

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**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		5. Lease Serial No. NMLC069627A
2. Name of Operator BOPCO LP		6. If Indian, Allottee or Tribe Name
Contact: NAOMI G O'DONNELL E-Mail: ngodonnell@basspet.com		7. If Unit or CA/Agreement, Name and/or No. 891000303X
3a. Address MIDLAND, TX 79702	3b. Phone No. (include area code) Ph: 432-683-2277	8. Well Name and No. POKER LAKE UNIT 443H
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 19 T24S R30E SWSE 791FSL 2262FEL		9. API Well No. 30-015-41198-00-X1
		10. Field and Pool, or Exploratory NASH DRAW
		11. County or Parish, and State EDDY COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ 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 recompletion 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.)

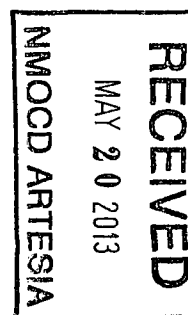
BOPCO, L.P. respectfully requests changes to the 8 pt. drilling program to include a new bottom hole location of 935' FNL & 2188' FEL, sec-31-T24S-R30E. New casing string design as well as updated directional plan is attached.

Attachments:

- 1) Drilling plan changes
- 2) Directional plan

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**Accepted for record
NMDCD

C. Sade 5/24/13



14. I hereby certify that the foregoing is true and correct.	
Electronic Submission #206176 verified by the BLM Well Information System For BOPCO LP, sent to the Carlsbad Committed to AFMSS for processing by KURT SIMMONS on 05/08/2013 (13KMS5975SE)	
Name (Printed/Typed) CHRIS VOLEK	Title DRILLING ENGINEER
Signature (Electronic Submission)	Date 05/03/2013

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By CHRISTOPHER WALLS	Title PETROLEUM ENGINEER	Date 05/16/2013
Conditions of approval, if any, are attached. Approval of this notice 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.		Office Carlsbad

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.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

BOPCO, L.P. respectfully requests permission to amend the casing program for Poker Lake Unit #443H. This will be accomplished by drilling a 17-1/2" surface hole and setting a 13-3/8", 48 ppf, H-40, ST&C surface string at approximately 568'. The 13-3/8" surface casing will be cemented to surface. The salt string will be drilled as a 12-1/4" hole with an approximate TD of 3,444'. The 12-1/4" hole will be cased with 9-5/8", 40 ppf, J-55, LTC casing and cemented to surface. The production hole will be drilled as an 8-3/4" hole drilled to TD and cased with 5-1/2", 17 ppf, HCP-110, BTC casing and cemented to 500' into the 9-5/8" salt string (2,944'). As a contingency if unexpected MW or hole conditions are experienced before reaching the lateral BOPCO L.P. will plan on stopping @ KOP (9,312' TVD) and running 7", 26 ppf, HCP-110, LTC casing to surface and cementing 500' above the 9-5/8" casing shoe. If 7" casing is set @ KOP; it will be drilled out with a 6-1/8" bit and a 4-1/2", 11.60 ppf, HCP-110, LTC liner will be run and tied back 200' into the 7" casing @ 9,112' and cemented in place.

This well will be drilled and completed in the second Bone Spring shell (9,695' TVD) and as such a packer system will not be used in the producing interval. This well will be completed by using the plug and perforated method.

Revised Casing Program:

Type	Interval (MD)	Hole Size
20" (already set)	0-120'	26"
13-3/8", 48ppf, H-40, STC	0-568'	17-1/2"
9-5/8", 40 ppf, J-55, LTC	0-3,444'	12-1/4"
5-1/2", 17 ppf, HCP-110, Buttress	0 – 16,537'	8-3/4"
<u>Contingency Plan</u>		
7", 26 ppf, HCP-110, LTC	0- 9,312'	8-3/4"
4-1/2", 11.60 ppf, HCP-110, LTC	9,312' – 16,537'	6-1/8"

Casing Program Safety Factors:

Type	Tension	Collapse	Burst
9-5/8", 40 ppf, J-55, LTC	5.40	1.32	2.06
5-1/2", 17 ppf, J-55, 8rd, LTC	5.00	2.10	2.59
<u>Contingency Plan</u>			
7", 26 ppf, HCP-110, LTC	3.32	1.52	1.91
4-1/2", 11.60 ppf, HCP-110, LTC	2.89	1.39	1.94

Cementing Program: Please see below for updates to cement program

13-3/8" Surface (gauge hole + 100% excess)

Primary Volume: 500 sacks

Primary Details: 14.8 ppg, 1.33 ft³/sk yield, H₂O 9.14 gal/sk
Top of Primary: Surface
Primary Slurry: Class "C" Cement + 2% PF1

9-5/8" 1st Intermediate salt string (fluid caliper + 30% excess)

Lead Slurry: Class "C" Cement: 6% Bentonite Gel + 0.2% Retarder + 5 lb/sk Kol Seal + 0.25 lb/sk Antifoam + 5% Salt

Lead Volume: 1420 sacks

Lead Length: 2,944'

Lead Details: 12.9 ppg, 1.92 ft³/sk yield, H₂O 9.805 gal/sk

Tail Slurry: Class "C" Cement: 0.2% Retarder

Tail Volume: 410 sacks

Tail Length: 500'

Tail Details: 14.8 ppg, 1.33 ft³/sk yield, H₂O 6.300 gal/sk

TOC: Surface

Production

5-1/2" ~~1st Intermediate~~ (gauge hole + 50% excess)

1st Stage

Lead Slurry: 65/35 Class "H": Poz Cement: 5% Salt + 6% Bentonite + 0.6% Retarder + 0.125 lb/sk Cellophane + 0.25 lb/sk Antifoam + 3 lb/sk Kol-Seal LCM

Lead Volume: 870 sacks

Lead Details: 12.9 ppg, 1.92 ft³/sk yield, H₂O 9.922 gal/sk

Tail Slurry: PVL Cement: 1.3% Salt + 5% Expanding Cement + 0.5% Gel Suppressing Agent + 0.1% Antisettling agent + 0.6% Retarder + 0.25 pps Antifoam

Tail Volume: 1860 sacks

Tail Details: 13.0 ppg, 1.48 ft³/sk yield, H₂O 7.566 gal/sk

Top of Tail: KOP (9,312')

TOC: +/- 5,000' (DV Tool)

2nd Stage

Lead Slurry: 65/35 Class "C": Poz Cement: 5% Salt + 6% Bentonite + 0.6% Retarder + 0.125 lb/sk Cellophane + 0.25 lb/sk Antifoam + 3 lb/sk Kol-Seal LCM

Lead Volume: 300 sacks

Lead Details: 12.9 ppg, 1.91 ft³/sk yield, H₂O 9.922 gal/sk

Top of Lead: 500' inside of 9-5/8" shoe (2,944')

Tail Slurry: Class "C" Cement: 0.2% Retarder
Tail Volume: 160 sacks
Tail Details: 14.8 ppg, 1.33 ft³/sk yield, 6.320 gal/sk
Tail Length: 500'

TOC: 2,944'

Contingency Cement Plan

7" 2nd Intermediate (caliper volume + 30% excess)

1st Stage

Lead Slurry: TUNED LIGHT (TM) SYSTEM Fluid Weight 11 lbm/gal , 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
Lead Volume: 340 sacks
Lead Details: 11.0 ppg, 2.64 ft³/sk yield, H₂O 14.84 gal/sk
Top of Lead: DV Tool

Tail Slurry: 0.5 % Halad(R)-344 (Low Fluid Loss Control) Slurry 0.4 % CFR-3 (Dispersant)
1 lbm/sk Salt (Salt)
Tail Volume: 100 sacks
Tail Details: 13 ppg, 1.67 ft³/sk yield, H₂O 8.88 gal/sk
Top of Tail: 8,812'

TOC: +/- 5,000' (DV Tool)

2nd Stage

Lead Slurry: TUNED LIGHT (TM) SYSTEM Fluid- 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)
Lead Volume: 200 sacks
Lead Details: 11 ppg, 2.35 ft³/sk yield, H₂O 11.69 gal/sk
Top of Lead: 500' inside of 9-5/8" shoe (2,944')

4-1/2" Liner (gauge hole + 50% excess)

1st Stage

Primary Slurry: VERSACEM H (TM) SYSTEM Fluid , 0.75 % LAP-1 (Low Fluid Loss Control)
0.25 % CFR-3 (Dispersant) , 0.05 lbm/sk FWCA (Free Water Control) Top of Fluid: 8912 ft ,
0.35 lbm/sk D-AIR 5000 (Defoamer) , 0.125 lbm/sk Poly-E-Flake (Lost Circulation Additive)

Primary Volume: 880 sacks

Primary Details: 14.40 ppg, 1.25 ft³/sk yield, H₂O 5.75 gal/sk

Top of Primary: 200' inside the 7" casing shoe @ 9,112'

Bottom Hole Location Change.

BOPCO, L.P respectfully submits to change the bottom hole location from its original location of 1,485' FSL & 2,535' FWL of Section 29, T24S-R30E to a new bottom hole location located 935' FNL & 2,188' FEL of Section 31, T24S-R30E. The new survey plat and directional plan are attached along with these revisions.



BOPCO, L.P.

Location: Eddy County, NM

Field: Poker Lake Unit

Facility: Poker Lake Unit No. 442H and 443H

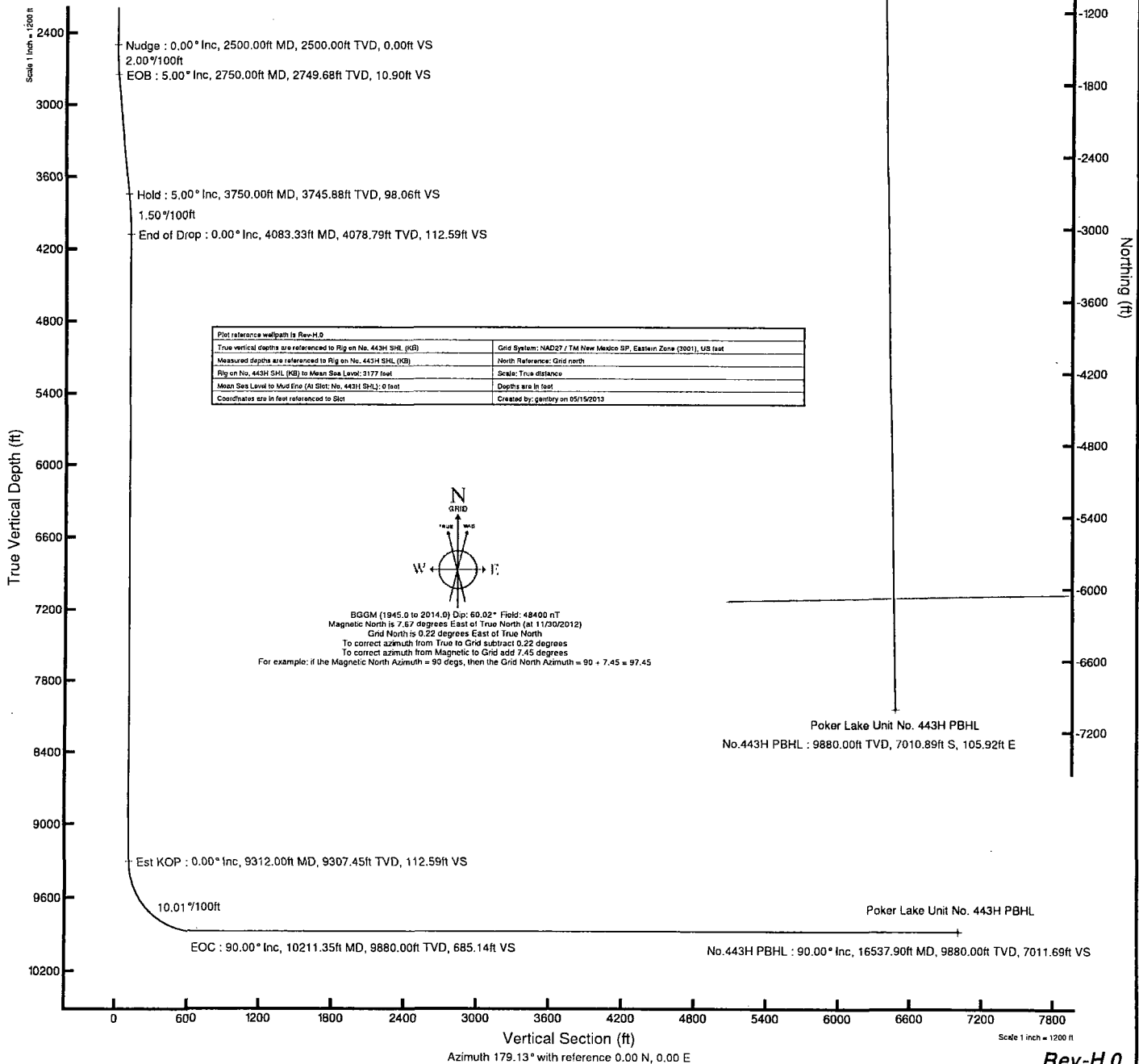
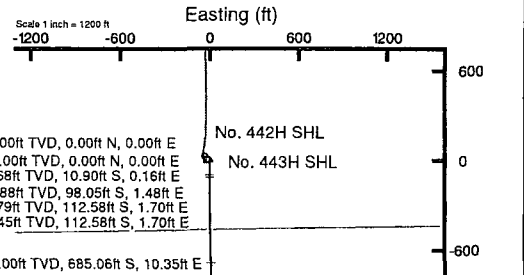
Slot: No. 443H SHL

Well: No. 443H

Wellbore: No. 443H 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	0.000	179.134	22.00	0.00	0.00	0.00	0.00
Nudge	2500.00	0.000	179.134	2500.00	0.00	0.00	0.00	0.00
EOB	2750.00	5.000	179.134	2749.68	-10.90	0.16	2.00	10.90
Hold	3750.00	5.000	179.134	3745.88	-98.05	1.49	0.00	98.06
End of Drop	4083.33	0.000	179.134	4078.79	-112.58	1.70	1.50	112.59
Est KOP	9312.00	0.000	179.134	9307.45	-112.58	1.70	0.00	112.59
EOC	10211.35	90.000	179.134	9880.00	-685.06	10.35	10.01	685.14
No. 443H PBHL	16537.90	90.000	179.134	9880.00	-7010.89	105.92	0.00	7011.69



Rev-H.0



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 443H SHL
Area	Eddy County, NM	Well	No. 443H
Field	Poker Lake Unit	Wellbore	No. 443H PWB
Facility	Poker Lake Unit No. 442H and 443H		

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	0.999928	Report Generated	05/15/2013 at 1:50:16 PM
Convergence at slot	0.22° East	Database/Source file	WA Midland/No. 443H_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	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W
Facility Reference Pt			628181.49	435921.07	32°11'52.026"N	103°55'08.210"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. 443H SHL (KB) to Facility Vertical Datum	3177.00ft
Horizontal Reference Pt	Slot	Rig on No. 443H SHL (KB) to Mean Sea Level	3177.00ft
Vertical Reference Pt	Rig on No. 443H SHL (KB)	Rig on No. 443H SHL (KB) to Mud Line at Slot (No. 443H SHL)	3177.00ft
MD Reference Pt	Rig on No. 443H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.13°



Planned Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 443H SHL
Area	Eddy County, NM	Well	No.443H
Field	Poker Lake Unit	Wellbore	No. 443H PWB
Facility	Poker Lake Unit No. 442H and 443H		

WELLPATH DATA (181 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	179.134	0.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
22.00	0.000	179.134	22.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	Tie On
122.00†	0.000	179.134	122.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
195.00†	0.000	179.134	195.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	Rustler
222.00†	0.000	179.134	222.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
322.00†	0.000	179.134	322.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
422.00†	0.000	179.134	422.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
475.00†	0.000	179.134	475.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	Salado
522.00†	0.000	179.134	522.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
622.00†	0.000	179.134	622.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
722.00†	0.000	179.134	722.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
822.00†	0.000	179.134	822.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
922.00†	0.000	179.134	922.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
1022.00†	0.000	179.134	1022.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
1122.00†	0.000	179.134	1122.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
1222.00†	0.000	179.134	1222.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
1322.00†	0.000	179.134	1322.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
1422.00†	0.000	179.134	1422.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
1522.00†	0.000	179.134	1522.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
1622.00†	0.000	179.134	1622.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
1722.00†	0.000	179.134	1722.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
1822.00†	0.000	179.134	1822.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
1922.00†	0.000	179.134	1922.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
2022.00†	0.000	179.134	2022.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
2122.00†	0.000	179.134	2122.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
2222.00†	0.000	179.134	2222.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
2322.00†	0.000	179.134	2322.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
2422.00†	0.000	179.134	2422.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	
2500.00	0.000	179.134	2500.00	0.00	0.00	0.00	628181.49	435921.07	32°11'52.026"N	103°55'08.210"W	0.00	Nudge
2522.00†	0.440	179.134	2522.00	0.08	-0.08	0.00	628181.49	435920.99	32°11'52.026"N	103°55'08.210"W	2.00	
2622.00†	2.440	179.134	2621.96	2.60	-2.60	0.04	628181.53	435918.47	32°11'52.001"N	103°55'08.209"W	2.00	
2722.00†	4.440	179.134	2721.78	8.60	-8.60	0.13	628181.62	435912.47	32°11'51.941"N	103°55'08.209"W	2.00	
2750.00	5.000	179.134	2749.68	10.90	-10.90	0.16	628181.65	435910.17	32°11'51.919"N	103°55'08.208"W	2.00	FOB
2822.00†	5.000	179.134	2821.41	17.18	-17.17	0.26	628181.75	435903.90	32°11'51.856"N	103°55'08.208"W	0.00	
2922.00†	5.000	179.134	2921.03	25.89	-25.89	-0.39	628181.88	435895.18	32°11'51.770"N	103°55'08.206"W	0.00	
3022.00†	5.000	179.134	3020.65	34.61	-34.60	0.52	628182.01	435886.47	32°11'51.684"N	103°55'08.205"W	0.00	
3122.00†	5.000	179.134	3120.27	43.32	-43.32	0.65	628182.14	435877.75	32°11'51.598"N	103°55'08.204"W	0.00	
3222.00†	5.000	179.134	3219.89	52.04	-52.03	0.79	628182.28	435869.04	32°11'51.512"N	103°55'08.203"W	0.00	
3223.12†	5.000	179.134	3221.00	52.14	-52.13	0.79	628182.28	435868.94	32°11'51.511"N	103°55'08.203"W	0.00	Base Salt
3322.00†	5.000	179.134	3319.51	60.75	-60.75	0.92	628182.41	435860.33	32°11'51.425"N	103°55'08.202"W	0.00	
3422.00†	5.000	179.134	3419.13	69.47	-69.46	1.05	628182.54	435851.61	32°11'51.339"N	103°55'08.201"W	0.00	
3423.88†	5.000	179.134	3421.00	69.63	-69.63	1.05	628182.54	435851.45	32°11'51.337"N	103°55'08.201"W	0.00	Lamar
3522.00†	5.000	179.134	3518.75	78.19	-78.18	1.18	628182.67	435842.90	32°11'51.253"N	103°55'08.200"W	0.00	
3622.00†	5.000	179.134	3618.36	86.90	-86.89	1.31	628182.80	435834.19	32°11'51.167"N	103°55'08.198"W	0.00	
3722.00†	5.000	179.134	3717.98	95.62	-95.61	1.45	628182.94	435825.47	32°11'51.080"N	103°55'08.197"W	0.00	



Planned Wellpath Report

Rev-H.0

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 443H SHL
Area	Eddy County, NM	Well	No. 443H
Field	Poker Lake Unit	Wellbore	No. 443H PWB
Facility	Poker Lake Unit No. 442H and 443H		

WELLPATH DATA (181 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
3750.00	5.000	179.134	3745.88	98.06	-98.05	1.48	628182.97	435823.03	32°11'51.056"N	103°55'08.197"W	0.00	Hold
3822.00†	3.920	179.134	3817.66	103.66	-103.64	1.57	628183.06	435817.43	32°11'51.001"N	103°55'08.196"W	1.50	
3922.00†	2.420	179.134	3917.50	109.19	-109.17	1.65	628183.14	435811.90	32°11'50.946"N	103°55'08.195"W	1.50	
4022.00†	0.920	179.134	4017.46	112.10	-112.09	1.69	628183.18	435808.99	32°11'50.917"N	103°55'08.195"W	1.50	
4083.33	0.000	179.134	4078.79	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	1.50	End of Drop
4122.00†	0.000	179.134	4117.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
4222.00†	0.000	179.134	4217.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
4322.00†	0.000	179.134	4317.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
4422.00†	0.000	179.134	4417.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
4522.00†	0.000	179.134	4517.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
4622.00†	0.000	179.134	4617.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
4722.00†	0.000	179.134	4717.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
4822.00†	0.000	179.134	4817.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
4922.00†	0.000	179.134	4917.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
5022.00†	0.000	179.134	5017.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
5122.00†	0.000	179.134	5117.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
5222.00†	0.000	179.134	5217.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
5322.00†	0.000	179.134	5317.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
5422.00†	0.000	179.134	5417.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
5522.00†	0.000	179.134	5517.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
5622.00†	0.000	179.134	5617.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
5722.00†	0.000	179.134	5717.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
5822.00†	0.000	179.134	5817.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
5922.00†	0.000	179.134	5917.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
6022.00†	0.000	179.134	6017.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
6122.00†	0.000	179.134	6117.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
6222.00†	0.000	179.134	6217.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
6322.00†	0.000	179.134	6317.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
6422.00†	0.000	179.134	6417.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
6522.00†	0.000	179.134	6517.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
6622.00†	0.000	179.134	6617.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
6722.00†	0.000	179.134	6717.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
6822.00†	0.000	179.134	6817.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
6922.00†	0.000	179.134	6917.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
7022.00†	0.000	179.134	7017.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
7122.00†	0.000	179.134	7117.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
7222.00†	0.000	179.134	7217.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
7322.00†	0.000	179.134	7317.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
7422.00†	0.000	179.134	7417.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
7522.00†	0.000	179.134	7517.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
7622.00†	0.000	179.134	7617.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
7722.00†	0.000	179.134	7717.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
7822.00†	0.000	179.134	7817.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
7922.00†	0.000	179.134	7917.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
8022.00†	0.000	179.134	8017.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 443H SHL
Area	Eddy County, NM	Well	No.443H
Field	Poker Lake Unit	Wellbore	No. 443H PWB
Facility	Poker Lake Unit No. 442H and 443H		

WELLPATH DATA (181 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
8122.00†	0.000	179.134	8117.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
8201.55†	0.000	179.134	8197.00	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	Bone Spring I Sand
8222.00†	0.000	179.134	8217.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
8322.00†	0.000	179.134	8317.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
8422.00†	0.000	179.134	8417.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
8522.00†	0.000	179.134	8517.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
8622.00†	0.000	179.134	8617.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
8722.00†	0.000	179.134	8717.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
8822.00†	0.000	179.134	8817.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
8922.00†	0.000	179.134	8917.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
9022.00†	0.000	179.134	9017.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
9042.55†	0.000	179.134	9038.00	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	Bone Spring II Sand
9122.00†	0.000	179.134	9117.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
9222.00†	0.000	179.134	9217.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	
9312.00	0.000	179.134	9307.45	112.59	-112.58	1.70	628183.19	435808.50	32°11'50.912"N	103°55'08.195"W	0.00	Est KOP
9322.00†	1.001	179.134	9317.45	112.68	-112.67	1.70	628183.19	435808.41	32°11'50.911"N	103°55'08.195"W	10.01	
9422.00†	11.008	179.134	9416.78	123.13	-123.11	1.86	628183.35	435797.97	32°11'50.808"N	103°55'08.194"W	10.01	
9522.00†	21.015	179.134	9512.78	150.67	-150.66	2.28	628183.77	435770.42	32°11'50.536"N	103°55'08.190"W	10.01	
9622.00†	31.022	179.134	9602.53	194.49	-194.46	2.94	628184.43	435726.62	32°11'50.102"N	103°55'08.184"W	10.01	
9722.00†	41.030	179.134	9683.30	253.23	-253.20	3.83	628185.32	435667.89	32°11'49.521"N	103°55'08.177"W	10.01	
9730.94†	41.924	179.134	9690.00	259.15	-259.12	3.92	628185.41	435661.97	32°11'49.462"N	103°55'08.176"W	10.01	Bone Spring II Shale
9822.00†	51.037	179.134	9752.64	325.11	-325.07	4.91	628186.40	435596.02	32°11'48.810"N	103°55'08.167"W	10.01	
9922.00†	61.044	179.134	9808.43	407.95	-407.90	6.16	628187.65	435513.20	32°11'47.990"N	103°55'08.156"W	10.01	
10022.00†	71.051	179.134	9848.97	499.22	-499.16	7.54	628189.03	435421.95	32°11'47.087"N	103°55'08.144"W	10.01	
10122.00†	81.058	179.134	9873.04	596.15	-596.08	9.01	628190.50	435325.03	32°11'46.128"N	103°55'08.132"W	10.01	
10211.35	90.000	179.134	9880.00	685.14	-685.06	10.35	628191.84	435236.06	32°11'45.247"N	103°55'08.120"W	10.01	EOC
10222.00†	90.000	179.134	9880.00	695.79	-695.71	10.51	628192.00	435225.42	32°11'45.142"N	103°55'08.119"W	0.00	
10322.00†	90.000	179.134	9880.00	795.79	-795.69	12.02	628193.51	435125.43	32°11'44.152"N	103°55'08.106"W	0.00	
10422.00†	90.000	179.134	9880.00	895.79	-895.68	13.53	628195.02	435025.45	32°11'43.163"N	103°55'08.092"W	0.00	
10522.00†	90.000	179.134	9880.00	995.79	-995.67	15.04	628196.53	434925.47	32°11'42.173"N	103°55'08.079"W	0.00	
10622.00†	90.000	179.134	9880.00	1095.79	-1095.66	16.55	628198.04	434825.49	32°11'41.184"N	103°55'08.066"W	0.00	
10722.00†	90.000	179.134	9880.00	1195.79	-1195.65	18.06	628199.55	434725.51	32°11'40.194"N	103°55'08.053"W	0.00	
10822.00†	90.000	179.134	9880.00	1295.79	-1295.64	19.57	628201.06	434625.53	32°11'39.205"N	103°55'08.040"W	0.00	
10922.00†	90.000	179.134	9880.00	1395.79	-1395.63	21.09	628202.57	434525.55	32°11'38.215"N	103°55'08.027"W	0.00	
11022.00†	90.000	179.134	9880.00	1495.79	-1495.61	22.60	628204.08	434425.57	32°11'37.226"N	103°55'08.014"W	0.00	
11122.00†	90.000	179.134	9880.00	1595.79	-1595.60	24.11	628205.59	434325.58	32°11'36.236"N	103°55'08.001"W	0.00	
11222.00†	90.000	179.134	9880.00	1695.79	-1695.59	25.62	628207.11	434225.60	32°11'35.247"N	103°55'07.988"W	0.00	
11322.00†	90.000	179.134	9880.00	1795.79	-1795.58	27.13	628208.62	434125.62	32°11'34.257"N	103°55'07.975"W	0.00	
11422.00†	90.000	179.134	9880.00	1895.79	-1895.57	28.64	628210.13	434025.64	32°11'33.268"N	103°55'07.962"W	0.00	
11522.00†	90.000	179.134	9880.00	1995.79	-1995.56	30.15	628211.64	433925.66	32°11'32.278"N	103°55'07.948"W	0.00	
11622.00†	90.000	179.134	9880.00	2095.79	-2095.55	31.66	628213.15	433825.68	32°11'31.289"N	103°55'07.935"W	0.00	
11722.00†	90.000	179.134	9880.00	2195.79	-2195.53	33.17	628214.66	433725.70	32°11'30.299"N	103°55'07.922"W	0.00	
11822.00†	90.000	179.134	9880.00	2295.79	-2295.52	34.68	628216.17	433625.72	32°11'29.310"N	103°55'07.909"W	0.00	
11922.00†	90.000	179.134	9880.00	2395.79	-2395.51	36.19	628217.68	433525.74	32°11'28.320"N	103°55'07.896"W	0.00	
12022.00†	90.000	179.134	9880.00	2495.79	-2495.50	37.70	628219.19	433425.75	32°11'27.331"N	103°55'07.883"W	0.00	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 443H SHL
Area	Eddy County, NM	Well	No. 443H
Field	Poker Lake Unit	Wellbore	No. 443H PWB
Facility	Poker Lake Unit No. 442H and 443H		

WELLPATH DATA (181 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
12122.00†	90.000	179.134	9880.00	2595.79	-2595.49	39.21	628220.70	433325.77	32°11'26.341"N	103°55'07.870"W	0.00	
12222.00†	90.000	179.134	9880.00	2695.79	-2695.48	40.72	628222.21	433225.79	32°11'25.352"N	103°55'07.857"W	0.00	
12322.00†	90.000	179.134	9880.00	2795.79	-2795.47	42.23	628223.72	433125.81	32°11'24.362"N	103°55'07.844"W	0.00	
12422.00†	90.000	179.134	9880.00	2895.79	-2895.46	43.74	628225.23	433025.83	32°11'23.373"N	103°55'07.831"W	0.00	
12522.00†	90.000	179.134	9880.00	2995.79	-2995.44	45.25	628226.74	432925.85	32°11'22.383"N	103°55'07.818"W	0.00	
12622.00†	90.000	179.134	9880.00	3095.79	-3095.43	46.77	628228.25	432825.87	32°11'21.394"N	103°55'07.804"W	0.00	
12722.00†	90.000	179.134	9880.00	3195.79	-3195.42	48.28	628229.76	432725.89	32°11'20.404"N	103°55'07.791"W	0.00	
12822.00†	90.000	179.134	9880.00	3295.79	-3295.41	49.79	628231.27	432625.90	32°11'19.415"N	103°55'07.778"W	0.00	
12922.00†	90.000	179.134	9880.00	3395.79	-3395.40	51.30	628232.78	432525.92	32°11'18.426"N	103°55'07.765"W	0.00	
13022.00†	90.000	179.134	9880.00	3495.79	-3495.39	52.81	628234.29	432425.94	32°11'17.436"N	103°55'07.752"W	0.00	
13122.00†	90.000	179.134	9880.00	3595.79	-3595.38	54.32	628235.80	432325.96	32°11'16.447"N	103°55'07.739"W	0.00	
13222.00†	90.000	179.134	9880.00	3695.79	-3695.36	55.83	628237.31	432225.98	32°11'15.457"N	103°55'07.726"W	0.00	
13322.00†	90.000	179.134	9880.00	3795.79	-3795.35	57.34	628238.82	432126.00	32°11'14.468"N	103°55'07.713"W	0.00	
13422.00†	90.000	179.134	9880.00	3895.79	-3895.34	58.85	628240.34	432026.02	32°11'13.478"N	103°55'07.700"W	0.00	
13522.00†	90.000	179.134	9880.00	3995.79	-3995.33	60.36	628241.85	431926.04	32°11'12.489"N	103°55'07.687"W	0.00	
13622.00†	90.000	179.134	9880.00	4095.79	-4095.32	61.87	628243.36	431826.06	32°11'11.499"N	103°55'07.674"W	0.00	
13722.00†	90.000	179.134	9880.00	4195.79	-4195.31	63.38	628244.87	431726.07	32°11'10.510"N	103°55'07.660"W	0.00	
13822.00†	90.000	179.134	9880.00	4295.79	-4295.30	64.89	628246.38	431626.09	32°11'09.520"N	103°55'07.647"W	0.00	
13922.00†	90.000	179.134	9880.00	4395.79	-4395.28	66.40	628247.89	431526.11	32°11'08.531"N	103°55'07.634"W	0.00	
14022.00†	90.000	179.134	9880.00	4495.79	-4495.27	67.91	628249.40	431426.13	32°11'07.541"N	103°55'07.621"W	0.00	
14122.00†	90.000	179.134	9880.00	4595.79	-4595.26	69.42	628250.91	431326.15	32°11'06.552"N	103°55'07.608"W	0.00	
14222.00†	90.000	179.134	9880.00	4695.79	-4695.25	70.93	628252.42	431226.17	32°11'05.562"N	103°55'07.595"W	0.00	
14322.00†	90.000	179.134	9880.00	4795.79	-4795.24	72.44	628253.93	431126.19	32°11'04.573"N	103°55'07.582"W	0.00	
14422.00†	90.000	179.134	9880.00	4895.79	-4895.23	73.96	628255.44	431026.21	32°11'03.583"N	103°55'07.569"W	0.00	
14522.00†	90.000	179.134	9880.00	4995.79	-4995.22	75.47	628256.95	430926.22	32°11'02.594"N	103°55'07.556"W	0.00	
14622.00†	90.000	179.134	9880.00	5095.79	-5095.20	76.98	628258.46	430826.24	32°11'01.604"N	103°55'07.543"W	0.00	
14722.00†	90.000	179.134	9880.00	5195.79	-5195.19	78.49	628259.97	430726.26	32°11'00.615"N	103°55'07.529"W	0.00	
14822.00†	90.000	179.134	9880.00	5295.79	-5295.18	80.00	628261.48	430626.28	32°10'59.625"N	103°55'07.516"W	0.00	
14922.00†	90.000	179.134	9880.00	5395.79	-5395.17	81.51	628262.99	430526.30	32°10'58.636"N	103°55'07.503"W	0.00	
15022.00†	90.000	179.134	9880.00	5495.79	-5495.16	83.02	628264.50	430426.32	32°10'57.646"N	103°55'07.490"W	0.00	
15122.00†	90.000	179.134	9880.00	5595.79	-5595.15	84.53	628266.01	430326.34	32°10'56.657"N	103°55'07.477"W	0.00	
15222.00†	90.000	179.134	9880.00	5695.79	-5695.14	86.04	628267.52	430226.36	32°10'55.667"N	103°55'07.464"W	0.00	
15322.00†	90.000	179.134	9880.00	5795.79	-5795.12	87.55	628269.03	430126.38	32°10'54.678"N	103°55'07.451"W	0.00	
15422.00†	90.000	179.134	9880.00	5895.79	-5895.11	89.06	628270.54	430026.39	32°10'53.688"N	103°55'07.438"W	0.00	
15522.00†	90.000	179.134	9880.00	5995.79	-5995.10	90.57	628272.06	429926.41	32°10'52.699"N	103°55'07.425"W	0.00	
15622.00†	90.000	179.134	9880.00	6095.79	-6095.09	92.08	628273.57	429826.43	32°10'51.709"N	103°55'07.412"W	0.00	
15722.00†	90.000	179.134	9880.00	6195.79	-6195.08	93.59	628275.08	429726.45	32°10'50.720"N	103°55'07.399"W	0.00	
15822.00†	90.000	179.134	9880.00	6295.79	-6295.07	95.10	628276.59	429626.47	32°10'49.730"N	103°55'07.385"W	0.00	
15922.00†	90.000	179.134	9880.00	6395.79	-6395.06	96.61	628278.10	429526.49	32°10'48.741"N	103°55'07.372"W	0.00	
16022.00†	90.000	179.134	9880.00	6495.79	-6495.04	98.12	628279.61	429426.51	32°10'47.751"N	103°55'07.359"W	0.00	
16122.00†	90.000	179.134	9880.00	6595.79	-6595.03	99.64	628281.12	429326.53	32°10'46.762"N	103°55'07.346"W	0.00	
16222.00†	90.000	179.134	9880.00	6695.79	-6695.02	101.15	628282.63	429226.54	32°10'45.772"N	103°55'07.333"W	0.00	
16322.00†	90.000	179.134	9880.00	6795.79	-6795.01	102.66	628284.14	429126.56	32°10'44.783"N	103°55'07.320"W	0.00	
16422.00†	90.000	179.134	9880.00	6895.79	-6895.00	104.17	628285.65	429026.58	32°10'43.793"N	103°55'07.307"W	0.00	
16522.00†	90.000	179.134	9880.00	6995.79	-6994.99	105.68	628287.16	428926.60	32°10'42.804"N	103°55'07.294"W	0.00	



Planned Wellpath Report

Rev-H.0
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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No. 443H SHL
Area	Eddy County, NM	Well	No. 443H
Field	Poker Lake Unit	Wellbore	No. 443H PWB
Facility	Poker Lake Unit No. 442H and 443H		

WELLPATH DATA (181 stations)												
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
16537.90	90.000	179.134	9880.00	7011.69	-7010.89	105.92	628287.40	428910.70	32°10'42.647"N	103°55'07.292"W	0.00	No.443H PBHL

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) Poker Lake Unit No. 443H PBHL	16537.90	9880.00	-7010.89	105.92	628287.40	428910.70	32°10'42.647"N	103°55'07.292"W	point

SURVEY PROGRAM - Ref Wellbore: No. 443H PWB - Ref Wellpath: Rev-H.0				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
22.00	600.00	Generic gyro - northseeking (Standard)		No. 443H PWB
600.00	16537.90	NaviTrak (Standard)		No. 443H PWB

CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, L. P.
LEASE NO.:	NMLC-069627A
WELL NAME & NO.:	POKER LAKE UNIT 443H
SURFACE HOLE FOOTAGE:	0791' FSL & 2262' FEL
LOCATION:	Section 19, T. 24S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well (minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
- c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**

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

1. **Hydrogen Sulfide (H₂S) monitors shall be installed prior to drilling out the surface shoe. If H₂S is encountered in quantities greater than 10 PPM the well shall be shut in and H₂S equipment shall be installed and flare line must be extended pursuant to Onshore Oil and Gas Order #6. After detection, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

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

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

Possible lost circulation in the Delaware.

Medium Cave/Karst

1. **The 13 3/8 inch surface casing shall be set at approximately 568 feet (at the base of the Rustler formation) 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.
Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.

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

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

- a. First stage to DV tool:
 - ☒ 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:

Contingency casing:

4. The minimum required fill of cement behind the **7** inch production casing is:

- c. First stage to DV tool:
 - ☒ 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.
- d. Second stage above DV tool:
 - ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

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

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.
2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).
3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M) psi**.
 - a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.
4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
 - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not

hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

- b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).
- c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOPE. on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.
- d. The results of the test shall be reported to the appropriate BLM office.
- e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
- f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

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

E. WASTE MATERIAL AND FLUIDS

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

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

CRW051613