

Form 3160-3
(April 2004)

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UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE- Other instructions on reverse side.

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator **BOPCO, L. P.**

3a. Address
P. O. Box 2760 Midland, TX 79702

3b. Phone No. (include area code)
432-683-2277

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

**SL: NWNE, UL B, 810' FNL & 1980' FEL, Sec 21, T24S R30E, Lat N32.208278, Lon W103.883497
BHL: NWSE, 2266' FSL, 1471' FEL, Sec 22, T24S, R30E, Lat N32.202197, Lon W103.864561**

5. Lease Serial No

NMLC 068431

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No
NMNM 71016X

8. Well Name and No.
Poker Lake Unit #293H

9. API Well No
30-015-35548

10. Field and Pool, or Exploratory Area
Nash Draw (Dela, BS, Avalon Sd)

11. County or Parish, State
Eddy County, NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒ Notice of Intent
☐ Subsequent Report
☐ Final Abandonment Notice

TYPE OF ACTION

- | | | | |
|--|---|--|---|
| ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| ☐ Alter Casing | ☐ Fracture Treat | ☐ Reclamation | ☐ Well Integrity |
| ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☐ Other |
| ☒ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | |
| ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

BOPCO L.P. respectfully request the changes listed below to be approved for the captioned well:

BOPCO, L.P. request approval to amend the APD approved 4/12/07 to reflect changing this well to a horizontal Lower Chispy Canyon test and that the dedicated acres be increased from 40 acres to 320 acres as marked on attached plat. A new 8 point drilling plan and surveyors plat are attached. A directional plan is also included.

NOTE: BOPCO, L.P. has added "H" to the well number to designate this well as a horizontal well.

The well will be drilled utilizing a closed loop mud circulating system without a reserve pit being built or utilized. All water or mud as drilling fluids will be cleaned and recycled or trucked to an approved disposal site. All drill cuttings will be collected and trucked to an approved disposal site.

BOPCO L.P. Bond # on file: COB00050

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Annette Childers

Title **Regulatory Clerk**

Signature

Annette Childers

Date

8-3-09

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Dustin Winkler

Title

Office

Date

NOV 10 2009

/s/ Dustin Winkler

Title 18 USC Section 1001 and Title 43 USC Section 1212, make it a crime for any person knowingly and willfully to make any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE**

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

5 1/2" production casing will be run in 8 3/4" OH and cemented so that TOC will tie back to 9-5/8" intermediate casing - 500'.

Drilling procedure, BOP diagram, and anticipated tops attached.

This well is located outside the R111 area and outside the Secretary's area. There are no potash leases within 1 mile of the location.

The surface hole location are both orthodox, but the bottom hole location is unorthodox.

BOPCO, L.P., at P. O. Box 2760, Midland, TX, 79702 is a subsidiary of BOPCO, L.P., 201 Mail Street, Ft. Worth, TX, 76102. Bond No. COB 000050 (Nationwide).

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 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	Pool Code	Pool Name
	47545	Nash Draw (Delaware, Bone Spring, Avalon Sand)
Property Code	Property Name	Well Number
068431	POKER LAKE UNIT	293H
OGRID No.	Operator Name	Elevation
260737	BOPCO, L.P.	3343'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	21	24 S	30 E		810	NORTH	1980	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
J	22	24 S	30 E		2266	SOUTH	1471	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320	N		

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 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.

Gary E. Gerhard 7/31/09
Signature Date

Gary E. Gerhard
Printed Name

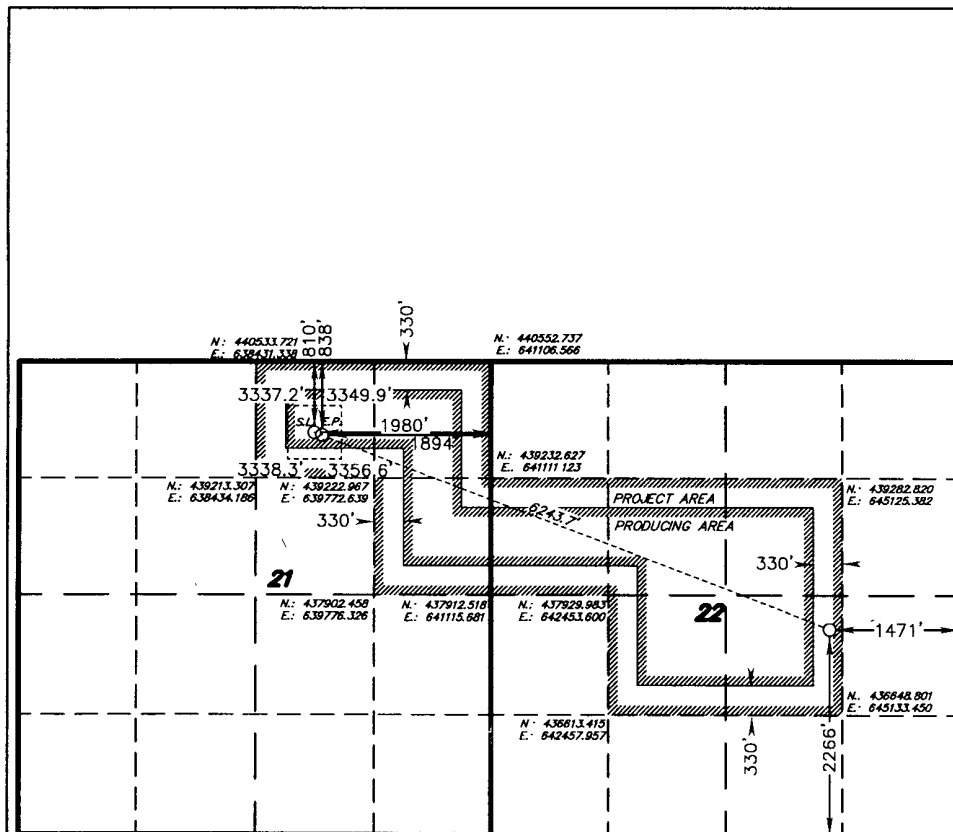
SURVEYOR CERTIFICATION

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.

JULY 1, 2009
Date Surveyed
Signature & Seal of Surveyor
Professional Surveyor

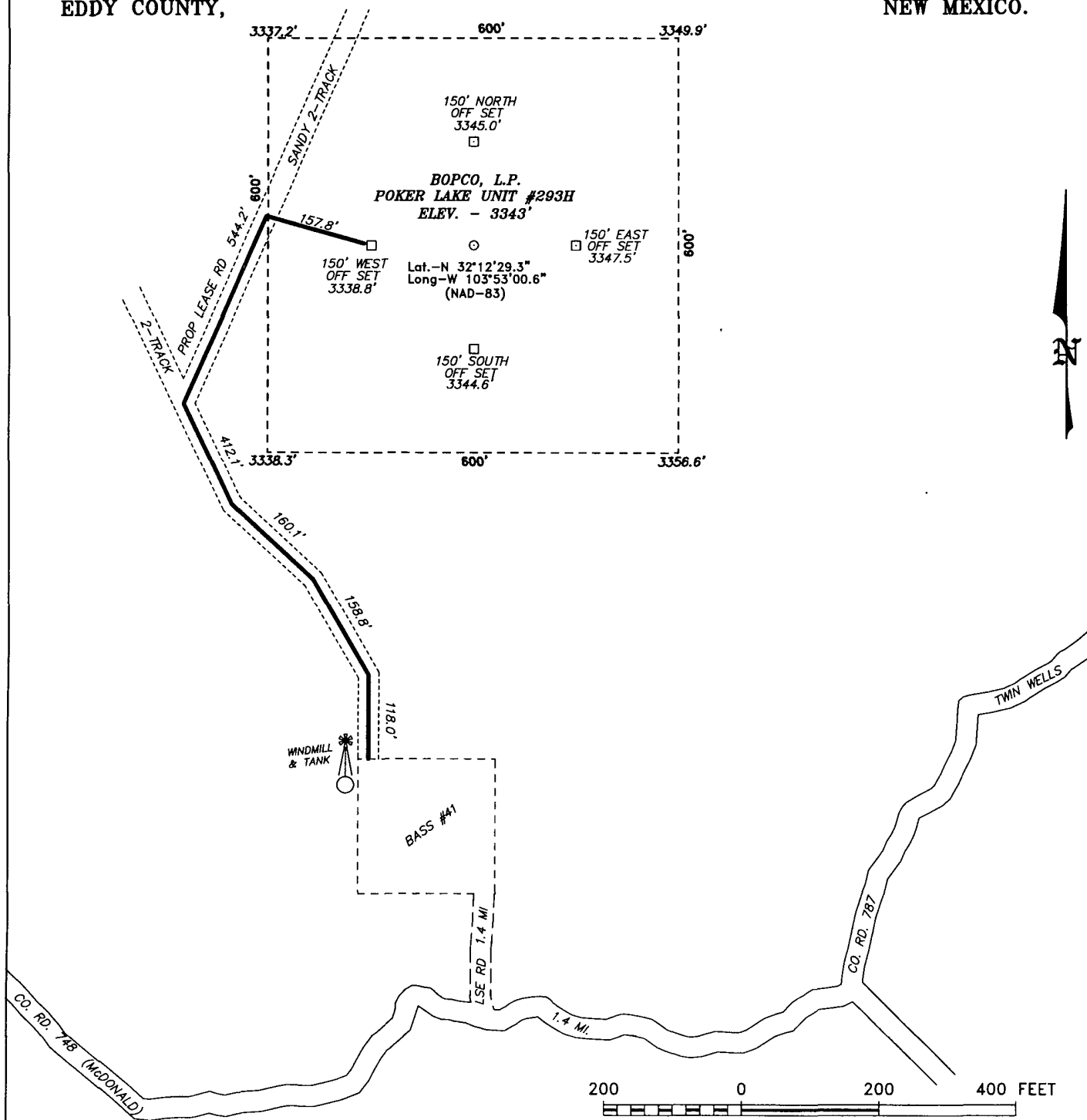
W.C. [Signature]
Certificate No. Gary L. Jones 7977

BASIN SURVEYS



SURFACE LOCATION Lat - N 32°12'29.31" Long - W 103°53'00.59" NMSPCE- E 639131.386 (NAD-27)	PROP. DELAWARE ENTRY POINT Lat - N 32°12'29.31" Long - W 103°53'00.59" NMSPCE- E 639131.386 (NAD-27)	PROP. BRUSHY CANYON E.P. Lat - N 32°12'28.99" Long - W 103°52'59.61" NMSPCE- E 639215.945 (NAD-27)	BOTTOM HOLE LOCATION Lat - N 32°12'07.91" Long - W 103°51'52.42" NMSPCE- E 644997.746 (NAD-27)
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SECTION 21, TOWNSHIP 24 SOUTH, RANGE 30 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO.



DIRECTIONS TO LOCATION:

FROM THE JUNCTION OF CO. RD. 787 (TWIN WELLS) AND CO. RD. 746 (McDONALD), PROCEED WEST ON CO. RD. 746 FOR 1.4 MILES TO LEASE ROAD. ON LEASE ROAD PROCEED NORTH 1.4 MILE TO THE #41 WELL AND PROPOSED LEASE ROAD.

BASIN SURVEYS P.O. BOX 1786—HOBBS, NEW MEXICO

W.O. Number: 17558 Drawn By: J. SMALL

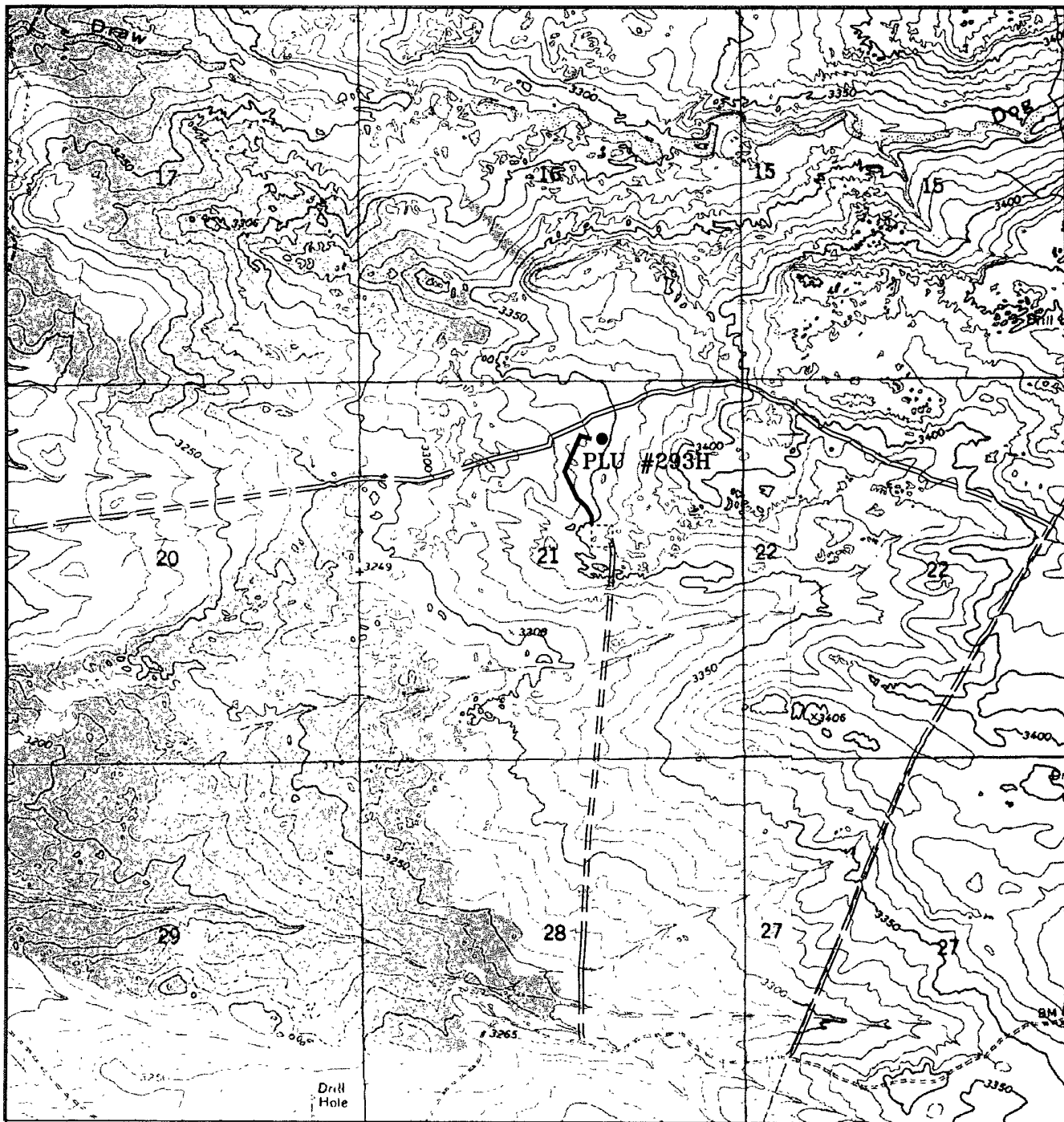
Date: 07-01-2009 Disk: 17558W JMS

BOPCO, L.P.

REF: POKER LAKE UNIT #293H / WELL PAD AND TOPO

THE POKER LAKE UNIT No. 293H LOCATED 810'
FROM THE NORTH LINE AND 1980' FROM THE EAST LINE OF
SECTION 21, TOWNSHIP 24 SOUTH, RANGE 30 EAST,
N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 07-01-2009 Sheet 1 of 1 Sheets



POKER LAKE UNIT #293H

810' FNL and 1980' FEL

Section 21, 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

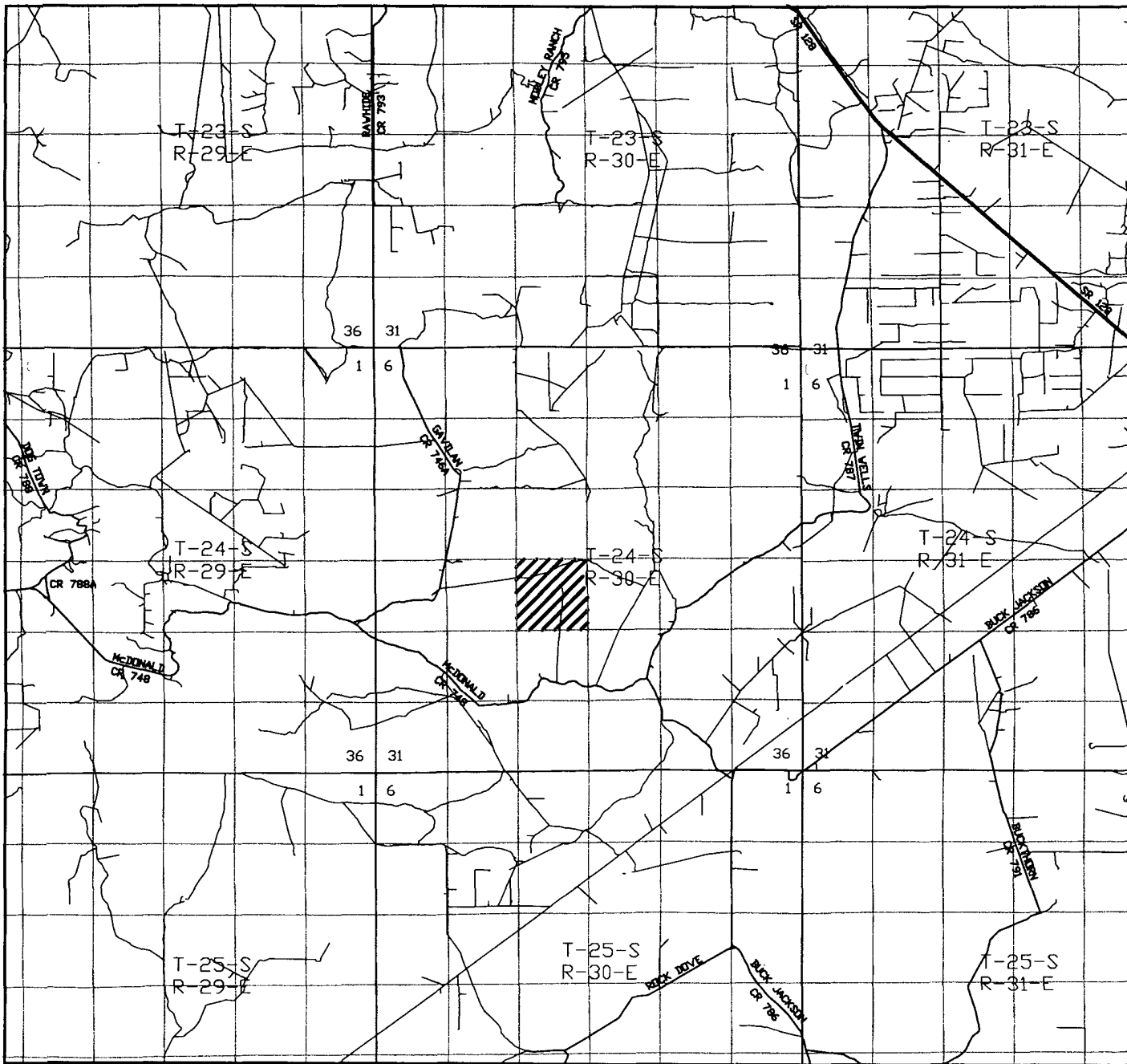
W.O. Number: JMS 17558T

Survey Date: 07-01-2009

Scale: 1" = 2000'

Date: 07-01-2009

BOPCO, L.P.



POKER LAKE UNIT #293H
 810' FNL and 1980' FEL
 Section 21, Township 24 South, Range 30 East,
 N.M.P.M., Eddy County, New Mexico.

basin
surveys
 focused on excellence
 in the oilfield

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: JMS 17558TR

Survey Date: 07-01-2009

Scale: 1" = 2 MILES

Date: 07-01-2009

BOPCO, L.P.

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

NAME OF WELL: Poker Lake Unit #293H

LEGAL DESCRIPTION - SURFACE: 810' FNL & 1980' FEL, Section 21, T-24-S, R-30-E, Eddy County, NM.
BHL: 2266' FSL, 1471' FEL, Section 22, 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 3362' (est) GL 3343'

FORMATION	ESTIMATED TOP FROM KB		ESTIMATED SUBSEA TOP	BEARING
	TVD	MD		
T/Rustler	1082'	1082'	+2,280'	Barren
B/Rustler	1332'	1332'	+2,030'	Barren
T/Salt	1362'	1362'	+2,000'	Barren
B/Salt	3,601'	3,601'	- 239'	Barren
T/Lamar Lime	3,811'	3,811'	- 449'	Barren
T/Ramsey	3,844'	3,844'	- 482'	Oil/Gas
T/Lwr Cherry Canyon	5,957'	5,957'	-2,595'	Oil/Gas
T/Lwr Brushy Canyon	7,375'	7,375'	-4,013'	NA
Bone Spring Lime	7,655'	7,655'	-4,293'	Oil/Gas
T/Avalon Sand	7,745'	7,745'	-4,383'	Oil/Gas
TD Pilot Hole	7,876'	7,876'	-4,514'	Oil/Gas
KOP	7,095'	7,095'	-3,732'	Oil/Gas
EOC	7,572'	7,835'	-4,210'	Oil/Gas
TD	7,672'	13,711'	-4,310'	Oil/Gas

POINT 3: CASING PROGRAM

See COA

TYPE	INTERVALS (MD)	Hole Size	PURPOSE	CONDITION
30"	0' - 60'	36"	Conductor	Contractor Discretion
20", 106.5#, K-55, Buttress	0' - 1352'	26"	Surface	New
9-5/8", 40#, J-55, 8RD, LTC	0' - 3,830' 3,830' 3,720'	17-1/2"	Intermediate	New
5-1/2", 17#, HCP-110, 8rd, LTC	0' - 6,900'	8-3/4"	Production	New
5-1/2", 17#, HCP-110, Ultra FJT	6,900' - 13,711'	8-3/4"	Production	New

CASING DESIGN SAFETY FACTORS:

TYPE	TENSION	COLLAPSE	BURST
20", 106.5#, K-55, Buttress	19.46	1.10	3.58
9-5/8", 40#, J-55, 8rd, LTC	3.40	1.29	1.10
5-1/2", 17#, HCP-110, 8rd, LTC	3.97	2.53	3.73
5-1/2", 17#, HCP-110, Ultra FJT	3.86	2.53	3.73

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	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. 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.
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 (3575 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 for 12-1/4" intermediate hole will consist of annular with mud cross, and choke manifold & chokes as per Diagram 1 (3000 psi WP). The BOP stack, choke, kill lines, kelly cocks, inside BOP, etc. when installed on the surface casinghead will be hydro-tested to 250-300 psig and 1500 psig by independent tester. The BOPE when rigged up on the intermediate casing spool will consist of annular, pipe & blind rams with choke manifold and chokes as in Diagram 2 and will be tested to 3000 psig by independent tester. In addition to the high pressure test, a low pressure (250-300 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

Poker Lake Unit #293 H
(AF)

3

POINT 4: PRESSURE CONTROL EQUIPMENT (SEE ATTACHED DIAGRAM)- con't...

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

POINT 5: MUD PROGRAM See COA

DEPTH	MUD TYPE	WEIGHT	FV	PV	YP	FL	Ph
0' - 765'	FW Spud Mud	8.5 - 9.2	38-70	NC	NC	NC	10.0
1352' - 3830'	Brine Water	9.8 - 10.2	28-30	NC	NC	NC	9.5 - 10.5
3830' - 13,711'	FW/Gel	8.7 - 9.2	28-36	NC	NC	20	9.5 - 10.0

NOTE: May increase vis for logging purposes only.

POINT 6: TECHNICAL STAGES OF OPERATION

A) TESTING

None anticipated.

B) LOGGING See COA

Run #1: PEX (GR-CNL/LDT-AIT) from TD of pilot hole 7875' to 3830' with GR-CNL to surface.

Run #2: GR with MWD during drilling of build and horizontal portions of 8-3/4" hole.

Run #3: Drill pipe conveyed GR/PE/NL/Density/Resistivity/Caliper log run from TD to KOP at 7094'.

C) CONVENTIONAL CORING

None anticipated.

D) CEMENT See COA

INTERVAL	AMOUNT SXS	FT OF FILL	TYPE	GALS/SX	PPG	FT ³ /SX
SURFACE: 1052'		1052'				
Lead: 0 - 466' (100% excess Circ to surface)	810 1810	466'	ExtendaCem CZ + 4% Gel + 2% CaCl ₂	9.20	13.5	1.75
Tail: 1052' - 1352' (100% excess)	670	300	Halcem + 2% CaCl ₂	6.39	14.8	1.35
INTERMEDIATE: Lead: 0' - 3330' (100% excess Circ to surface)	4000 4130	3330	EconoCem-HLC + 5% Salt + 5 pps Gilsonite	9.59	12.9	1.88
Tail: 3330' - 3720' (100% excess)	875	500	HalCem-C	6.34	14.8	1.33

D) CEMENT - con't...

See COA

INTERVAL PRODUCTION	AMOUNT SXS	FT OF FILL	TYPE	GALS/SX	PPG	FT ³ /SX
Lead 3330 ²²²⁰ - 6500' (50% excess)	650	3170	Tuned Light + 20 pps HGS-6000 + 1.25 pps CFR3 + 1 pps NaCl	14.68	9.7	3.16
Tail 6500' - 13,711' (50% excess)	850	7211	SoluCem-H + 10 pps Silicalite + 0.7% Halad 344 + 0.25 pps D-Air 3000 + 0.3% HR601	11.12	15.0	2.66

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 7875' at which point open hole logs will be run. The 8-3/4" hole will be plugged back to approximately 7094'. At this depth an 8-3/4" directional hole will be initiated at an azimuth of 110.26°, building angle at 12.00°/100' to a max angle of 89.01° at a TVD of 7571' (MD 7835'). An 8-3/4" lateral will then be drilled to a MD of 13,711' (TVD 7671'). 5-1/2" casing will then be run and cemented.

POINT 7: ANTICIPATED RESERVOIR CONDITIONS

Normal pressures are anticipated throughout Delaware and Bone Spring section. A BHP of 3322 psi (max) or MWE of 9.0 ppg is expected. Lost circulation may exist in the Delaware Section from 3843'-7374' TVD. No H₂S 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

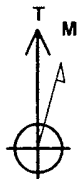
Upon approval

24 days drilling operations

14 days completion operations



Project: Eddy County(NAD27)
Site: Poker Lake Unit
Well: #293H
Wellbore: OH
Plan: Plan #1 (#293H/OH)

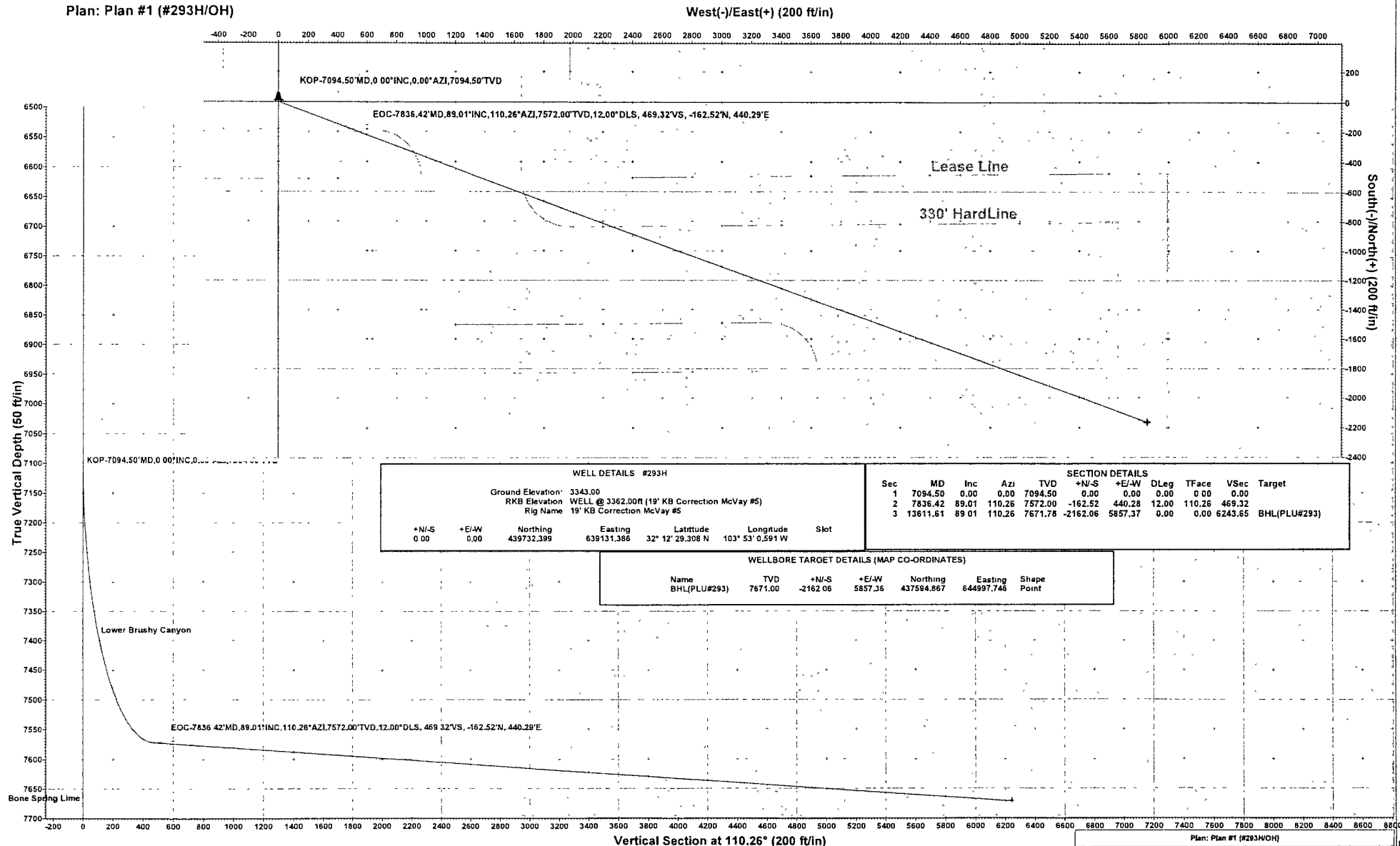


Azimuths to True North
Magnetic North: 7.94°

Magnetic Field
Strength: 48790.8nT
Dip Angle: 60.18°
Date: 07/20/2009
Model: IGRF200510

PROJECT DETAILS: Eddy County(NAD27)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: No north reference data is available

PATHFINDER



Plan: Plan #1 (#293H/OH)
Created By: Nate Bingham Date: 14 02, August 03 2009



BOPCO, L.P.

Eddy County(NAD27)

Poker Lake Unit

#293H

OH

Plan: Plan #1

Pathfinder X & Y Planning Report

03 August, 2009

PATHFINDER



Pathfinder Energy Services
Pathfinder X & Y Planning Report

PATHFINDER

Company: BOPCO, L.P.
Project: Eddy County(NAD27)
Site: Poker Lake Unit
Well: #293H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #293H
TVD Reference: WELL @ 3362.00ft (19' KB Correction McVay #5)
MD Reference: WELL @ 3362.00ft (19' KB Correction McVay #5)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Project Eddy County(NAD27)

Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001

System Datum: Mean Sea Level

Site Poker Lake Unit

Site Position: Northing: 431,785.905 ft Latitude: 32° 11' 9.261 N
From: Map Easting: 669,777.503 ft Longitude: 103° 47' 4.373 W
Position Uncertainty: 0.00 ft Slot Radius: " Grid Convergence: 0.29 °

Well #293H

Well Position +N/-S 0.00 ft Northing: 439,732.399 ft Latitude: 32° 12' 29.308 N
+E/-W 0.00 ft Easting: 639,131.386 ft Longitude: 103° 53' 0.591 W
Position Uncertainty 0.00 ft Wellhead Elevation: ft Ground Level: 3,343.00 ft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	07/20/2009	7.94	60.18	48,791

Design Plan #1

Audit Notes:

Version: Phase: PLAN Tie On Depth: 7,094.50

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	110.26



Pathfinder Energy Services
Pathfinder X & Y Planning Report

PATHFINDER

Company: BOPCO, L.P.
Project: Eddy County(NAD27)
Site: Poker Lake Unit
Well: #293H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #293H
TVD Reference: WELL @ 3362.00ft (19' KB Correction McVay #5)
MD Reference: WELL @ 3362.00ft (19' KB Correction McVay #5)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Survey Tool Program	Date 08/03/2009				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	7,094.50	Plan #1 (Pilot Hole)	MWD	MWD - Standard	
7,094.50	13,611.40	Plan #1 (OH)	MWD	MWD - Standard	

Planned Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)	
0.00	0.00	0.00	0.00	-3,362.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
100.00	0.00	0.00	100.00	-3,262.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
200.00	0.00	0.00	200.00	-3,162.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
300.00	0.00	0.00	300.00	-3,062.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
400.00	0.00	0.00	400.00	-2,962.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
500.00	0.00	0.00	500.00	-2,862.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
600.00	0.00	0.00	600.00	-2,762.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
700.00	0.00	0.00	700.00	-2,662.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
800.00	0.00	0.00	800.00	-2,562.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
900.00	0.00	0.00	900.00	-2,462.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
1,000.00	0.00	0.00	1,000.00	-2,362.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
1,100.00	0.00	0.00	1,100.00	-2,262.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
1,200.00	0.00	0.00	1,200.00	-2,162.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
1,300.00	0.00	0.00	1,300.00	-2,062.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
1,400.00	0.00	0.00	1,400.00	-1,962.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
1,500.00	0.00	0.00	1,500.00	-1,862.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
1,600.00	0.00	0.00	1,600.00	-1,762.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
1,700.00	0.00	0.00	1,700.00	-1,662.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
1,800.00	0.00	0.00	1,800.00	-1,562.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
1,900.00	0.00	0.00	1,900.00	-1,462.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
2,000.00	0.00	0.00	2,000.00	-1,362.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	



Pathfinder Energy Services
Pathfinder X & Y Planning Report



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Project: Eddy County(NAD27)
Site: Poker Lake Unit
Well: #293H
Wellbore: OH
Design: Plan #1

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Planned Survey											
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2,100.00	0.00	0.00	2,100.00	-1,262.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
2,200.00	0.00	0.00	2,200.00	-1,162.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
2,300.00	0.00	0.00	2,300.00	-1,062.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
2,400.00	0.00	0.00	2,400.00	-962.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
2,500.00	0.00	0.00	2,500.00	-862.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
2,600.00	0.00	0.00	2,600.00	-762.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
2,700.00	0.00	0.00	2,700.00	-662.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
2,800.00	0.00	0.00	2,800.00	-562.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
2,900.00	0.00	0.00	2,900.00	-462.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
3,000.00	0.00	0.00	3,000.00	-362.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
3,100.00	0.00	0.00	3,100.00	-262.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
3,200.00	0.00	0.00	3,200.00	-162.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
3,300.00	0.00	0.00	3,300.00	-62.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
3,400.00	0.00	0.00	3,400.00	38.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
3,500.00	0.00	0.00	3,500.00	138.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
3,600.00	0.00	0.00	3,600.00	238.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
3,700.00	0.00	0.00	3,700.00	338.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
3,800.00	0.00	0.00	3,800.00	438.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
3,900.00	0.00	0.00	3,900.00	538.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
4,000.00	0.00	0.00	4,000.00	638.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
4,100.00	0.00	0.00	4,100.00	738.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
4,200.00	0.00	0.00	4,200.00	838.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
4,300.00	0.00	0.00	4,300.00	938.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
4,400.00	0.00	0.00	4,400.00	1,038.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
4,500.00	0.00	0.00	4,500.00	1,138.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
4,600.00	0.00	0.00	4,600.00	1,238.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	
4,700.00	0.00	0.00	4,700.00	1,338.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39	



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Pathfinder X & Y Planning Report

PATHFINDER

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4,800.00	0.00	0.00	4,800.00	1,438.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
4,900.00	0.00	0.00	4,900.00	1,538.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
5,000.00	0.00	0.00	5,000.00	1,638.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
5,100.00	0.00	0.00	5,100.00	1,738.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
5,200.00	0.00	0.00	5,200.00	1,838.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
5,300.00	0.00	0.00	5,300.00	1,938.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
5,400.00	0.00	0.00	5,400.00	2,038.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
5,500.00	0.00	0.00	5,500.00	2,138.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
5,600.00	0.00	0.00	5,600.00	2,238.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
5,700.00	0.00	0.00	5,700.00	2,338.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
5,800.00	0.00	0.00	5,800.00	2,438.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
5,900.00	0.00	0.00	5,900.00	2,538.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
6,000.00	0.00	0.00	6,000.00	2,638.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
6,100.00	0.00	0.00	6,100.00	2,738.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
6,200.00	0.00	0.00	6,200.00	2,838.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
6,300.00	0.00	0.00	6,300.00	2,938.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
6,400.00	0.00	0.00	6,400.00	3,038.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
6,500.00	0.00	0.00	6,500.00	3,138.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
6,600.00	0.00	0.00	6,600.00	3,238.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
6,700.00	0.00	0.00	6,700.00	3,338.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
6,800.00	0.00	0.00	6,800.00	3,438.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
6,900.00	0.00	0.00	6,900.00	3,538.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
7,000.00	0.00	0.00	7,000.00	3,638.00	0.00	0.00	0.00	0.00	439,732.40	639,131.39
7,094.50	0.00	0.00	7,094.50	3,732.50	0.00	0.00	0.00	0.00	439,732.40	639,131.39
KOP-7094.50'MD,0.00°INC,0.00°AZI,7094.50'TVD										
7,100.00	0.66	110.26	7,100.00	3,738.00	-0.01	0.03	0.03	12.00	439,732.39	639,131.42
7,125.00	3.66	110.26	7,124.98	3,762.98	-0.34	0.91	0.97	12.00	439,732.07	639,132.30



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7,150.00	6.66	110.26	7,149.88	3,787.88	-1.12	3.02	3.22	12.00	439,731.30	639,134.41
7,175.00	9.66	110.26	7,174.62	3,812.62	-2.34	6.35	6.77	12.00	439,730.08	639,137.75
7,200.00	12.66	110.26	7,199.14	3,837.14	-4.02	10.89	11.61	12.00	439,728.43	639,142.29
7,225.00	15.66	110.26	7,223.38	3,861.38	-6.14	16.62	17.72	12.00	439,726.33	639,148.03
7,250.00	18.66	110.26	7,247.27	3,885.27	-8.69	23.54	25.09	12.00	439,723.81	639,154.96
7,275.00	21.66	110.26	7,270.73	3,908.73	-11.67	31.62	33.71	12.00	439,720.86	639,163.06
7,300.00	24.65	110.26	7,293.72	3,931.72	-15.08	40.84	43.54	12.00	439,717.49	639,172.29
7,325.00	27.65	110.26	7,316.15	3,954.15	-18.89	51.18	54.55	12.00	439,713.72	639,182.64
7,350.00	30.65	110.26	7,337.98	3,975.98	-23.11	62.60	66.73	12.00	439,709.55	639,194.08
7,375.00	33.65	110.26	7,359.15	3,997.15	-27.71	75.08	80.03	12.00	439,705.00	639,206.58
7,393.07	35.82	110.26	7,374.00	4,012.00	-31.28	84.74	90.33	12.00	439,701.47	639,216.26
Lower Brushy Canyon										
7,400.00	36.65	110.26	7,379.59	4,017.59	-32.70	88.58	94.43	12.00	439,700.07	639,220.11
7,425.00	39.65	110.26	7,399.24	4,037.24	-38.05	103.07	109.87	12.00	439,694.79	639,234.62
7,450.00	42.65	110.26	7,418.07	4,056.07	-43.74	118.50	126.32	12.00	439,689.15	639,250.07
7,475.00	45.65	110.26	7,436.00	4,074.00	-49.77	134.84	143.73	12.00	439,683.19	639,266.43
7,500.00	48.65	110.26	7,453.00	4,091.00	-56.12	152.03	162.06	12.00	439,676.92	639,283.65
7,525.00	51.65	110.26	7,469.02	4,107.02	-62.76	170.03	181.25	12.00	439,670.35	639,301.68
7,550.00	54.65	110.26	7,484.01	4,122.01	-69.69	188.80	201.25	12.00	439,663.50	639,320.47
7,575.00	57.65	110.26	7,497.94	4,135.94	-76.88	208.27	222.01	12.00	439,656.39	639,339.98
7,600.00	60.65	110.26	7,510.76	4,148.76	-84.31	228.40	243.47	12.00	439,649.05	639,360.14
7,625.00	63.65	110.26	7,522.44	4,160.44	-91.96	249.14	265.57	12.00	439,641.48	639,380.91
7,650.00	66.65	110.26	7,532.94	4,170.94	-99.82	270.42	288.25	12.00	439,633.72	639,402.22
7,675.00	69.64	110.26	7,542.25	4,180.25	-107.85	292.18	311.45	12.00	439,625.77	639,424.02
7,700.00	72.64	110.26	7,550.33	4,188.33	-116.04	314.37	335.11	12.00	439,617.67	639,446.24
7,725.00	75.64	110.26	7,557.16	4,195.16	-124.37	336.93	359.15	12.00	439,609.44	639,468.84
7,750.00	78.64	110.26	7,562.72	4,200.72	-132.81	359.79	383.52	12.00	439,601.10	639,491.73



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7,775.00	81.64	110.26	7,567.00	4,205.00	-141.33	382.90	408.15	12.00	439,592.67	639,514.87
7,800.00	84.64	110.26	7,569.98	4,207.98	-149.93	406.18	432.97	12.00	439,584.17	639,538.19
7,825.00	87.64	110.26	7,571.67	4,209.67	-158.57	429.58	457.91	12.00	439,575.63	639,561.63
7,836.42	89.01	110.26	7,572.00	4,210.00	-162.52	440.28	469.32	12.00	439,571.73	639,572.35
EOC-7836.42°MD,89.01°INC,110.26°AZI,7572.00°TVD,12.00°DLS, 469.32°VS, -162.52°N, 440.29°E										
7,900.00	89.01	110.26	7,573.10	4,211.10	-184.53	499.93	532.89	0.00	439,549.96	639,632.08
8,000.00	89.01	110.26	7,574.83	4,212.83	-219.15	593.72	632.88	0.00	439,515.73	639,726.02
8,100.00	89.01	110.26	7,576.55	4,214.55	-253.78	687.52	732.87	0.00	439,481.50	639,819.97
8,200.00	89.01	110.26	7,578.28	4,216.28	-288.40	781.32	832.85	0.00	439,447.27	639,913.91
8,300.00	89.01	110.26	7,580.01	4,218.01	-323.02	875.12	932.84	0.00	439,413.04	640,007.85
8,400.00	89.01	110.26	7,581.74	4,219.74	-357.65	968.92	1,032.82	0.00	439,378.81	640,101.79
8,500.00	89.01	110.26	7,583.47	4,221.47	-392.27	1,062.72	1,132.81	0.00	439,344.58	640,195.74
8,600.00	89.01	110.26	7,585.19	4,223.19	-426.89	1,156.52	1,232.79	0.00	439,310.35	640,289.68
8,700.00	89.01	110.26	7,586.92	4,224.92	-461.51	1,250.32	1,332.78	0.00	439,276.12	640,383.62
8,800.00	89.01	110.26	7,588.65	4,226.65	-496.14	1,344.12	1,432.76	0.00	439,241.89	640,477.57
8,900.00	89.01	110.26	7,590.38	4,228.38	-530.76	1,437.92	1,532.75	0.00	439,207.66	640,571.51
9,000.00	89.01	110.26	7,592.10	4,230.10	-565.38	1,531.72	1,632.73	0.00	439,173.43	640,665.45
9,100.00	89.01	110.26	7,593.83	4,231.83	-600.01	1,625.51	1,732.72	0.00	439,139.20	640,759.40
9,200.00	89.01	110.26	7,595.56	4,233.56	-634.63	1,719.31	1,832.70	0.00	439,104.97	640,853.34
9,300.00	89.01	110.26	7,597.29	4,235.29	-669.25	1,813.11	1,932.69	0.00	439,070.74	640,947.28
9,400.00	89.01	110.26	7,599.02	4,237.02	-703.87	1,906.91	2,032.67	0.00	439,036.51	641,041.23
9,500.00	89.01	110.26	7,600.74	4,238.74	-738.50	2,000.71	2,132.66	0.00	439,002.28	641,135.17
9,600.00	89.01	110.26	7,602.47	4,240.47	-773.12	2,094.51	2,232.64	0.00	438,968.05	641,229.11
9,700.00	89.01	110.26	7,604.20	4,242.20	-807.74	2,188.31	2,332.63	0.00	438,933.82	641,323.06
9,800.00	89.01	110.26	7,605.93	4,243.93	-842.37	2,282.11	2,432.61	0.00	438,899.59	641,417.00
9,900.00	89.01	110.26	7,607.65	4,245.65	-876.99	2,375.91	2,532.60	0.00	438,865.36	641,510.94
10,000.00	89.01	110.26	7,609.38	4,247.38	-911.61	2,469.71	2,632.58	0.00	438,831.13	641,604.89



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10,100.00	89.01	110.26	7,611.11	4,249.11	-946.24	2,563.51	2,732.57	0.00	438,796.90	641,698.83
10,200.00	89.01	110.26	7,612.84	4,250.84	-980.86	2,657.30	2,832.55	0.00	438,762.67	641,792.77
10,300.00	89.01	110.26	7,614.57	4,252.57	-1,015.48	2,751.10	2,932.54	0.00	438,728.44	641,886.72
10,400.00	89.01	110.26	7,616.29	4,254.29	-1,050.10	2,844.90	3,032.52	0.00	438,694.21	641,980.66
10,500.00	89.01	110.26	7,618.02	4,256.02	-1,084.73	2,938.70	3,132.51	0.00	438,659.98	642,074.60
10,600.00	89.01	110.26	7,619.75	4,257.75	-1,119.35	3,032.50	3,232.49	0.00	438,625.75	642,168.54
10,700.00	89.01	110.26	7,621.48	4,259.48	-1,153.97	3,126.30	3,332.48	0.00	438,591.52	642,262.49
10,800.00	89.01	110.26	7,623.20	4,261.20	-1,188.60	3,220.10	3,432.46	0.00	438,557.29	642,356.43
10,900.00	89.01	110.26	7,624.93	4,262.93	-1,223.22	3,313.90	3,532.45	0.00	438,523.06	642,450.37
11,000.00	89.01	110.26	7,626.66	4,264.66	-1,257.84	3,407.70	3,632.43	0.00	438,488.83	642,544.32
11,100.00	89.01	110.26	7,628.39	4,266.39	-1,292.46	3,501.50	3,732.42	0.00	438,454.60	642,638.26
11,200.00	89.01	110.26	7,630.12	4,268.12	-1,327.09	3,595.30	3,832.40	0.00	438,420.37	642,732.20
11,300.00	89.01	110.26	7,631.84	4,269.84	-1,361.71	3,689.09	3,932.39	0.00	438,386.14	642,826.15
11,400.00	89.01	110.26	7,633.57	4,271.57	-1,396.33	3,782.89	4,032.37	0.00	438,351.91	642,920.09
11,500.00	89.01	110.26	7,635.30	4,273.30	-1,430.96	3,876.69	4,132.36	0.00	438,317.68	643,014.03
11,600.00	89.01	110.26	7,637.03	4,275.03	-1,465.58	3,970.49	4,232.34	0.00	438,283.45	643,107.98
11,700.00	89.01	110.26	7,638.75	4,276.75	-1,500.20	4,064.29	4,332.33	0.00	438,249.22	643,201.92
11,800.00	89.01	110.26	7,640.48	4,278.48	-1,534.82	4,158.09	4,432.31	0.00	438,214.99	643,295.86
11,900.00	89.01	110.26	7,642.21	4,280.21	-1,569.45	4,251.89	4,532.30	0.00	438,180.76	643,389.81
12,000.00	89.01	110.26	7,643.94	4,281.94	-1,604.07	4,345.69	4,632.28	0.00	438,146.53	643,483.75
12,100.00	89.01	110.26	7,645.67	4,283.67	-1,638.69	4,439.49	4,732.27	0.00	438,112.30	643,577.69
12,200.00	89.01	110.26	7,647.39	4,285.39	-1,673.32	4,533.29	4,832.25	0.00	438,078.07	643,671.64
12,300.00	89.01	110.26	7,649.12	4,287.12	-1,707.94	4,627.09	4,932.24	0.00	438,043.84	643,765.58
12,400.00	89.01	110.26	7,650.85	4,288.85	-1,742.56	4,720.88	5,032.22	0.00	438,009.61	643,859.52
12,500.00	89.01	110.26	7,652.58	4,290.58	-1,777.19	4,814.68	5,132.21	0.00	437,975.38	643,953.46
12,582.36	89.01	110.26	7,654.00	4,292.00	-1,805.70	4,891.94	5,214.56	0.00	437,947.19	644,030.84

Bone Spring Lime



Pathfinder Energy Services
Pathfinder X & Y Planning Report



Company: BOPCO, L.P.
Project: Eddy County(NAD27)
Site: Poker Lake Unit
Well: #293H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #293H
TVD Reference: WELL @ 3362 00ft (19' KB Correction McVay #5)
MD Reference: WELL @ 3362.00ft (19' KB Correction McVay #5)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Planned Survey

MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
12,600.00	89.01	110.26	7,654.30	4,292.30	-1,811.81	4,908.48	5,232.19	0.00	437,941.15	644,047.41
12,700.00	89.01	110.26	7,656.03	4,294.03	-1,846.43	5,002.28	5,332.18	0.00	437,906.92	644,141.35
12,800.00	89.01	110.26	7,657.76	4,295.76	-1,881.05	5,096.08	5,432.16	0.00	437,872.69	644,235.29
12,900.00	89.01	110.26	7,659.49	4,297.49	-1,915.68	5,189.88	5,532.15	0.00	437,838.46	644,329.24
13,000.00	89.01	110.26	7,661.22	4,299.22	-1,950.30	5,283.68	5,632.13	0.00	437,804.23	644,423.18
13,100.00	89.01	110.26	7,662.94	4,300.94	-1,984.92	5,377.48	5,732.12	0.00	437,770.00	644,517.12
13,200.00	89.01	110.26	7,664.67	4,302.67	-2,019.55	5,471.28	5,832.10	0.00	437,735.77	644,611.07
13,300.00	89.01	110.26	7,666.40	4,304.40	-2,054.17	5,565.08	5,932.09	0.00	437,701.54	644,705.01
13,400.00	89.01	110.26	7,668.13	4,306.13	-2,088.79	5,658.88	6,032.07	0.00	437,667.31	644,798.95
13,500.00	89.01	110.26	7,669.85	4,307.85	-2,123.41	5,752.67	6,132.06	0.00	437,633.08	644,892.90
13,600.00	89.01	110.26	7,671.58	4,309.58	-2,158.04	5,846.47	6,232.04	0.00	437,598.85	644,986.84
13,611.60	89.01	110.26	7,671.78	4,309.78	-2,162.05	5,857.35	6,243.64	0.00	437,594.88	644,997.74
BHL(PLU#293)										
13,611.61	89.01	110.26	7,671.78	4,309.78	-2,162.06	5,857.37	6,243.65	0.01	437,594.87	644,997.75
TD at 13611.61										



Pathfinder Energy Services
Pathfinder X & Y Planning Report



Company: BOPCO, L.P.
Project: Eddy County(NAD27)
Site: Poker Lake Unit
Well: #293H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #293H
TVD Reference: WELL @ 3362.00ft (19' KB Correction McVay #5)
MD Reference: WELL @ 3362.00ft (19' KB Correction McVay #5)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: Midland Database

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL(PLU#293) - plan hits target - Point	0.00	0.00	7,671.00	-2,162.06	5,857.36	437,594.867	644,997.746	32° 12' 7.907 N	103° 51' 52.421 W

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction
	7,744.00	Avalon Sand		0.00	
7,393.07	7,374.00	Lower Brushy Canyon		0.00	
12,582.36	7,654.00	Bone Spring Lime		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
7,094.50	7,094.50	0.00	0.00	KOP-7094.50°MD,0.00°INC,0.00°AZI,7094.50°TVD
7,836.42	7,572.00	-162.52	440.28	EOC-7836.42°MD,89.01°INC,110.26°AZI,7572.00°TVD,12.00°DLS, 469
13,611.61	7,671.78	-2,162.06	5,857.37	TD at 13611.61

Checked By: _____ Approved By: _____ Date: _____

McVay Rig #7,5

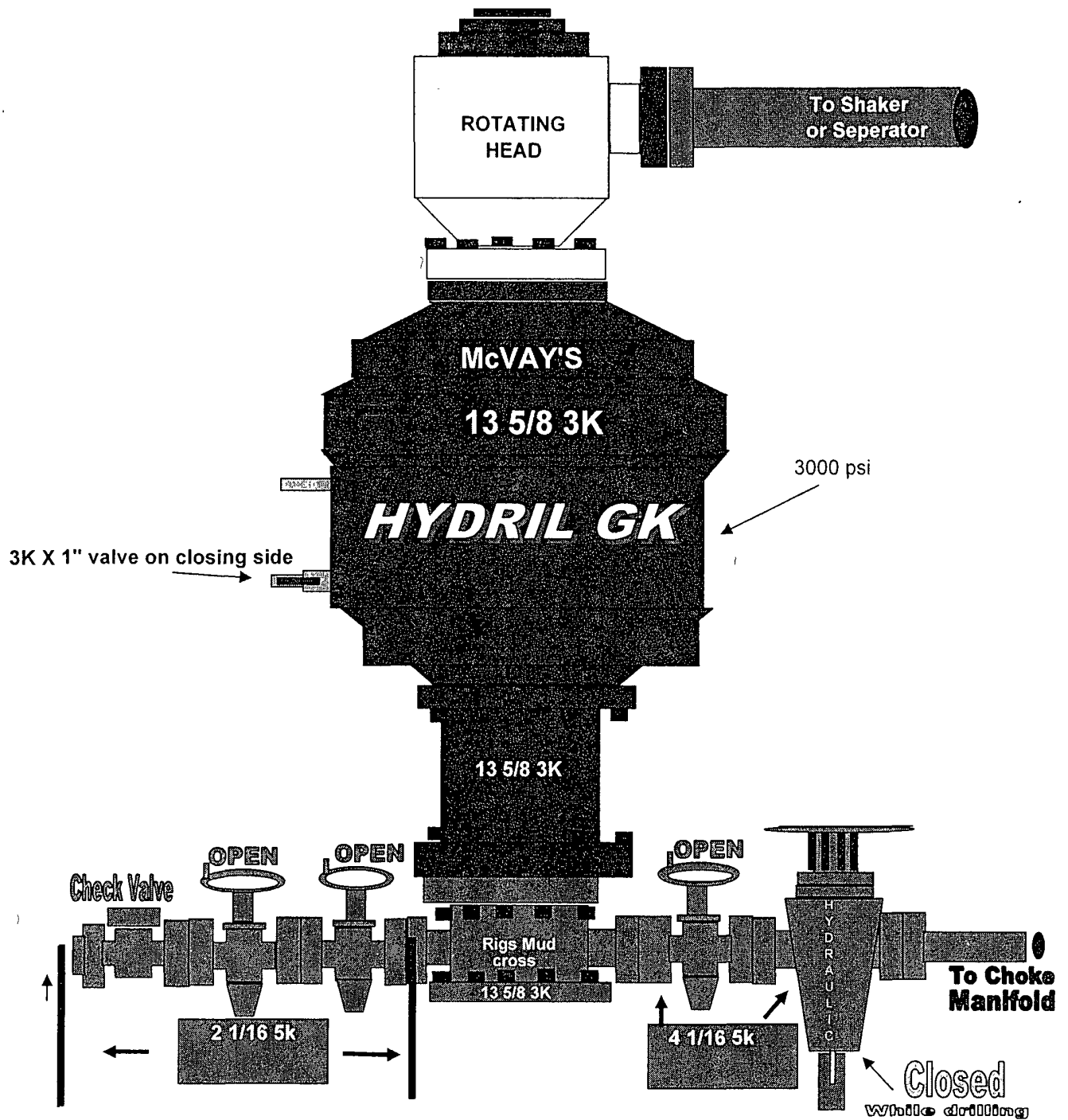


Diagram #1

Approved as
3M System

ROTATING HEAD



- ## DIAGRAM 2

PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, L.P.
LEASE NO.:	NMLC-068431
WELL NAME & NO.:	Poker Lake Unit #293H
SURFACE HOLE FOOTAGE:	810' FNL & 1980' FEL Section 21
BOTTOM HOLE FOOTAGE:	2266' FSL & 1471' FEL
LOCATION:	Section 22, T. 24 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

I. 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.
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 CAL/GR/N well log run from TD to surface will 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 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.

Medium Cave/Karst

Possible lost circulation in the Delaware and Bone Springs.

1. **The 20 inch surface casing shall be set at approximately 1352 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.**
 - a. **If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.**
 - b. **Wait on cement (WOC) time for a primary cement job 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.

Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst. Set at approximately 3720' within the Lamar Limestone below the Castile Formation.

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

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

3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

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

3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

a. The tests shall be done by an independent service company.

b. The results of the test shall be reported to the appropriate BLM office.

c. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

- d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.
- e. Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.

D. DRILL STEM TEST

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

DHW 102609