575) 476-3440
U.S. Dept. of Labor	(575) 887-1174

**EOG Resources, Inc.**

EOG / Midland	Office (432) 686-3600
---------------	-----------------------

**Company Drilling Consultants:**

Danny Kiser    Will Henderson	Cell (432) 894-3417
Larry King	

**Drilling Engineer**

Steve Munsell	Office (432) 686-3609
	Cell (432) 894-1256

**Operations Manager**

Travis Lain	Office (432) 686-3740
	Cell (432) 254-3521

**Drilling Superintendents**

Ron Welch	Office (432) 686-3695
	Cell (432) 386-0592

**Cactus Drilling**

Cactus Drilling	Office (580) 799-2752
Cactus 123 Drilling Rig	Rig (432) 894-3417

**Tool Pusher:**

Jack Herndon	Cell (405) 519-6552
Larry Slife	Cell (405) 250-6368

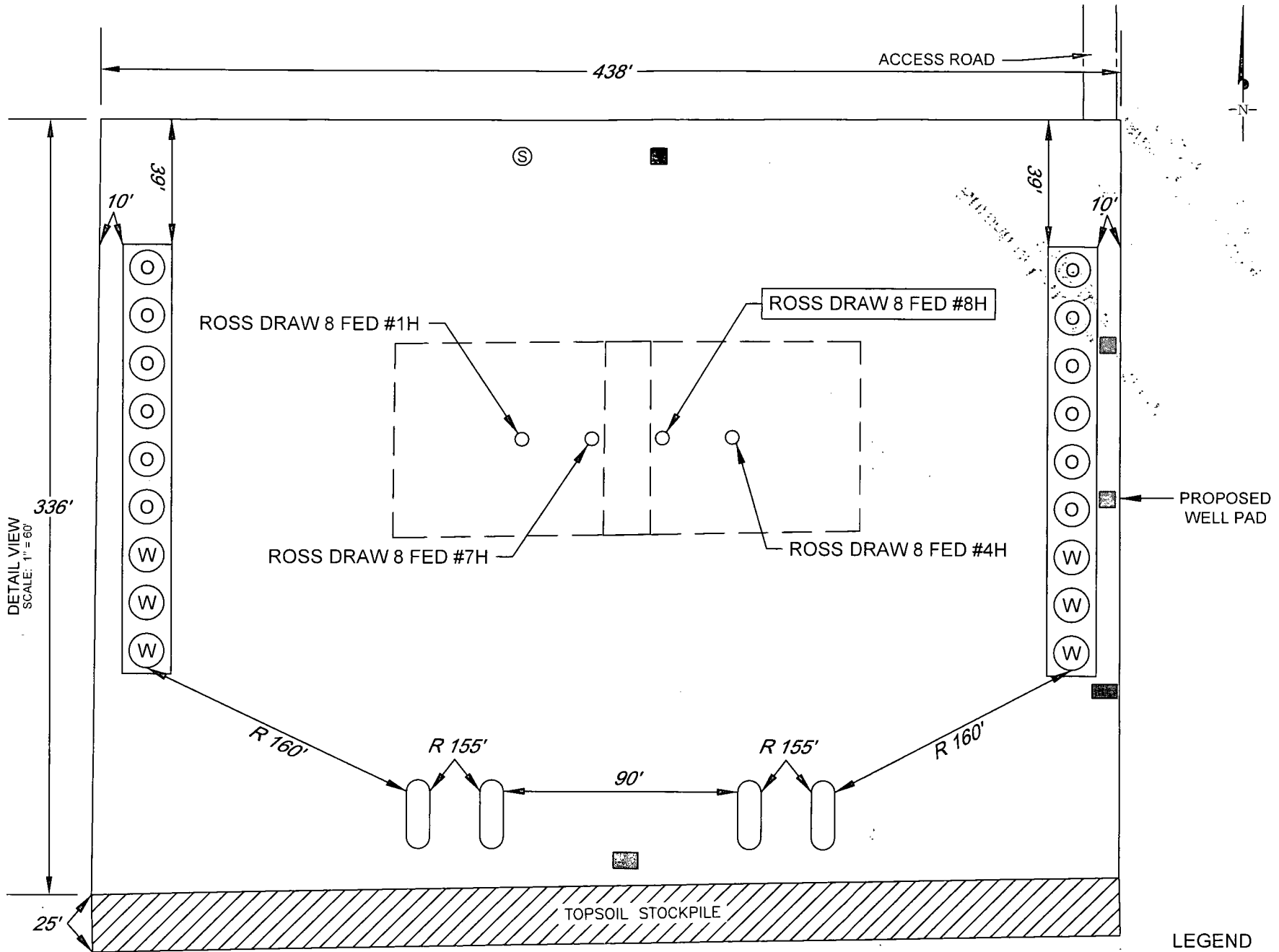
**Safety**

Reggie Phillips (HSE Manager)	Office (432) 686-3747
	Cell (303) 501-4587
Brian Chandler	Cell (806) 777-8814
Terry Maxwell (Consultant)	Cell (432) 349-6926

# EXHIBIT 2B RECLAMATION AND FACILITY DIAGRAM - PRODUCTION FACILITIES DIAGRAM

**eog resources, inc.**  
SECTION 8, TOWNSHIP 26 SOUTH, RANGE 31 EAST, N.M.P.M.  
EDDY COUNTY, NEW MEXICO

DETAIL VIEW  
SCALE: 1" = 60'



LEASE NAME & WELL NO.: ROSS DRAW 8 FED #8H  
#8H LATITUDE N 32.0636824 #8H LONGITUDE W 103.8066064

## LEGEND

- 500 BBL OIL TANK
- 500 BBL WATER TANK
- FLARE SEPARATOR
- OP FLARE
- 48 X 25 VRT
- FP FLARE
- VRU
- 500 BBL WATER TANK



# Surface Use Plan of Operations

## Introduction

The following surface use plan of operations will be followed and carried out once the APD is approved. No other disturbance will be created other than what was submitted in this surface use plan. If any other surface disturbance is needed after the APD is approved, a BLM approved sundry notice or right of way application will be acquired prior to any new surface disturbance.

Before any surface disturbance is created, stakes or flagging will be installed to mark boundaries of permitted areas of disturbance, including soils storage areas. As necessary, slope, grade, and other construction control stakes will be placed to ensure construction in accordance with the surface use plan. All boundary markers will be maintained in place until final construction cleanup is completed. If disturbance boundary markers are disturbed or knocked down, they will be replaced before construction proceeds.

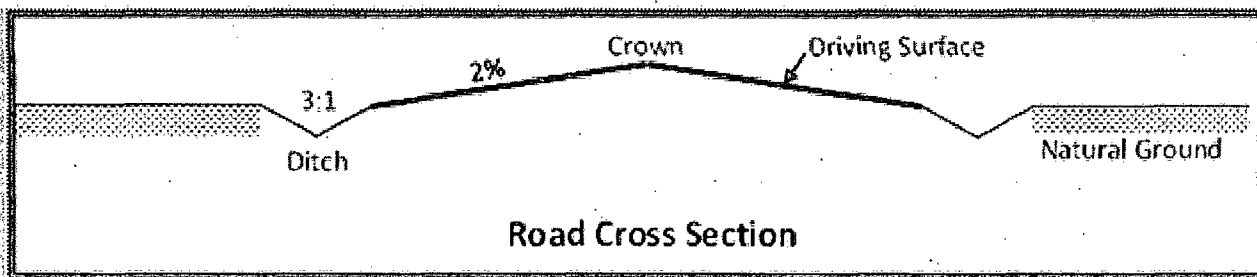
If terms and conditions are attached to the approved APD and amend any of the proposed actions in this surface use plan, we will adhere to the terms and conditions.

## 1. Existing Roads

- a. The existing access road route to the proposed project is depicted on Exhibit 2A. 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 access road route to the proposed project does not cross lease or unit boundaries, so a BLM right-of-way grant will not be acquired for this proposed road route.
- c. The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattleguards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use.
- d. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

## 2. New or Reconstructed Access Roads

- a. An access road will be needed for this proposed project. See the survey plat for the location of the access road.
- b. The length of access road needed to be constructed for this proposed project is about 160 feet.
- c. The maximum driving width of the access road will be 14 feet. The maximum width of surface disturbance when constructing the access road will not exceed 25 feet. All areas outside of the driving surface will be revegetated.
- d. The access road will be constructed with 6 inches of compacted and rolled caliche.
- e. 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. See Road Cross Section diagram below.



- f. The access road will be constructed with a ditch on each side of the road.
- g. The maximum grade for the access road will be 2 percent.
- h. No turnouts will be constructed on the proposed access road.
- i. No cattleguards will be installed for this proposed access road.
- j. No BLM right-of-way grant is needed for the construction of this access road.
- k. No culverts will be constructed for this proposed access road.
- l. No low water crossings will be constructed for the access road.
- m. Since the access road is on level ground, no lead-off ditches will be constructed for the proposed access road.
- n. Newly constructed or reconstructed roads, on surface under the jurisdiction of the Bureau of Land Management, will be constructed as outlined in the BLM "Gold Book" and to meet the standards of the anticipated traffic flow and all anticipated weather requirements as needed. Construction will include ditching, draining, crowning and capping or sloping and dipping the roadbed as necessary to provide a well-constructed and safe road.

### 3. Location of Existing Wells

- a. Exhibit 3 of the APD depicts all known wells within a one mile radius of the proposed well.
- b. The existing wells located within a one mile radius are the Ross Gulch 8 Fed Com #1H, Ross Gulch 8 #3 SWD Well, and the Ross Draw 8 Fed #2H. These wells are shown on Exhibit 3 to the APD.

### 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, barrels, pipeline risers, meter housing, etc. that are not subject to safety requirements will be painted a non-reflective paint color, Shale Green, from the BLM Standard Environmental Colors chart, unless another color is required in the APD Conditions of Approval.
- b. If any type of production facilities are located on the well pad, they will be strategically placed to allow for maximum interim reclamation, recontouring, and revegetation of the well location.
- c. A production facility is proposed to be installed on the proposed well location. Production from the well will be processed on site in the production facility. Exhibit 2B depicts the location of the production facilities as they relate to the well and well pad.
- d. The proposed production facility will have a secondary containment structure that is constructed to hold the capacity of 1-1/2 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

- e. There is no other diagram that depicts production facilities.

**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 or construction.**

### **Additional Pipeline(s)**

We propose to install 2 additional pipeline(s):

1. Buried Natural gas pipeline:

a. We plan to install a 6 inch buried polyethylene pipeline from the Ross Draw 8 Fed #7H well pad to a gas sales line located in the SE corner of the Ross Draw 8 Fed #2H well pad. The proposed length of the pipeline will be 2558 feet. The working pressure of the pipeline will be about 125 psi. A 30 feet wide work area will be needed to install the buried pipeline. We will need an extra 10 foot wide area near corners to safely install the pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.

b. Exhibit 5A depicts the proposed Natural gas pipeline route.

c. The proposed pipeline does not cross lease boundaries, so a right of way grant will not need to be acquired from the BLM.

2. Surface Produced water pipeline:

a. We plan to install a 4 inch surface polyethylene pipeline from Ross Draw 8 Fed #7H to the Ross Gulch 8 Fed Com #3 SWD.. The proposed length of the pipeline will be 4488 feet. The working pressure of the pipeline will be 100 psi or less. The pipeline will transport Produced water. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline will be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline will be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

b. Exhibit 5 depicts the proposed Produced water pipeline route.

c. The proposed pipeline does not cross lease boundaries, so a right of way grant will not need to be acquired from the BLM.

### **Electric Line(s)**

- a. 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 source and location of the water supply are as follows: EOG water storage pond located on the SE<sub>4</sub> of the NW<sub>4</sub> of Section 8\_ T26S R31E\_ Eddy County\_ New Mexico.

b. Exhibit 5 depicts the proposed route for a 4 inch poly temporary (<90 days) water pipeline supplying water for drilling operations.

## **6. Construction Material**

a. The material used for the construction of the 160' road and the well pad was caliche that was obtained on site.

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**

### **Reclamation Objectives**

There will be no interim reclamation performed on the location of the Ross Draw 8 Fed No 7H. Should production or activities in the future reach a state in which reclamation is an option EOG will contact the BLM and set up plans for reclamation at that time.

iii. The BLM will be notified at least 3 days prior to commencement of any reclamation procedures.

iv. If circumstances allow, interim reclamation and/or final reclamation actions will be completed no later than 6 months from when the final well on the location has been completed or plugged. We will gain written permission from the BLM if more time is needed.

v. Interim reclamation will not be performed on the well site because there are four wells and the production facilities for these four wells located on the location which will not allow room for reclamation at this time. If in the future there is cessation of production, EOG will contact the BLM and address reclamation activities at that time..

### **Interim Reclamation Procedures (If performed)**

1. Within 30 days of well completion, the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production.

2. 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.

3. 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.

4. 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.

5. Proper erosion control methods will be used on the area to control erosion, runoff and siltation of the surrounding area.

6. The interim reclamation will be monitored periodically to ensure that vegetation has reestablished and that erosion is controlled.

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

1. Prior to final reclamation procedures, the well pad, road, and surrounding area will be cleared of material, trash, and equipment.

2. All surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.
3. 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.
4. 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.
5. Proper erosion control methods will be used on the entire area to control erosion, runoff and siltation of the surrounding area.
6. All unused equipment and structures including pipelines, electric line poles, tanks, etc. that serviced the well will be removed.
7. All reclaimed areas will be monitored periodically to ensure that revegetation occurs, that the area is not redisturbed, and that erosion is controlled.

## 11. Surface Ownership

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

1. **Surface Owner:**

**Phone Number:**

**Address:**

a.

b.

2. **Surface Owner:**

**Phone Number:**

**Address:**

a.

- b. A good faith effort was made to provide a copy of the APD Surface Use Plan of Operations to the private surface owner.

## 12. Other Information

- a. Our Exhibit 4, which is referred to as the Rig Layout Diagram, is also included in this Surface Use Plan of Operations.

## 13. Maps and Diagrams

Exhibit 2A - Existing Road

Exhibit 3 - Wells Within One Mile

Exhibit 2B - Production Facilities Diagram

Exhibit 5A - Natural gas Pipeline

Exhibit 5 - Produced water Pipeline  
Exhibit 5 - Drilling Water Pipeline

## PECOS DISTRICT CONDITIONS OF APPROVAL

<b>OPERATOR'S NAME:</b>	<b>EOG Resources, Inc.</b>
<b>LEASE NO.:</b>	<b>NMNM-0438001</b>
<b>WELL NAME &amp; NO.:</b>	<b>Ross Draw 8 Fed 7H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>0333' FNL &amp; 0553' FWL</b>
<b>BOTTOM HOLE FOOTAGE</b>	<b>0230' FSL &amp; 0620' FWL</b>
<b>LOCATION:</b>	<b>Section 08, T. 26 S., R 31 E., NMPM</b>
<b>COUNTY:</b>	<b>Eddy County, New Mexico</b>

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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**
  - Phantom Banks Heronry Stipulation
- ☐ **Construction**
  - Notification
  - Topsoil
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- ☐ **Road Section Diagram**
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  - Well Structures & Facilities
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- ☐ **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)**

### **Phantom Banks Heronry Stipulations:**

Exhaust noise from permanent (lasting more than 90 days) engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

## **VI. CONSTRUCTION**

### **A. NOTIFICATION**

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the 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**

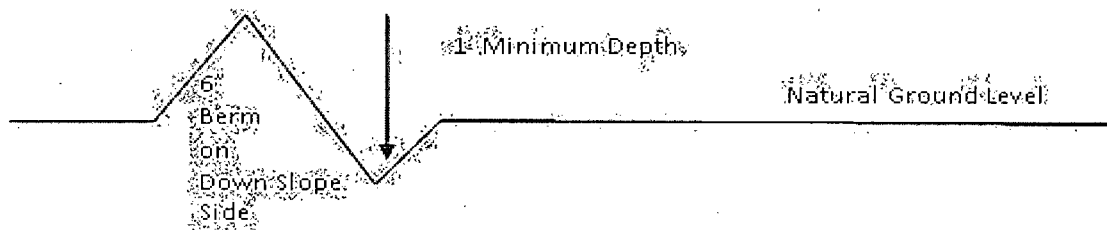
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

### **Drainage**

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

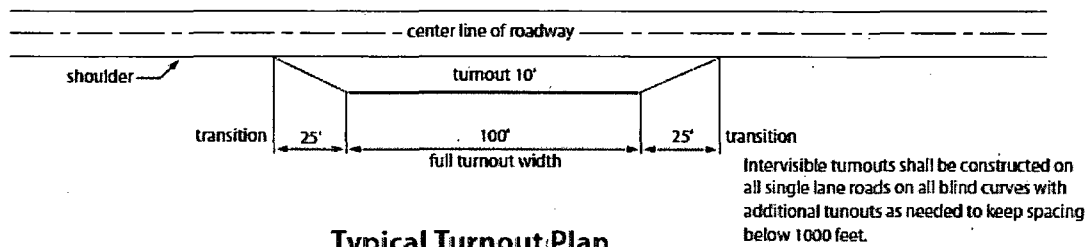
**Public Access**

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

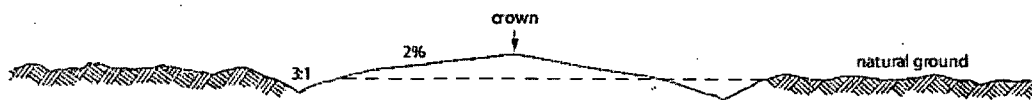
## Construction Steps

1. Salvage topsoil
2. Construct road

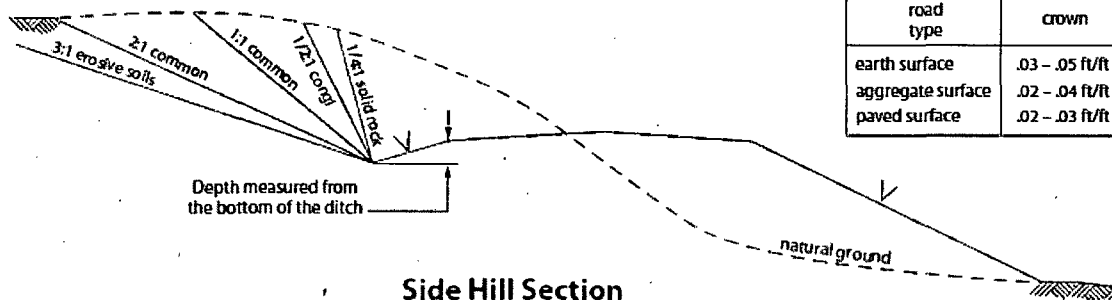
3. Redistribute topsoil
4. Revegetate slopes



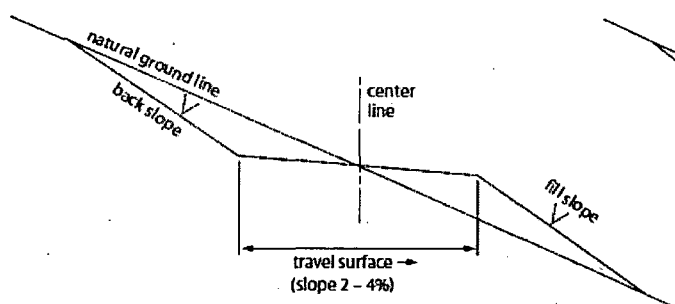
**Typical Turnout Plan**



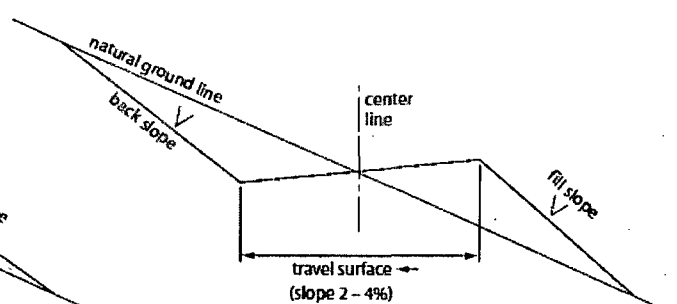
**Level Ground Section**



**Side Hill Section**



**Typical Outsloped Section**



**Typical Insloped Section**

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. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. If Hydrogen Sulfide is encountered, report measured amounts and formations to the BLM. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe.**
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. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

### B. CASING

**Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. 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.).**

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

**Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. 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.**

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

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

1. The **13-3/8** inch surface casing shall be set at approximately **1400** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
  - 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 is:
  - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Excess calculates to 19% - Additional cement may be required.**

**Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.**

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
  - ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.
4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

### C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi (Installing 10M testing to 2,000 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.
4. 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 **3000 (3M) psi (Installing 10M testing to 3,000 psi).**



5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. 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 (18 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.

#### **D. DRILL STEM TEST**

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

## **E. 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 031314**

## **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. PIPELINES**

### **BURIED PIPELINE STIPULATIONS**

A copy of the application (Grant, APD, or Sundry Notice) and attachments, including conditions of approval, 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. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil or other pollutant, wherever found, shall be the responsibility of holder, regardless of fault. Upon failure of holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to

repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve holder of any responsibility as provided herein.

5. All construction and maintenance activity will be confined to the authorized right-of-way.

6. The pipeline will be buried with a minimum cover of 36 inches between the top of the pipe and ground level.

7. The maximum allowable disturbance for construction in this right-of-way will be 30 feet:

- Blading of vegetation within the right-of-way will be allowed: maximum width of blading operations will not exceed 20 feet. The trench is included in this area. (*Blading is defined as the complete removal of brush and ground vegetation.*)
- Clearing of brush species within the right-of-way will be allowed: maximum width of clearing operations will not exceed 30 feet. The trench and bladed area are included in this area. (*Clearing is defined as the removal of brush while leaving ground vegetation (grasses, weeds, etc.) intact. Clearing is best accomplished by holding the blade 4 to 6 inches above the ground surface.*)
- The remaining area of the right-of-way (if any) shall only be disturbed by compressing the vegetation. (*Compressing can be caused by vehicle tires, placement of equipment, etc.*)

8. The holder shall stockpile an adequate amount of topsoil where blading is allowed. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be segregated from other spoil piles from trench construction. The topsoil will be evenly distributed over the bladed area for the preparation of seeding.

9. 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 of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

10. Vegetation, soil, and rocks left as a result of construction or maintenance activity will be randomly scattered on this right-of-way and will not be left in rows, piles, or berms, unless otherwise approved by the Authorized Officer. The entire right-of-way shall be recontoured to match the surrounding landscape. The backfilled soil shall be compacted and a 6 inch berm will be left over the ditch line to allow for settling back to grade.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. The holder will reseed all disturbed areas. Seeding will be done according to the attached seeding requirements, using the following seed mix.

- |  |  |
|--|--|
| <input type="checkbox"/> seed mixture 1            | <input type="checkbox"/> seed mixture 3          |
| <input checked="" type="checkbox"/> seed mixture 2 | <input type="checkbox"/> seed mixture 4          |
| <input type="checkbox"/> seed mixture 2/LPC        | <input type="checkbox"/> Aplomado Falcon Mixture |

13. All above-ground structures not subject to safety requirements shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2.

14. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. All signs and information thereon will be posted in a permanent, conspicuous manner, and will be maintained in a legible condition for the life of the pipeline.

15. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder before maintenance begins. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway. As determined necessary during the life of the pipeline, the Authorized Officer may ask the holder to construct temporary deterrence structures.

16. Any cultural and/or paleontological resources (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.

17. 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 associated roads, 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.

18. Escape Ramps - The operator will construct and maintain pipeline/utility trenches that are not otherwise fenced, screened, or netted to prevent livestock, wildlife, and humans from becoming entrapped. At a minimum, the operator will construct and maintain escape ramps, ladders, or other methods of avian and terrestrial wildlife escape in the trenches according to the following criteria:

- a. Any trench left open for eight (8) hours or less is not required to have escape ramps; however, before the trench is backfilled, the contractor/operator shall inspect the trench for wildlife, remove all trapped wildlife, and release them at least 100 yards from the trench.
- b. For trenches left open for eight (8) hours or more, earthen escape ramps (built at no more than a 30 degree slope and spaced no more than 500 feet apart) shall be placed in the trench.

## STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

**A copy of the application (Grant, Sundry Notice, APD) 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 activity of 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. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:
  - a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
  - b. Activities of other parties including, but not limited to:
    - (1) Land clearing.

- (2) Earth-disturbing and earth-moving work.
- (3) Blasting.
- (4) Vandalism and sabotage.
- c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars (\$1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of 20 feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky or dune areas, the pipeline will be "snaked" around hummocks and dunes rather than suspended across these features.

9. The pipeline shall be buried with a minimum of 24 inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.



10. 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 of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. 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 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.

16. 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, powerline 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.

17: Surface pipelines must be less than or equal to 4 inches and a working pressure below 125 psi.

## **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 2, for Sandy Sites

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

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

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

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

\*Pounds of pure live seed:

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