

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

EA281

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER <i>NOS RCVD 10/19/11</i>		5. Lease Serial No. <i>A</i> <input checked="" type="checkbox"/> NM 0506 (BHL) (See box 6)
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name See pg 1 of 8pt DP for lease info
2. Name of Operator BOPCO, L. P.		7. If Unit or CA Agreement, Name and No. Poker Lake Unit NMNM 71016X
3a. Address P. O. Box 2760 Midland, TX 79702	3b. Phone No. (include area code) 432-683-2277	8. Lease Name and Well No. Poker Lake Unit 401H <i>[366402]</i>
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface SESE, UL P, 335' FSL, 570' FEL, Lat: N 32.196369, Long: W 103.775586 At proposed prod. zone 350' FNL, 550' FWL, Sec 21, T24S-R31E, Lat: N 32.208997, Lg: W 103.789047		9. API Well No. 30-015-39918
14. Distance in miles and direction from nearest town or post office* 20 miles East of Malaga		10. Field and Pool, or Exploratory Poker Lake (Delaware) South <i>[50386]</i>
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig. unit line, if any) 335'	16. No. of acres in lease 2485.12	11. Sec, T, R, M. or Blk and Survey or Area Sec 21, T24S-R31E, Mer, NMPM
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 200' (PLU 261)	19. Proposed Depth 14,145' MD, 8,166' TVD	12. County or Parish Eddy
21. Elevations (Show whether DF, KDB, RT, GL, etc) 3502'	22. Approximate date work will start* 08/01/2012	13. State NM
20. BLM/BIA Bond No. on file COB 000050		
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>Jeremy Braden</i>	Name (Printed/Typed) Jeremy Braden	Date 11-22-11
Title Engineering Assistant		
Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed)	Date FEB - 6 2012
Title CARLSBAD FIELD OFFICE	Office FIELD MANAGER	

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

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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

*(Instructions on page 2)

Carlsbad Controlled Water Basin

SEE ATTACHED FOR
CONDITIONS OF APPROVALApproval Subject to General Requirements
& Special Stipulations Attached

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210

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

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

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised July 16, 2010

Submit one copy to appropriate
District Office

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-39918	Pool Code 50386	Pool Name Poker Lake, S (Delaware)
Property Code 306402	Property Name POKER LAKE UNIT	Well Number 401H
OGRID No. 260737	Operator Name BOPCO, L.P.	Elevation 3502'

Surface Location

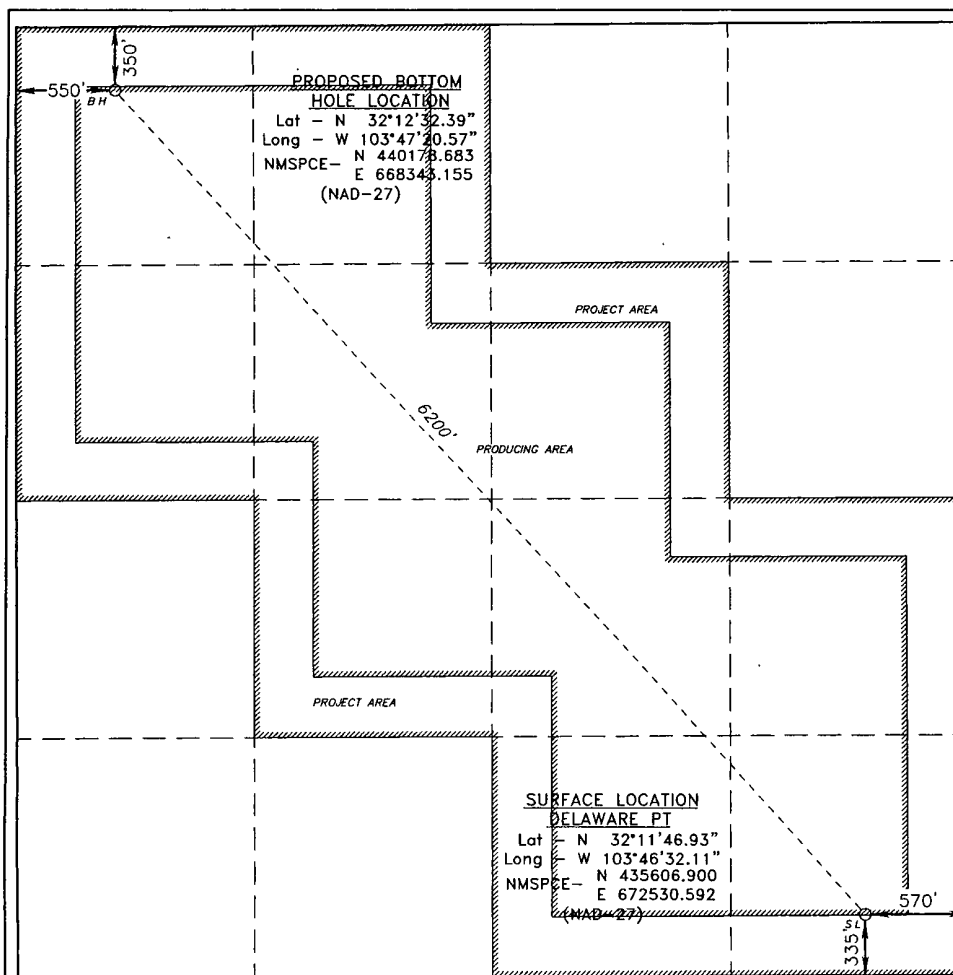
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	21	24 S	31 E		335	SOUTH	570	EAST	EDDY

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
D	21	24 S	31 E		350	NORTH	550	WEST	EDDY

Dedicated Acres 400	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Jeremy Braden 11/16/11
Signature Date

Jeremy Braden

Printed Name

JDBraden@basspet.com

Email Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

SEP 16 2011

Date Surveyed

Signature & Seal of
Professional Surveyor

Certificate No. Gory L. Jones 7977

BASIN SURVEYS 25295

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

NAME OF WELL: Poker Lake Unit 401H

LEGAL DESCRIPTION - SURFACE: 335' FSL, 570' FEL, Section 21, T24S, R31E, Eddy County, NM.
BHL: 350' FNL, 550' FWL, Section 21, T24S, R31E, Eddy County, New Mexico.

POINT 1: ESTIMATED FORMATION TOPS (See No. 2 Below)

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

Anticipated Formation Tops: KB 3524' (estimated)
GL 3502'

<u>FORMATION</u>	<u>ESTIMATED TOP FROM KB</u>		<u>ESTIMATED SUB-SEA TOP</u>	<u>BEARING</u>
	<u>TVD</u>	<u>MD</u>		
T/Fresh Water	182'	182'	+ 3,305'	Fresh Water
T/Rustler	629'	629'	+ 2,895'	Barren
T/Salado	859'	859'	+ 2,665'	Barren
T/Salt	981'	981'	+ 2,543'	Barren
B/Salt	4,073'	4,073'	- 549'	Barren
T/Lamar	4,356'	4,356'	- 832'	Barren
T/Ramsey	4,411'	4,411'	- 887'	Oil/Gas
T/Lower Cherry Canyon	6,483'	6,483'	- 2,959'	Oil/Gas
KOP	7,618'	7,618'	- 4,094'	Oil/Gas
Lower Brushy Canyon Sand	7,984'	8,015'	- 4,491'	Oil/Gas
EOC	8,191'	8,518'	- 4,667'	Oil/Gas
Target #1	8,191'	9,024'	- 4,667'	Oil/Gas
TD Horizontal Hole	8,166'	14,145'	- 4,642'	Oil/Gas

POINT 3: CASING PROGRAM

<u>TYPE</u>	<u>INTERVALS (MD)</u>	<u>Hole Size</u>	<u>PURPOSE</u>	<u>CONDITION</u>
20"	0' - 80'	24"	Conductor	Contractor Discretion
13-3/8", 48#, H-40, or 54.5#, J-55 8rd, ST&C*	0' - 971'	17-1/2"	Surface	New
9-5/8", 40#, N-80, 8rd, LTC	0' - 4,376'	12-1/4"	Intermediate	New
7", 26#, N-80, Buttress or 8rd LTC*	0' - 8,618'	8-3/4"	Production	New
<u>Completion System</u>				
4-1/2", 11.6#, HCP-110 8rd. LT&C*	8,568' - 14,145'	6-1/8"	Completion System	New
4-1/2", 11.6#, N-80, 8rd, LT&C*	8,568' - 14,145'	6-1/8"	Completion System	New

CASING DESIGN SAFETY FACTORS:

<u>TYPE</u>	<u>TENSION</u>	<u>COLLAPSE</u>	<u>BURST</u>
13-3/8", 48#, H-40, 8rd, ST&C*	7.99	1.51	3.19
13-3/8", 54.5#, J-55, 8rd, STC*	18.75	2.39	5.04
9-5/8", 40#, N-80, 8rd, LT&C*	4.99	1.21	2.35
7", 26#, N-80, Buttress*	3.30	1.17	1.58
7", 26#, N-80, 8rd, LTC*	2.83	1.15	1.58

Completion System

4-1/2", 11.6#, HCP-110 8rd. LT&C*	3.40	1.93	2.34
4-1/2", 11.6#, N-80, 8rd, LT&C*	2.72	1.32	1.70

* Depending on availability



BOPCO, L.P.

Location Eddy County, NM
Field Poker Lake Unit
Facility Poker Lake Unit No. 401H

Slot No 401H SHL
Well No 401H
Wellbore No 401H PWB



Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	22 00	0 00	317 512	22 00	0 00	0 00	0 00	0 00
Est KOP	7618 00	0 00	317 512	7618 00	0 00	0 00	0 00	0 00
EOC	8518 07	90 00	317 512	8191 00	422 54	-387 02	10 00	573 00
Target #1H	9024 07	90 00	317 512	8191 00	795 87	728 80	0 00	1079 00
Build	9038 07	90 28	317 513	8190 97	806 00	738 25	2 00	1093 00
No 401H PBHL	14145 15	90 28	317 513	8166 00	4572 05	-4187 68	0 00	6200 00

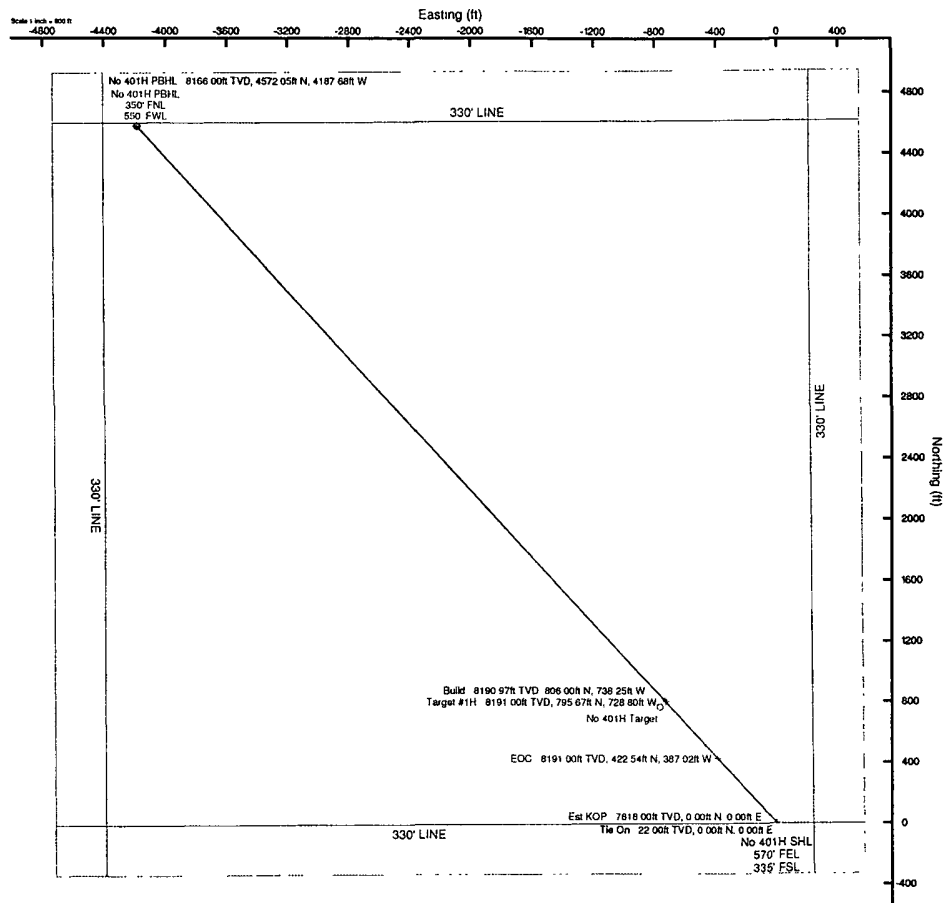
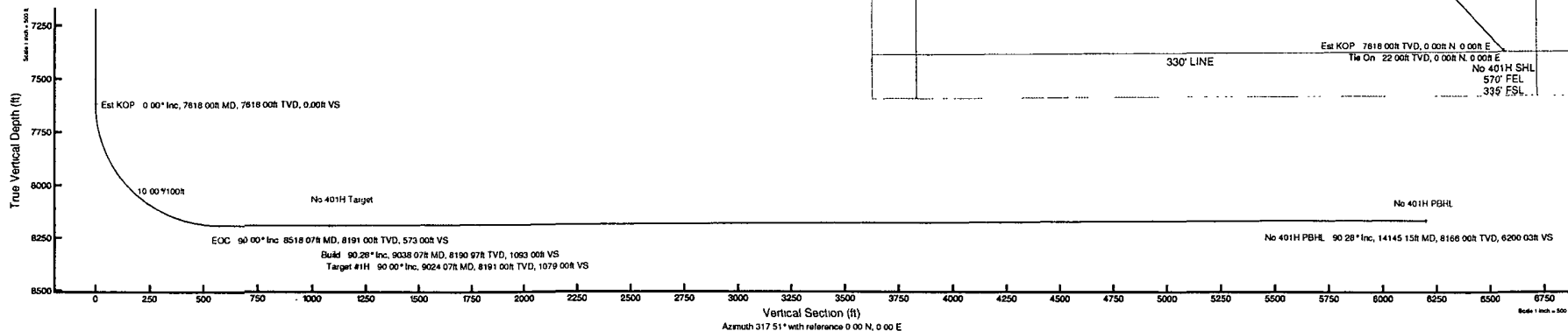
Plot reference wellpath as Prelim 1

True vertical depths are referenced to Rig on No 401H SHL (KB)
Measured depths are referenced to Rig on No 401H SHL (KB)
Rig on No 401H SHL (KB) to Mean Sea Level 3524 feet
Mean Sea Level to Mud line (At Slot No 401H SHL) -3502 feet
Coordinates are in feet referenced to Slot

Grid System NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet
North Reference Grid north
Scale True distance
Depths are in feet
Created by gwhby on 11/10/2011



BGGM (1945.0 to 2012.0) Dip 60 12° Field 48582 2 nT
Magnetic North is 7 67 degrees East of True North (at 11/9/2011)
Grid North is 0 30 degrees East of True North
To correct azimuth from True to Grid subtract 0 30 degrees
To correct azimuth from Magnetic to Grid add 7 37 degrees
For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7 37 = 97 37





Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No.401H SHL
Area	Eddy County, NM	Well	No.401H
Field	Poker Lake Unit	Wellbore	No.401H PWB
Facility	Poker Lake Unit No. 401H		

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Gentbry
Scale	0.999943	Report Generated	11/10/2011 at 1:59:31 PM
Convergence at slot	0.30° East	Database/Source file	WA Midland/No.401H_PWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W
Facility Reference Pt			672530.59	435606.90	32°11'46.933"N	103°46'32.107"W
Field Reference Pt			630272.49	405347.85	32°06'49.387"N	103°54'45.266"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No.401H SHL (KB) to Facility Vertical Datum	22.00ft
Horizontal Reference Pt	Slot	Rig on No.401H SHL (KB) to Mean Sea Level	3524.00ft
Vertical Reference Pt	Rig on No.401H SHL (KB)	Rig on No.401H SHL (KB) to Mud Line at Slot (No.401H SHL)	22.00ft
MD Reference Pt	Rig on No.401H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	317.51°



Planned Wellpath Report

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**BAKER
HUGHES**

REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No.401H SHL
Area	Eddy County, NM	Well	No.401H
Field	Poker Lake Unit	Wellbore	No.401H PWB
Facility	Poker Lake Unit No. 401H		

WELLPATH DATA (156 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	317.512	0.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
22.00	0.000	317.512	22.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	Tie On
122.00†	0.000	317.512	122.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
222.00†	0.000	317.512	222.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
322.00†	0.000	317.512	322.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
422.00†	0.000	317.512	422.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
522.00†	0.000	317.512	522.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
622.00†	0.000	317.512	622.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
629.00†	0.000	317.512	629.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	Rustler
722.00†	0.000	317.512	722.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
822.00†	0.000	317.512	822.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
859.00†	0.000	317.512	859.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	Salado
922.00†	0.000	317.512	922.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
981.00†	0.000	317.512	981.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	Salt
1022.00†	0.000	317.512	1022.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
1122.00†	0.000	317.512	1122.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
1222.00†	0.000	317.512	1222.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
1322.00†	0.000	317.512	1322.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
1422.00†	0.000	317.512	1422.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
1522.00†	0.000	317.512	1522.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
1622.00†	0.000	317.512	1622.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
1722.00†	0.000	317.512	1722.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
1822.00†	0.000	317.512	1822.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
1922.00†	0.000	317.512	1922.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
2022.00†	0.000	317.512	2022.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
2122.00†	0.000	317.512	2122.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
2222.00†	0.000	317.512	2222.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
2322.00†	0.000	317.512	2322.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
2422.00†	0.000	317.512	2422.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
2522.00†	0.000	317.512	2522.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
2622.00†	0.000	317.512	2622.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
2722.00†	0.000	317.512	2722.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
2822.00†	0.000	317.512	2822.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
2922.00†	0.000	317.512	2922.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
3022.00†	0.000	317.512	3022.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
3122.00†	0.000	317.512	3122.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
3222.00†	0.000	317.512	3222.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
3322.00†	0.000	317.512	3322.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
3422.00†	0.000	317.512	3422.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
3522.00†	0.000	317.512	3522.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
3622.00†	0.000	317.512	3622.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
3722.00†	0.000	317.512	3722.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
3822.00†	0.000	317.512	3822.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
3922.00†	0.000	317.512	3922.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
4022.00†	0.000	317.512	4022.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	



Planned Wellpath Report

Prelim_1

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No.401H SHL
Area	Eddy County, NM	Well	No.401H
Field	Poker Lake Unit	Wellbore	No.401H PWB
Facility	Poker Lake Unit No. 401H		

WELLPATH DATA (156 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4073.00†	0.000	317.512	4073.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	Base/Salt
4122.00†	0.000	317.512	4122.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
4222.00†	0.000	317.512	4222.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
4322.00†	0.000	317.512	4322.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
4356.00†	0.000	317.512	4356.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	Lamar
4411.00†	0.000	317.512	4411.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	Ramsey
4422.00†	0.000	317.512	4422.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
4522.00†	0.000	317.512	4522.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
4622.00†	0.000	317.512	4622.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
4722.00†	0.000	317.512	4722.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
4822.00†	0.000	317.512	4822.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
4922.00†	0.000	317.512	4922.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
5022.00†	0.000	317.512	5022.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
5122.00†	0.000	317.512	5122.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
5222.00†	0.000	317.512	5222.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
5322.00†	0.000	317.512	5322.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
5422.00†	0.000	317.512	5422.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
5522.00†	0.000	317.512	5522.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
5622.00†	0.000	317.512	5622.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
5722.00†	0.000	317.512	5722.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
5822.00†	0.000	317.512	5822.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
5922.00†	0.000	317.512	5922.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
6022.00†	0.000	317.512	6022.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
6122.00†	0.000	317.512	6122.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
6222.00†	0.000	317.512	6222.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
6322.00†	0.000	317.512	6322.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
6422.00†	0.000	317.512	6422.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
6483.00†	0.000	317.512	6483.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	Lower Cherry Canyon
6522.00†	0.000	317.512	6522.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
6622.00†	0.000	317.512	6622.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
6722.00†	0.000	317.512	6722.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
6822.00†	0.000	317.512	6822.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
6922.00†	0.000	317.512	6922.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
7022.00†	0.000	317.512	7022.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
7122.00†	0.000	317.512	7122.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
7222.00†	0.000	317.512	7222.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
7322.00†	0.000	317.512	7322.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
7422.00†	0.000	317.512	7422.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
7522.00†	0.000	317.512	7522.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	
7618.00	0.000	317.512	7618.00	0.00	0.00	0.00	672530.59	435606.90	32°11'46.933"N	103°46'32.107"W	0.00	Est KOP
7622.00†	0.400	317.512	7622.00	0.01	0.01	-0.01	672530.58	435606.91	32°11'46.934"N	103°46'32.107"W	10.00	
7722.00†	10.399	317.512	7721.43	9.41	6.94	-6.36	672524.23	435613.84	32°11'47.002"N	103°46'32.181"W	10.00	
7822.00†	20.398	317.512	7817.72	35.93	26.50	-24.27	672506.32	435633.40	32°11'47.197"N	103°46'32.388"W	10.00	
7922.00†	30.398	317.512	7907.94	78.77	58.09	-53.20	672477.39	435664.98	32°11'47.511"N	103°46'32.723"W	10.00	
8015.01†	39.698	317.512	7984.00	132.12	97.43	-89.24	672441.36	435704.32	32°11'47.902"N	103°46'33.140"W	10.00	Lower Brushy Canyon



Planned Wellpath Report

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BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No.401H SHL
Area	Eddy County, NM	Well	No.401H
Field	Poker Lake Unit	Wellbore	No.401H PWB
Facility	Poker Lake Unit No. 401H		

WELLPATH DATA (156 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8022.00†	40.397	317.512	7989.35	136.62	100.75	-92.28	672438.32	435707.64	32°11'47.935"N	103°46'33.175"W	10.00	
8122.00†	50.396	317.512	8059.48	207.73	153.18	-140.31	672390.29	435760.07	32°11'48.456"N	103°46'33.731"W	10.00	
8222.00†	60.396	317.512	8116.20	289.93	213.80	-195.83	672334.77	435820.69	32°11'49.059"N	103°46'34.373"W	10.00	
8322.00†	70.395	317.512	8157.78	380.74	280.76	-257.16	672273.44	435887.65	32°11'49.725"N	103°46'35.083"W	10.00	
8422.00†	80.394	317.512	8182.97	477.38	352.03	-322.44	672208.17	435958.91	32°11'50.433"N	103°46'35.838"W	10.00	
8518.07	90.000	317.512	8191.00	573.00	422.54	-387.02	672143.59	436029.42	32°11'51.135"N	103°46'36.586"W	10.00	EOC
8522.00†	90.000	317.512	8191.00	576.93	425.44	-389.68	672140.93	436032.32	32°11'51.163"N	103°46'36.616"W	0.00	
8622.00†	90.000	317.512	8191.00	676.93	499.18	-457.23	672073.39	436106.05	32°11'51.897"N	103°46'37.398"W	0.00	
8722.00†	90.000	317.512	8191.00	776.93	572.93	-524.77	672005.85	436179.79	32°11'52.630"N	103°46'38.179"W	0.00	
8822.00†	90.000	317.512	8191.00	876.93	646.67	-592.31	671938.31	436253.53	32°11'53.363"N	103°46'38.961"W	0.00	
8922.00†	90.000	317.512	8191.00	976.93	720.41	-659.86	671870.77	436327.27	32°11'54.096"N	103°46'39.743"W	0.00	
9022.00†	90.000	317.512	8191.00	1076.93	794.15	-727.40	671803.23	436401.00	32°11'54.829"N	103°46'40.524"W	0.00	
9024.07	90.000	317.512	8191.00†	1079.00	795.67	-728.80	671801.84	436402.53	32°11'54.844"N	103°46'40.540"W	0.00	Target #1H
9038.07	90.280	317.513	8190.97	1093.00	806.00	-738.25	671792.38	436412.85	32°11'54.947"N	103°46'40.650"W	2.00	Build
9122.00†	90.280	317.513	8190.56	1176.93	867.89	-794.94	671735.70	436474.74	32°11'55.562"N	103°46'41.306"W	0.00	
9222.00†	90.280	317.513	8190.07	1276.93	941.63	-862.48	671668.16	436548.48	32°11'56.295"N	103°46'42.087"W	0.00	
9322.00†	90.280	317.513	8189.58	1376.93	1015.38	-930.03	671600.62	436622.22	32°11'57.029"N	103°46'42.869"W	0.00	
9422.00†	90.280	317.513	8189.09	1476.93	1089.12	-997.57	671533.08	436695.95	32°11'57.762"N	103°46'43.650"W	0.00	
9522.00†	90.280	317.513	8188.60	1576.93	1162.86	-1065.11	671465.54	436769.69	32°11'58.495"N	103°46'44.432"W	0.00	
9622.00†	90.280	317.513	8188.11	1676.93	1236.60	-1132.65	671398.00	436843.43	32°11'59.228"N	103°46'45.214"W	0.00	
9722.00†	90.280	317.513	8187.62	1776.93	1310.34	-1200.19	671330.47	436917.17	32°11'59.961"N	103°46'45.995"W	0.00	
9822.00†	90.280	317.513	8187.13	1876.92	1384.08	-1267.74	671262.93	436990.90	32°12'00.694"N	103°46'46.777"W	0.00	
9922.00†	90.280	317.513	8186.64	1976.92	1457.83	-1335.28	671195.39	437064.64	32°12'01.427"N	103°46'47.558"W	0.00	
10022.00†	90.280	317.513	8186.16	2076.92	1531.57	-1402.82	671127.85	437138.38	32°12'02.161"N	103°46'48.340"W	0.00	
10122.00†	90.280	317.513	8185.67	2176.92	1605.31	-1470.36	671060.31	437212.12	32°12'02.894"N	103°46'49.122"W	0.00	
10222.00†	90.280	317.513	8185.18	2276.92	1679.05	-1537.90	670992.78	437285.85	32°12'03.627"N	103°46'49.903"W	0.00	
10322.00†	90.280	317.513	8184.69	2376.92	1752.79	-1605.45	670925.24	437359.59	32°12'04.360"N	103°46'50.685"W	0.00	
10422.00†	90.280	317.513	8184.20	2476.92	1826.53	-1672.99	670857.70	437433.33	32°12'05.093"N	103°46'51.466"W	0.00	
10522.00†	90.280	317.513	8183.71	2576.92	1900.28	-1740.53	670790.16	437507.06	32°12'05.826"N	103°46'52.248"W	0.00	
10622.00†	90.280	317.513	8183.22	2676.91	1974.02	-1808.07	670722.62	437580.80	32°12'06.559"N	103°46'53.030"W	0.00	
10722.00†	90.280	317.513	8182.73	2776.91	2047.76	-1875.61	670655.09	437654.54	32°12'07.293"N	103°46'53.811"W	0.00	
10822.00†	90.280	317.513	8182.25	2876.91	2121.50	-1943.16	670587.55	437728.28	32°12'08.026"N	103°46'54.593"W	0.00	
10922.00†	90.280	317.513	8181.76	2976.91	2195.24	-2010.70	670520.01	437802.01	32°12'08.759"N	103°46'55.374"W	0.00	
11022.00†	90.280	317.513	8181.27	3076.91	2268.99	-2078.24	670452.47	437875.75	32°12'09.492"N	103°46'56.156"W	0.00	
11122.00†	90.280	317.513	8180.78	3176.91	2342.73	-2145.78	670384.93	437949.49	32°12'10.225"N	103°46'56.938"W	0.00	
11222.00†	90.280	317.513	8180.29	3276.91	2416.47	-2213.32	670317.40	438023.23	32°12'10.958"N	103°46'57.719"W	0.00	
11322.00†	90.280	317.513	8179.80	3376.91	2490.21	-2280.87	670249.86	438096.96	32°12'11.691"N	103°46'58.501"W	0.00	
11422.00†	90.280	317.513	8179.31	3476.91	2563.95	-2348.41	670182.32	438170.70	32°12'12.424"N	103°46'59.283"W	0.00	
11522.00†	90.280	317.513	8178.82	3576.90	2637.69	-2415.95	670114.78	438244.44	32°12'13.158"N	103°47'00.064"W	0.00	
11622.00†	90.280	317.513	8178.33	3676.90	2711.44	-2483.49	670047.24	438318.18	32°12'13.891"N	103°47'00.846"W	0.00	
11722.00†	90.280	317.513	8177.85	3776.90	2785.18	-2551.03	669979.71	438391.91	32°12'14.624"N	103°47'01.627"W	0.00	
11822.00†	90.280	317.513	8177.36	3876.90	2858.92	-2618.58	669912.17	438465.65	32°12'15.357"N	103°47'02.409"W	0.00	
11922.00†	90.280	317.513	8176.87	3976.90	2932.66	-2686.12	669844.63	438539.39	32°12'16.090"N	103°47'03.191"W	0.00	
12022.00†	90.280	317.513	8176.38	4076.90	3006.40	-2753.66	669777.09	438613.13	32°12'16.823"N	103°47'03.972"W	0.00	
12122.00†	90.280	317.513	8175.89	4176.90	3080.14	-2821.20	669709.55	438686.86	32°12'17.556"N	103°47'04.754"W	0.00	



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, L.P.	Slot	No.401H SHL
Area	Eddy County, NM	Well	No.401H
Field	Poker Lake Unit	Wellbore	No.401H PWB
Facility	Poker Lake Unit No. 401H		

WELLPATH DATA (156 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12222.00†	90.280	317.513	8175.40	4276.90	3153.89	-2888.74	669642.02	438760.60	32°12'18.289"N	103°47'05.536"W	0.00	
12322.00†	90.280	317.513	8174.91	4376.89	3227.63	-2956.29	669574.48	438834.34	32°12'19.023"N	103°47'06.317"W	0.00	
12422.00†	90.280	317.513	8174.42	4476.89	3301.37	-3023.83	669506.94	438908.07	32°12'19.756"N	103°47'07.099"W	0.00	
12522.00†	90.280	317.513	8173.93	4576.89	3375.11	-3091.37	669439.40	438981.81	32°12'20.489"N	103°47'07.881"W	0.00	
12622.00†	90.280	317.513	8173.45	4676.89	3448.85	-3158.91	669371.86	439055.55	32°12'21.222"N	103°47'08.662"W	0.00	
12722.00†	90.280	317.513	8172.96	4776.89	3522.59	-3226.45	669304.33	439129.29	32°12'21.955"N	103°47'09.444"W	0.00	
12822.00†	90.280	317.513	8172.47	4876.89	3596.34	-3294.00	669236.79	439203.02	32°12'22.688"N	103°47'10.226"W	0.00	
12922.00†	90.280	317.513	8171.98	4976.89	3670.08	-3361.54	669169.25	439276.76	32°12'23.421"N	103°47'11.007"W	0.00	
13022.00†	90.280	317.513	8171.49	5076.89	3743.82	-3429.08	669101.71	439350.50	32°12'24.154"N	103°47'11.789"W	0.00	
13122.00†	90.280	317.513	8171.00	5176.88	3817.56	-3496.62	669034.17	439424.24	32°12'24.887"N	103°47'12.571"W	0.00	
13222.00†	90.280	317.513	8170.51	5276.88	3891.30	-3564.16	668966.64	439497.97	32°12'25.620"N	103°47'13.353"W	0.00	
13322.00†	90.280	317.513	8170.02	5376.88	3965.04	-3631.71	668899.10	439571.71	32°12'26.354"N	103°47'14.134"W	0.00	
13422.00†	90.280	317.513	8169.54	5476.88	4038.79	-3699.25	668831.56	439645.45	32°12'27.087"N	103°47'14.916"W	0.00	
13522.00†	90.280	317.513	8169.05	5576.88	4112.53	-3766.79	668764.02	439719.19	32°12'27.820"N	103°47'15.698"W	0.00	
13622.00†	90.280	317.513	8168.56	5676.88	4186.27	-3834.33	668696.48	439792.92	32°12'28.553"N	103°47'16.479"W	0.00	
13722.00†	90.280	317.513	8168.07	5776.88	4260.01	-3901.87	668628.95	439866.66	32°12'29.286"N	103°47'17.261"W	0.00	
13822.00†	90.280	317.513	8167.58	5876.88	4333.75	-3969.42	668561.41	439940.40	32°12'30.019"N	103°47'18.043"W	0.00	
13922.00†	90.280	317.513	8167.09	5976.88	4407.49	-4036.96	668493.87	440014.13	32°12'30.752"N	103°47'18.825"W	0.00	
14022.00†	90.280	317.513	8166.60	6076.87	4481.24	-4104.50	668426.33	440087.87	32°12'31.485"N	103°47'19.606"W	0.00	
14122.00†	90.280	317.513	8166.11	6176.87	4554.98	-4172.04	668358.79	440161.61	32°12'32.218"N	103°47'20.388"W	0.00	
14145.15	90.280	317.513	8166.00	6200.03	4572.05	-4187.68	668343.15	440178.68	32°12'32.388"N	103°47'20.569"W	0.00	No.401H PBHL

TARGETS

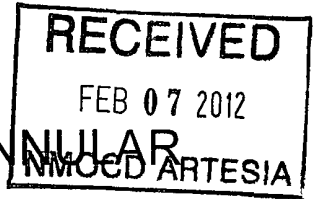
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
2) No.401H PBHL	14145.15	8166.00	4572.05	-4187.68	668343.15	440178.68	32°12'32.388"N	103°47'20.569"W	point
1) No.401H Target	9024.07	8191.00	795.67	-728.80	671801.84	436402.53	32°11'54.844"N	103°46'40.540"W	point

SURVEY PROGRAM - Ref Wellbore: No.401H PWB Ref Wellpath: Prelim_1

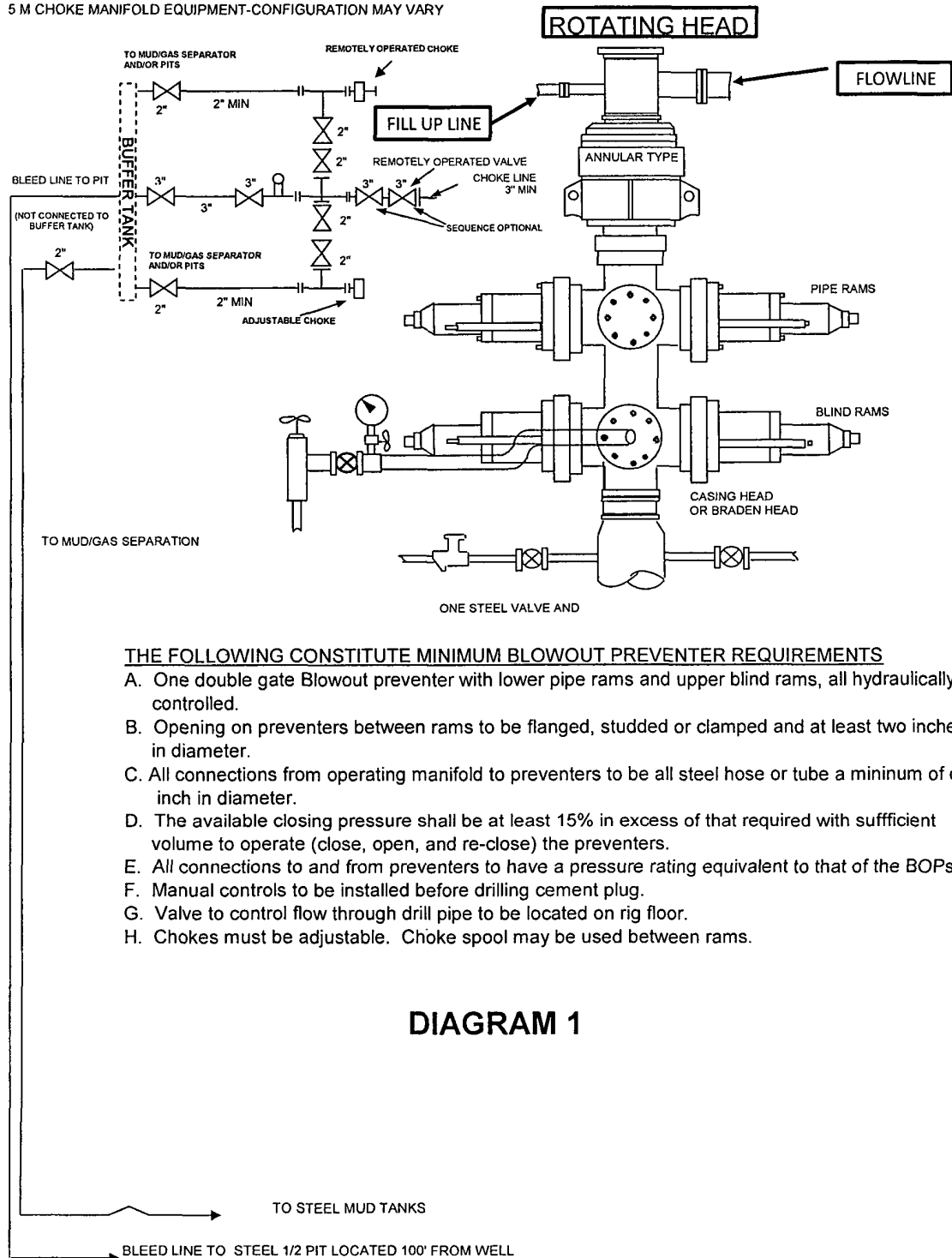
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
22.00	14145.15	NaviTrak (Standard)		No.401H PWB

BOPCO, L. P.

13 5/8" X 5-M WP BOPE WITH 5-M WP ANNULAR



5 M CHOKE MANIFOLD EQUIPMENT-CONFIGURATION MAY VARY



THE FOLLOWING CONSTITUTE MINIMUM BLOWOUT PREVENTER REQUIREMENTS

- A. One double gate Blowout preventer with lower pipe rams and upper blind rams, 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 BOPs.
- 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. Chokes must be adjustable. Choke spool may be used between rams.

DIAGRAM 1

HYDROGEN SULFIDE (H₂S) CONTINGENCY PLAN

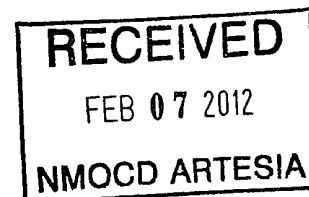
Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must

- Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- Evacuate any public places encompassed by the 100 ppm ROE.
- Be equipped with H₂S monitors and air packs in order to control the release.
- Use the "buddy system" to ensure no injuries occur during the response
- Take precautions to avoid personal injury during this operation.
- Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- Have received training in the
 - Detection of H₂S, and
 - Measures for protection against the gas,
 - Equipment used for protection and emergency response.



Ignition of Gas source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever this is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

BOPCO L.P. personnel must liaison with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. (Operator Name)'s response must be in coordination with the State of New México's "Hazardous Materials Emergency Response Plan" (HMER).

H₂S CONTINGENCY PLAN EMERGENCY CONTACTS

BOPCO L.P. Midland Office

432-683-2277

Key Personnel

<u>Name</u>	<u>Title</u>	<u>Cell Phone Number</u>
Stephen Martinez	Drilling Supt.	432-556-0262
Buddy Jenkins	Assistant Supt.	432-238-3295
Bill Dannels	Engineer	432-638-9463
Pete Lensing	Engineer	432-557-7157
Charles Warne	Engineer	432-894-1392

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
24 Hour	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635
National Emergency Response Center (Washington, DC)	800-424-8802

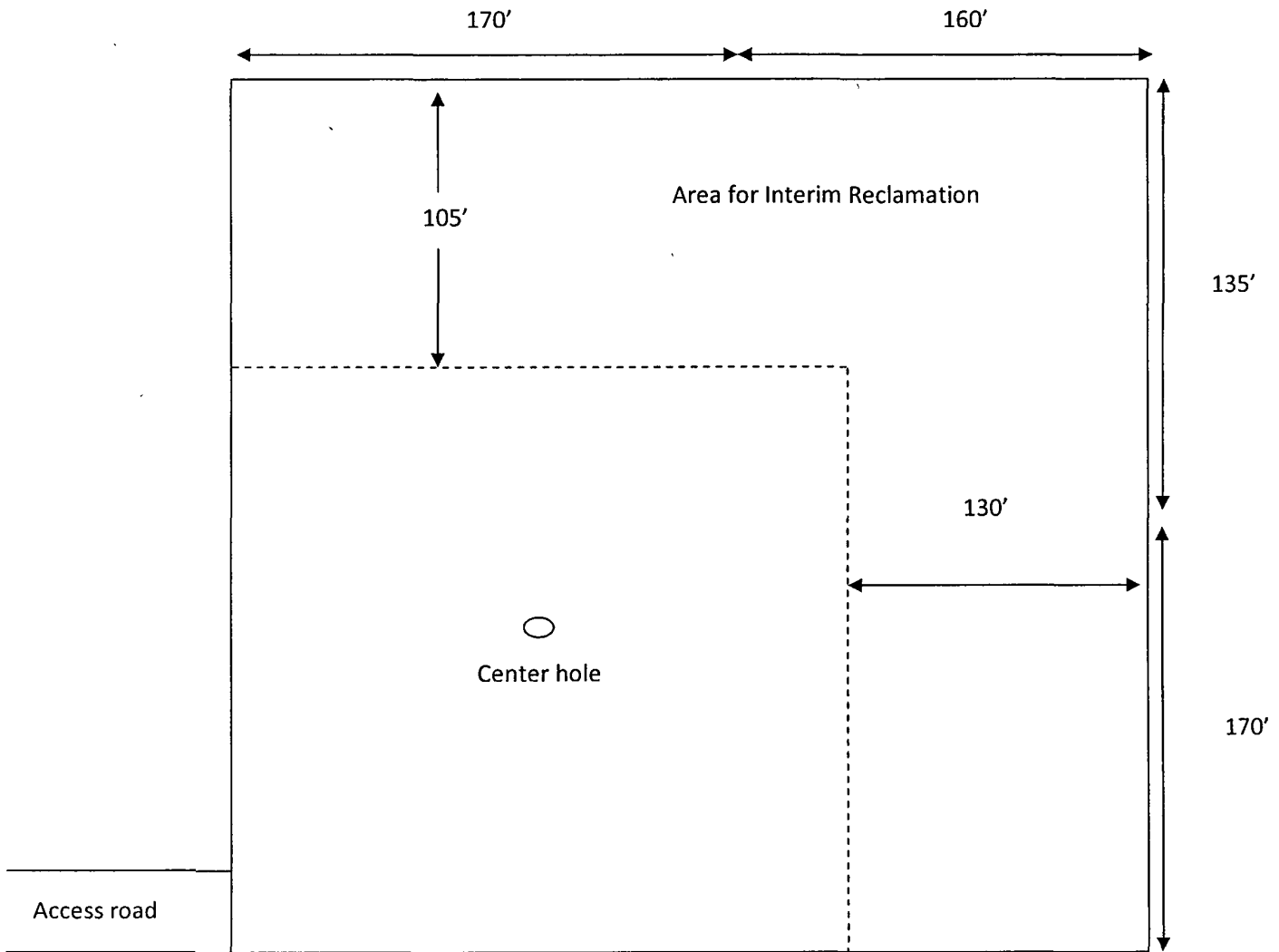
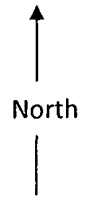
Other

Boots & Coots IWC	800-256-9688 or 281-931-8884
Cudd PressureControl	432-580-3544 or 432-570-5300
Halliburton	575-746-2757
B. J. Services	575-746-3569
Flight For Life – 4000 24 th St. Lubbock, Texas	806-743-9911
Aerocare – R3, Box 49F, Lubbock, Texas	806-747-8923
Med Flight Air Amb – 2301 Yale Blvd SE #D3, Albuquerque, NM	505-842-4433
S B Air Med Service – 2505 Clark Carr Loop SE, Albuquerque, NM	505-842-4949

Diagram 3

BOPCO, Poker Lake Unit 401H

Interim Reclamation Well Pad Layout



Location On-Site Notes

Location on-site conducted by Cecil Watkins-BOPCO L.P., Randy Rust-BLM, and Robert Gomez-Basin Survey on 09/20/2011. The Poker Lake Unit 401H was moved in Section 21 to a new surface footage call located at 335' FSL & 570' FEL of Sec 21-T24S-R31E to get off pipeline ROW. V-Door will face the east

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, L.P.
LEASE NO.:	NMNM0506A
WELL NAME & NO.:	Poker Lake Unit 401H
SURFACE HOLE FOOTAGE:	335' FSL & 570' FEL
BOTTOM HOLE FOOTAGE:	350' FNL & 550' FWL
LOCATION:	Section 21, T. 24 S., R. 31 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**
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
 - Commercial Well Determination
- ☐ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Logging Requirements
 - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **Interim Reclamation**
- ☐ **Final Abandonment & Reclamation**

I. GENERAL PROVISIONS

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

II. PERMIT EXPIRATION

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

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

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

IV. NOXIOUS WEEDS

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

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Commercial Well Determination

Well is outside Delaware participating area. A commercial well determination will need to be submitted.

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 in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 4 inches in depth. The topsoil 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

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

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

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

F. ON LEASE ACCESS ROADS

Road Width

The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty (20) 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.

Turnouts

Standard Turnout – Plan View

14' Centerline of Road Driving Surface

25' 10' 50'

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).

Cross Section of a Typical Lead-off Ditch

The diagram illustrates the cross-section of a lead-off ditch. It shows a horizontal line representing the "Natural Ground Level". A ditch is excavated below this level, with a "6" Berm on Down Slope Side" indicated on the left. The ditch has a "1' Minimum Depth" marked by a vertical arrow pointing from the ground level to the bottom of the ditch.

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:

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

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

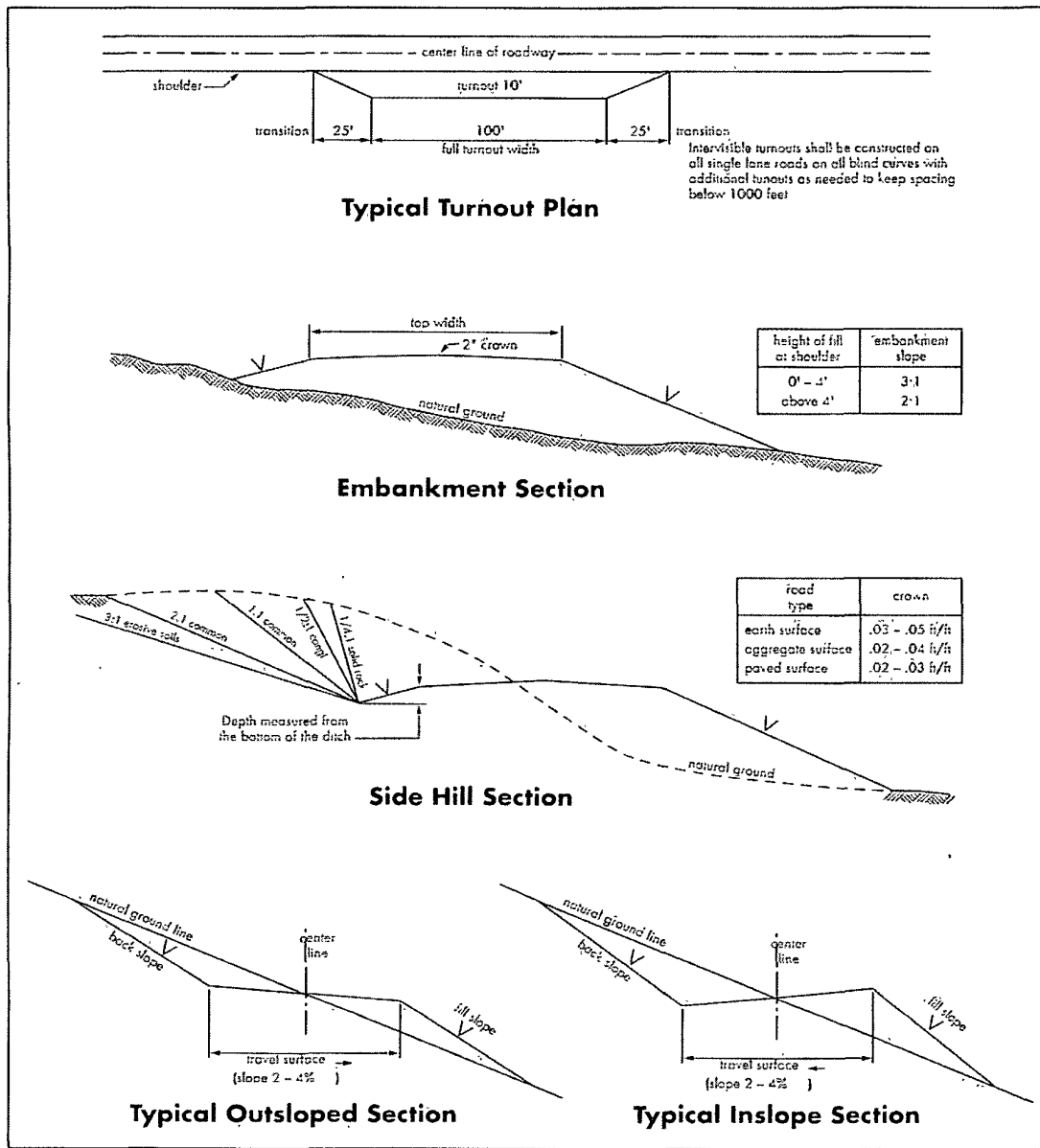
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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 the area, 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. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#).

Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

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

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. 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.

Possible lost circulation in the Delaware.

Possible water flows in the Castile, Salado and Delaware.

1. The 13-3/8 inch surface casing shall be set **at approximately 971 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If the salt is encountered set the casing 25 feet above the top of the salt.**
 - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
 - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
 - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
 - d. If cement falls back, remedial cementing will be done prior to drilling out that string.
2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:
☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

3. The minimum required fill of cement behind the 7 inch production casing is:
 - a. First stage to DV tool, cement shall:
 - ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.
 - b. Second stage above DV tool, cement shall:
 - ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.
4. Cement not required on the 4-1/2" completion assembly. **Packer system being used.**
5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M) psi. Operator installing a 5M but testing as a 2M system.**
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the 9-5/8 intermediate casing shoe shall be **3000 (3M) psi. Operator installing a 5M but testing as a 3M system.**
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

- a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
- b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- c. The results of the test shall be reported to the appropriate BLM office.
- d. 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.**
- e. 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.

E. WASTE MATERIAL AND FLUIDS

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

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

CRW 020312

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

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

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

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

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.
2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.
3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the

Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to 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.

6. (a) Where a polyline is laid along a County Road, the operator will lay that polyline ten (10) feet out from the center of the ditch to prevent obstructing County Maintenance activities.

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

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

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

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

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

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

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

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

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

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

IX. INTERIM RECLAMATION

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

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

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

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.

Seed Mixture for LPC Sand/Shinnery Sites

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

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

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

<u>Species</u>	<u>lb/acre</u>
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Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A
Four-winged Saltbush	5lbs/A

*Pounds of pure live seed:

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