

OCD-ARTESIA

JUL 29 2009

JUL 22 2009

ATS-09-338  
Secretary's Petach  
EA-09-641

Form 3160-3  
(April 2004)

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT  
**APPLICATION FOR PERMIT TO DRILL OR REENTER**

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

1a Type of work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5 Lease Serial No NMNM-068545
1b Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6 If Indian, Allottee or Tribe Name
2 Name of Operator BOPCO, L. P.		7 If Unit or CA Agreement, Name and No NMNM71016
3a Address P. O. Box 2760 Midland, TX 79702		8 Lease Name and Well No Poker Lake Unit #270H
3b. Phone No (include area code) 432-683-2277		9 API Well No. 30-015-37174
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface SWNW, Lot 2, 2250' FNL, 660' FWL, Lat:N32.233194, Long:W103.927361 At proposed prod zone BHL 2075' FNL & 400' FEL, Sec 7, T24S, R30E		10 Field and Pool, or Exploratory Undesignated Bonesprings
11 Sec, T R M or Blk and Survey or Area Sec., 7, T24S, R30E Mer NMP		12 County or Parish Eddy
13 State NM		14 Distance in miles and direction from nearest town or post office* 14 miles East of Malaga, NM
15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) 660'	16 No. of acres in lease 1843	17 Spacing Unit dedicated to this well 160
18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 1338'	19 Proposed Depth TVD 8297 12400' MD 12332 Pilot hole 9450'	20 BLM/BIA Bond No on file COB 000050
21 Elevations (Show whether DF, KDB, RT, GL, etc ) 3151' GL	22 Approximate date work will start* 04/01/2009	23 Estimated duration 30 Days

## 24. Attachments

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

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

25 Signature <i>Annette Childers</i>	Name (Printed/Typed) Annette Childers	Date 3-10-09
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Title  
Administrative Assistant

Approved by (Signature) <i>Jesse J. Juen</i>	Name (Printed/Typed)	Date JUL 16 2009
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Title STATE DIRECTOR	Office NM STATE OFFICE
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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 USC Section 1001 and Title 43 USC Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction

\*(Instructions on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

Surface casing to be set into the Rustler below all fresh water sands.

Production casing will be cemented using Schlumberger 50:50 Poz: Class "H" system with TOC above base of 9 5/8" intermediate casing.

Drilling procedure, BOP diagram, anticipated tops attached.

This well is located inside the Secretary's Potash area and outside the R-111 Potash area. There are no potash leases within one mile of the location

Both surface and bottom hole location are orthodox.

Closed Loop System will be used.

DISTRICT I  
1626 N. French Dr., Hobbs, NM 88240

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

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

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

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised October 12, 2005

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

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-015-37174</b>	Pool Code <b>97077</b>	Pool Name <b>Undesignated Bone Spring</b>
Property Code	Property Name <b>POKER LAKE UNIT</b>	Well Number <b>270H</b>
GRID No. <b>260737</b>	Operator Name <b>BOPCO, L.P.</b>	Elevation <b>3151'</b>

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
LOT 2	7	24 S	30 E		2250	NORTH	660	WEST	EDDY

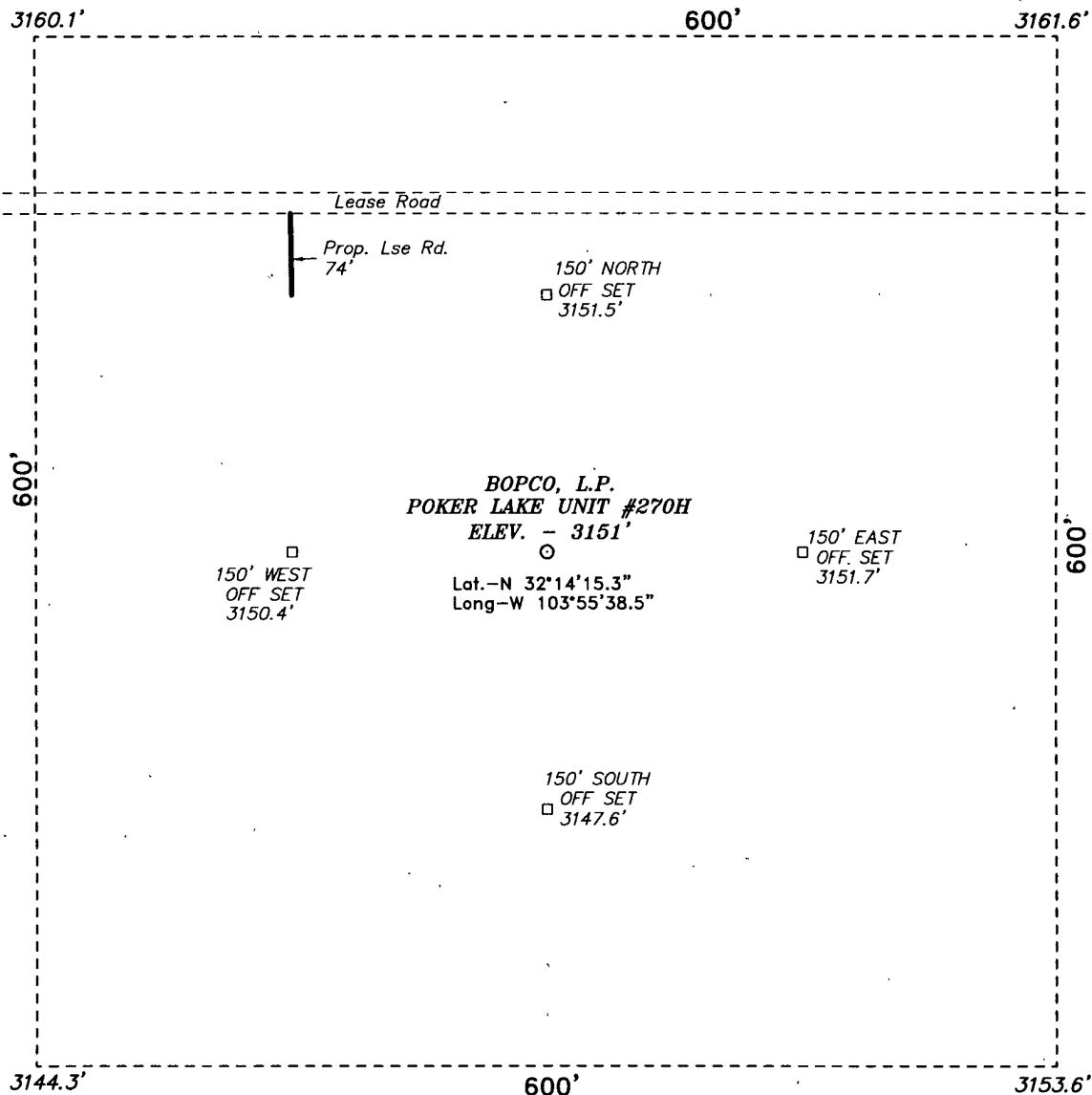
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	7	24 S	30 E		2075	NORTH	400	EAST	EDDY
Dedicated Acres <b>160</b>	Joint or Infill <b>N</b>	Consolidation Code	Order No.						

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

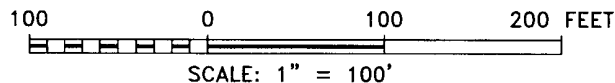
		<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Gary E. Gerhard</i> 3/10/09 Signature Date</p> <p><b>Gary E. Gerhard</b> Printed Name</p>
<p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>MARCH 7 2009 Date Surveyed</p> <p><i>Gary L. Jones</i> Signature &amp; Seal Professional Surveyor</p> <p>Certificate No. Gary L. Jones 7977</p>		
<p>BASIN SURVEYS</p>		

SECTION 7, TOWNSHIP 24 SOUTH, RANGE 30 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



DIRECTIONS TO LOCATION:

FROM THE JUNCTION OF CO. R. 793 AND STATE HWY 128, GO SOUTH ON 793 FOR APPROX. 4.0 MILES TO LEASE ROAD; THENCE EAST ON LEASE ROAD FOR 0.25 MILE; THENCE SOUTH 0.9 MILE; THENCE EAST 0.3 MILE; THENCE SOUTHERLY FOR APPROX. 5.0 MILES; THENCE WESTERLY FOR 1.2 MILE TO CO. RD. 748; THENCE SOUTHEASTERLY FOR APPROX. 2.1 MILES TO LEASE ROAD; THENCE WESTERLY FOR 0.2 MILE TO A POINT ON THE PROPOSED WELL PAD.



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

W.O. Number: 6299

Drawn By: K. GOAD

Date: 10-13-2008

Disk: KJG CD#7 - 6299A.DWG

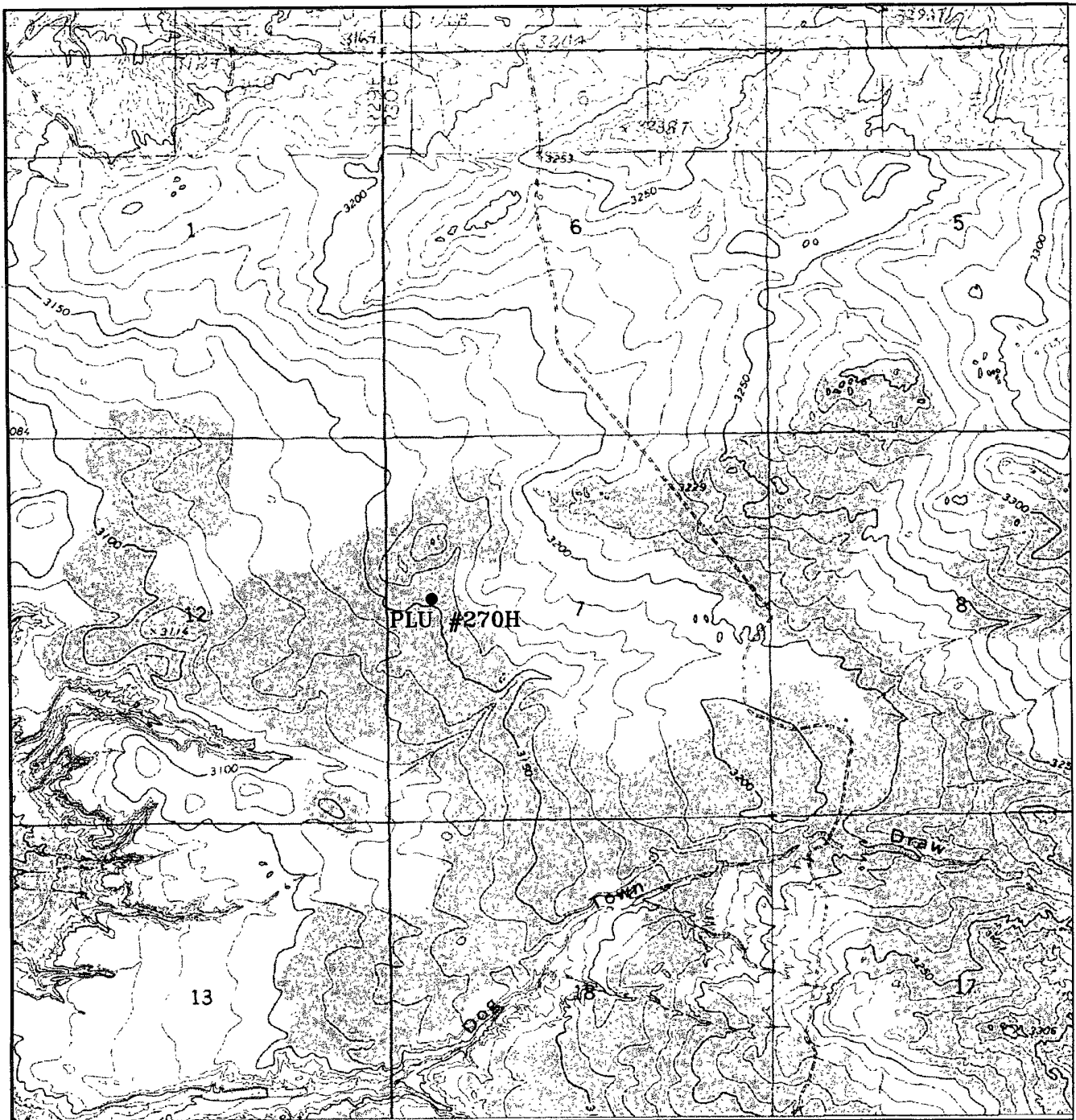
**BOPCO, L.P.**

REF: POKER LAKE UNIT No. 270H / Well Pad Topo

THE POKER LAKE UNIT No. 270H LOCATED 2250' FROM  
THE NORTH LINE AND 660' FROM THE WEST LINE OF  
SECTION 7, TOWNSHIP 24 SOUTH, RANGE 30 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 10-13-2008

Sheet 1 of 1 Sheets



# **POKER LAKE UNIT #270H**

Located at 2250' FNL and 660' FWL

Section 7, Township 24 South, Range 30 East,  
N.M.P.M., Eddy County, New Mexico.



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

W.O. Number: 6299AA - KJG #7

Survey Date 03-01-2006

Scale: 1" = 2000'

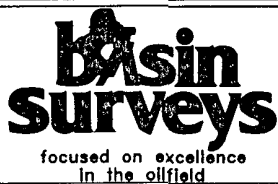
Date: 03-01-2006

**BOPCO, L.P.**

## POKER LAKE UNIT #270H

Located at 2250' FNL and 660' FWL

Section 7, Township 24 South, Range 30 East,  
N.M.P.M., Eddy County, New Mexico.



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

W.O. Number: 6299AA - KJG #7

Survey Date: 03-01-2006

Scale: 1" = 2 MILES

Date: 03-01-2006

BOPCO, L.P.

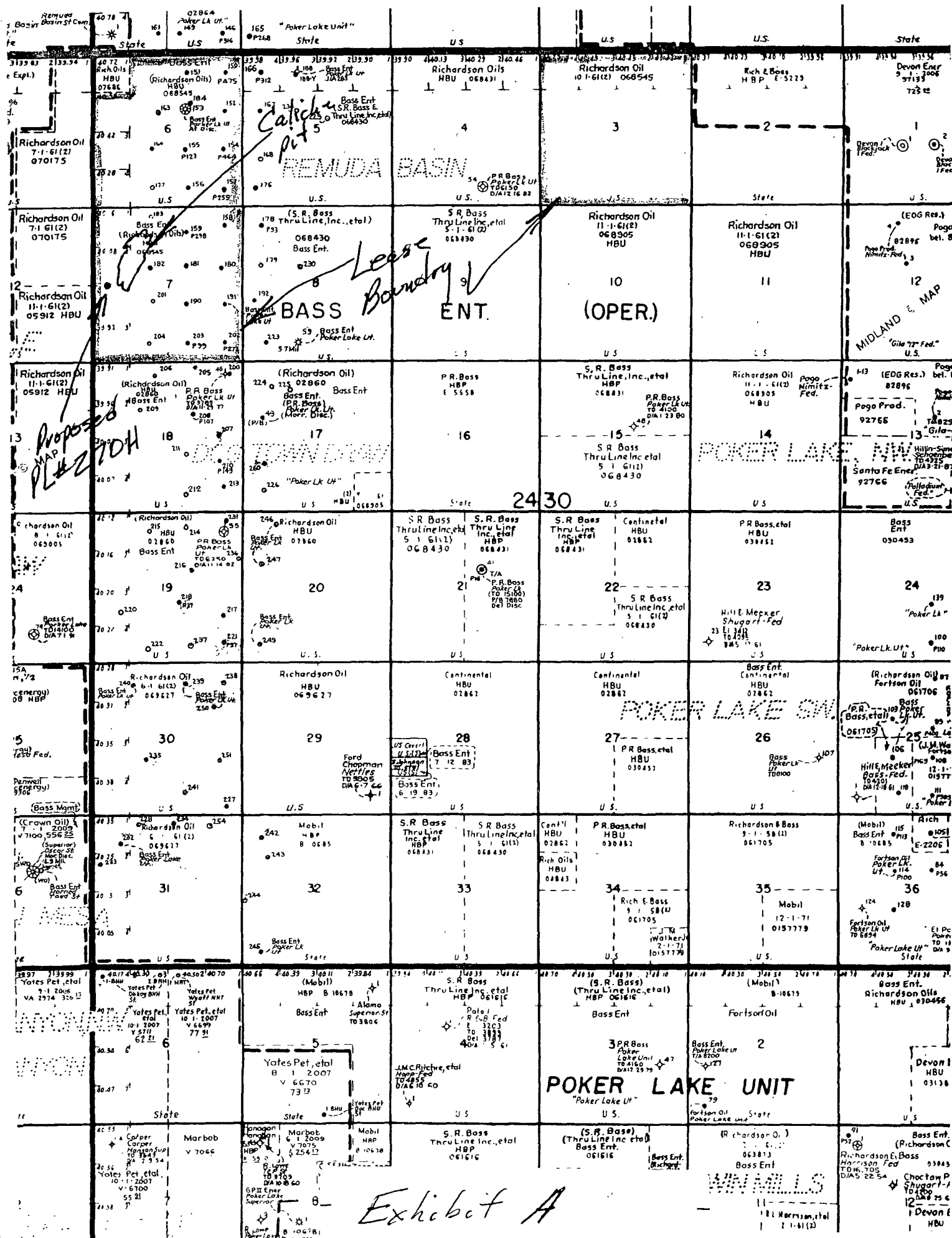
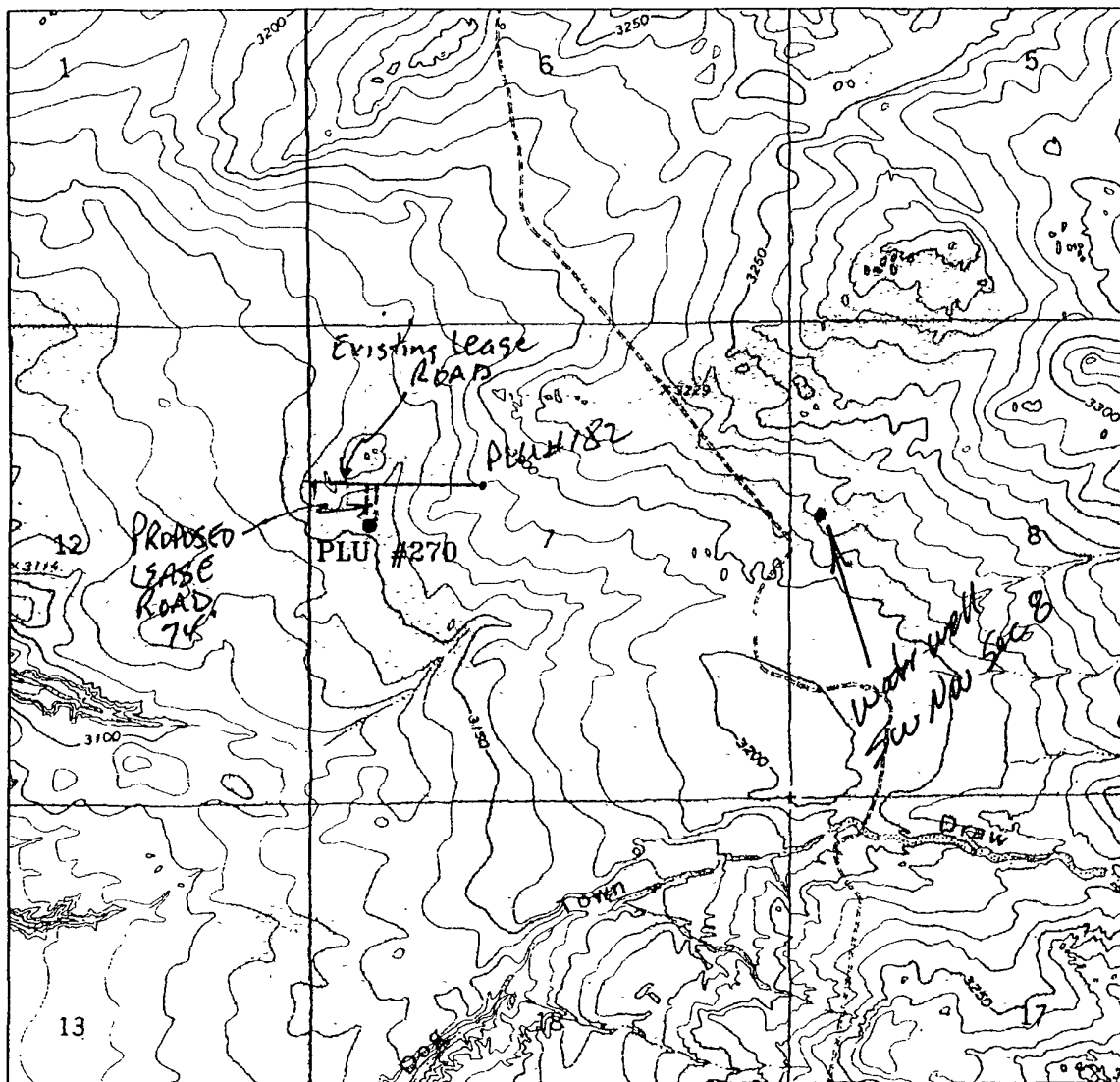


Exhibit "B"

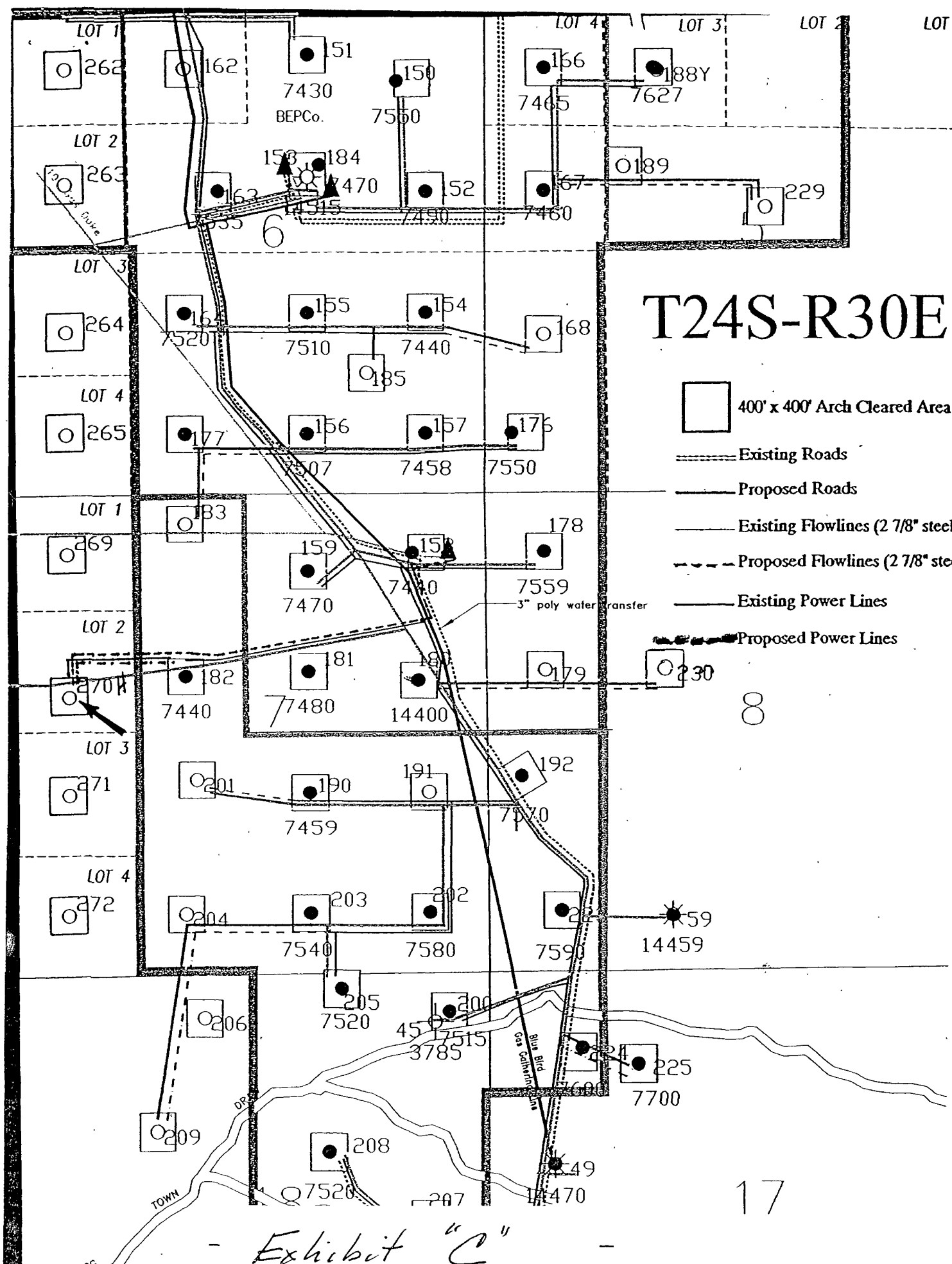


POKER LAKE UNIT #270H

Located at 2250' FNL and 660' FWL

Section 7, Township 24 South, Range 30 East,

N M P M Eddy County New Mexico



- Exhibit "C" -

# **EIGHT POINT DRILLING PROGRAM** **BOPCO, L. P.**

**NAME OF WELL: Poker Lake Unit #270-H**

**LEGAL DESCRIPTION - SURFACE:** 2250' FNL & 660' FWL, Section 7, T24S, R30E, Eddy County, NM.  
**BHL:** 2075' FNL, 400' FEL, Section 7, T24S, R30E, Eddy County, NM.

## **POINT 1: ESTIMATED FORMATION TOPS**

(See No. 2 Below)

## **POINT 2: WATER, OIL, GAS AND/OR MINERAL BEARING FORMATIONS**

Anticipated Formation Tops: KB 3176' (est)      GL 3151'

FORMATION	ESTIMATED TOP FROM KB		ESTIMATED SUBSEA TOP	BEARING
	TVD	MD		
B/Rustler	577'	577'	+2600'	Barren
T/Salt	617'	617'	+2560'	Barren
B/Salt	3199'	3199'	-22'	Barren
T/Lamar Lime	3417'	3417'	-240'	Barren
T/Ramsey	3452'	3452'	-275'	Oil/Gas
T/Lwr Cherry Canyon	5527'	5527'	-2350'	Oil/Gas
T/Lwr Brushy Canyon	6899'	6899'	-3722'	NA
Bone Spring Lime	7162'	7162'	-3985'	Oil/Gas
T/Avalon Sand	7252'	7252'	-4075'	Oil/Gas
T/1 <sup>st</sup> Bone Spring Sand	8177'	8177'	-5000'	Oil/Gas
T/2 <sup>nd</sup> Bone Spring Sand	9117'	9117'	-5940'	Oil/Gas
TD Pilot Hole	9450'	9450'	-6273'	Oil/Gas
KOP	7750'	7819'	-4573'	Oil/Gas
EOC	8237'	8600'	-5060'	Oil/Gas
TD	8297'	<del>12400'</del>	-5120'	Oil/Gas

*12332 - div. plan*

## **POINT 3: CASING PROGRAM**

TYPE	INTERVALS (MD)	Hole Size	PURPOSE	CONDITION
20"	0' - 60'	24"	Conductor	Contractor Discretion
13-3/8", 48#, H-40, ST&C	0' - <del>607'</del>	17-1/2"	Surface	New
9-5/8", 36#, J-55, 8RD, LT&C	0' - 3437'	12-1/4"	Intermediate	New
5-1/2", 17#, P-110, LT&C	0' - 7500'	8-3/4"	Production	New
5-1/2", 17#, P-110, Ultra Flush JT	7500' - <del>12,400'</del>	8-3/4"	Production	New

*12332 - div. plan*

## **CASING DESIGN SAFETY FACTORS:**

TYPE	TENSION	COLLAPSE	BURST
13-3/8", 48#, H-40, ST&C	12.772	2.77	2.85
9-5/8", 36#, J-55, LT&C	4.40	1.44	1.16
5-1/2", 17#, J-55, LT&C	1.897	1.61	1.66
5-1/2", 17#, P110, Ultra Flush Jt	1.897	1.82	6.55

## DESIGN CRITERIA AND CASING LOADING ASSUMPTIONS:

### SURFACE CASING

Tension	A 1.6 design factor utilizing the effects of buoyancy (9.2 ppg).
Collapse	A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.48 psi/ft). The effects of axial load on collapse will be considered.
Burst	A 1.3 design factor with a surface pressure equal to the fracture gradient at setting depth less a gas gradient to the surface. Internal burst force at the shoe will be fracture pressure at that depth. Backup pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a 1.0 psi/ft gradient. The effects of tension on burst will not be utilized.

### PROTECTIVE CASING

Tension	A 1.6 design factor utilizing the effects of buoyancy (10 ppg).
Collapse	<p>A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.52 psi/ft). The effects of axial load on collapse will be considered.</p> <p>In the case of development drilling, collapse design should be analyzed using internal evacuation equal to 1/3 the proposed total depth of the well. This criterion will be used when there is absolutely no potential of the protective string being used as a production casing string.</p>
Burst	A 1.0 surface design factor and a 1.3 downhole design factor with a surface pressure equivalent to the fracture gradient at setting depth less a gas gradient to the surface. Internal burst force at the shoe will be fracture pressure at that depth. Backup pressure will be formation pore pressure. In all cases a conservative fracture pressure will be used such that it represents the upper limit of potential fracture resistance up to a 1.0 psi/ft gradient.

### PRODUCTION CASING

Tension	A 1.6 design factor utilizing the effects of buoyancy (9.2 ppg).
Collapse	A 1.0 design factor with full internal evacuation and a collapse force equal to the mud gradient in which the casing will be run (0.48 psi/ft). The effects of axial load on collapse will be considered.
Burst	A 1.25 design factor with anticipated maximum tubing pressure (3975 psig) on top of the maximum anticipated packer fluid gradient. Backup on production strings will be formation pore pressure. The effects of tension on burst will not be utilized.

## **POINT 4: PRESSURE CONTROL EQUIPMENT (SEE ATTACHED DIAGRAM)**

The blowout preventer equipment will be as shown in Diagram #2 and will consist of a 13 5/8" double ram type preventer (10,000 psi WP) and a bag type annular preventer (5000 psi WP). The same BOPE will be installed on the surface casinghead and on all subsequent casing strings. The BOP stack, choke, kill lines, kelly cocks, inside BOP, etc. when installed on the surface casinghead will be hydro-tested to 200 psig & 2000 psig by an independent tester. The BOPE when rigged up on the intermediate casing spool will be tested to 3000 psig by independent tester. In addition to the high pressure test, a low pressure (200 psig) test will be required.

These tests will be performed:

- a) Upon installation
- b) After any component changes
- c) Fifteen days after a previous test
- d) As required by well conditions

A function test to insure that the preventers are operating correctly will be performed on each trip.

#### POINT 5: MUD PROGRAM

DEPTH	MUD TYPE	WEIGHT	FV	PV	YP	FL	Ph
<i>see COA</i> 0' - 607'	FW Spud Mud	8.5 - 9.2	38-70	NC	NC	NC	10.0
607' - 3437'	Brine Water	9.8 - 10.2	28-30	NC	NC	NC	9.5 - 10.5
3437' - 5600'	FW/Gel	8.7 - 9.2	28-36	NC	NC	NC	9.5 - 10.0
5600' - <del>12,400'</del> 12332' - div. plan	FW/Gel	8.7 - 9.2	28-36	NC	NC	NC	9.5 - 10.0

**NOTE:** May increase vis for logging purposes only.

#### POINT 6: TECHNICAL STAGES OF OPERATION

##### A) TESTING

None anticipated.

##### B) LOGGING

Run #1: PEX (GR-CNL/LDT-AIT) from TD of pilot hole 9450' to 3437' with GR-CNL to surface.  
Run #2: GR with MWD during drilling of build and horizontal portions of 8-3/4" hole.

##### C) CONVENTIONAL CORING

None anticipated.

##### D) CEMENT *← see COA*

INTERVAL	AMOUNT SXS	FT OF FILL	TYPE	GALS/SX	PPG	FT <sup>3</sup> /SX
<b>SURFACE:</b>						
Lead: 0 - 307' (100% excess Circ to surface)	260	307	Class "C" + 2% CaCl <sub>2</sub> + 4% D20 + 0.125 pps D130	10.79	12.9	1.96
Tail: 307' - 607' (100% excess)	340	300	Class "C" + 2% CaCl <sub>2</sub>	6.29	14.8	1.34
<b>INTERMEDIATE:</b>						
Lead: 0' - 2937' (100% excess Circ to surface)	935	2937	50:50 Poz: Class "C" + 5% D44 (bwow) + 10% D20 + 2 pps D24 + 0.2% D46 + 0.125 pps D130	13.95	11.9	2.46
Tail: 2437' - 3437' (100% excess)	260	500	Class "C" + 1% CaCl <sub>2</sub> Halad-9	6.29	14.8	1.33

PRODUCTION:						
Lead 2937' - 7500'	560	4563	50:50 Poz: Class "H" + 5%	14.68	11.9	2.46
(50% excess			D44(bwow) + 10% D20 +			
<del>circ to surface</del>			2 pps D24 + 0.2% D46 +			
			0.125 pps D130			
<i>500' Tie back</i>						
Tail 7500' - <del>12,400'</del>	715	4900	50:50 Poz: Class "H" + 5%	6.02	14.2	1.36
(50% excess)			D44(bwow) + 0.2% D167 +			
			0.1% D65 + 3 pps D24 + 0.2%			
			D800 + 0.2% D46 + 0.125 pps			
			D130 + 2% D20			
<i>12332 div. plan</i>						

#### E) DIRECTIONAL DRILLING

BOPCO, L.P. plans to drill out the 9-5/8" intermediate casing with a 8-3/4" bit to a TVD of approximately 9450' at which point open hole logs will be run. The 8-3/4" hole will be plugged back to approximately 7760'. At this depth a 8-3/4" directional hole will be initiated at an azimuth of 89.9°, building angle at 12.00°/100' to a max angle of 89.47° at a TVD of 8237' (MD 8502'). This 89.9° angle will be maintained to a MD of ~~12,400'~~ or TVD of 8297'.

*12332 - div. plan*

#### POINT 7: ANTICIPATED RESERVOIR CONDITIONS

Normal pressures are anticipated throughout Delaware and Bone Spring section. A BHP of 3940 psi (max) or MWE of 9.20 ppg is expected. Lost circulation may exist in the Delaware Section from 3417'-8177' TVD. No H<sub>2</sub>S is anticipated.

#### POINT 8: OTHER PERTINENT INFORMATION

##### A) Auxiliary Equipment

Upper and lower kelly cocks. Full opening stab in valve on the rig floor.

##### B) Anticipated Starting Date

Upon approval

30 days drilling operations

14 days completion operations

GEG/jdb

March 5, 2009

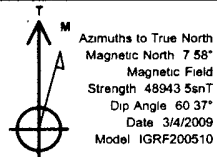


# BOPCO L.P.

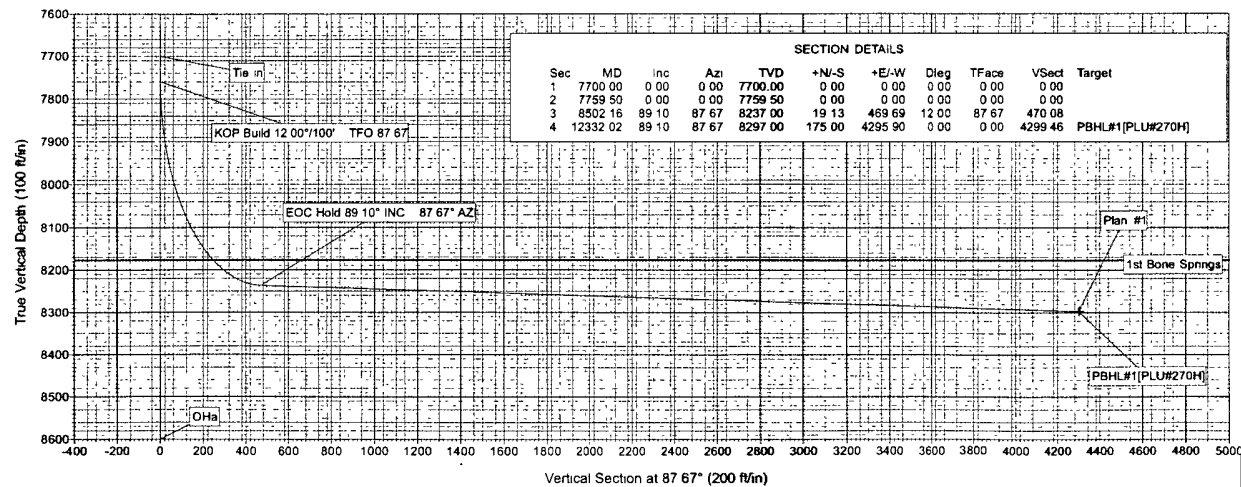
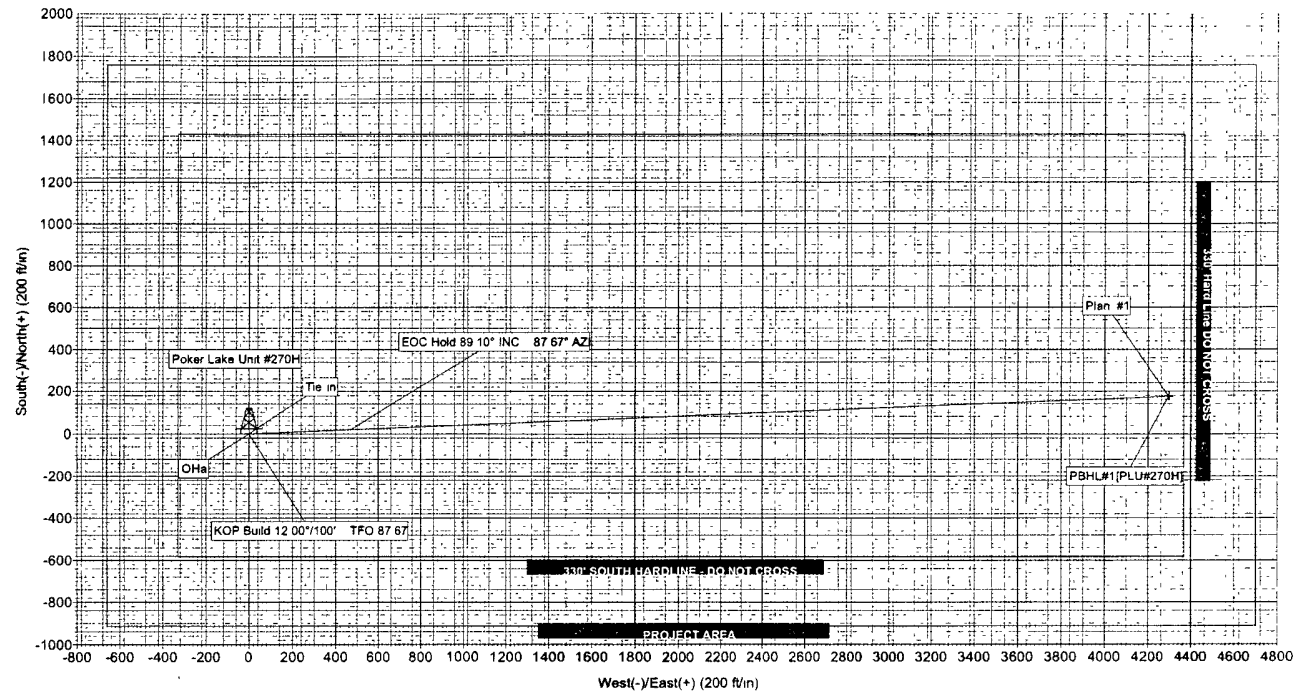
PROJECT DETAILS Eddy Co., New Mexico (Nad 83)

Geodetic System US State Plane 1983  
Datum North American Datum 1983  
Ellipsoid GRS 1980  
Zone New Mexico Eastern Zone  
System Datum Mean Sea Level

ANNOTATIONS  
TVD MD Annotation  
7700.00 7700.00 Tie in  
7759.50 7759.50 KOP Build 12.00°/100' TFO 87.67  
8237.00 8502.16 EOC Hold 89.10° INC 87.67° AZI



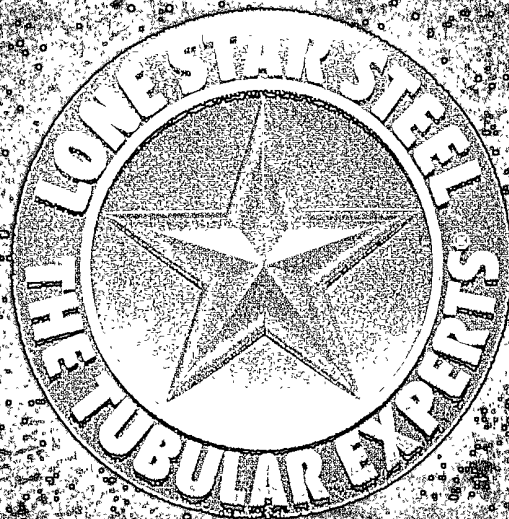
Project Eddy Co., New Mexico (Nad 83)  
Site Poker Lake Unit #270H  
Well Poker Lake Unit #270H  
Wellbore Lateral #1  
Plan Plan #1 (Poker Lake Unit #270H/Lateral #1)



Plan Plan #1 (Poker Lake Unit #270H/Lateral #1)  
Created By Heather Vannoy Date March 04 2009

# OCTG PRODUCTS

## 24<sup>th</sup> Edition





**LONE STAR STEEL**  
Lone Star Technologies Company

### **Executive & General Sales Offices**

P. O. Box 803546  
Dallas, Texas 75380-3546  
972-386-3981  
fax: 972-770-6409  
[www.lonestarsteel.com](http://www.lonestarsteel.com)

### **Sales Office**

515 North Sam Houston Parkway E., Suite 400  
Houston, Texas 77060-4041  
281-447-8818  
fax: 281-447-8933

### **Technical Services Department**

6866 Highway 259 South  
Lone Star, Texas 75668-1000  
(903) 656-6981  
fax: (903) 656-6987

# **1-800-527-4615**

Belgium	0-800-1-2157
France	0-800-90-1272
Germany	0-800-000-7315
Netherlands	0-800-022-4935
United Kingdom	0-800-89-1086

# CASING DIMENSIONS AND MINIMUM PERFORMANCE PROPERTIES

Size O D in	Nominal Weight T & C lbs/ft	Grade	Collapse Resistance psi	Internal Yield Pressure at Minimum Yield, psi				Joint Strength 1000 lbs			Body Yield 1000 lbs	Wall in	I.D. in	Drift Diameter in	
				PE	STC	LTC	BTC	STC	LTC	BTC				API	LSS
5 500	15 50	J-55*	4040	4810	4810	4810	4810	202	217	300	248	0.275	4.950	4.825	
5.500	15 50	K-55*	4040	4810	4810	4810	4810	222	239	366	248	0.275	4.950	4.825	
5 500	15.50	M-65*	4470	5690	5690	5690	5690	235	253	342	293	0.275	4.950	4.825	
5 500	17 00	J-55*	4910	5320	5320	5320	5320	229	247	329	273	0.304	4.892	4.767	
5 500	17 00	K-55*	4910	5320	5320	5320	5320	252	272	402	273	0.304	4.892	4.767	
5 500	17 00	M-65*	5510	6290	6290	6290	6290	267	287	376	323	0.304	4.892	4.767	
5 500	17 00	L-80*	6290	7740	7740	7740	7740	338	428	397	397	0.304	4.892	4.767	
5.500	17 00	HCL-80*	8580	7740	7740	7740	7740	338	443	397	397	0.304	4.892	4.767	
5 500	17 00	N-80*	6290	7740	7740	7740	7740	348	446	397	397	0.304	4.892	4.767	
5 500	17 00	HCN-80*	8580	7740	7740	7740	7740	356	462	397	397	0.304	4.892	4.767	
5 500	17 00	C-90	6740	8710	8710	8710	8710	356	456	447	447	0.304	4.892	4.767	
5 500	17 00	S-95*	8580	9190	9190	9190	9190	392	498	471	471	0.304	4.892	4.767	
5 500	17 00	T-95	6940	9190	9190	9190	9190	374	480	471	471	0.304	4.892	4.767	
5 500	17 00	C-95*	6940	9190	9190	9190	9190	374	480	471	471	0.304	4.892	4.767	
* 5 500	17 00	HCP-110*	8580	10640	10640	10640	10640	445	568	546	546	0.304	4.892	4.767	
5.500	17 00	P-110*	7480	10640	10640	10640	10640	445	568	546	546	0.304	4.892	4.767	
5 500	17.00	HCQ-125*	8580	12090	12090	12090	12090	481	620	620	620	0.304	4.892	4.767	
5 500	17 00	Q-125*	7890	12090	12090	12090	12090	481	620	620	620	0.304	4.892	4.767	
5 500	17 00	LS-140*	8580	13540	13540 <sup>LR</sup>	13540	13540	534	690	695	695	0.304	4.892	4.767	
5 500	20 00	M-65*	7540	7470	7470	7470	7470	353	442	379	379	0.361	4.778	4.653	
5.500	20 00	L-80*	8830	9190	9190	8990	8990	416	503	466	466	0.361	4.778	4.653	
5 500	20 00	HCL-80*	10630	9190	9190	8990	8990	416	521	466	466	0.361	4.778	4.653	
5 500	20 00	N-80*	8830	9190	9190	8990	8990	428	524	466	466	0.361	4.778	4.653	
5 500	20 00	HCN-80*	10630	9190	9190	8990	8990	438	542	466	466	0.361	4.778	4.653	
5.500	20 00	C-90	9630	10340	10340	10120	10120	438	436	525	525	0.361	4.778	4.653	
5 500	20 00	S-95*	10630	10910	10910	10680	10680	482	585	554	554	0.361	4.778	4.653	
5 500	20 00	T-95	10010	10910	10910	10680	10680	460	563	554	554	0.361	4.778	4.653	
5 500	20 00	C-95*	10010	10910	10910	10680	10680	460	563	554	554	0.361	4.778	4.653	
5 500	20 00	P-110*	11100	12630	12630	12360	12360	548	667	641	641	0.361	4.778	4.653	
5 500	20 00	Q-125*	12080	14360	14360 <sup>LR</sup>	14050	14050	592	728	729	729	0.361	4.778	4.653	
5 500	20 00	LS-140*	12950	16080	16080 <sup>LR</sup>	15740	15740	657	810	816	816	0.361	4.778	4.653	
5 500	20 00	V-150	13460	17230	17230 <sup>LR</sup>	16860 <sup>LR</sup>	16860 <sup>LR</sup>	701	865	874	874	0.361	4.778	4.653	
5 500	23 00	L-80*	11160	10560	9880	8990	8990	489	550	530	530	0.415	4.670	4.545	
5 500	23 00	HCL-80*	12450	10560	9880	8990	8990	489	550	530	530	0.415	4.670	4.545	
5 500	23 00	N-80*	11160	10560	9880	8990	8990	502	579	530	530	0.415	4.670	4.545	
5 500	23 00	HCN-80*	12450	10560	9880	8990	8990	514	579	530	530	0.415	4.670	4.545	
5 500	23 00	C-90	12380	11880	11110	10120	10120	514	579	597	597	0.415	4.670	4.545	
5 500	23 00	S-95*	12940	12540	11730	10680	10680	566	637	630	630	0.415	4.670	4.545	
5.500	23 00	T-95	12940	12540	11730	10680	10680	540	608	630	630	0.415	4.670	4.545	
5 500	23 00	C-95*	12940	12540	11730	10680	10680	540	608	630	630	0.415	4.670	4.545	
5.500	23.00	P-110*	14540	14530	13580 <sup>LR</sup>	12360	12360	643	724	729	729	0.415	4.670	4.545	
5 500	23 00	Q-125*	16070	16510	15430 <sup>LR</sup>	14050	14050	694	782	829	829	0.415	4.670	4.545	
5 500	23 00	LS-140*	17500	18490	17290 <sup>LR</sup>	15740	15740	771	869	928	928	0.415	4.670	4.545	
5 500	23 00	V-150	18390	19810	18520 <sup>LR</sup>	16860 <sup>LR</sup>	16860 <sup>LR</sup>	823	927	995	995	0.415	4.670	4.545	
5 500	26 00	C-90	14240	13630	11110	10120	10120	598	579	676	676	0.476	4.548	4.423	
5 500	26 00	C-95*	15030	14390	11730	10680	10680	628	608	714	714	0.476	4.548	4.423	
5 500	26 00	T-95	15030	14390	11730	10680	10680	628	608	714	714	0.476	4.548	4.423	
5 500	26 00	P-110*	17400	16660	13580 <sup>LR</sup>	12360	12360	748	724	826	826	0.476	4.548	4.423	
5 500	26 00	Q-125*	19770	18930	15430 <sup>LR</sup>	14050	14050	808	782	939	939	0.476	4.548	4.423	
5 500	26 00	V-150	23720	22720	18520 <sup>LR</sup>	16860 <sup>LR</sup>	16860 <sup>LR</sup>	957	927	1127	1127	0.476	4.548	4.423	

**ULTra-FJ****A High-Strength, Flush-Joint Casing Connection**

Nominal OD = 5 1/2  
 Nominal Weight = 17.00  
 Grade = P-110

**Material Parameters**

Minimum Yield = 110,000  
 Minimum Ultimate = 125,000

**Pipe Body**

PE Weight = 16.87  
 Wall thickness = 0.304  
 Nominal ID = 4.892  
 Drift Diameter = 4.767  
 Average Pipe Body Area = 4.989 sq- inches  
 Yield Strength = 548,800 pounds  
 Tensile Strength = 623,600 pounds  
 Minimum Internal Yield Pressure = 10,640 psi (API)  
 Fracture Pressure = 14,640 psi

**Connection Parameters**

OD = 5.528 inches  
 ID (bored) = 4.889 inches  
 Critical Cross Section Area = 3.241 sq- inches  
Yield Strength in Tension = 356,500 pounds  
 Tension Efficiency = 65.0%  
 Fracture Strength = 391,100 pounds  
 Percent Pipe Body Fracture = 62.7%  
Yield Strength in Compression = 367,100 pounds  
Compression Efficiency = 66.9%  
Make-Up Loss = 4.106 inches  
Min. Internal Yield Pressure = 10,640 psi (API 5C3)

The Leak Resistance Limit of ULTra-FJ is

- Internal Pressure -- API Minimum Internal Yield Pressure
- External Pressure -- API Collapse Pressure

Plain-End Wt.		16.87	
Connection Yield		357,000	
Connection Fracture		391,000	
Set Depth	StringWt	DF-Yield	DF-Fail
1,000	16,870	21.16	23.18
2,000	33,740	10.58	11.59
3,000	50,610	7.05	7.73
4,000	67,480	5.29	5.79
5,000	84,350	4.23	4.64
6,000	101,220	3.53	3.86
7,000	118,090	3.02	3.31
8,000	134,960	2.65	2.90
9,000	151,830	2.35	2.58
10,000	168,700	2.12	2.32
11,000	185,570	1.92	2.11
12,000	202,440	1.76	1.93
13,000	219,310	1.63	1.78
14,000	236,180	1.51	1.66
15,000	253,050	1.41	1.55
16,000	269,920	1.32	1.45



Exhibit "D"

BOPCO, L P  
Poker Lake Unit #300H  
Sec 27, T24S, R30E  
Eddy County, NM

RIG LAYOUT SCHEMATIC  
INCLUSIVE OF CLOSED-LOOP DESIGN PLAN

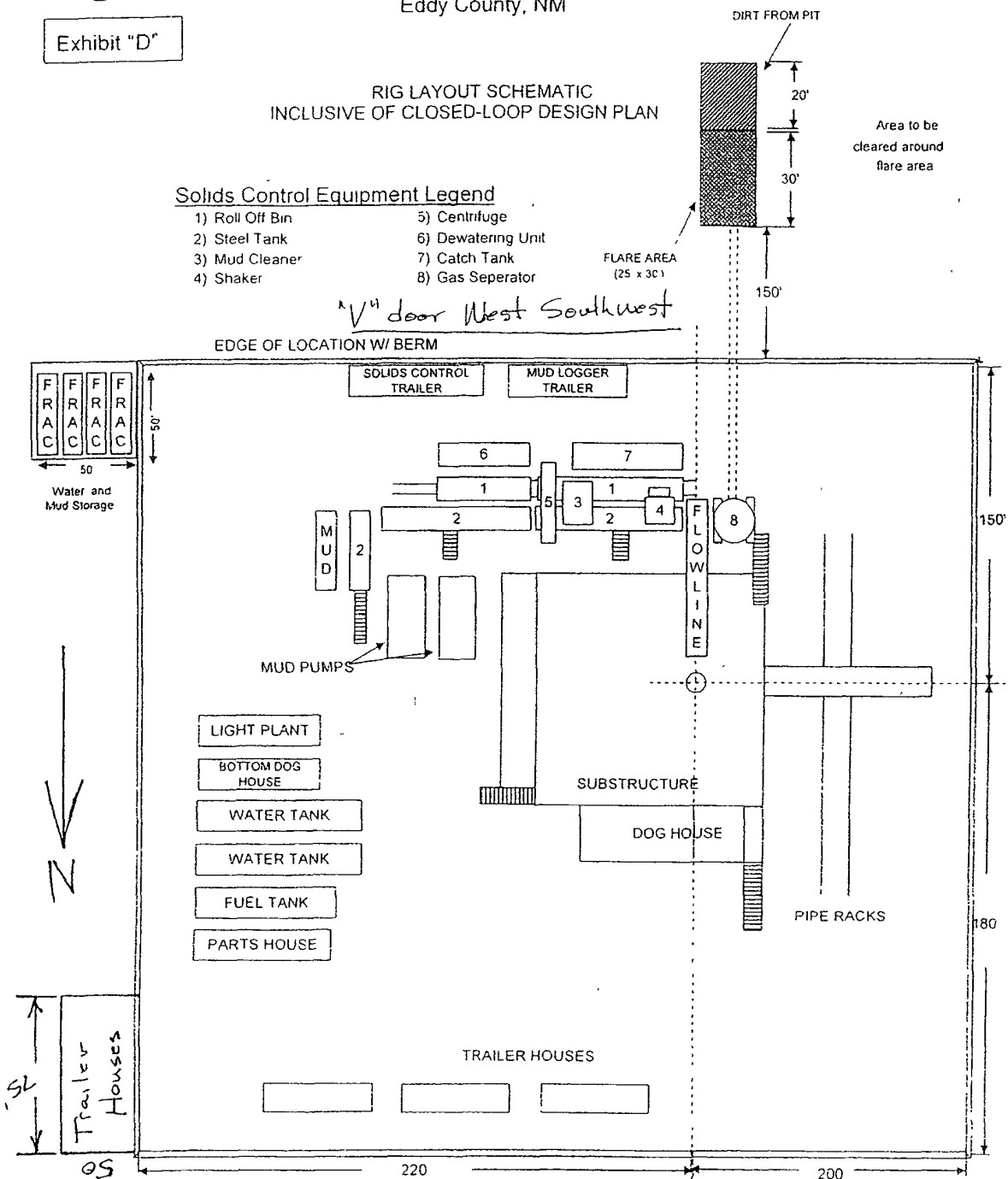
Solids Control Equipment Legend

- |                 |                    |
|-----------------|--------------------|
| 1) Roll Off Bin | 5) Centrifuge      |
| 2) Steel Tank   | 6) Dewatering Unit |
| 3) Mud Cleaner  | 7) Catch Tank      |
| 4) Shaker       | 8) Gas Separator   |

FLARE AREA  
(25 x 30')

V<sup>h</sup> door West Southwest

EDGE OF LOCATION W/ BERM

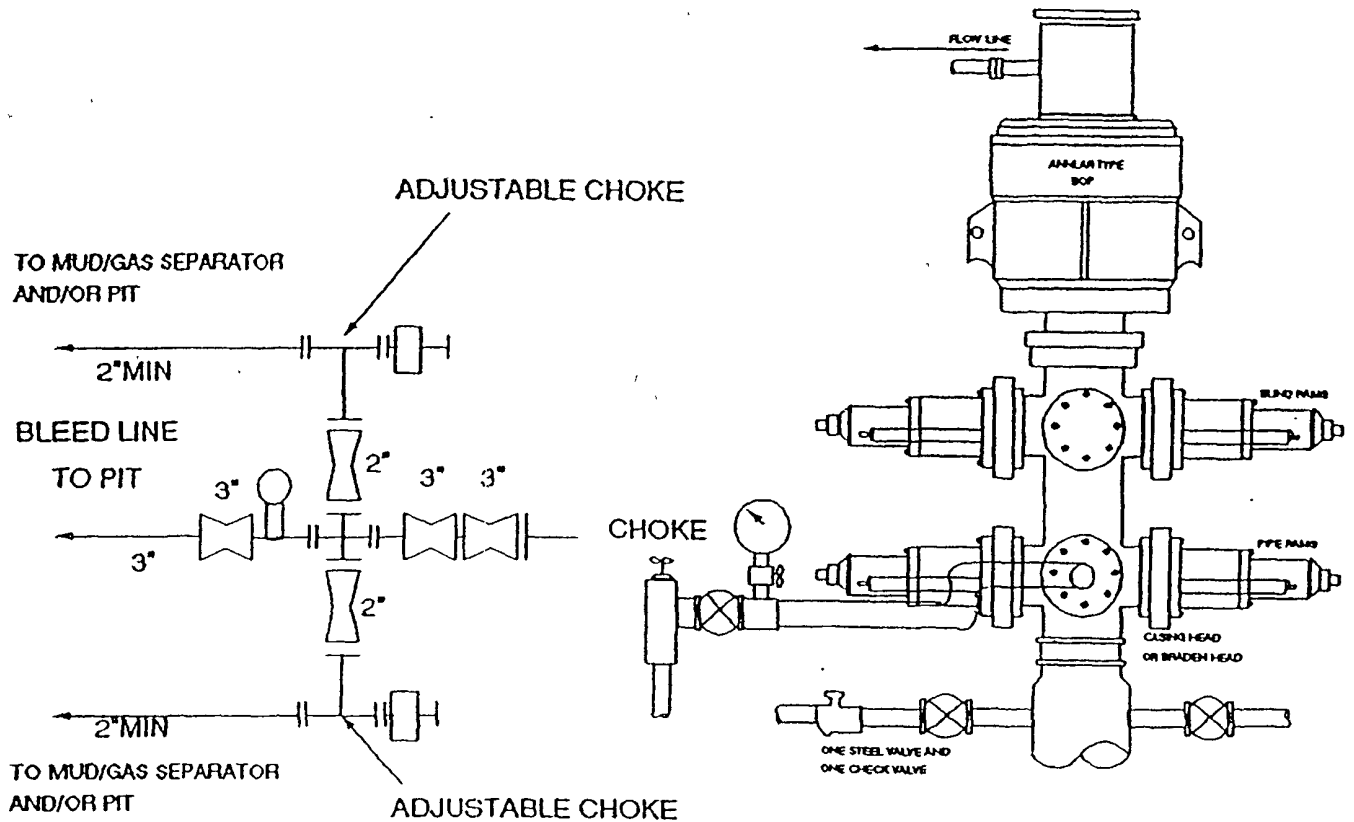


W:\ser\Drilling\DrillingDiagrams\H&P Drilling Rig Pac demimons Closed LoopRes P# Exhibit D w rig

Exhibit "D"

Need prevailing  
wind direction

# 3000 PSI WP



## THE FOLLOWING CONSTITUTE MINIMUM BLOWOUT PREVENTER REQUIREMENTS

- A. One double gate blowout preventer with lower rams for pipe and upper rams blind, all hydraulically controlled.
- B. Opening on preventers between rams to be flanged, studded or clamped and at least two inches in diameter.
- C. All connections from operating manifold to preventers to be all steel hose or tube a minimum of one inch in diameter.
- D. The available closing pressure shall be at least 15% in excess of that required with sufficient volume to operate (close, open, and re-close) the preventers.
- E. All connections to and from preventers to have a pressure rating equivalent to that of the BOP's.
- F. Manual controls to be installed before drilling cement plug.
- G. Valve to control flow through drill pipe to be located on rig floor.
- H. All chokes will be adjustable. Choke spool may be used between rams.

## **MULTI-POINT SURFACE USE PLAN**

**NAME OF WELL: Poker Lake Unit #270H**

LEGAL DESCRIPTION - SURFACE: 2250' FNL, 660' FWL, of Section 7, T24S, R30E, Eddy County, NM.  
BHL: 2075' FNL & 400' FEL, Section 7, T24S, R30E, Eddy County, NM.

### **POINT 1: EXISTING ROADS**

A) Proposed Well Site Location:

See Exhibit A and Survey Plats

B) Existing Roads:

See Survey Plats.

C) Existing Road Maintenance or Improvement Plan.

See Exhibit "B" and Survey Plats

### **POINT 2: NEW PLANNED ACCESS ROUTE**

A) Route Location

From the junction of Co Rd 793 and State Hwy 128, go south on Co Rd 793 for approx 4.0 miles to lease road, then go east on lease road for 0.25 of a mile; then south 0.9 miles, go east 0.3 miles, go southerly for approx 5.0 miles, then westerly for 1.2 miles to Co Rd 748, then go south easterly for approx 2.1 miles to Lease Road then go westerly for 0.2 miles to proposed well pad.

B) Width

15'

C) Maximum Grade

Grade to match existing topography or as per BLM requirements

D) Turnout Ditches

Spaced per BLM requirements.

E) Culverts, Cattle Guards, and Surfacing Equipment

If required, culverts and cattle guards will be set per BLM Specs.

F) 74' of lease road is required. (see Exhibit "B" or survey plats)

### **POINT 3: LOCATION OF EXISTING WELLS**

Exhibit C indicates existing wells within the surrounding area

#### **POINT 4: LOCATION OF EXISTING OR PROPOSED FACILITIES**

Page 2

- A) Existing facilities are located within one mile which are owned or controlled by lessee/operator:

Closest Oil/Gas production facilities are located at Poker lake Unit Delaware "C" Battery @ Poker Lake Unit #158 wellsite. The Poker Lake Unit "C" Battery is located approximately 4200' northeast of the proposed well.

- B) New Facilities in the Event of Production:

Additional production facilities will be added at Poker lake unit battery (Section 7, T24S, R30E) and will be used via flowlines. A new flowline consisting of 2-7/8" steel pipe will be laid within 50' of the centerline of the access road and existing roads that have previously been Arch cleared. Power Lines will also follow existing roads to the Poker Lake Unit #182 and connect with the existing power line. See attached map (Exhibit "C")

- C) Rehabilitation of Disturbed Areas Unnecessary for Production:

Following flowline construction, those access areas required for continued production will be graded to provide drainage and minimize erosion. The areas unnecessary for use will be graded to blend in with the surrounding topography (see Point 10)

#### **POINT 5: LOCATION AND TYPE OF WATER SUPPLY**

- A) Location and Type of Water Supply

Fresh water will be hauled from Johnson Station 50 miles east of Carlsbad, New Mexico or other commercial facilities. Brine water will be hauled from commercial facilities.

- B) Water Transportation System

Water hauling to the location will be over the existing and proposed roads.

#### **POINT 6: SOURCE OF CONSTRUCTION MATERIALS**

- A) Materials

Caliche will be hauled in from off site, from a specified caliche pit.

- B) Land Ownership

Federally Owned

- C) Materials Foreign to the Site

If onsite caliche is not sufficient, we will haul caliche from a BLM approved site.

- D) Access Roads

See Exhibit B

## **POINT 7: METHODS FOR HANDLING WASTE MATERIAL**

Page 3

### **A) Cuttings**

Cuttings will be contained in steel pits and hauled to CRI for disposal.

### **B) Drilling Fluids**

Drilling fluids will be contained in steel pits, frac tanks, or will be disposed of at licensed disposal facilities.

### **C) Produced Fluids**

Water production will be contained in the steel pits.

Hydrocarbon fluid or other fluids that may be produced during testing will be retained in test tanks.

### **D) Sewage**

Current laws and regulations pertaining to the disposal of human waste will be complied with.

### **E) Garbage**

Portable containers will be utilized for garbage disposal during the drilling of this well.

### **F) Cleanup of Well Site**

Upon release of the drilling rig, the surface of the drilling pad will be graded to accommodate a completion rig if electric log analysis indicate potential productive zones. Reasonable cleanup will be performed prior to the final restoration of the site.

## **POINT 8: ANCILLARY FACILITIES**

None required.

## **POINT 9: WELL SITE LAYOUT**

### **A) Rig Orientation and Layout**

Exhibit "D" shows the dimensions of the well pad and the location of major rig components. Only minor leveling of the well site will be required. No significant cuts or fills will be necessary.

**B) Locations of Closed Loop System and Access Road**

See Exhibits "B", "D", & Survey Plats.

**C) Lining of the Pits**

No reserve pit will be built.

**POINT 10: PLANS FOR RESTORATION OF THE SURFACE**

**A) Reserve Pit Cleanup - Not applicable**

The pits will be fenced immediately after construction and shall be maintained until they are backfilled. Previous to backfill operations, any hydrocarbon material on the pits' surfaces shall be removed. The fluids and solids contained in the pits shall be backfilled with soil excavated from the site and soil adjacent to the reserve pits. The restored surface of the pits shall be contoured to prevent impoundment of surface water flow. Water-bars will be constructed as needed to prevent excessive erosion. Topsoil, as available, shall be placed over the restored surface in a uniform layer. The area will be seeded according to the Bureau of Land Management stipulations during the appropriate season following restoration.

**B) Restoration Plans - Production Developed**

No reserve pits will be utilized on this location. In addition, those areas not required for production will be graded to blend with the surrounding topography. Topsoil, as available, will be placed upon those areas and seeded. The portion of the site required for production will be graded to minimize erosion and provide access during inclement conditions. Following depletion and abandonment of the site, restoration procedures will be those that follow under Item C.

**C) Restoration Plans - No Production Developed**

With no production developed, the entire surface disturbed by construction of the well site will be restored. The site will be contoured to blend with the surrounding topography and provide drainage of surface water. The topsoil, as available, shall be replaced in a uniform layer and seeded according to the Bureau of Land Management's stipulations.

**D) Rehabilitation's Timetable**

Upon completion of drilling operations, the initial cleanup of the site will be performed as soon as weather and site conditions allow economic execution of the work.

## POINT 11: OTHER INFORMATION

Page 5

A) Terrain

Relatively flat.

B) Soil

Caliche and sand.

C) Vegetation

Sparse, primarily grasses and mesquite with very little grass.

D) Surface Use

Primarily grazing.

E) Surface Water

There are no ponds, lakes, streams or rivers within several miles of the wellsite.

F) Water Wells

There is one water well in Sec 8, T26S, R30E approximately 1 miles east of Poker Lake Unit #270H. (See Exhibit "B")

G) Residences and Buildings

None in the immediate vicinity.

H) Historical Sites

None observed.

I) Archeological Resources

An archeological survey will be obtained for this area. Before any construction begins, a full and complete archeological survey will be submitted to the Bureau of Land Management. Any location or construction conflicts will be resolved before construction begins.

J) Surface Ownership

The well site is on federally owned land.

K) Well signs will be posted at the drilling site.

L) Open Pits

All pits containing liquid or mud will be fenced and bird-netted

**POINT 12: OPERATOR'S FIELD REPRESENTATIVE**

Page 6

(Field personnel responsible for compliance with development plan for surface use).

**DRILLING**

William R. Dannels  
Box 2760  
Midland, Texas 79702  
(432) 683-2277

**PRODUCTION**

Dean Clemmer  
3104 East Green Street  
Carlsbad, New Mexico 88220  
(505) 887-7329

Carlos Cruz  
Box 2760  
Midland, Texas 79702  
(432) 683-2277

3/10/09

Date

Gary E. Gerhard

Gary E Gerhard

GEG/jdb

## OPERATOR CERTIFICATION

I hereby certify that I, or persons under my direct supervision have inspected the proposed drill site and access route; that I am familiar with the conditions which currently exist; that the statements made in the plan are, to the best of my knowledge, true and correct; and that the work associated with operations proposed herein will be performed by BOPCO, L.P. and it's contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

3/10/09

Date

Gary E. Gerhard

Gary E. Gerhard

# **BOPCO, L.P.**

P. O. Box 2760  
Midland, Texas 79702

432-683-2277

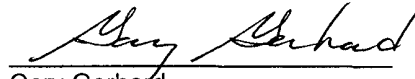
FAX-432-687-0329

Bureau of Land Management  
Carlsbad Field Office  
620 East Green Street  
Carlsbad, New Mexico 88220-6292

Gentlemen

BOPCO, L P respectfully requests exception to the Prairie Chicken timing restrictions for this location - 2250' FNL, 660' FWL, of Section 7, T24S, R30E, Eddy County, New Mexico

Sincerely,

A handwritten signature in cursive script, appearing to read "Gary Gerhard", written over a horizontal line.

Gary Gerhard,  
Drilling Engineer

# PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO L.P.
LEASE NO.:	LC-068545
WELL NAME & NO.:	Poker Lake Unit #270H
SURFACE HOLE FOOTAGE:	2250' FNL & 660' FWL
BOTTOM HOLE FOOTAGE:	2075' FNL & 400' FEL
LOCATION:	Section 7, T. 24 S., R 30 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**
- ☒ **Construction**
  - Notification
  - Topsoil
  - Closed Loop System
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - Pilot hole plug
- ☒ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- ☒ **Closed Loop System/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)

## **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) 234-5972 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. 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**

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 (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. 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.

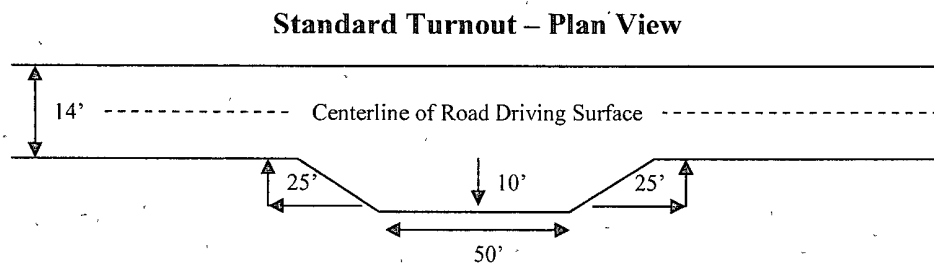
### **Ditching**

Ditching shall be required on the uphill side of the road.

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:

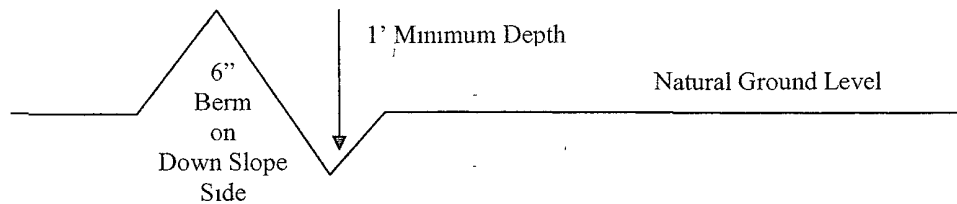


### **Drainage**

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:

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

#### **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**

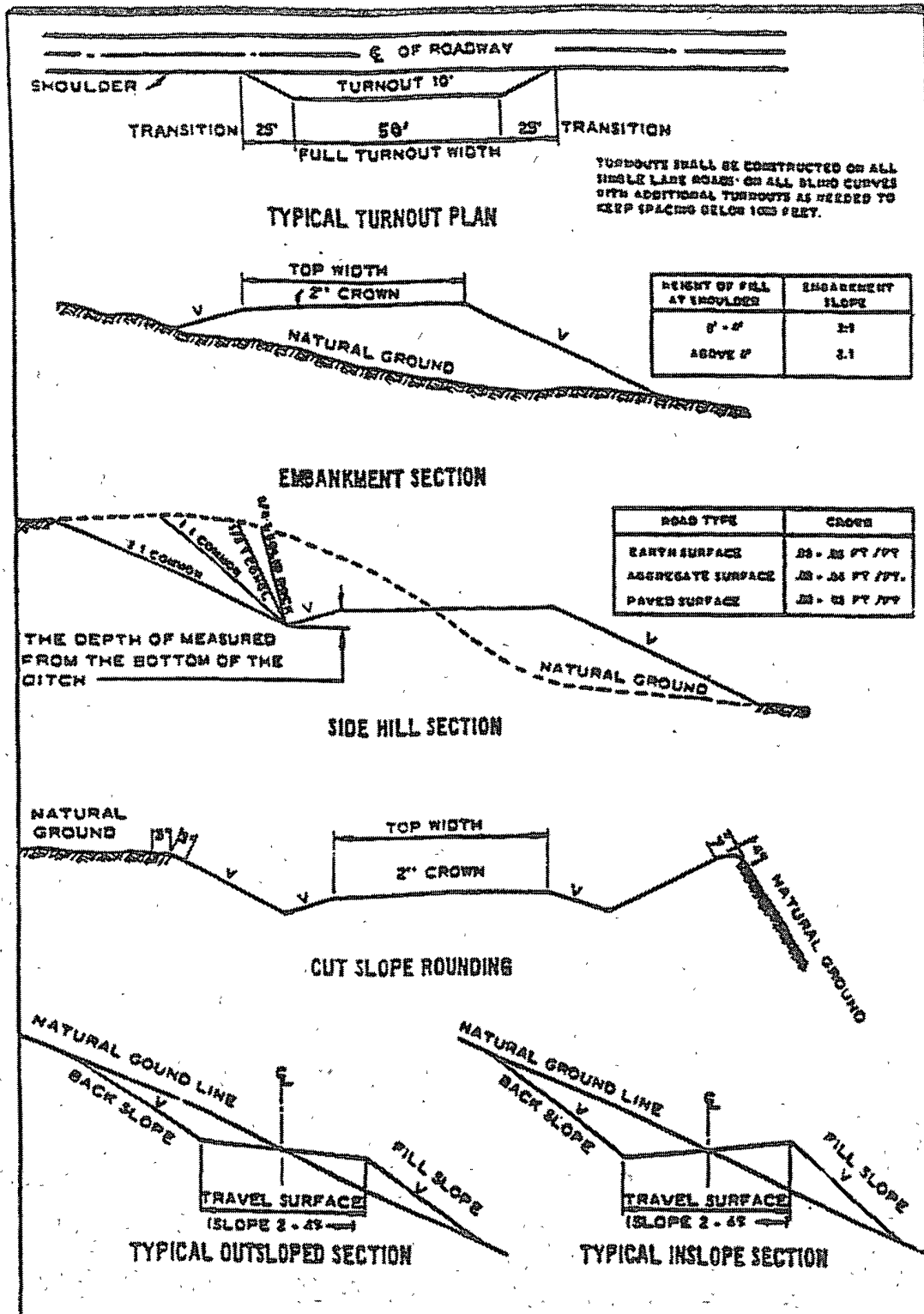
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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. **Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
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

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.**

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

**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 for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. 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.

**Secretary's Potash.**

**Medium cave/karst.**

**Possible lost circulation in the Delaware and Bone Spring formations.**

1. The 13-3/8 inch surface casing shall be set **at approximately 520 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If the salt is penetrated, the casing is to be set 25' above the top of the salt. This well is located in a large scale salt solution trough and the Rustler depth is highly variable. Drill rate and drill cuttings should be monitored to determine Rustler penetration.**
  - 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 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.  
**Casing to be set in Lamar Limestone as proposed. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to Secretary's Potash and cave/karst.**

**Pilot hole will require a solid plug from 9450' to 7750' or two plugs; one at bottom of pilot hole, which must be a minimum of 195' in length and must be tagged a 195' from TD and depth reported on subsequent sundry with casing details. Then the kickoff plug should be a minimum of 500' in length.**

**If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.**

3. The minimum required fill of cement behind the 5-1/2 inch production casing/second intermediate casing is:
  - ☒ Cement should tie-back at least **500** feet into previous casing string. Operator shall provide method of verification. **Additional cement will be required to achieve the 500 foot tie-back as excess cement based on gauge hole calculates to due to Secretary's Potash.**
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. **Piping from choke manifold to closed loop system is to be kept as straight as possible with minimum bends. Flare line is also to be kept as straight as possible.**
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi. Operator is installing 10M rams with 5M annular and testing as 2M and then 3M.**
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9-5/8" intermediate casing shoe shall be **3000 (3M) psi.**
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. The tests shall be done by an independent service company.
  - b. The results of the test shall be reported to the appropriate BLM office.
  - c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.
  - d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

**D. DRILL STEM TEST**

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

**WWI 052009**

## **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**

BLM LEASE NUMBER:

COMPANY NAME:

WELL NO. & NAME:

#### **STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES**

**A copy of the 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 25 feet.

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.

(March 1989)

### **C. ELECTRIC LINES**

BLM Serial Number:

Company Reference:

Well No. & Name:

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

**A copy of the 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 the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. There will be no clearing or blading of the right-of-way unless otherwise agreed to in writing by the Authorized Officer.

5. Powerlines shall be constructed in accordance to standards outlined in "Suggested Practices for Raptor Protection on Powerlines, " Raptor Research Foundation, Inc., 1981. The holder shall assume the burden and expense of proving that pole designs not shown in the above publication are "raptor safe." Such proof shall be provided by a raptor expert approved by the Authorized Officer. The BLM reserves the right to require modification or additions to all powerline structures placed on this right-of-way, should they be necessary to ensure the safety of large perching birds. Such modifications and/or additions shall be made by the holder without liability or expense to the United States.

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

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

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

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

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

11. Special Stipulations:

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

## **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.

The 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.

BLM SERIAL #:  
COMPANY REFERENCE:  
WELL # & NAME:

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 bristlegass ( <i>Setaria macrostachya</i> )	2.0

\*Pounds of pure live seed:

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