Form 3160-3 (February 2005)

## OCD-ARTESIA

UNITED STATES DEPARTMENT OF T **BUREAU OF LAND** 

APPLICATION FOR PERMIT TO DRILL OR REENTER

OMB No 1004-0137

HE INTERIOR MANAGEMENT	5.	Lease Serial No. NM 109412
	6.	If Indian, Allotee or Tribe Name

			1			
la. Type of work:  DRILL	REENTER	Split Esta	ite	7 If Unit or CA Agree	ement, Name and No.	
lb. Type of Well: Oil Well Gas Well	Other		ole Zone	8. Lease Name and V	Vell No. 370. 26 FED COM 2H	
2. Name of Operator EOG Resources, Inc.	7377			9. API Well No. 30-015- 2/2	175	
3a. Address P.O. Box 2267 Midland, TX 79702	3b. P	hone No. (include area code) 432-686-3642		10. Field and Pool, or Four Mile Dra	Exploratory w;Wolfcamp, SW (G)	
4. Location of Well (Report location clearly and in ac	cordance with arry State	requirements EB 28 200	8	11. Sec., T. R. M. or Bi	lk. and Survey or Area	
At surface 1650' FNL & 450' FNL At proposed prod. zone 1880' FNL & 660' Fl	•	OCD-ARTES	IA	Section 26, T18	8S-R21E, N.M.P.M.	
<ol> <li>Distance in miles and direction from nearest town or Approx 8 miles S of Hope, NM</li> </ol>	post office*			12 County or Parish  Eddy	13. State NM	
15. Distance from proposed* 450'	16	No. of acres in lease	17. Spacin	g Unit dedicated to this w	vell	
property or lease line, ft. (Also to nearest drig. unit line, if any)	48		N/2 S	Sec 26, T18S-R21E, N.M.P.M.		
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft  NA		Proposed Depth 000' TVD; 8,070' TMD	20. BLM/F NM23	BIA Bond No. on file		
21. Elevations (Show whether DF, KDB, RT, GL, etc. GL 4,157'	) 22. /	Approximate date work will sta 02/01/2008	rt*	23. Estimated duration 18		
	24.	Attachments				
The following, completed in accordance with the require	ments of Onshore Oil	and Gas Order No.1, must be a	ttached to thi	s form:		
Well plat certified by a registered surveyor.     A Drilling Plan.		4 Bond to cover t Item 20 above).	he operation	ns unless covered by an	existing bond on file (see	
3. A Surface Use Plan (if the location is on National SUPO must be filed with the appropriate Forest Serv				ormation and/or plans as	may be required by the	
25. Signature	1	Name (Printed/Typed)  Donny G. Glanton		Date		
Title Sr. Lease Operations ROW Represe	entative	Dointy G. Gianton			12/11/2007	
Approved by (Signature) /s/ James	Stovall	Name (Printed/Typed) /s/	James	Stovall	Date FEB 2 6 2008	
FIELD MANAG	ER			IELD QEFK		
Application approval does not warrant or certify that the conduct operations thereon.  Conditions of approval, if any, are attached.	e applicant holds lega	Torequitable title to the country	PAIL THE COM	Kerletta mich manns	Mattle the applicant to	

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.

**Roswell Controlled Water Basin** 

SEE ATTACHED FOR CONDITIONS OF APPROVAL APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS **ATTACHED** 

<sup>\*(</sup>Instructions on page 2)



Donny\_Glanton@eogresourc es.com 02/11/2008 02:39 PM To cheryle\_ryan@nm.blm.gov

CC

bcc

Subject Klamath- Surface Owner Agreement Reached

----- Forwarded by Donny Glanton/EOGResources on 02/11/2008 03:40 PM ----- Donny Glanton/EOGResources

02/11/2008 03:36 PM

To cheryl\_ryan@nm.blm.gov

CC

Subject Surface Owner Agreement Reached

## Cheryl,

EOG cetifies that a written agreement has been entered into with the hereinbelow surface owner with respect to the following well locations:

- 1. Klamath A 26 Fed Com 2H
- 2. Klamath B 26 Fed 2H

Surface Owner: Sam Teel

Box H

Hope, NM 88250 575-365-4305 home 575-365-7271cell

Please adivse if you have any questions.

Thanks, Donny G. Glanton District I

1625 N French Dr., Hobbs, NM 88240
District II

1301 W. Grand Avenue, Artesia, NM 88210 District III

1000 Rio Brazos Rd., Aztec, NM 87410 District IV

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

State of New Mexico

Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.

Santa Fe, NM 87505

Form C-102 Revised October 12, 2005

Submit to Appropriate District Office

State Lease- 4 Copies Fee Lease- 3 Copies

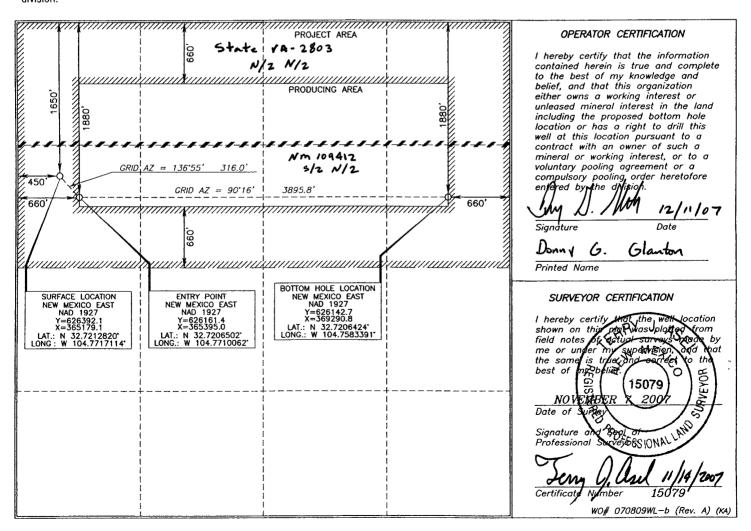
AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

30-015-36/7	97553	Four Mile Draw	Pool Name Wolfcamp, Si	w (G)
Property Code	•	rty Name		Well Number
	KLAMATH "A"	26 FED. COM		2Н
OGRID No.	Opera	tor Name		Elevation
7377	EOG RESO	4157'		
	^ <i>′</i>			

Surface Location UL or lot no. Section Township Range Lot Idn Feet from the North/South line Feet from the East/West line County  $\boldsymbol{E}$ 26 18 SOUTH 21 EAST, N.M.P.M. 1650 NORTH 450 WEST **EDDY** Bottom Hole Location If Different From Surface UL or lot no. Section Township Lot Idn Feet from the North/South line Feet from the East/West line County **EDDY** Н 26 18 SOUTH 21 EAST, N.M.P.M. 1880 NORTH 660 **EAST** Order No. **Dedicated Acres** Joint or Infill Consolidation Code 320

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.



## **Permit Information:**

Well Name: Klamath A 26 Fed Com #2H

Location:

SL

1650' FNL & 450' FWL, Section 26, T-18-S, R-21-E, Eddy Co., N.M.

BHL

1880' FNL & 660' FEL, Section 26, T-18-S, R-21-E, Eddy Co., N.M.

## **Casing Program:**

Casing	Setting Depth	Hole Size	Casing Size	Casing Weight	Casing Grade	Desired TOC
Surface	1,250'	12-1/4"	8-5/8"	32#	J-55	Surface
Production	8,070'	7-7/8"	5 1/2"	17#	N-80	Surface

## **Cement Program:**

Depth	No.	Slurries:
_	Sacks	
1,250'	500	Lead: 35:65 Poz C + 6% Bentonite+ 0.005 gps FP-6L + 0.005 pps Static Free + 5 pps LCM-1 + 2% CaCl2
• • • • • • • • • • • • • • • • • • • •	400	Tail: Premium Plus C + 0.005 gps FP-6L + 0.005 pps Static Free + 0.125 pps CelloFlake
8,070'	630	Lead: 50:50 Poz:Class C + 0.005 gps FP-6L + 10% Bentonite + 0.005 pps Static Free + 0.125 pps CelloFlake
	745	Tail: 50:50 Poz:Class C + 2% Bentonite + 0.005 gps FP-6L + 0.005 pps Static Free + 5% NaCl + 0.3% FL-2A + 0.2% CD-32 + 0.05% R-3
	ļ	

**Mud Program**:

Depth	Туре	Weight (ppg)	Viscosity	Water Loss
0 – 1,250'	Fresh - Gel	8.6-8.8	28-34	N/c
1,250' - 3,800'	Cut Brine	8.8-9.2	28-34	N/c
3,800' - 4,500'	Cut Brine	8.8-9.2	28-34	10-15
3,648' - 8,070'	Polymer (Lateral)	9.0-9.4	40-45	10-20

## **DRILLING PROGRAM**

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

Quaternary Alluvium

0-200

## 2. ESTIMATED TOPS OF IMPORTANT GEOLOGICAL MARKERS:

San Andres	480'
Glorieta	1,750'
Tubb	2,700'
Abo Shale	3,300'
Wolfcamp Pay	4,130'

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

Quanterary Alluvium	0- 200'	Fresh Water
San Andres	480'	Oil
Glorieta	1,750'	Oil/Gas
Tubb	2,700'	Oil/Gas
Abo/Wolfcamp Pay	4,130'	Gas

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 8.625" casing at 1,250' and circulating cement back to surface.

## 4. CASING PROGRAM-NEW

•						Collapse	<u>Burst</u>	<u>Tension</u>
						<u>Design</u>	Design	<u>Design</u>
<u>Hole</u>	Interval	OD Csg	<u>Weight</u>	<u>Grade</u>	Conn.	<u>Factor</u>	<u>Factor</u>	<b>Factor</b>
12.250"	0-1,250'	8.625"	32#	J-55	LT&C	4.24	3.81	9.77
7.875"	0-8,070	5.5"	17#	N-80	LT&C	2.96	1.27	3.46

## **Cementing Program:**

8.625" Surface Casing: Cement to surface

Cement to surface, Lead: 345 sx 35:65 Poz C + 0.005 pps Static Free + 2% CaCl<sub>2</sub> + 5 pps LCM-1 + 0.005 gps FP-6L + 6% Bentonite, 12.5 ppg, 1.97 yield Tail: 400 sx Prem Plus C + 0.125 pps CelloFlake + 0.005 FP-6L + 0.005 pps Static Free, 14.8 ppg, 1.33 yield

5.50" Production: Cement to surface, Lead: 630 sx 50:50 Poz C + 0.005

pps Static Free + 0.125 pps CelloFlake + 0.005 gps FP-

6L + 10% Bentonite, 11.8 ppg, 2.29 yield

Tail: 745 sx 50:50 Poz C + 2% Bentonite + 0.005 gps FP-6L + 0.005 pps Static Free + 5% NaCl + 0.05% R-3 + 0.2% CD-32 + 0.3% FL-52A, 14.2 ppg, 1.30 yield

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

(SEE EXHIBIT #1)

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of a double ram-type (5000 psi WP) preventer and an annular preventer (5000-psi WP). Units will be hydraulically operated and the ram-type will be equipped with blind rams on top and drill pipe rams on bottom. All BOP's and accessory equipment will be tested in accordance with Onshore Oil & Gas order No. 2. for a 3M system.

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.

EOG Resources requests a variance to eliminate the stipulation requiring a BOPE test within 500' of the Wolfcamp. The Wolfcamp is not expected to be abnormally pressured (approx 1,800 lbs.) and the BOPE will be tested to the appropriate pressure requirements as per Onshore Order No. 2 prior to drilling out of the surface casing.

#### 6. TYPES AND CHARACTERISTICS OF THE PROPOSED MUD SYSTEM:

The well will be drilled to TD with a combination of brine, cut brine, and polymer mud system. The applicable depths and properties of this system are as follows:

<u>Depth</u>	<u>Type</u>	(PPG)	(sec)	(cc)
0-1,250'	Fresh – Gel	8.6-8.8	28-34	N/c
1,250'-3,800'	Cut Brine	8.8-9.2	28-34	N/c
3,800'-4,500'	Cut Brine	8.8-9.2	28-34	10-15
3,648'-8,070'	Polymer (Lateral)	9.0-9.4	40-45	10-25

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

#### 7. 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.

## 8. LOGGING, TESTING AND CORING PROGRAM:

Electric logging will consist of GR-Dual Laterlog and GR-Compensated Density-Neutron from +/-1,250' to TD.

Possible sidewall cores based on shows.

# 9. ABNORMAL CONDITIONS, PRESSURES, TEMPERATURES AND POTENTIAL HAZARDS:

The estimated bottom hole temperature (BHT) at TD is 125 degrees F with an estimated maximum bottom-hole pressure (BHP) at TD of 2000 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.

#### 10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS:

The drilling operation should be finished in approximately one month. If the well is productive, an additional 30-60 days will be required for completion and testing before a decision is made to install permanent facilities.

#### EOG RESOURCES INC.

Planning Report

Database:

EDM

Local Co-ordinate Reference:

Well Klamath A 26 Fed Com #2H

Company:

EOG - Midland (3)

MD Reference:

WELL @ 4176 00ft (Original Well Elev) 4

North Reference:

TVD Reference:

WELL @ 4176.00ff (Original Well Elev)

described for the figure of the second second

Project: Site: Well

Thames

Klamath A 26 Fed Com #2H

Weli: Wellbore:

Klamath A 26 Fed Com #2H Klamath A 26 Fed Com #2H

Original Plan Design:

Survey Calculation Method:

Minimum Curvature

Project \*\* > \*\* Thames

Map System:

US State Plane 1927 (Exact solution)

System Datum:

Ground Level

Geo Datum:

NAD 1927 (NADCON CONUS)

Map Zone:

New Mexico East 3001

Klamath A 26 Fed Com #2H.

Site Site Position:

**Well Position** 

Northing:

626,392 10ft

Latitude:

32° 43' 16.615 N

From:

Easting:

365,179.10ft

Longitude:

104° 46' 18.161 W

**Position Uncertainty:** 

0.00 ft

0.00 ft

**Slot Radius:** 

**Grid Convergence:** 

-0.24°

Klamath A 26 Fed Com #2H

Northing:

626,392 10 ft 365,179.10 ft Latitude: Longitude:

ber energy and a street 32° 43' 16.615 N 104° 46' 18.161 W

**Position Uncertainty** 

+E/-W 0.00 ft 0.00 ft Easting: Wellhead Elevation:

**Ground Level:** 

4,157.00ft

Klamath A 26 Fed Com #2H Wellbore

+N/-S

Magnetics

Model Name

Sample Date

Declination

Dip Angle

Field Strenath

**IGRF2005** 

11/28/2007

8.57

49.079

Design Original Plan **Audit Notes:** 

Tie On Depth:

Version: Vertical Section: Phase:

**PROTOTYPE** 

+E/-W

0 00

Direction Depth From (TVD) +N/-S (ft) 🔻 (ft) (ft) -(°) 4,259.00 0.00 0.00 93.47

Plan Sections		and the state of t	est vend area endermont a ser street	attende visit vitras vitras de la Calabase. P	TOWNS MATERIAL SERVICE	the courte control control control control	The second second second second	DESCRIPTION OF THE PROPERTY OF	tions agent parties and the second process and	TOTAL SECTION OF SECTION AND ASSESSMENT OF
Measured			Vertical			Dogleg	Build	Turn		
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4,981.44	87.99	90.23	4,150.68	-237.24	1,025.20	3 00	-2.75	-1 19	0.00	
8,069.51	87.99	90.23	4,258.99	-249 40	4,111.34	0.00	0.00	0.00	0 00	
8,069 87	88.00	90 23	4,259.00	-249.40	4,111.70	3.00	2.75	1.19	0.00 B	HL (Klamath A #2

## **EOG RESOURCES INC.**

Planning Report

Database: EDM
Company: EOG - Midland (3)
Project: Thames
Site: Klamath A 26 Fed Com #2H
Well: Klamath A 26 Fed Com #2H
Wellbore: Klamath A 26 Fed Com #2H
Oesign: Original Plan

Local Co-ordinate Reference:

TVD Reference: MD Reference: North Reference:

Survey Calculation Method:

Well Klamath A 26 Fed Com #2H 🍻

WELL @ 4176.00ft (Original Well Elev) WELL @ 4176 00ft (Original Well Elev)

Grid

Grid Minimum Curvature

Design: Oligina	un iau	de la compa	Lacus arrivus de rives				indiana.	verenciez rinde	
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		Azimuth	Depth-	+N/-S-	· 11 ( ) · 10 · 10 · 10 · 10 · 10 · 10 · 10 ·	Section 👞 🧸	Rate	Rate	Rate
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400.00	0.00	360.00	400 00	0.00	0.00	0.00	0.00	0.00	0 00
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2,800.00	0.00	360.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	360.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0 00
3,000.00	0.00	360.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	360.00	3,100.00	0.00	0.00	0 00	0.00	0.00	0.00
3,200.00	0.00 0.00	360.00 360.00	3,200 00	0 00	0.00	0.00	0.00	0.00	0.00
3,300.00 3,400.00	0.00	360.00	3,300.00 3,400.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 0 00	0.00 0 00
3,500.00	0.00	360.00	3,500.00	0.00	0.00	0.00	0.00	0 00	0.00
3,600.00	0.00	360.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,648 00	0.00	360.00	3,648.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	6 18	108.00	3,699 90	-0.87	2.66	2.71	11.88	11 88	0.00
3,800.00	18 06	108.00	3,797.50	-7.34	22.59	22 99	11 88	11.88	0.00
3,900.00	29.94	108.00	3,888.69	-19.89	61.20	62.29	11.88	11.88	0.00
4,000.00 4,100.00	41.82 53.70	108.00 108.00	3,969.57 4,036.68	-37.96 -60 80	116.84 187.12	118 92 190.46	11.88 11.88	11.88 11.88	0.00 0.00
4,200.00	65.58	108.00	4,030.08	-87 41	269.03	273.83	11.88	11.88	0.00
PP (Klamath A		, ,	3			\$ 245.23°	y >	* * *	
4,300.00	77.46	108.00	4,118.78	-116 67	359.07	365.48	11 88	11.88	0.00
4,388 75	88.00	108.00	4,130.00	-143.84	442.68	450.58	11.88	11.88	0.00
4,400.00	88.00	107.66	4,130.39	-147.28	453.38	461.47	3.00	0.00	-3.00
4,500 00	88.00	104.66	4,133.88	-175 09	549.36	558.95	3.00	0.00	-3.00
4,600.00 4,700.00	88.00 88.00	101.66 98 66	4,137.37 4,140.86	-197.85 -215.48	646.66 745 02	657.46 756.70	3.00 3.00	0.00 0.00	-3.00 -3.00
			·						ì
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4,500.00	00.00	92.00	4, 147.04	-200 15	J4J 04	330.34	3.00	0.00	-3.00

## **EOG RESOURCES INC.**

## Planning Report

Database:

EOG - Midland (3)

Database
Company
Project:
Site:
Klamath A 26
Wellbore:
Design

EDM
EOG - Midlan
Thames
Klamath A 26
Klamath A 26
Klamath A 26
Original Plan Klamath A 26 Fed Com #2H Klamath A 26 Fed Com #2H Klamath A 26 Fed Com #2H

Local Co-ordinate Reference:

Eccai co-ordinate Reference: TVD Reference: MD Reference: North Reference Survey Calculation Method:

Well Klamath A 26 Fed Com #2H

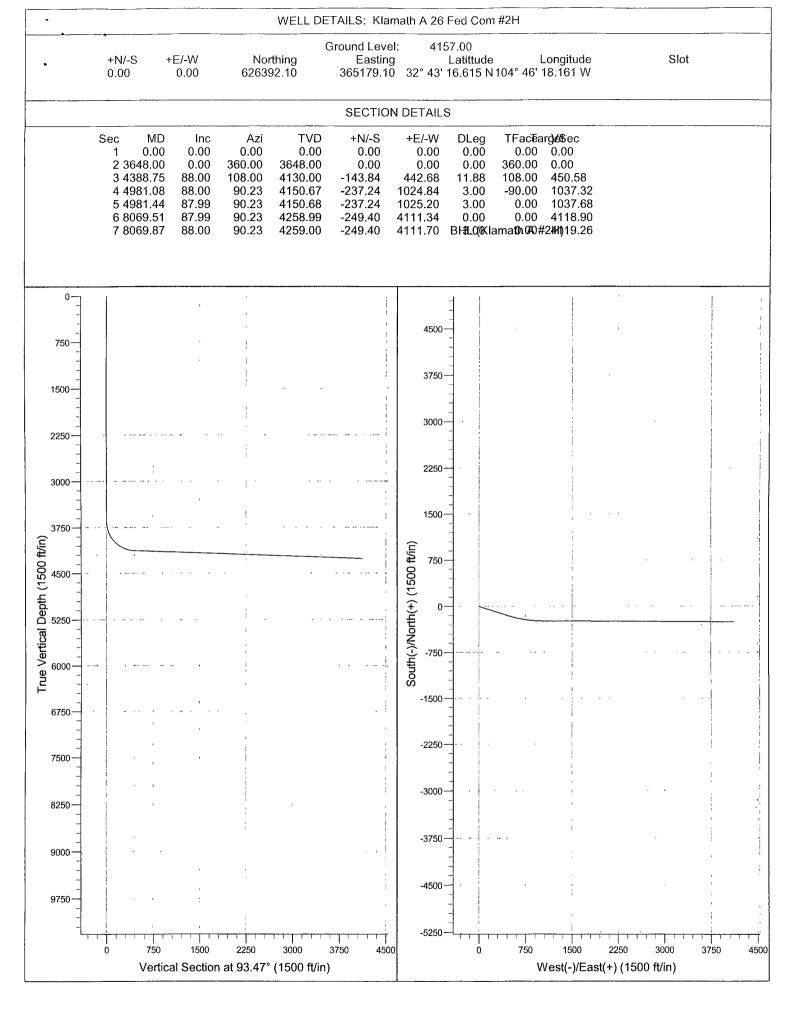
WELL @ 4176.00ft (Original Well Elev) WELL @ 4176.00ft (Original Well Elev)

Grid

Minimum Curvature

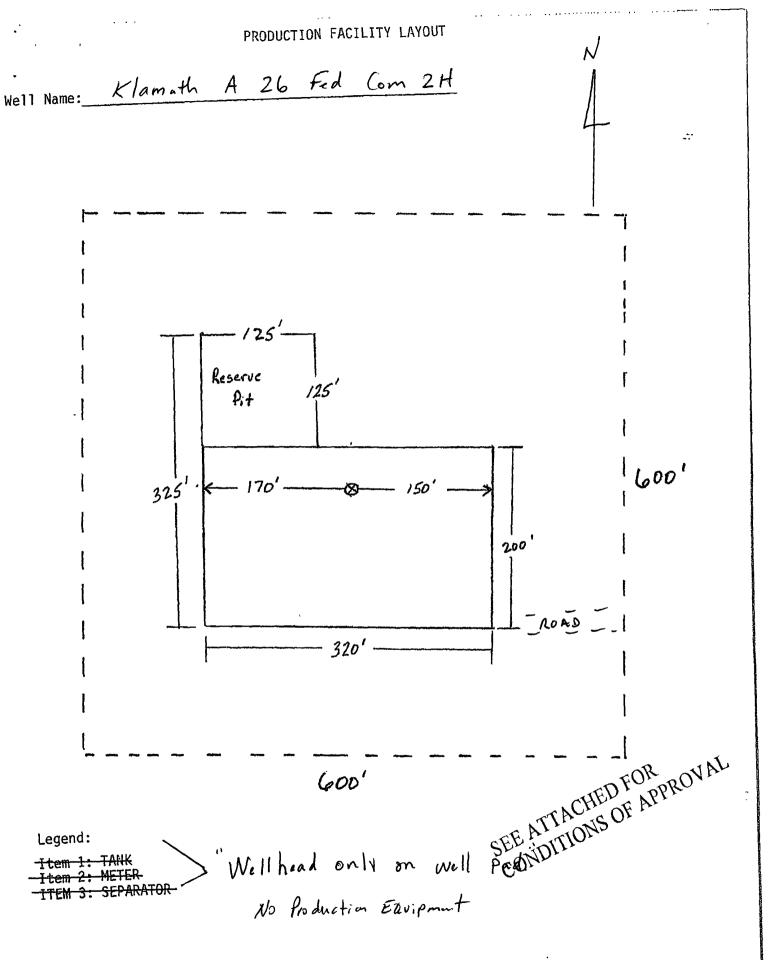
Planned Survey	TO THE THE PERSON	-	That talk some star while star the	The Section of the Se	L-Ma-Schieffeld, despited C	TITI SAMETTI ME	ariti ga angan	ilenatiji il koh	A THE STATE AND A SECOND SECON
	STATE VIEW							7.77.77.53	
Measured			Vertical 🔌			Vertical	Dogleg	Build 💉	Turn
Depth : In		Azimuth	Depth	.+N/-S.	+E/-W	Section :	Rate	Rate⊬	Rate
(ft)	(3)	(°).	(ft)	(ft)	∠ (ft) (√ (a)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)
4,981.08	88.00	90.23	4,150.67	-237.24	1,024 84	1,037 32	3.00	0.00	-3 00
4,981 44	87.99	90 23	4,150.68	-237.24	1,025 20	1,037.68	3.00	-2.75	-1.19
5,000 00	87 99	90.23	4,151.34	-237 31	1,043.74	1,056 20	0 00	0 00	0 00
5,100 00	87 99	90 23	4,154.84	-237.71	1,143 68	1,155 97	0 00	0 00	0.00
5,200 00	87.99	90.23	4,158 35	-238.10	1,243.62	1,255.75	0.00	0.00	0.00
5,300.00	87 99	90.23	4,161.86	-238.49	1,343.56	1,355 53	0.00	0.00	0.00
5,400.00	87.99	90.23	4,165 36	-238.89	1,443.49	1,455.31	0.00	0 00	0.00
5,500.00	87.99	90.23	4,168 87	-239.28	1,543 43	1,555 09	0.00	0.00	0.00
5,600 00	87 99	90 23	4,172 38	-239.68	1,643 37	1,654 87	0 00	0 00	0.00
5,700.00	87.99	90.23	4,175.89	-240.07	1,743.31	1,754 64	0.00	0.00	0.00
5,800 00	87 99	90 23	4,179.39	-240.46	1,843.24	1,854.42	0.00	0.00	0 00
5,900 00	87.99	90 23	4,182.90	-240.86	1,943.18	1,954.20	0.00	0 00	0.00
6,000.00	87.99	90.23	4,186 41	-241.25	2,043.12	2,053.98	0.00	0.00	0 00
6,100.00	87.99	90.23	4,189.91	-241.64	2,143.06	2,153.76	0.00	0.00	0.00
6,200 00	87.99	90.23	4,193.42	-242.04	2,243.00	2,253.53	0.00	0.00	0.00
6,300 00	87.99	90 23	4,196.93	-242 43	2,342 93	2,353.31	0.00	0.00	0.00
6,400.00	87.99	90 23	4,200.44	-242.83	2,442.87	2,453.09	0.00	0.00	0.00
6,500.00	87 99	90.23	4,203.94	-243.22	2,542.81	2,552.87	0.00	0.00	0.00
6,600.00	87.99	90.23	4,207.45	-243.61	2,642.75	2,652 65	0.00	0.00	0.00
6,700.00	87.99	90.23	4,210.96	-244.01	2,742.68	2,752 43	0.00	0.00	0.00
6,800.00	87. <del>9</del> 9	90.23	4,214.46	-244.40	2,842.62	2,852 20	0.00	0.00	0.00
6,900.00	87.99	90.23	4,217.97	-244.79	2,942.56	2,951.98	0.00	0.00	0.00
7,000.00	87.99	90.23	4,221.48	-245.19	3,042.50	3,051.76	0 00	0.00	0.00
7,100 00	87 99	90.23	4,224.99	-245.58	3,142.43	3,151 54	0 00	0.00	0.00
7,200 00	87.99	90.23	4,228 49	-245.98	3,242 37	3,251.32	0.00	0.00	0.00
7,300.00	87 99	90.23	4,232.00	-246.37	3,342.31	3,351 09	0.00	0.00	0 00
7,400 00	87.99	90.23	4,235.51	-246.76	3,442.25	3,450.87	0.00	0.00	0.00
7,500 00	87.99	90.23	4,239.01	<b>-24</b> 7.16	3,542.19	3,550.65	0.00	0.00	0.00
7,600.00	87.99	90.23	4,242.52	-247 55	3,642.12	3,650.43	0.00	0.00	0.00
7,700 00	87.99	90 23	4,246.03	-247 94	3,742.06	3,750.21	0.00	0.00	0.00
7,800 00	87.99	90 23	4,249.54	-248 34	3,842 00	3,849.99	0.00	0.00	0 00
7,900.00	87.99	90.23	4,253.04	-248.73	3,941.94	3,949.76	0.00	0 00	0 00
8,000.00	87 99	90 23	4,256 55	-249.12	4,041.87	4,049.54	0.00	0.00	0 00
8,069.51	87 99	90.23	4,258 99	-249 40	4,111.34	4,118.90	0.00	0.00	0.00
8,069 87	88.00	90.23	4,259 00	-249 40	4,111 70	4,119.26	3.00	2 75	1.19
BHL (Klamath	A #2H)	u <sup>4</sup>			3				

Targets Target Name - hit/miss/target Dip - Shape	**	27-44- Table 197 (2019)	TVD (ft)	SHAPPINE SECTION		Northing (ft)	Easting (ft)	Latitude	Longitude
PP (Klamath A #2H) - plan misses by 153.36 - Point	0.00 6ft at 420		4,100.00 (4087.14	-230.70 TVD, -87.41 I	215.90 N, 269.03 E)	626,161.40	365,395.00	32° 43′ 14.341 N	104° 46' 15.623 W
BHL (Klamath A #2H) - plan hits target - Point	0 00	360 00	4,259.00	-249.40	4,111 70	626,142.70	369,290.80	32° 43′ 14.312 N	104° 45′ 30.021 W

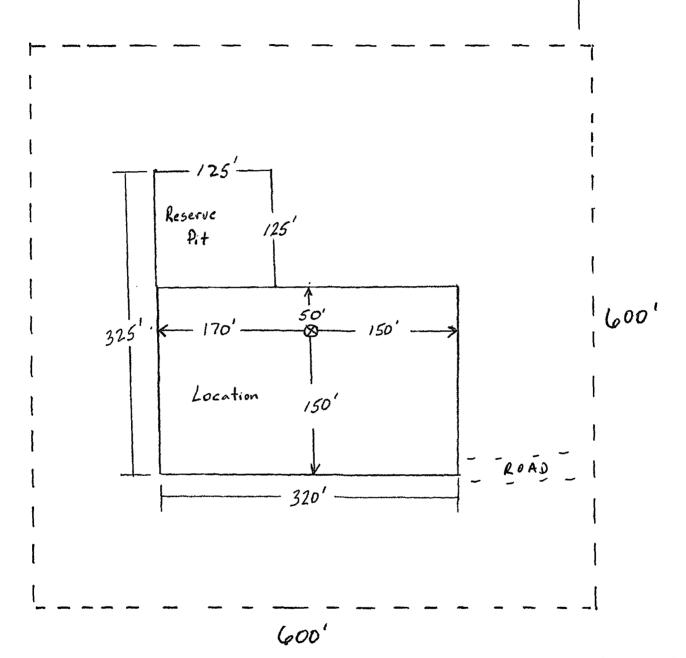


#### **ATTACHMENT TO EXHIBIT #1**

- 1. Wear ring to be properly installed in head.
- 2. Blow out preventer and all fittings must be in good condition, 3000 psi W.P. minimum. Exhibit #1.
- 3. All fittings to be flanged
- 4. Safety valve must be available on rig floor at all times with proper connections, valve to be full bore 3000 psi W.P. minimum.
- 5. All choke and fill lines to be securely anchored especially ends of choke lines.
- 6. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
- 7. Kelly cock on kelly.
- 8. Extension wrenches and hand wheels to be properly installed.
- 9. Blow out preventer control to be located as close to driller's position as feasible.
- 10. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation, and meet all API specifications.



# Klamath A 26 Fed Com 2H



SEE ATTACHED FOR APPROVAL CONDITIONS OF APPROVAL

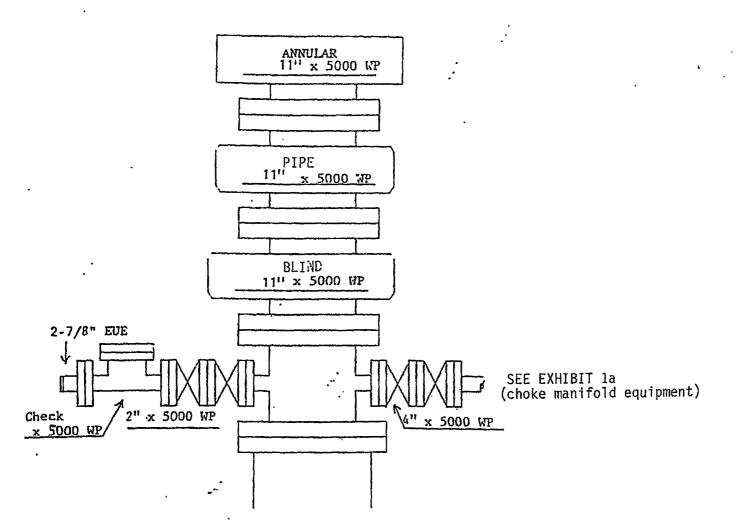
WELL NAME: Klamath A 26 Fed Com 2H Reserve P.t Location

Items 1-4: Drilling Trailers

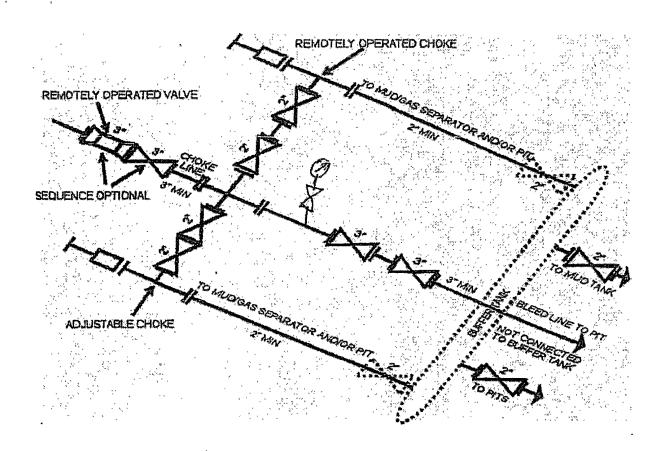
SEE ATTACHED FOR CONDITIONS OF APPROVAL

EOG Resources, Inc.

Klamath A. 26 Fed Com 2H



WELL NAME: Klamath A 26 Fed Com 2H Exhibit 1a



## 5M CHOKE MANIFOLD EQUIPMENT - CONFIGURATION OF CHOKES MAY VARY

Although not required for any of the choke manifold systems, buffer tanks are sometimes installed downstream of the choke assemblies for the purpose of manifolding the bleed lines together. When buffer tanks are employed, valves shall be installed upstream to isolate a failure or malfunction without interrupting flow control. Though not shown on 2M, 3M, 10M, OR 15M drawings, it would also be applicable to those situations.

[54 FR 39528, Sept. 27, 1989]



**EOG Besources, In:**P.O. Box 2267
Midland, TX 79702
(432) 686-3600

November 28, 2007

State of New Mexico Energy, Minerals and Natural Resources Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505

To Whom It May Concern:

I am writing to request a waiver for the inclusion of an  $H_2S$  Contingency Plan for the Klamath A 26 Fed Com #2H. The current plan is to complete this well in the Wolfcamp, which is sweet, and I do not anticipate encountering any  $H_2S$  bearing formations during drilling operations.

Sincerely,

Jåson La Trega Drilling Engineer

## SURFACE USE PLAN OF OPERATION

SHL: 1650' FNL & 450' FWL, Unit E, Section 26, T18S-R21E, N.M.P.M., Eddy, NM BHL: 1880' FNL & 660' FEL, Unit H, Section 26, T18S-R21E, N.M.P.M., Eddy, NM

#### 1. EXISTING ROADS:

- a. The well site and elevation plat for the proposed well are reflected on the well site layout; Form C-102. The well was staked by Terry Asel, RPL 15079.
- b. All roads into the location are depicted on Exhibit 2 & 2a.
- c. <u>Directions to Locations:</u> Beginning in Hope, NM at the intersection of Hwy #82 and Eddy County Road #12 (Armstrong Road), Go south on Eddy County Road #12 for 4.9 miles, turn right on Eddy County Road #19 (Trail Ends Road) for 2.1 miles, turn left on Eddy County Road #19A and go south for 0.2 miles, turn right 204 feet to location.

#### 2. NEW OR RECONSTRUCTED ACCESS ROAD:

- a. The well site layout, Exhibit 2 shows the layout. The proposed access road, begins on paved CR #19a and trends W to the SE Side of the well pad. (See 1c above for driving directions).
- b. The maximum width of the road will be 15'. It will be crowned and made of 6" of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent soil erosion.
- c. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest in proximity to the location. The average grade will be approximately 1%.
- d. Cattleguards will be set where fences are cut. No turnouts are planned.

#### 3. LOCATION OF EXISTING WELLS:

Exhibit #3 shows all existing wells within a one-mile radius of this well.

#### 4. LOCATION OF EXISTING AND/OR PROPOSED PRODUCTION FACILITIES:

- a. In the event the well is found to be productive, the Klamath A 26 Fed Com 2H will be tied into an existing facility at the Klamath A 26 State Com 1H. Therefore, there will not be a tank, separator and meter run on this well pad.
- b. As a proposed gas well, we do not anticipate the need for electrical service.
- c. All flow lines will adhere to API standards.
- d. As a proposed gas well, we do not anticipate the need for electrical service.
- e. If the well is productive, rehabilitation plans are as follows:
  - i. The reserve pit will be back filled after the contents of the pit are dry (within 120 days after completion, weather permitting).

ii. The original topsoil from the well site will be returned to the location. The drill site will be contoured as close as possible to the original state.

#### 5. LOCATION AND TYPE OF WATER SUPPLY:

This location will be drilled using a combination of water mud systems (outlined in the drilling program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using existing and proposed roads shown in Exhibit 2. On occasion, water will be obtained from existing water wells. In these cases where a poly pipeline is used to transport water for drilling purposes, proper authorizations will be secured. If poly pipeline is used to transport fresh water to the location, proper authorization will be secured by the contractor.

#### 6. CONSTRUCTION MATERIALS

All caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. All roads will be constructed of rolled and compacted caliche. Will use BLM recommended use of extra caliche from other locations close by roads, if available.

#### 7. METHODS OF HANDLING WASTE MATERIALS

- a. Drill cuttings will be disposed of in the reserve pit.
- b. All trash, junk, and other waste material will be contained in trash cages or trash bins to prevent scattering. When a job is completed, all contents will be removed and disposed of in an approved landfill.
- c. The supplier, including broken sacks, will pick up salts remaining after completion of well.
- d. If necessary, a porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.
- e. Remaining drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry enough to be broken for further drying. If the drilling fluids do not evaporate in a reasonable time they will be hauled off by transports to a state approved disposal site. Later pits will be broken out to speed dry. Water produced during completion will be put in reserve pits. Oil and condensate produced will be put in a storage tank and sold.
- f. Disposal of fluids to be transported by the following companies:
  - i. RGB TRUCKING
  - ii. LOBO TRUCKING
  - iii. I & W TRUCKING
  - iv. CRANE HOT OIL & TRANSPORT

#### 8. ANCILLARY FACILITIES:

a. No airstrip, campsite, or other facilities will be built.

#### 9. WELL SITE LAYOUT:

- a. Exhibit 4 shows the proposed well site layout with dimensions of the pad layout.
- b. Exhibit 5 shows proposed location of reserve and sump pits and living facilities.
- c. Mud pits in the active circulating system will be steel pits and the reserve pits will be lined.
- d. If needed, the reserve pit is to be line with polyethylene. The pit liner will be 12 mils thick. Pit liner will extend a minimum of two feet (2') over the reserve pit's dykes where the liner will be anchored down.
- e. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down after the pit contents have dried. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

#### 10. PLANS FOR SURFACE RECLAMATION:

- a. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The reserve pit area will be broken out and leveled after drying to a condition where these are feasible. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography. The pit will be closed per OCD compliance regulations.
- b. The pit lining will be buried or hauled away in order to return the location and road to their pristine nature. All pits will be filled and the location leveled, weather permitting, within 120 days after abandonment.
- c. The location and road will be rehabilitated as recommended by the BLM.
- d. The reserve pit will be fenced on three side throughout drilling operations. After the rotary rig is removed, the reserve pit will be fenced on the fourth side to preclude endangering wildlife. The fencing will be in place until the pit is reclaimed.
- e. If the well is deemed commercially productive, the reserve pit will be restored as described in 10(A) within 120 days subsequent to the completion date. Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to

operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.

#### 11. SURFACE OWNERSHIP

The surface is owned by the Sam Teel. The surface is multiple use with the primary uses of the region for the grazing of livestock and the production of oil and gas. The proposed road routes and surface location will be restored as directed by the BLM.

As a requirement of the New Mexico Surface Owners Protection Act (NMSOPA), EOG will enter into a Surface Use and Compensation Agreement with the Fee Surface Owner.

Fee Surface Owner:

Sam Teel Box H Hope, NM 505-484-3403 hm 505-365-7271 cell

#### 12. OTHER INFORMATION:

- a. The area surrounding the well is grassland. The topsoil is sandy & rocky in nature. The vegetation is moderately sparse with native prairie grass, scrub and cactus. No wildlife was observed but it is likely that deer, rabbits, coyotes, rodents and birds transverse the area.
- b. There are not dwellings within 1 miles of location.
- c. There is no permanent or live water within 1 miles of the location.
- d. A Cutural Resources Examination will be completed by 12/30/2007 and forwarded to the BLM office in Carlsbad, New Mexico.

## 13. BOND COVERAGE:

a. Bond Coverage is Nationwide; Bond No. NM 2308

## **COMPANY REPRESENTATIVES:**

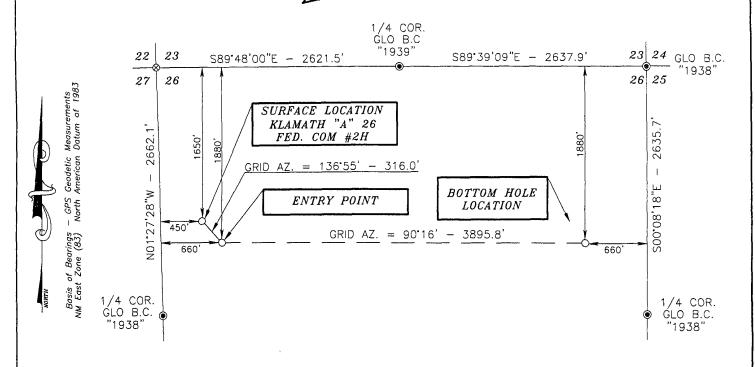
Representatives responsible for ensuring compliance of the surface use plan are listed below:

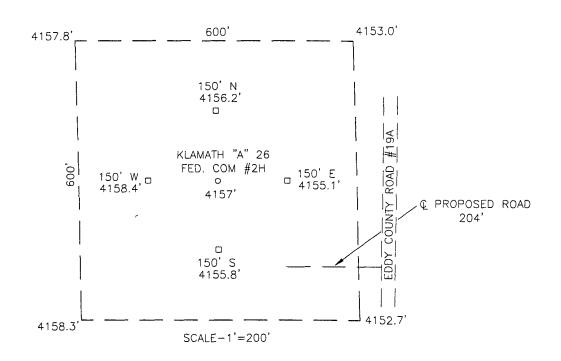
## Permitting & Land

Mr. Donny G. Glanton Senior Lease Operations ROW Representative EOG Resources, Inc. P.O. Box 2267 Midland, TX 79702 (432) 686-3642 Office (432) 770-0602 Cell

<u>Drilling</u>	<b>Operations</b>
Mr. Jason LaGrega	Mr. Howard Kemp
Division Drilling Engineer	Production Manager
EOG Resources, Inc.	EOG Resources, Inc
P.O. Box 2267	P.O. Box 2267
Midland, TX 79702	Midland, TX 79702
(432) 686-3633 Office	(432) 686-3704 Office
(432) 894-1217 Cell	(432) 634-1001 Cell

SECTION 26, TOWNSHIP 18 SOUTH, RANGE 21 EAST, N.M.P.M., NEW MEXICO EXHIBIT #2 EDDY COUNTY







## SURVEYORS CERTIFICATE

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR
NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM
RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS
TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND
BELIEF, AND MEETS THE "MINIMIUM STANDARDS FOR SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS

Terry J. Asgl J.M. R.P.S. No. 15079

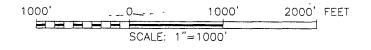
Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR HOBBS, NEW MEXICO - 505-393-9146

DRIVING DIRECTIONS:
BEGINNING IN HOPE AT THE INTERSECTION OF HWY.
#82 AND EDDY COUNTY ROAD #12 (ARMSTRONG
ROAD), GO SOUTH ON EDDY CO ROAD #12 FOR
4.9 MILES, TURN RIGHT ON EDDY COUNTY ROAD
#19 (TRAIL ENDS ROAD) FOR 2.1 MILES, TURN
LEFT ON EDDY COUNTY ROAD #19A AND GO SOUTH
FOR 0.2 MILES, TURN RIGHT FOR 204 FEET TO

## **LEGEND**

- - DENOTES FOUND MONUMENT AS NOTED
- DENOTES CALCULATED CORNER

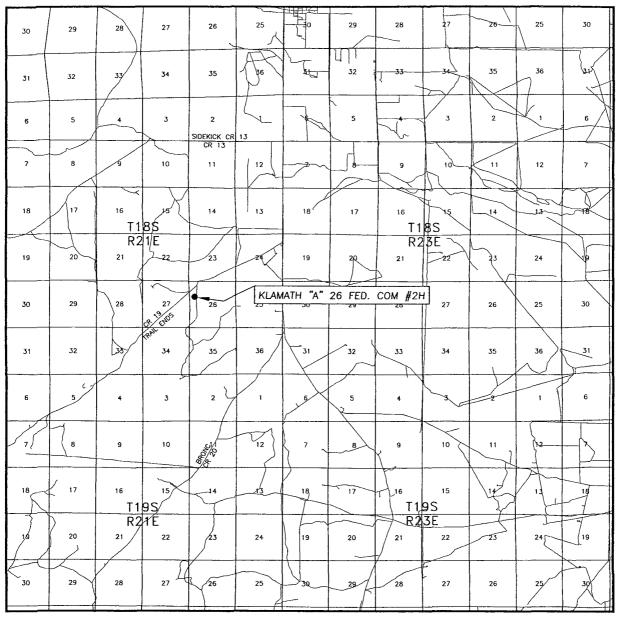


## EOG RESOURCES INC.

KLAMATH "A" 26 FED. COM #2H IN SECTION 26, TOWNSHIP 18 SOUTH, RANGE 21 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 11/07/07	Sheet 1 o	f 1 Sheets
W.O. Number: 070809WL-b (Rev. A)	Drawn By: KA	Rev: "A"
Date: 11/12/07	070809WL-b	Scale:1"=1000'

# VICINITY MAP



SEC. 26 TWP. 18-S RGE. 21-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1650' FNL & 450' FWL

ELEVATION 4157'

OPERATOR EOG RESOURCES INC.

LEASE KLAMATH "A" 26 FED. COM #2H

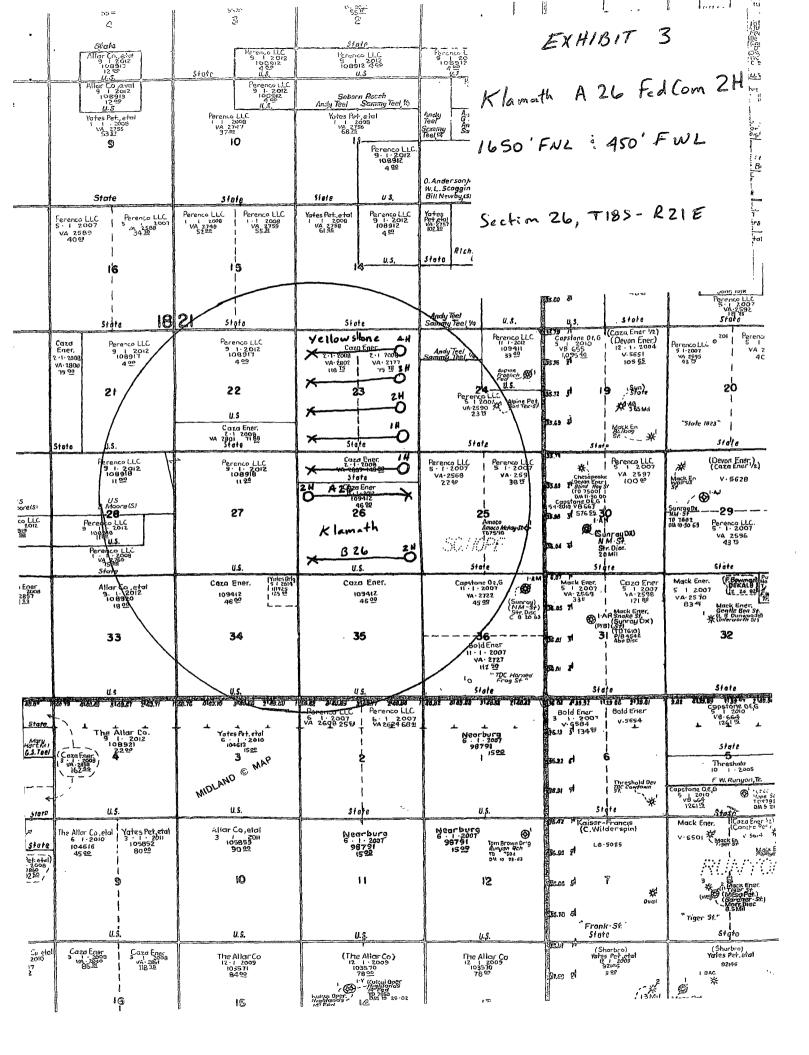
SCALE: 1" = 2 MILES

Asel Surveying

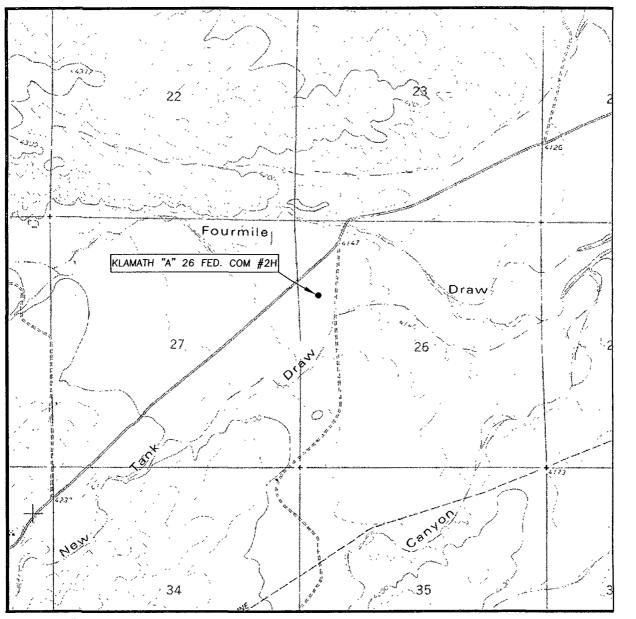


P.O BOX 393 - 310 W. TAYLOR HOBBS, NEW MEXICO - 505-393-9146

DIRECTIONS BEGINNING IN HOPE AT THE INTERSECTION OF HWY. #82 AND EDDY COUNTY ROAD #12 (ARMSTRONG ROAD), GO SOUTH ON EDDY CO. ROAD #12 FOR 4.9 MILES, TURN RIGHT ON EDDY COUNTY ROAD #19 (TRAIL ENDS ROAD) FOR 2.1 MILES, TURN LEFT ON EDDY COUNTY ROAD #19A AND GO SOUTH FOR 0.2 MILES, TURN RIGHT FOR 204 FEET TO LOCATION.



# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

HOLT TANK, N.M.

CONTOUR INTERVAL: 20'

SEC. 26 TWP. 18-S RGE. 21-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 1650' FNL & 450' FWL

ELEVATION 4157'

OPERATOR EOG RESOURCES INC.

LEASE KLAMATH "A" 26 FED. COM #2H

U.S.G.S. TOPOGRAPHIC MAP

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR HOBBS, NEW MEXICO - 505-393-9146



## **OPERATOR CERTIFICATION**

I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions 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 \_\_\_\_\_\_\_\_, day of \_\_\_\_\_\_\_\_\_\_, 2007.

Name:	Doriny G. Glanton	
Position:	Sr. Lease Operations ROW Representative	
Address:	P.O. BOX 2267 Midland, TX 79705	
Telephone	e: 432-686-3642	
Field Repr	resentative (if not above signatory):	
Address (i	if different from above):	
Telephone	e (if different from above):	
E-mail (or	otional): donny_glanton@eogresources.com	

Du J. Mily

# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	EOG Resources Inc.
LEASE NO.:	NM-109412
WELL NAME & NO.:	2H-Klamath A 26 Fed Com
SURFACE HOLE FOOTAGE:	1650' FNL & 450' FWL
BOTTOM HOLE FOOTAGE	1880' FNL & 660' FEL
LOCATION:	Section 26, T. 18 S., R 21 E., NMPM
COUNTY:	Eddy County, New Mexico

## TABLE OF CONTENTS

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

General Provisions
Permit Expiration
Archaeology, Paleontology, and Historical Sites
Noxious Weeds
Special Requirements
Aplomado Falcon
<b>◯</b> Construction
Notification
Topsoil
Reserve Pit
Federal Mineral Material Pits
Well Pads
Roads
Road Section Diagram
<b>∑</b> Drilling
Production (Post Drilling)
Well Structures & Facilities
Pipelines
Electric Lines
Reserve Pit Closure/Interim Reclamation
Final Abandonment/Reclamation

## I. GENERAL PROVISIONS

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

## II. PERMIT EXPIRATION

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

## III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

## IV. NOXIOUS WEEDS

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

## V. SPECIAL REQUIREMENT(S)

Mitigation Measures: The mitigation measures include the Pecos District Conditions of Approval and the Aplomado Falcon stipulations.

## Stipulations for Drilling in Aplomado Falcon Habitat

The following well pad construction and reclamation measures will be implemented to provide for minimal long-term disturbance:

No Yuccas over 5 feet in height will be damaged by vehicular use or any other activity associated with this project.

Remove all caliche from well pads and roads that are plugged and abandoned. Reclamation will consist of disking, mulching, seeding with a drill (See seed mixture below), and application of water to encourage seed germination.

Well pad size will not exceed 300 ft. x 390 ft. (unless multiple wells are drilled from the same well pad). All unused portions of the well pad associated with producing wells will be reclaimed using the seed mixture below:

Buffalograss (Buchloe dactyloides)	4 lbs/acre
Blue grama (Bouteloua gracilis)	1 lbs/acre
Cane bluestem (Bothriochloa barbinodis)	5 lbs/acre
Sideoats grama (Boutelou curtipendula)	·5 lbs/acre
Plains bristlegrass (Setaria macrostachya)	6 lbs/acre

Reserve pits for drilling and disposal are not allowed unless the pit can be effectively netted to the satisfaction of the BLM. Steel tank circulation system must be used if the reserve pit is not netted.

All active raptor nests will be avoided by a minimum of 400 meters by all activities or curtail activities until fledging is complete.

All inactive raptor nests will be avoided by a minimum of 200 meters by all activities.

All roads associated with well development will not exceed 30 ft in width

Klamath "A" 26 Federal Com. # 2H: Pit North V-Door East

#### 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 (505) 234-5972 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 stockpile the topsoil of the well pad. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

#### C. RESERVE PITS

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

The reserve pit shall be constructed 125' X 125' on the North side of the well pad V-Door East.

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

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

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

#### D. FEDERAL MINERAL MATERIALS PIT

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

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

## E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

#### F. ON LEASE ACCESS ROADS

#### Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

#### Surfacing

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

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

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

#### Crowning

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

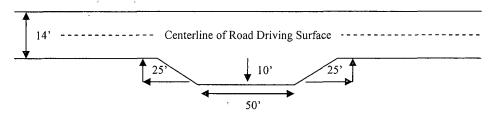
#### Ditching

Ditching shall be required on both sides of the road.

#### **Turnouts**

Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

#### Standard Turnout - Plan View

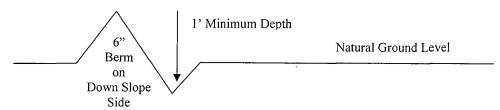


## Drainage

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

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

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



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

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

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

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

## **Culvert Installations**

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

#### Cattleguards

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

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

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

## Fence Requirement

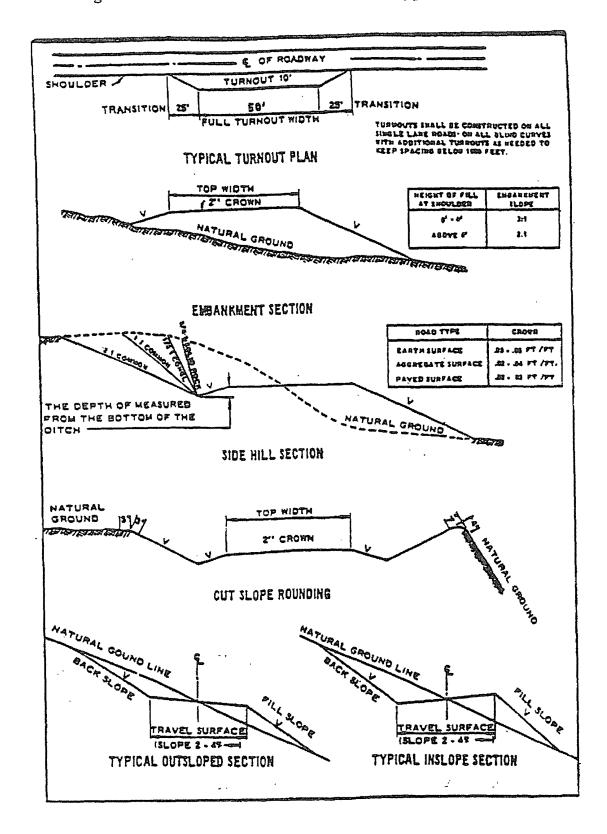
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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

#### **Public Access**

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

Figure 1 - Cross Sections and Plans For Typical Road Sections



#### VII. DRILLING

#### A. DRILLING OPERATIONS REQUIREMENTS

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

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

## **Eddy County**

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

- 1. Hydrogen Sulfide has been reported in minor concentrations of less than 10 ppm in STVs. It is recommended that monitoring equipment be onsite for potential Hydrogen Sulfide. If Hydrogen Sulfide is encountered, please report measurements to the BLM.
- 2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
- 3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

#### B. CASING

- 1. The 8-5/8 inch surface casing shall be set at approximately 1250 feet and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
  - b. Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement). Please provide WOC times to inspector for cement slurries.

- c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
- d. If cement falls back, remedial action will be done prior to drilling out that string.

#### Medium cave/karst.

Possible lost circulation in the San Andres, Glorietta, and Wolfcamp formations.

- 2. The minimum required fill of cement behind the 5-1/2 inch production casing is:
  - Cement to surface. If cement does not circulate, contact the appropriate BLM office. Please provide WOC times to inspector for cement slurries.
- 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. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. The tests shall be done by an independent service company.
  - b. The results of the test shall be reported to the appropriate BLM office.
  - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
  - d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.
  - e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

## D. DRILLING MUD

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

Engineer on call phone (after hours): Carlsbad: (575) 706-2779

WWI 011408

## VIII. PRODUCTION (POST DRILLING)

#### A. WELL STRUCTURES & FACILITIES

## **Placement of Production Facilities**

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

#### **Containment Structures**

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

## **Painting Requirement**

All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color Shale Green, Munsell Soil Color Chart # 5Y 4/2

- B. PIPELINES
- C. ELECTRIC LINES

## IX. INTERIM RECLAMATION & RESERVE PIT CLOSURE

#### A. INTERIM RECLAMATION

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

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

At the time reserve pits are to be reclaimed, operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

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

#### B. RESERVE PIT CLOSURE

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

## Aplomado Falcon Habitat Seed Mixture

Buffalograss (Buchloe dactyloides)) 4 lbs/acre
Blue grama (Bouteloua gracilis) 1 lb/acre
Cane bluestem (Bothriochloa barbinodis) 5 lbs/acre
Sideoats grama (Bouteloua curtipendula) 5 lbs/acre
Plains bristlegrass (Setaria macrostachya) 6 lbs/acre

(Insert Seed Mixture Here)

## X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

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

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