OCD Artesia

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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.

5. Lease Serial No. ~~NMNM02862~~ NMNM-02860

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
891000303X

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

8. Well Name and No.
POKER LAKE UNIT CVX JV PC 20H

2. Name of Operator
BOPCO LP
Contact: WHITNEY MCKEE
E-Mail: wbmckee@basspet.com

9. API Well No.
30-015-42668-00-X1

3a. Address
P O BOX 2760
MIDLAND, TX 79702

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

10. Field and Pool, or Exploratory
UNDESIGNATED

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 21 T24S R30E NWNE 65FNL 2410FEL
32.123662 N Lat, 103.530565 W Lon

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 recomplete 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 to change the BHL and also the new TD, casing design and cement volume changes.
The original APD approved BHL was 2,310 FSL and 1,980? FEL in Sec 28, T24S-R30E the new BHL is 660? FNL and 330? FWL in Sec 20, T24S-R30E.
Attached are the cement volumes, directional plan and the C-102.

NM OIL CONSERVATION
ARTESIA DISTRICT
DEC 18 2014
RECEIVED

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Accepted for record
NMOCD 12/19/14

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #283624 verified by the BLM Well Information System
For BOPCO LP, sent to the Carlsbad
Committed to AFMSS for processing by JENNIFER MASON on 12/11/2014 (15JAM0122SE)

Name *(Printed/Typed)* DON WOOD — Title DRILLING ENGINEER

Signature (Electronic Submission) — Date 12/01/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

APPROVED
DEC 16 2014
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

Approved By — Title — Date

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

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 ****

DISTRICT I
16100 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax: (575) 393-0720
DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170
DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

1225 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
015-42668	96473	PIERCE CROSSING; BS, EAST

Property Code	Property Name	Well Number
313369	POKER LAKE UNIT CVX JV PC	020

OGRID No.	Operator Name	Elevation
260737	BOPCO, L.P.	3351'

Surface Location

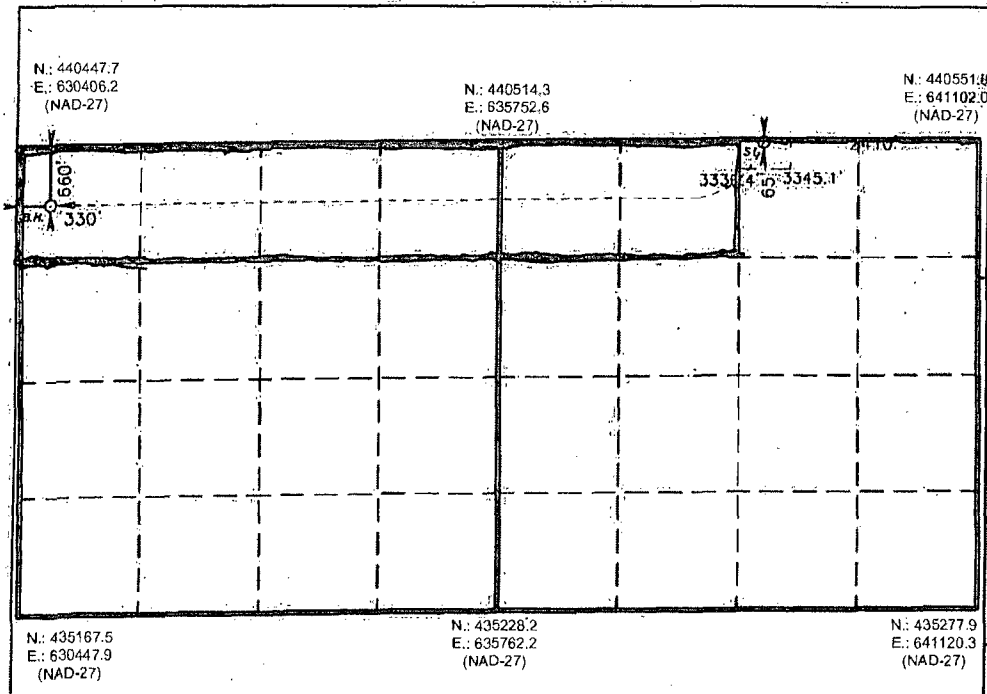
UL or lot No.	Section	Township	Range	Lot Idn	FEET from the	North/SOUTH LINE	FEET from the	East/EAST LINE	County
B	21	24 S	30 E		65	NORTH	2410	EAST	EDDY

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/EAST LINE	County
D	20	24 S	30 E		660	NORTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
240			

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



PROPOSED BOTTOM HOLE LOCATION
Lat - N 32°12'30.26"
Long - W 103°54'38.19"
NMSPCE- N 439794.3
E 630745.7
(NAD-27)

SURFACE LOCATION
Lat - N 32°12'37.07"
Long - W 103°53'07.41"
NMSPCE- N 440469.9
E 638692.3
(NAD-27)

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.

Signature 12/1/14 Date

Whitney McKee
Printed Name

wbmckee@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 supervison, and that the same is true and correct to the best of my belief.

MARCH 03, 2014
Date Surveyed

Signature & Seal of Professional Surveyor

NEW MEXICO 7977 REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate Number 7977

0' 1000' 2000' 3000' 4000'
SCALE: 1" = 2000'
WO Num.: 30147

BOPCO L.P. respectfully requests to change the BHL and also the new TD, casing design and cement volume changes.

The original APD approved BHL was 2,310 FSL and 1,980' FEL in Sec 28, T24S-R30E the new BHL is 660' FNL and 330' FWL in Sec 20, T24S-R30E.

The following table details the **approved APD** casing design:

TYPE	INTERVAL MD	HOLE SIZE	PURPOSE	INSTALLATION TYPE
20"	0-120'	30"	Conductor	Contractor Discretion
13-3/8, 48.0 ppf, H-40 , 8rd STC	0-1,260'	17-1/2"	Surface	New
9-5/8", 40.0 ppf, J-55 LTC or 9-5/8" , 40.0 ppf, N-80 LTC	0-3,800'	12-1/4"	Intermediate	New
7", 26.0 ppf, HCP-110 LTC	0-9,919'	8-3/4"	Production	New
4-1/2" 11.6 ppf, HCP-8rd LTC	9,869-16,951'	6-1/8"	Completion System	New

This table details the **requested changes** in casing design:

TYPE	INTERVAL MD	HOLE SIZE	PURPOSE	INSTALLATION TYPE
20"	No changes	No changes	No changes	No changes
13-3/8, 54.5 ppf, J-55 , 8rd STC	0-958'	17-1/2"	Surface	New
9-5/8", 40.0 ppf, J-55 LTC	No change	No change	No change	New
5-1/2", 17.0 ppf, HCP-110 BTC	0-17,435'	8-3/4"	Production	New

The 13-3/8" setting depth is being changed by our geologist who estimates the top of the Salado at 987 feet. The 7" casing originally called for in the approved APD may not be necessary, therefore, a long string of 5-1/2" casing will be run through the 8-3/4" hole to TD and cemented. The lateral section is being lengthened to capture more reserves.

Original APD Cement Design

INTERVAL	SACKS	FT of FILL	TYPE	GAL/SX	PPG	FT3/SX
SURFACE:						
Lead: 0-960'	770	960'	Class C + 2% CACL2 + 0.25 #/sk CFR-3 + 0.25 #/sk Cello Flake + 3 #/sk LCM-1	8.69	13.5	1.75

Tail: 960-1,260'	340	300'	Class C + 2% CACL2 + 4% Bentonite + 0.25 #/sk Cello Flake + 3 #/sk LCM-1	6.35	14.8	1.35
INTERMEDIATE:						
Lead: 0-3,375'	760	3,375'	EconoCEM HLC + 5% CACL2 + 5#/sk Gilsonite	9.32	12.9	1.85
Tail: 3375-3875	190	500'	HALCEM C	6.34	14.80	1.33
PRODUCTION:						
Stage 1						
Lead: 5,000-9,200'	360	4,200'	Tuned Light + 0.125 #/sk Poly-E-Flake	14.87	11.0	2.64
Tail: 9,200'-9,919'	90	719'	Class "H" +0.5% Halad-344 + 0.25% CFR-3 + 0.5% Econolite	11.41	12.0	2.03
DV Tool @5,000'						
Stage 2						
Lead: 3,375-5,000'	150	1,625'	Tuned Light + 0.125 #/sk Poly-E-Flake	11.70	11.0	2.35
COMPLETION SYSTEM						
Open hole packers	Un-cemented		Un-cemented			

Revised Cement Design

INTERVAL	SACKS	FT of FILL	TYPE	GAL/SX	PPG	FT3/SX
SURFACE:						
Lead: 0-558'	445	300'	ECONCEM + 5% Salt	10.76	12.7	1.96
Tail: 558-958'	335	658'	HALCEM	6.34	14.8	1.33
INTERMEDIATE:						
Lead: 0-3,300'	830	3,300'	ECONCEM + 5% Salt + 0.15% HR-800	10.76	12.7	1.96
Tail: 3,300'-3,800'	240	500'	HALCEM	6.34	14.8	1.33
PRODUCTION:						
Stage 1						
Lead: 5,800-8,955'	625	3,148'	VersaCem-H PBSH2, 8.0% BWOC Bentonite, 0.5% D-Air 5000, 0.125 lb/sk Poly-E-Flake, 0.6% BWOC HR-601	13.27	11.9	2.29
Tail: 8,955-17,435'	2,265	8,487'	VersaCem-H PBSH2, 0.5% BWOC LAP-1, 0.3% BWOC CFR-3, 0.1% BWOC FWCA, 0.125 lb/sk Poly-E-Flake, 0.5 lb/sx D-Air 5000, 0.1% BWOC HR-601	5.58	14.5	1.23

Stage 2						
Lead: 3,300-5,500'	365	2,200'	VersaCem-H PBSH2, 8.0% BWOC Bentonite, 0.5% D-Air 5000, 0.125 lb/sk Poly-E-Flake	13.05	11.9	2.23
Tail: 5,500-5,800'	115	300'	Cemex Premium Plus C	6.34	14.80	1.33

Cement excesses will be as follows:

Surface-100% excess with cement circulated to surface.

1st Intermediate-80% excess above hole size with cement circulated to surface.

Production-30% excess from TD to KOP at 8,955' and 80% excess over hole size from 8,955' to 9-5/8" shoe at 3,800'. Five hundred feet (500') of cement will be circulated up above the 9-5/8" shoe plus 10% excess.

cc: Charles Warne

BOPCO, LP

Location: Eddy County, NM | Slot: No. 20H
Field: Eddy County, NM (NAD 27 / Grid) | Well: No. 20H
Facility: PLU CVX JC PC (No 20H) Sec 21 T25S R30E | Wellbore: PLU CVX JC PC No. 20H PWB

BAKER HUGHES

Plot reference wellpath is PLU CVX JC PC No. 20H Rev A.0

True vertical depths are referenced to Latshaw 18 (KB)	Grid System: NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Latshaw 18 (KB)	North Reference: Grid north
Latshaw 18 (KB) to Mean Sea Level: 3380 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No. 20H): -3351 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: janotho on 11/25/2014

Location Information

Facility Name	Grid East: (US ft)	Grid North (US ft)	Latitude	Longitude
PLU CVX JC PC (No 20H) Sec 21, TSP 24S, Rnge 30E	635692.300	440469.900	32°12'36.625"N	103°53'05.666"W

Slot	Local N (ft)	Local E (ft)	Grid East: (US ft)	Grid North (US ft)	Latitude	Longitude
No. 20H	0.00	0.00	635692.300	440469.900	32°12'36.625"N	103°53'05.666"W

Latshaw 18 (KB) to Mud line (At Slot: No. 20H)	29ft
Mean Sea Level to Mud line (At Slot: No. 20H)	-3351ft
Latshaw 18 (KB) to Mean Sea Level	3380ft

Well Profile Data

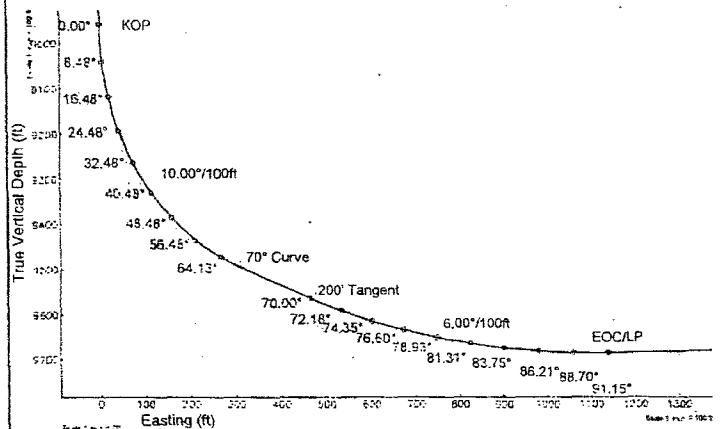
Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	0.00	0.000	230.600	0.00	0.00	0.00	0.00	0.00
KOP	8955.20	0.000	230.600	8955.20	0.00	0.00	0.00	0.00
70° Curve	9655.20	70.000	230.600	9493.60	-239.29	-291.32	10.00	310.54
200' Tangent	9855.20	70.000	230.600	9562.01	-356.58	-436.54	0.00	465.35
EOC/LP	10578.60	91.148	269.284	9684.38	-590.01	-1092.46	6.00	1138.51
No. 20H PBHL	17435.22	91.148	269.284	9547.00	-675.65	-7947.16	0.00	7975.83

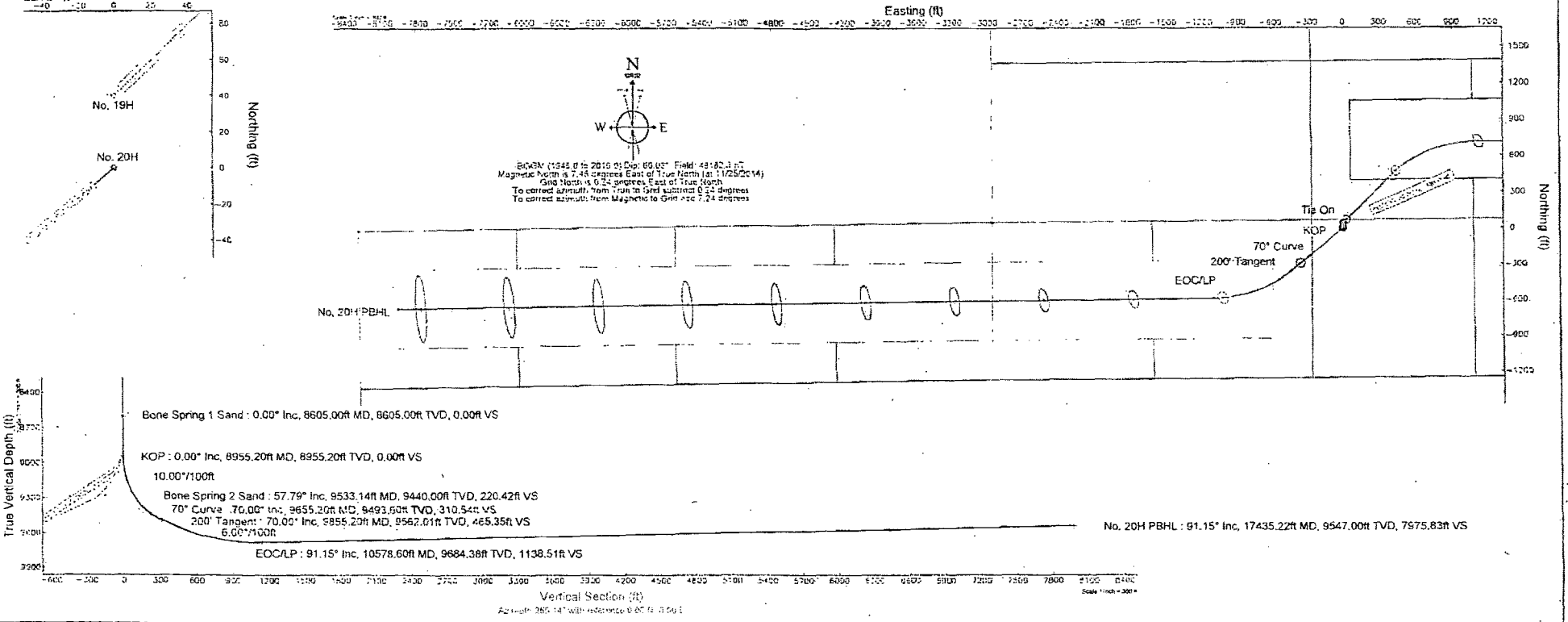
Targets

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
PLU CVX JC PC No. 20H PBHL Rev-1	17435.22	9547.00	-675.65	-7947.16	630745.70	439794.30	32°12'30.258"N	103°54'38.191"W

Bottom Hole Location

MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
17435.22	91.148	269.284	9547.00	-675.65	-7947.16	630745.70	439794.30	32°12'30.258"N	103°54'38.191"W





Planned Wellpath Report

PLU CVX JC PC No. 20H Rev A.0

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	**BOPCO, LP**	Slot	**No. 20H**
Area	**Eddy County, NM**	Well	**No. 20H**
Field	**Eddy County, NM (NAD 27 / Grid)**	Wellbore	**PLU CVX JC PC No. 20H PWB**
Facility	**PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E**		

REPORT SETUP INFORMATION			
Projection System	**NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet**	Software System	**WellArchitect® 4.0.0**
North Reference	**Grid**	User	**Janotho**
Scale	**0.999931**	Report Generated	**11/25/2014 at 10:42:41 AM**
Convergence at slot	**0.24° East**	Database/Source file	**WA_Midland/PLU_CVX_JC_PC_No._20H_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**	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W
Facility Reference Pt			**638692.30**	**440469.90**	32°12'36.625"N	103°53'05.666"W
Field Reference Pt			510280.10	534700.83	**32°28'12.000"N**	**104°18'00.000"W**

WELLPATH DATUM			
Calculation method	**Minimum curvature**	Latshaw 18 (KB) to Facility Vertical Datum	**29.00ft**
Horizontal Reference Pt	**Slot**	Latshaw 18 (KB) to Mean Sea Level	**3380.00ft**
Vertical Reference Pt	**Latshaw 18 (KB)**	Latshaw 18 (KB) to Mud Line at Slot (No. 20H)	**29.00ft**
MD Reference Pt	**Latshaw 18 (KB)**	Section Origin	**N 0.00, E 0.00 ft**
Field Vertical Reference	**Mean Sea Level**	Section Azimuth	**265.14°**

Planned Wellpath Report

PLU CVX JC PC No. 20H Rev A.0

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

WELLPATH DATA (187 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	230.600	0.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	Tie On
100.00†	0.000	230.600	100.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
200.00†	0.000	230.600	200.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
300.00†	0.000	230.600	300.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
400.00†	0.000	230.600	400.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
500.00†	0.000	230.600	500.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
600.00†	0.000	230.600	600.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
619.00†	0.000	230.600	619.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	Rustler
700.00†	0.000	230.600	700.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
800.00†	0.000	230.600	800.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
900.00†	0.000	230.600	900.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
994.00†	0.000	230.600	994.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	Salado
1000.00†	0.000	230.600	1000.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
1100.00†	0.000	230.600	1100.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
1200.00†	0.000	230.600	1200.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
1300.00†	0.000	230.600	1300.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
1400.00†	0.000	230.600	1400.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
1500.00†	0.000	230.600	1500.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
1600.00†	0.000	230.600	1600.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
1700.00†	0.000	230.600	1700.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
1800.00†	0.000	230.600	1800.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
1900.00†	0.000	230.600	1900.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
2000.00†	0.000	230.600	2000.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
2100.00†	0.000	230.600	2100.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
2200.00†	0.000	230.600	2200.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
2300.00†	0.000	230.600	2300.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
2400.00†	0.000	230.600	2400.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
2500.00†	0.000	230.600	2500.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
2600.00†	0.000	230.600	2600.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
2700.00†	0.000	230.600	2700.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
2800.00†	0.000	230.600	2800.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
2900.00†	0.000	230.600	2900.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
3000.00†	0.000	230.600	3000.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
3100.00†	0.000	230.600	3100.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
3200.00†	0.000	230.600	3200.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
3300.00†	0.000	230.600	3300.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
3400.00†	0.000	230.600	3400.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
3500.00†	0.000	230.600	3500.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
3600.00†	0.000	230.600	3600.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
3635.00†	0.000	230.600	3635.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	Base/salt
3700.00†	0.000	230.600	3700.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
3800.00†	0.000	230.600	3800.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
3849.00†	0.000	230.600	3849.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	Lamar
3900.00†	0.000	230.600	3900.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
4000.00†	0.000	230.600	4000.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	

Planned Wellpath Report

PLU CVX JC PC No. 20H Rev A.0

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

WELLPATH DATA (187 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
4100.00†	0.000	230.600	4100.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
4200.00†	0.000	230.600	4200.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
4300.00†	0.000	230.600	4300.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
4400.00†	0.000	230.600	4400.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
4500.00†	0.000	230.600	4500.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
4600.00†	0.000	230.600	4600.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
4700.00†	0.000	230.600	4700.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
4800.00†	0.000	230.600	4800.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
4900.00†	0.000	230.600	4900.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
5000.00†	0.000	230.600	5000.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
5100.00†	0.000	230.600	5100.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
5200.00†	0.000	230.600	5200.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
5300.00†	0.000	230.600	5300.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
5400.00†	0.000	230.600	5400.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
5500.00†	0.000	230.600	5500.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
5600.00†	0.000	230.600	5600.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
5700.00†	0.000	230.600	5700.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
5800.00†	0.000	230.600	5800.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
5900.00†	0.000	230.600	5900.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
6000.00†	0.000	230.600	6000.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
6100.00†	0.000	230.600	6100.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
6200.00†	0.000	230.600	6200.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
6300.00†	0.000	230.600	6300.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
6400.00†	0.000	230.600	6400.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
6500.00†	0.000	230.600	6500.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
6600.00†	0.000	230.600	6600.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
6700.00†	0.000	230.600	6700.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
6800.00†	0.000	230.600	6800.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
6900.00†	0.000	230.600	6900.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
7000.00†	0.000	230.600	7000.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
7100.00†	0.000	230.600	7100.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
7200.00†	0.000	230.600	7200.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
7300.00†	0.000	230.600	7300.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
7400.00†	0.000	230.600	7400.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
7500.00†	0.000	230.600	7500.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
7600.00†	0.000	230.600	7600.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
7686.00†	0.000	230.600	7686.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	Bone Spring Lime
7700.00†	0.000	230.600	7700.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
7800.00†	0.000	230.600	7800.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
7900.00†	0.000	230.600	7900.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
8000.00†	0.000	230.600	8000.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
8100.00†	0.000	230.600	8100.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
8200.00†	0.000	230.600	8200.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
8300.00†	0.000	230.600	8300.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
8400.00†	0.000	230.600	8400.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	

Planned Wellpath Report

PLU CVX JC PC No. 20H Rev A.0

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

WELLPATH DATA (187 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
8500.00†	0.000	230.600	8500.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
8600.00†	0.000	230.600	8600.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
8605.00†	0.000	230.600	8605.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	Bone Spring 1 Sand
8700.00†	0.000	230.600	8700.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
8800.00†	0.000	230.600	8800.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
8900.00†	0.000	230.600	8900.00	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	
8955.20	0.000	230.600	8955.20	0.00	0.00	0.00	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W	0.00	KOP
9000.00†	4.480	230.600	8999.95	1.44	-1.11	-1.35	638690.95	440468.79	32°12'36.614"N	103°53'05.682"W	10.00	
9100.00†	14.480	230.600	9098.46	14.99	-11.55	-14.06	638678.24	440458.35	32°12'36.511"N	103°53'05.830"W	10.00	
9200.00†	24.480	230.600	9192.62	42.43	-32.69	-39.80	638652.50	440437.21	32°12'36.303"N	103°53'06.131"W	10.00	
9300.00†	34.480	230.600	9279.56	82.91	-63.89	-77.78	638614.53	440406.02	32°12'35.996"N	103°53'06.574"W	10.00	
9400.00†	44.480	230.600	9356.65	135.22	-104.19	-126.85	638565.46	440365.71	32°12'35.599"N	103°53'07.148"W	10.00	
9500.00†	54.480	230.600	9421.54	197.76	-152.38	-185.52	638506.80	440317.53	32°12'35.125"N	103°53'07.833"W	10.00	
9533.14†	57.794	230.600	9440.00	220.42	-169.85	-206.78	638485.54	440300.06	32°12'34.953"N	103°53'08.081"W	10.00	Bone Spring 2 Sand
9600.00†	64.480	230.600	9472.26	268.63	-206.99	-252.00	638440.32	440262.92	32°12'34.587"N	103°53'08.609"W	10.00	
9655.20	70.000	230.600	9493.60	310.54	-239.29	-291.32	638401.00	440230.63	32°12'34.269"N	103°53'09.068"W	10.00	70° Curve
9700.00†	70.000	230.600	9508.93	345.22	-266.01	-323.85	638368.48	440203.91	32°12'34.006"N	103°53'09.448"W	0.00	
9800.00†	70.000	230.600	9543.13	422.62	-325.66	-396.46	638295.87	440144.27	32°12'33.419"N	103°53'10.296"W	0.00	
9855.20	70.000	230.600	9562.01	465.35	-358.58	-436.54	638255.79	440111.35	32°12'33.095"N	103°53'10.764"W	0.00	200' Tangent
9900.00†	71.136	233.183	9576.91	500.68	-384.65	-469.78	638222.55	440085.28	32°12'32.838"N	103°53'11.152"W	6.00	
10000.00†	73.796	238.825	9607.06	583.94	-437.90	-548.81	638143.53	440032.03	32°12'32.314"N	103°53'12.075"W	6.00	
10100.00†	76.599	244.312	9632.63	672.52	-483.88	-633.80	638058.54	439986.05	32°12'31.863"N	103°53'13.066"W	6.00	
10200.00†	79.519	249.671	9653.33	765.44	-522.08	-723.82	637968.53	439947.85	32°12'31.488"N	103°53'14.116"W	6.00	
10300.00†	82.526	254.928	9668.94	861.71	-552.08	-817.88	637874.48	439917.85	32°12'31.195"N	103°53'15.212"W	6.00	
10400.00†	85.595	260.112	9679.29	960.25	-573.56	-914.95	637777.42	439896.38	32°12'30.987"N	103°53'16.342"W	6.00	
10500.00†	88.699	265.253	9684.27	1059.99	-586.27	-1013.97	637678.40	439883.68	32°12'30.865"N	103°53'17.495"W	6.00	
10578.60	91.148	269.284	9684.38	1138.51	-590.01	-1092.46	637599.92	439879.93	32°12'30.831"N	103°53'18.409"W	6.00	EOC/LP
10600.00†	91.148	269.284	9683.95	1159.85	-590.28	-1113.85	637578.53	439879.67	32°12'30.830"N	103°53'18.658"W	0.00	
10700.00†	91.148	269.284	9681.95	1259.57	-591.53	-1213.82	637478.56	439878.42	32°12'30.821"N	103°53'19.822"W	0.00	
10800.00†	91.148	269.284	9679.94	1359.29	-592.77	-1313.79	637378.60	439877.17	32°12'30.813"N	103°53'20.985"W	0.00	
10900.00†	91.148	269.284	9677.94	1459.01	-594.02	-1413.77	637278.63	439875.92	32°12'30.805"N	103°53'22.149"W	0.00	
11000.00†	91.148	269.284	9675.94	1558.72	-595.27	-1513.74	637178.67	439874.67	32°12'30.797"N	103°53'23.312"W	0.00	
11100.00†	91.148	269.284	9673.93	1658.44	-596.52	-1613.71	637078.70	439873.42	32°12'30.788"N	103°53'24.476"W	0.00	
11200.00†	91.148	269.284	9671.93	1758.16	-597.77	-1713.68	636978.74	439872.17	32°12'30.780"N	103°53'25.640"W	0.00	
11300.00†	91.148	269.284	9669.92	1857.88	-599.02	-1813.65	636878.77	439870.92	32°12'30.772"N	103°53'26.803"W	0.00	
11400.00†	91.148	269.284	9667.92	1957.60	-600.27	-1913.63	636778.81	439869.67	32°12'30.763"N	103°53'27.967"W	0.00	
11500.00†	91.148	269.284	9665.92	2057.32	-601.52	-2013.60	636678.84	439868.43	32°12'30.755"N	103°53'29.130"W	0.00	
11600.00†	91.148	269.284	9663.91	2157.04	-602.77	-2113.57	636578.88	439867.18	32°12'30.747"N	103°53'30.294"W	0.00	
11700.00†	91.148	269.284	9661.91	2256.75	-604.02	-2213.54	636478.91	439865.93	32°12'30.739"N	103°53'31.457"W	0.00	
11800.00†	91.148	269.284	9659.91	2356.47	-605.26	-2313.52	636378.95	439864.68	32°12'30.730"N	103°53'32.621"W	0.00	
11900.00†	91.148	269.284	9657.90	2456.19	-606.51	-2413.49	636278.98	439863.43	32°12'30.722"N	103°53'33.785"W	0.00	
12000.00†	91.148	269.284	9655.90	2555.91	-607.76	-2513.46	636179.02	439862.18	32°12'30.714"N	103°53'34.948"W	0.00	
12100.00†	91.148	269.284	9653.90	2655.63	-609.01	-2613.43	636079.05	439860.93	32°12'30.705"N	103°53'36.112"W	0.00	
12200.00†	91.148	269.284	9651.89	2755.35	-610.26	-2713.40	635979.09	439859.68	32°12'30.697"N	103°53'37.275"W	0.00	
12300.00†	91.148	269.284	9649.89	2855.07	-611.51	-2813.38	635879.12	439858.43	32°12'30.689"N	103°53'38.439"W	0.00	

Planned Wellpath Report

PLU CVX JC PC No. 20H Rev A.0

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

WELLPATH DATA (187 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
12400.00†	91.148	269.284	9647.89	2954.78	-612.76	-2913.35	635779.16	439857.18	32°12'30.680"N	103°53'39.602"W	0.00	
12500.00†	91.148	269.284	9645.88	3054.50	-614.01	-3013.32	635679.19	439855.94	32°12'30.672"N	103°53'40.766"W	0.00	
12600.00†	91.148	269.284	9643.88	3154.22	-615.26	-3113.29	635579.23	439854.69	32°12'30.664"N	103°53'41.930"W	0.00	
12700.00†	91.148	269.284	9641.87	3253.94	-616.51	-3213.26	635479.26	439853.44	32°12'30.655"N	103°53'43.093"W	0.00	
12800.00†	91.148	269.284	9639.87	3353.66	-617.75	-3313.24	635379.30	439852.19	32°12'30.647"N	103°53'44.257"W	0.00	
12900.00†	91.148	269.284	9637.87	3453.38	-619.00	-3413.21	635279.33	439850.94	32°12'30.639"N	103°53'45.420"W	0.00	
13000.00†	91.148	269.284	9635.86	3553.10	-620.25	-3513.18	635179.37	439849.69	32°12'30.630"N	103°53'46.584"W	0.00	
13100.00†	91.148	269.284	9633.86	3652.81	-621.50	-3613.15	635079.40	439848.44	32°12'30.622"N	103°53'47.747"W	0.00	
13200.00†	91.148	269.284	9631.86	3752.53	-622.75	-3713.12	634979.44	439847.19	32°12'30.614"N	103°53'48.911"W	0.00	
13300.00†	91.148	269.284	9629.85	3852.25	-624.00	-3813.10	634879.47	439845.94	32°12'30.605"N	103°53'50.075"W	0.00	
13400.00†	91.148	269.284	9627.85	3951.97	-625.25	-3913.07	634779.51	439844.70	32°12'30.597"N	103°53'51.238"W	0.00	
13500.00†	91.148	269.284	9625.85	4051.69	-626.50	-4013.04	634679.54	439843.45	32°12'30.589"N	103°53'52.402"W	0.00	
13600.00†	91.148	269.284	9623.84	4151.41	-627.75	-4113.01	634579.58	439842.20	32°12'30.580"N	103°53'53.565"W	0.00	
13700.00†	91.148	269.284	9621.84	4251.13	-629.00	-4212.99	634479.61	439840.95	32°12'30.572"N	103°53'54.729"W	0.00	
13800.00†	91.148	269.284	9619.84	4350.84	-630.24	-4312.96	634379.65	439839.70	32°12'30.564"N	103°53'55.892"W	0.00	
13900.00†	91.148	269.284	9617.83	4450.56	-631.49	-4412.93	634279.68	439838.45	32°12'30.555"N	103°53'57.056"W	0.00	
14000.00†	91.148	269.284	9615.83	4550.28	-632.74	-4512.90	634179.72	439837.20	32°12'30.547"N	103°53'58.220"W	0.00	
14100.00†	91.148	269.284	9613.82	4650.00	-633.99	-4612.87	634079.75	439835.95	32°12'30.539"N	103°53'59.383"W	0.00	
14200.00†	91.148	269.284	9611.82	4749.72	-635.24	-4712.85	633979.79	439834.70	32°12'30.530"N	103°54'00.547"W	0.00	
14300.00†	91.148	269.284	9609.82	4849.44	-636.49	-4812.82	633879.82	439833.46	32°12'30.522"N	103°54'01.710"W	0.00	
14400.00†	91.148	269.284	9607.81	4949.16	-637.74	-4912.79	633779.86	439832.21	32°12'30.513"N	103°54'02.874"W	0.00	
14500.00†	91.148	269.284	9605.81	5048.87	-638.99	-5012.76	633679.89	439830.96	32°12'30.505"N	103°54'04.037"W	0.00	
14600.00†	91.148	269.284	9603.81	5148.59	-640.24	-5112.73	633579.93	439829.71	32°12'30.497"N	103°54'05.201"W	0.00	
14700.00†	91.148	269.284	9601.80	5248.31	-641.49	-5212.71	633479.96	439828.46	32°12'30.488"N	103°54'06.365"W	0.00	
14800.00†	91.148	269.284	9599.80	5348.03	-642.73	-5312.68	633380.00	439827.21	32°12'30.480"N	103°54'07.528"W	0.00	
14900.00†	91.148	269.284	9597.80	5447.75	-643.98	-5412.65	633280.03	439825.96	32°12'30.471"N	103°54'08.692"W	0.00	
15000.00†	91.148	269.284	9595.79	5547.47	-645.23	-5512.62	633180.07	439824.71	32°12'30.463"N	103°54'09.855"W	0.00	
15100.00†	91.148	269.284	9593.79	5647.19	-646.48	-5612.60	633080.10	439823.46	32°12'30.455"N	103°54'11.019"W	0.00	
15200.00†	91.148	269.284	9591.78	5746.90	-647.73	-5712.57	632980.14	439822.22	32°12'30.446"N	103°54'12.182"W	0.00	
15300.00†	91.148	269.284	9589.78	5846.62	-648.98	-5812.54	632880.17	439820.97	32°12'30.438"N	103°54'13.346"W	0.00	
15400.00†	91.148	269.284	9587.78	5946.34	-650.23	-5912.51	632780.21	439819.72	32°12'30.429"N	103°54'14.510"W	0.00	
15500.00†	91.148	269.284	9585.77	6046.06	-651.48	-6012.48	632680.24	439818.47	32°12'30.421"N	103°54'15.673"W	0.00	
15600.00†	91.148	269.284	9583.77	6145.78	-652.73	-6112.46	632580.28	439817.22	32°12'30.413"N	103°54'16.837"W	0.00	
15700.00†	91.148	269.284	9581.77	6245.50	-653.98	-6212.43	632480.31	439815.97	32°12'30.404"N	103°54'18.000"W	0.00	
15800.00†	91.148	269.284	9579.76	6345.22	-655.22	-6312.40	632380.35	439814.72	32°12'30.396"N	103°54'19.164"W	0.00	
15900.00†	91.148	269.284	9577.76	6444.93	-656.47	-6412.37	632280.38	439813.47	32°12'30.387"N	103°54'20.327"W	0.00	
16000.00†	91.148	269.284	9575.76	6544.65	-657.72	-6512.34	632180.42	439812.22	32°12'30.379"N	103°54'21.491"W	0.00	
16100.00†	91.148	269.284	9573.75	6644.37	-658.97	-6612.32	632080.45	439810.98	32°12'30.371"N	103°54'22.655"W	0.00	
16200.00†	91.148	269.284	9571.75	6744.09	-660.22	-6712.29	631980.49	439809.73	32°12'30.362"N	103°54'23.818"W	0.00	
16300.00†	91.148	269.284	9569.75	6843.81	-661.47	-6812.26	631880.52	439808.48	32°12'30.354"N	103°54'24.982"W	0.00	
16400.00†	91.148	269.284	9567.74	6943.53	-662.72	-6912.23	631780.56	439807.23	32°12'30.345"N	103°54'26.145"W	0.00	
16500.00†	91.148	269.284	9565.74	7043.25	-663.97	-7012.20	631680.59	439805.98	32°12'30.337"N	103°54'27.309"W	0.00	
16600.00†	91.148	269.284	9563.73	7142.96	-665.22	-7112.18	631580.63	439804.73	32°12'30.328"N	103°54'28.472"W	0.00	
16700.00†	91.148	269.284	9561.73	7242.68	-666.47	-7212.15	631480.66	439803.48	32°12'30.320"N	103°54'29.636"W	0.00	
16800.00†	91.148	269.284	9559.73	7342.40	-667.71	-7312.12	631380.70	439802.23	32°12'30.311"N	103°54'30.799"W	0.00	

Planned Wellpath Report

PLU CVX JC PC No. 20H Rev A.0

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

WELLPATH DATA (187 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
16900.00†	91.148	269.284	9557.72	7442.12	-668.96	-7412.09	631280.73	439800.98	32°12'30.303"N	103°54'31.963"W	0.00	
17000.00†	91.148	269.284	9555.72	7541.84	-670.21	-7512.07	631180.77	439799.74	32°12'30.295"N	103°54'33.127"W	0.00	
17100.00†	91.148	269.284	9553.72	7641.56	-671.46	-7612.04	631080.80	439798.49	32°12'30.286"N	103°54'34.290"W	0.00	
17200.00†	91.148	269.284	9551.71	7741.28	-672.71	-7712.01	630980.84	439797.24	32°12'30.278"N	103°54'35.454"W	0.00	
17300.00†	91.148	269.284	9549.71	7840.99	-673.96	-7811.98	630880.87	439795.99	32°12'30.269"N	103°54'36.617"W	0.00	
17400.00†	91.148	269.284	9547.71	7940.71	-675.21	-7911.95	630780.91	439794.74	32°12'30.261"N	103°54'37.781"W	0.00	
17435.22	91.148	269.284	9547.00[1]	7975.83	-675.65	-7947.16	630745.70	439794.30	32°12'30.258"N	103°54'38.191"W	0.00	No. 20H PBHL

HOLE & CASING SECTIONS - Ref Wellbore: PLU CVX JC PC No. 20H PWB Ref Wellpath: PLU CVX JC PC No. 20H Rev A.0

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
8.75in Open Hole	0.00	17435.22	17435.22	0.00	NA	0.00	0.00	NA	NA

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
1) PLU CVX JC PC No. 20H PBHL Rev-1	17435.22	9547.00	-675.65	-7947.16	630745.70	439794.30	32°12'30.258"N	103°54'38.191"W	point

SURVEY PROGRAM - Ref Wellbore: PLU CVX JC PC No. 20H PWB Ref Wellpath: PLU CVX JC PC No. 20H Rev A.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
29.00	500.00	Generic gyro - northseeking (Standard)		PLU CVX JC PC No. 20H PWB
500.00	17440.61	NaviTrak (Standard)		PLU CVX JC PC No. 20H PWB

Clearance Report

PLU CVX JC PC No. 20H Rev A.0

Closest Approach

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION

Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 4.0.0
North Reference	Grid	User	Janotho
Scale	0.999931	Report Generated	11/25/2014 at 10:45:43 AM
Convergence at slot	0.24° East	Database/Source file	WA_Midland/PLU_CVX_JC_PC_No._20H_PWB_CR.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	638692.30	440469.90	32°12'36.625"N	103°53'05.666"W
Facility Reference Pt			638692.30	440469.90	32°12'36.625"N	103°53'05.666"W
Field Reference Pt			510280.10	534700.83	32°28'12.000"N	104°18'00.000"W

WELLPATH DATUM

Calculation method	Minimum Curvature	Latshaw 18 (KB) to Facility Vertical Datum	29.00ft
Horizontal Reference Pt	Slot	Latshaw 18 (KB) to Mean Sea Level	3380.00ft
Vertical Reference Pt	Latshaw 18 (KB)	Latshaw 18 (KB) to Mud Line at Slot (No. 20H)	29.00ft
MD Reference Pt	Latshaw 18 (KB)		
Field Vertical Reference	Mean Sea Level		

POSITIONAL UNCERTAINTY CALCULATION SETTINGS

Ellipse Confidence Limit	3.00 Std Dev	Ellipse Start MD	29.00ft	Surface Position Uncertainty	included
Declination	7.48° East of TN	Dip Angle	60.03°	Mag Field Strength	48182 nT
Slot Surface Uncertainty @1SD		Horizontal	0.000ft	Vertical	0.000ft
Facility Surface Uncertainty @1SD		Horizontal	3.300ft	Vertical	1.000ft

Positional Uncertainty values in the WELLPATH DATA table are the projection of the ellipsoid of uncertainty onto the vertical and horizontal planes

ANTI-COLLISION RULE

Rule Name	Baker Hughes Stop Drilling	Rule Based On	Ratio
Plane of Rule	Closest Approach	Threshold Value	1.00
Subtract Casing & Hole Size	yes	Apply Cone of Safety	no

HOLE & CASING SECTIONS - Ref Wellbore: PLU CVX JC PC No. 20H PWB Ref Wellpath: PLU CVX JC PC No. 20H Rev A.0

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
8.75in Open Hole	0.00	17435.22	17435.22	0.00	NA	0.00	0.00	NA	NA

Clearance Report
PLU CVX JC PC No. 20H Rev A.0
Closest Approach

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

SURVEY PROGRAM - Ref Wellbore: PLU CVX JC PC No. 20H PWB Ref Wellpath: PLU CVX JC PC No. 20H Rev A.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
29.00	500.00	Generic gyro - northseeking (Standard)		PLU CVX JC PC No. 20H PWB
500.00	17440.61	NaviTrak (Standard)		PLU CVX JC PC No. 20H PWB

CALCULATION RANGE & CUTOFF

From: 0.00ft MD	To: 17435.22ft MD	C-C Cutoff: (none)

OFFSET WELL CLEARANCE SUMMARY (1 Offset Wellpath selected) Ratios are calculated in Closest Approach plane

Offset Facility	Offset Slot	Offset Well	Offset Wellbore	Offset Wellpath	C-C Clearance Distance			ACR Separation Ratio			
					Ref MD [ft]	Min C-C Clear Dist [ft]	Diverging from MD [ft]	Ref MD of Min Ratio [ft]	Min Ratio	Min Ratio Dvrg from [ft]	ACR Status
PLU CVX JC PC {19H} Sec. 21, TSP 24S, Rnge 30E	No. 19H	No. 19H	PLU CVX JC PC No. 19H PWB	PLU CVX JC PC No. 19H Rev A.0	100.00	40.00	8800.00	8808.13	0.63	8808.13	FAIL

Clearance Report

PLU CVX JC PC No. 20H Rev A.0

Closest Approach

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

CLEARANCE DATA - Offset Wellbore: PLU CVX JC PC No. 19H PWB Offset Wellpath: PLU CVX JC PC No. 19H Rev A.0

Facility: PLU CVX JC PC {19H} Sec. 21, TSP 24S, Rnge 30E Slot: No. 19H Well: No. 19H Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
0.00	0.00	0.00	0.00	0.00	4.00	40.00	0.00	0.00	40.20	0.73	NA	NA
100.00†	100.00	0.00	0.00	96.00	100.00	40.00	0.00	0.00	40.00	20.13	2.02	PASS
200.00†	200.00	0.00	0.00	196.00	200.00	40.00	0.00	0.00	40.00	20.55	1.98	PASS
300.00†	300.00	0.00	0.00	296.00	300.00	40.00	0.00	0.00	40.00	20.59	1.98	PASS
400.00†	400.00	0.00	0.00	396.00	400.00	40.00	0.00	0.00	40.00	20.65	1.97	PASS
500.00†	500.00	0.00	0.00	496.00	500.00	40.00	0.00	0.00	40.00	20.74	1.96	PASS
600.00†	600.00	0.00	0.00	596.00	600.00	40.00	0.00	0.00	40.00	20.79	1.96	PASS
700.00†	700.00	0.00	0.00	696.00	700.00	40.00	0.00	0.00	40.00	20.82	1.95	PASS
800.00†	800.00	0.00	0.00	796.00	800.00	40.00	0.00	0.00	40.00	20.87	1.95	PASS
900.00†	900.00	0.00	0.00	896.00	900.00	40.00	0.00	0.00	40.00	20.95	1.94	PASS
1000.00†	1000.00	0.00	0.00	996.00	1000.00	40.00	0.00	0.00	40.00	21.05	1.93	PASS
1100.00†	1100.00	0.00	0.00	1096.00	1100.00	40.00	0.00	0.00	40.00	21.17	1.92	PASS
1200.00†	1200.00	0.00	0.00	1196.00	1200.00	40.00	0.00	0.00	40.00	21.32	1.91	PASS
1300.00†	1300.00	0.00	0.00	1296.00	1300.00	40.00	0.00	0.00	40.00	21.50	1.89	PASS
1400.00†	1400.00	0.00	0.00	1396.00	1400.00	40.00	0.00	0.00	40.00	21.70	1.87	PASS
1500.00†	1500.00	0.00	0.00	1496.00	1500.00	40.00	0.00	0.00	40.00	21.92	1.85	PASS
1600.00†	1600.00	0.00	0.00	1596.00	1600.00	40.00	0.00	0.00	40.00	22.16	1.83	PASS
1700.00†	1700.00	0.00	0.00	1696.00	1700.00	40.00	0.00	0.00	40.00	22.42	1.81	PASS
1800.00†	1800.00	0.00	0.00	1796.00	1800.00	40.00	0.00	0.00	40.00	22.70	1.79	PASS
1900.00†	1900.00	0.00	0.00	1896.00	1900.00	40.00	0.00	0.00	40.00	23.01	1.76	PASS
2000.00†	2000.00	0.00	0.00	1996.00	2000.00	40.00	0.00	0.00	40.00	23.33	1.74	PASS
2100.00†	2100.00	0.00	0.00	2096.00	2100.00	40.00	0.00	0.00	40.00	23.67	1.71	PASS
2200.00†	2200.00	0.00	0.00	2196.00	2200.00	40.00	0.00	0.00	40.00	24.03	1.69	PASS
2300.00†	2300.00	0.00	0.00	2296.00	2300.00	40.00	0.00	0.00	40.00	24.40	1.66	PASS
2400.00†	2400.00	0.00	0.00	2396.00	2400.00	40.00	0.00	0.00	40.00	24.79	1.63	PASS
2500.00†	2500.00	0.00	0.00	2496.00	2500.00	40.00	0.00	0.00	40.00	25.19	1.61	PASS
2600.00†	2600.00	0.00	0.00	2596.00	2600.00	40.00	0.00	0.00	40.00	25.61	1.58	PASS
2700.00†	2700.00	0.00	0.00	2696.00	2700.00	40.00	0.00	0.00	40.00	26.04	1.55	PASS
2800.00†	2800.00	0.00	0.00	2796.00	2800.00	40.00	0.00	0.00	40.00	26.49	1.52	PASS
2900.00†	2900.00	0.00	0.00	2896.00	2900.00	40.00	0.00	0.00	40.00	26.94	1.50	PASS
3000.00†	3000.00	0.00	0.00	2996.00	3000.00	40.00	0.00	0.00	40.00	27.41	1.47	PASS
3100.00†	3100.00	0.00	0.00	3096.00	3100.00	40.00	0.00	0.00	40.00	27.89	1.45	PASS
3200.00†	3200.00	0.00	0.00	3196.00	3200.00	40.00	0.00	0.00	40.00	28.38	1.42	PASS
3300.00†	3300.00	0.00	0.00	3296.00	3300.00	40.00	0.00	0.00	40.00	28.88	1.40	PASS
3400.00†	3400.00	0.00	0.00	3396.00	3400.00	40.00	0.00	0.00	40.00	29.39	1.37	PASS
3500.00†	3500.00	0.00	0.00	3496.00	3500.00	40.00	0.00	0.00	40.00	29.91	1.35	PASS
3600.00†	3600.00	0.00	0.00	3596.00	3600.00	40.00	0.00	0.00	40.00	30.43	1.32	PASS
3700.00†	3700.00	0.00	0.00	3696.00	3700.00	40.00	0.00	0.00	40.00	30.96	1.30	PASS
3800.00†	3800.00	0.00	0.00	3796.00	3800.00	40.00	0.00	0.00	40.00	31.51	1.28	PASS
3900.00†	3900.00	0.00	0.00	3896.00	3900.00	40.00	0.00	0.00	40.00	32.05	1.25	PASS
4000.00†	4000.00	0.00	0.00	3996.00	4000.00	40.00	0.00	0.00	40.00	32.61	1.23	PASS
4100.00†	4100.00	0.00	0.00	4096.00	4100.00	40.00	0.00	0.00	40.00	33.17	1.21	PASS
4200.00†	4200.00	0.00	0.00	4196.00	4200.00	40.00	0.00	0.00	40.00	33.74	1.19	PASS
4300.00†	4300.00	0.00	0.00	4296.00	4300.00	40.00	0.00	0.00	40.00	34.31	1.17	PASS
4400.00†	4400.00	0.00	0.00	4396.00	4400.00	40.00	0.00	0.00	40.00	34.89	1.15	PASS

Clearance Report

PLU CVX JC PC No. 20H Rev A.0

Closest Approach

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

CLEARANCE DATA - Offset Wellbore: PLU CVX JC PC No. 19H PWB Offset Wellpath: PLU CVX JC PC No. 19H Rev A.0

Facility: PLU CVX JC PC {19H} Sec. 21, TSP 24S, Rnge 30E Slot: No. 19H Well: No. 19H Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
4500.00†	4500.00	0.00	0.00	4496.00	4500.00	40.00	0.00	0.00	40.00	35.48	1.13	PASS
4600.00†	4600.00	0.00	0.00	4596.00	4600.00	40.00	0.00	0.00	40.00	36.07	1.11	PASS
4700.00†	4700.00	0.00	0.00	4696.00	4700.00	40.00	0.00	0.00	40.00	36.66	1.09	PASS
4800.00†	4800.00	0.00	0.00	4796.00	4800.00	40.00	0.00	0.00	40.00	37.26	1.08	PASS
4900.00†	4900.00	0.00	0.00	4896.00	4900.00	40.00	0.00	0.00	40.00	37.86	1.06	PASS
5000.00†	5000.00	0.00	0.00	4996.00	5000.00	40.00	0.00	0.00	40.00	38.47	1.04	PASS
5100.00†	5100.00	0.00	0.00	5096.00	5100.00	40.00	0.00	0.00	40.00	39.08	1.02	PASS
5200.00†	5200.00	0.00	0.00	5196.00	5200.00	40.00	0.00	0.00	40.00	39.69	1.01	PASS
5300.00†	5300.00	0.00	0.00	5296.00	5300.00	40.00	0.00	0.00	40.00	40.31	0.99	FAIL
5400.00†	5400.00	0.00	0.00	5396.00	5400.00	40.00	0.00	0.00	40.00	40.93	0.98	FAIL
5500.00†	5500.00	0.00	0.00	5496.00	5500.00	40.00	0.00	0.00	40.00	41.56	0.96	FAIL
5600.00†	5600.00	0.00	0.00	5596.00	5600.00	40.00	0.00	0.00	40.00	42.18	0.95	FAIL
5700.00†	5700.00	0.00	0.00	5696.00	5700.00	40.00	0.00	0.00	40.00	42.81	0.93	FAIL
5800.00†	5800.00	0.00	0.00	5796.00	5800.00	40.00	0.00	0.00	40.00	43.45	0.92	FAIL
5900.00†	5900.00	0.00	0.00	5896.00	5900.00	40.00	0.00	0.00	40.00	44.08	0.91	FAIL
6000.00†	6000.00	0.00	0.00	5996.00	6000.00	40.00	0.00	0.00	40.00	44.72	0.89	FAIL
6100.00†	6100.00	0.00	0.00	6096.00	6100.00	40.00	0.00	0.00	40.00	45.36	0.88	FAIL
6200.00†	6200.00	0.00	0.00	6196.00	6200.00	40.00	0.00	0.00	40.00	46.00	0.87	FAIL
6300.00†	6300.00	0.00	0.00	6296.00	6300.00	40.00	0.00	0.00	40.00	46.65	0.86	FAIL
6400.00†	6400.00	0.00	0.00	6396.00	6400.00	40.00	0.00	0.00	40.00	47.30	0.84	FAIL
6500.00†	6500.00	0.00	0.00	6496.00	6500.00	40.00	0.00	0.00	40.00	47.95	0.83	FAIL
6600.00†	6600.00	0.00	0.00	6596.00	6600.00	40.00	0.00	0.00	40.00	48.60	0.82	FAIL
6700.00†	6700.00	0.00	0.00	6696.00	6700.00	40.00	0.00	0.00	40.00	49.25	0.81	FAIL
6800.00†	6800.00	0.00	0.00	6796.00	6800.00	40.00	0.00	0.00	40.00	49.91	0.80	FAIL
6900.00†	6900.00	0.00	0.00	6896.00	6900.00	40.00	0.00	0.00	40.00	50.56	0.79	FAIL
7000.00†	7000.00	0.00	0.00	6996.00	7000.00	40.00	0.00	0.00	40.00	51.22	0.78	FAIL
7100.00†	7100.00	0.00	0.00	7096.00	7100.00	40.00	0.00	0.00	40.00	51.88	0.77	FAIL
7200.00†	7200.00	0.00	0.00	7196.00	7200.00	40.00	0.00	0.00	40.00	52.54	0.76	FAIL
7300.00†	7300.00	0.00	0.00	7296.00	7300.00	40.00	0.00	0.00	40.00	53.21	0.75	FAIL
7400.00†	7400.00	0.00	0.00	7396.00	7400.00	40.00	0.00	0.00	40.00	53.87	0.74	FAIL
7500.00†	7500.00	0.00	0.00	7496.00	7500.00	40.00	0.00	0.00	40.00	54.54	0.73	FAIL
7600.00†	7600.00	0.00	0.00	7596.00	7600.00	40.00	0.00	0.00	40.00	55.21	0.72	FAIL
7700.00†	7700.00	0.00	0.00	7696.00	7700.00	40.00	0.00	0.00	40.00	55.87	0.71	FAIL
7800.00†	7800.00	0.00	0.00	7796.00	7800.00	40.00	0.00	0.00	40.00	56.54	0.70	FAIL
7900.00†	7900.00	0.00	0.00	7896.00	7900.00	40.00	0.00	0.00	40.00	57.22	0.70	FAIL
8000.00†	8000.00	0.00	0.00	7996.00	8000.00	40.00	0.00	0.00	40.00	57.89	0.69	FAIL
8100.00†	8100.00	0.00	0.00	8096.00	8100.00	40.00	0.00	0.00	40.00	58.56	0.68	FAIL
8200.00†	8200.00	0.00	0.00	8196.00	8200.00	40.00	0.00	0.00	40.00	59.24	0.67	FAIL
8300.00†	8300.00	0.00	0.00	8296.00	8300.00	40.00	0.00	0.00	40.00	59.91	0.66	FAIL
8400.00†	8400.00	0.00	0.00	8396.00	8400.00	40.00	0.00	0.00	40.00	60.59	0.66	FAIL
8500.00†	8500.00	0.00	0.00	8496.00	8500.00	40.00	0.00	0.00	40.00	61.27	0.65	FAIL
8600.00†	8600.00	0.00	0.00	8596.00	8600.00	40.00	0.00	0.00	40.00	61.94	0.64	FAIL
8700.00†	8700.00	0.00	0.00	8696.00	8700.00	40.00	0.00	0.00	40.00	62.62	0.63	FAIL
8800.00†	8800.00	0.00	0.00	8796.00	8800.00	40.00	0.00	0.00	40.00	63.30	0.63	FAIL
8808.13†	8808.13	0.00	0.00	8803.94	8807.94	40.01	0.01	0.01	40.01	63.36	0.63	FAIL

Clearance Report

PLU CVX JC PC No. 20H Rev A.0

Closest Approach

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

CLEARANCE DATA - Offset Wellbore: PLU CVX JC PC No. 19H PWB Offset Wellpath: PLU CVX JC PC No. 19H Rev A.0

Facility: PLU CVX JC PC {19H} Sec. 21, TSP 24S, Rnge 30E Slot: No. 19H Well: No. 19H Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
8900.00†	8900.00	0.00	0.00	8890.75	8894.37	45.03	5.12	6.49	45.67	63.93	0.71	FAIL
8955.20	8955.20	0.00	0.00	8941.21	8943.78	52.14	12.36	13.34	54.79	64.31	0.85	FAIL
9000.00†	8999.95	-1.11	-1.35	8980.09	8981.14	59.68	20.04	19.39	67.14	64.57	1.04	PASS
9100.00†	9098.46	-11.55	-14.06	9054.36	9050.08	78.93	39.64	30.69	115.81	64.99	1.79	PASS
9200.00†	9192.62	-32.69	-39.80	9107.84	9097.23	96.58	57.62	37.00	187.88	65.45	2.89	PASS
9300.00†	9279.56	-63.89	-77.78	9141.41	9125.56	109.21	70.48	40.58	275.06	65.62	4.23	PASS
9400.00†	9356.65	-104.19	-126.85	9158.61	9139.64	116.12	77.51	42.85	370.67	65.74	5.69	PASS
9500.00†	9421.54	-152.38	-185.52	9163.16	9143.31	118.00	79.42	44.42	469.80	65.90	7.20	PASS
9600.00†	9472.26	-206.99	-252.00	9158.19	9139.30	115.95	77.34	45.56	568.87	66.17	8.68	PASS
9655.20	9493.60	-239.29	-291.32	9152.27	9134.48	113.54	74.88	46.07	622.54	66.35	9.48	PASS
9700.00†	9508.93	-266.01	-323.85	9146.87	9130.05	111.37	72.67	46.42	665.72	66.50	10.11	PASS
9800.00†	9543.13	-325.66	-396.46	9136.07	9121.12	107.12	68.35	47.04	762.52	66.81	11.53	PASS
9855.20	9562.01	-358.58	-436.54	9130.76	9116.68	105.08	66.27	47.32	816.16	66.97	12.31	PASS
9900.00†	9576.91	-384.65	-469.78	9126.59	9113.18	103.49	64.65	47.59	859.62	67.09	12.94	PASS
10000.00†	9607.06	-437.90	-548.81	9117.14	9105.18	99.96	61.06	48.59	955.58	67.38	14.33	PASS
10100.00†	9632.63	-483.88	-633.80	9107.57	9097.00	96.49	57.52	49.99	1049.59	67.67	15.67	PASS
10200.00†	9653.33	-522.08	-723.82	9097.93	9088.68	93.08	54.05	51.66	1141.20	67.96	16.96	PASS
10300.00†	9668.94	-552.08	-817.88	9088.27	9080.25	89.77	50.67	53.54	1230.01	68.25	18.21	PASS
10400.00†	9679.29	-573.56	-914.95	9078.60	9071.75	86.55	47.40	55.55	1315.66	68.54	19.39	PASS
10500.00†	9684.27	-586.27	-1013.97	9068.95	9063.17	83.44	44.23	57.67	1397.88	68.84	20.51	PASS
10578.60	9684.38	-590.01	-1092.46	9061.37	9056.40	81.07	41.82	59.39	1459.89	69.05	21.36	PASS
10600.00†	9683.95	-590.28	-1113.85	9059.32	9054.55	80.44	41.18	59.86	1476.51	69.09	21.59	PASS
10700.00†	9681.95	-591.53	-1213.82	9050.11	9046.24	77.66	38.35	61.88	1555.59	69.27	22.69	PASS
10800.00†	9679.94	-592.77	-1313.79	9041.45	9038.36	75.14	35.78	63.67	1636.79	69.43	23.81	PASS
10900.00†	9677.94	-594.02	-1413.77	9033.30	9030.91	72.84	33.44	65.26	1719.81	69.59	24.96	PASS
11000.00†	9675.94	-595.27	-1513.74	9025.63	9023.84	70.74	31.30	66.68	1804.43	69.75	26.13	PASS
11100.00†	9673.93	-596.52	-1613.71	9018.39	9017.13	68.83	29.35	67.96	1890.43	69.89	27.32	PASS
11200.00†	9671.93	-597.77	-1713.68	9011.54	9010.77	67.07	27.56	69.10	1977.64	70.03	28.53	PASS
11300.00†	9669.92	-599.02	-1813.65	9005.07	9004.71	65.45	25.92	70.14	2065.93	70.16	29.74	PASS
11400.00†	9667.92	-600.27	-1913.63	8998.93	8998.96	63.97	24.41	71.08	2155.16	70.29	30.97	PASS
11500.00†	9665.92	-601.52	-2013.60	8993.12	8993.48	62.60	23.01	71.94	2245.22	70.40	32.21	PASS
11600.00†	9663.91	-602.77	-2113.57	8987.59	8988.25	61.34	21.73	72.72	2336.03	70.52	33.46	PASS
11700.00†	9661.91	-604.02	-2213.54	8982.34	8983.27	60.17	20.54	73.44	2427.51	70.62	34.72	PASS
11800.00†	9659.91	-605.26	-2313.52	8977.34	8978.52	59.09	19.44	74.11	2519.59	70.73	35.98	PASS
11900.00†	9657.90	-606.51	-2413.49	8972.58	8973.98	58.09	18.42	74.72	2612.20	70.83	37.25	PASS
12000.00†	9655.90	-607.76	-2513.46	8968.04	8969.64	57.16	17.47	75.28	2705.30	70.93	38.53	PASS
12100.00†	9653.90	-609.01	-2613.43	8963.71	8965.49	56.29	16.58	75.80	2798.84	71.03	39.80	PASS
12200.00†	9651.89	-610.26	-2713.40	8959.57	8961.51	55.48	15.76	76.29	2892.78	71.12	41.08	PASS
12300.00†	9649.89	-611.51	-2813.38	8955.61	8957.70	54.73	14.99	76.75	2987.08	71.22	42.37	PASS
12400.00†	9647.89	-612.76	-2913.35	8951.82	8954.05	54.02	14.28	77.17	3081.72	71.31	43.65	PASS
12500.00†	9645.88	-614.01	-3013.32	8948.19	8950.54	53.36	13.61	77.57	3176.66	71.40	44.94	PASS
12600.00†	9643.88	-615.26	-3113.29	8944.71	8947.18	52.75	12.98	77.94	3271.88	71.50	46.22	PASS
12700.00†	9641.87	-616.51	-3213.26	8941.37	8943.94	52.17	12.39	78.29	3367.36	71.59	47.51	PASS
12800.00†	9639.87	-617.75	-3313.24	8938.16	8940.83	51.63	11.84	78.62	3463.07	71.68	48.80	PASS
12900.00†	9637.87	-619.00	-3413.21	8935.08	8937.83	51.12	11.32	78.93	3559.00	71.77	50.09	PASS

Clearance Report

PLU CVX JC PC No. 20H Rev A.0

Closest Approach

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

CLEARANCE DATA - Offset Wellbore: PLU CVX JC PC No. 19H PWB Offset Wellpath: PLU CVX JC PC No. 19H Rev A.0

Facility: PLU CVX JC PC {19H} Sec. 21, TSP 24S, Rnge 30E Slot: No. 19H Well: No. 19H Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
13000.00†	9635.86	-620.25	-3513.18	8932.12	8934.95	50.64	10.83	79.22	3655.14	71.86	51.38	PASS
13100.00†	9633.86	-621.50	-3613.15	8929.27	8932.17	50.18	10.37	79.50	3751.46	71.95	52.66	PASS
13200.00†	9631.86	-622.75	-3713.12	8926.52	8929.49	49.76	9.93	79.76	3847.95	72.04	53.95	PASS
13300.00†	9629.85	-624.00	-3813.10	8923.87	8926.91	49.36	9.52	80.01	3944.61	72.13	55.23	PASS
13400.00†	9627.85	-625.25	-3913.07	8921.32	8924.41	48.98	9.14	80.25	4041.42	72.22	56.52	PASS
13500.00†	9625.85	-626.50	-4013.04	8918.86	8922.01	48.62	8.77	80.47	4138.38	72.32	57.80	PASS
13600.00†	9623.84	-627.75	-4113.01	8916.48	8919.68	48.28	8.43	80.69	4235.46	72.41	59.08	PASS
13700.00†	9621.84	-629.00	-4212.99	8914.19	8917.43	47.96	8.10	80.89	4332.67	72.50	60.36	PASS
13800.00†	9619.84	-630.24	-4312.96	8911.97	8915.26	47.65	7.79	81.08	4429.99	72.60	61.63	PASS
13900.00†	9617.83	-631.49	-4412.93	8909.82	8913.15	47.36	7.49	81.27	4527.42	72.69	62.90	PASS
14000.00†	9615.83	-632.74	-4512.90	8907.75	8911.11	47.09	7.21	81.45	4624.96	72.79	64.17	PASS
14100.00†	9613.82	-633.99	-4612.87	8905.74	8909.14	46.83	6.95	81.62	4722.59	72.89	65.44	PASS
14200.00†	9611.82	-635.24	-4712.85	8903.79	8907.22	46.58	6.70	81.78	4820.31	72.98	66.70	PASS
14300.00†	9609.82	-636.49	-4812.82	8901.90	8905.37	46.34	6.46	81.94	4918.12	73.08	67.96	PASS
14400.00†	9607.81	-637.74	-4912.79	8900.08	8903.57	46.12	6.23	82.09	5016.01	73.18	69.22	PASS
14500.00†	9605.81	-638.99	-5012.76	8898.30	8901.82	45.90	6.01	82.23	5113.97	73.29	70.47	PASS
14600.00†	9603.81	-640.24	-5112.73	8896.58	8900.13	45.70	5.80	82.37	5212.01	73.40	71.71	PASS
14700.00†	9601.80	-641.49	-5212.71	8894.91	8898.48	45.50	5.60	82.50	5310.12	73.51	72.95	PASS
14800.00†	9599.80	-642.73	-5312.68	8893.29	8896.88	45.32	5.41	82.63	5408.29	73.63	74.18	PASS
14900.00†	9597.80	-643.98	-5412.65	8891.72	8895.32	45.14	5.23	82.75	5506.52	73.74	75.41	PASS
15000.00†	9595.79	-645.23	-5512.62	8890.18	8893.81	44.97	5.06	82.87	5604.82	73.85	76.64	PASS
15100.00†	9593.79	-646.48	-5612.60	8888.70	8892.34	44.81	4.89	82.98	5703.17	73.97	77.86	PASS
15200.00†	9591.78	-647.73	-5712.57	8887.25	8890.91	44.65	4.74	83.10	5801.57	74.08	79.08	PASS
15300.00†	9589.78	-648.98	-5812.54	8885.84	8889.52	44.50	4.58	83.20	5900.02	74.20	80.29	PASS
15400.00†	9587.78	-650.23	-5912.51	8884.47	8888.16	44.36	4.44	83.31	5998.52	74.32	81.50	PASS
15500.00†	9585.77	-651.48	-6012.48	8883.13	8886.84	44.23	4.30	83.40	6097.07	74.44	82.71	PASS
15600.00†	9583.77	-652.73	-6112.46	8881.83	8885.55	44.10	4.17	83.50	6195.66	74.56	83.91	PASS
15700.00†	9581.77	-653.98	-6212.43	8880.56	8884.30	43.97	4.04	83.59	6294.29	74.68	85.11	PASS
15800.00†	9579.76	-655.22	-6312.40	8879.33	8883.08	43.85	3.92	83.68	6392.96	74.80	86.30	PASS
15900.00†	9577.76	-656.47	-6412.37	8878.12	8881.88	43.73	3.80	83.77	6491.67	74.92	87.49	PASS
16000.00†	9575.76	-657.72	-6512.34	8876.95	8880.72	43.62	3.69	83.86	6590.42	75.04	88.68	PASS
16100.00†	9573.75	-658.97	-6612.32	8875.80	8879.58	43.52	3.58	83.94	6689.20	75.16	89.86	PASS
16200.00†	9571.75	-660.22	-6712.29	8874.69	8878.48	43.41	3.47	84.02	6788.02	75.29	91.03	PASS
16300.00†	9569.75	-661.47	-6812.26	8873.60	8877.39	43.31	3.37	84.10	6886.87	75.42	92.20	PASS
16400.00†	9567.74	-662.72	-6912.23	8872.53	8876.34	43.22	3.28	84.17	6985.75	75.54	93.37	PASS
16500.00†	9565.74	-663.97	-7012.20	8871.49	8875.31	43.13	3.18	84.24	7084.66	75.67	94.53	PASS
16600.00†	9563.73	-665.22	-7112.18	8870.47	8874.30	43.04	3.09	84.32	7183.59	75.80	95.68	PASS
16700.00†	9561.73	-666.47	-7212.15	8869.48	8873.31	42.96	3.01	84.39	7282.56	75.93	96.83	PASS
16800.00†	9559.73	-667.71	-7312.12	8868.51	8872.35	42.87	2.92	84.45	7381.55	76.06	97.98	PASS
16900.00†	9557.72	-668.96	-7412.09	8867.56	8871.40	42.79	2.84	84.52	7480.57	76.19	99.12	PASS
17000.00†	9555.72	-670.21	-7512.07	8866.63	8870.48	42.72	2.77	84.58	7579.61	76.32	100.26	PASS
17100.00†	9553.72	-671.46	-7612.04	8865.72	8869.58	42.64	2.69	84.64	7678.68	76.46	101.39	PASS
17200.00†	9551.71	-672.71	-7712.01	8864.84	8868.70	42.57	2.62	84.70	7777.77	76.59	102.51	PASS
17300.00†	9549.71	-673.96	-7811.98	8863.97	8867.83	42.51	2.55	84.76	7876.88	76.73	103.64	PASS
17400.00†	9547.71	-675.21	-7911.95	8863.12	8866.99	42.44	2.48	84.82	7976.01	76.86	104.75	PASS

Clearance Report

PLU CVX JC PC No. 20H Rev A.0

Closest Approach

BAKER HUGHES

REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	No. 20H
Area	Eddy County, NM	Well	No. 20H
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JC PC No. 20H PWB
Facility	PLU CVX JC PC {No 20H} Sec 21, TSP 24S, Rnge 30E		

CLEARANCE DATA - Offset Wellbore: PLU CVX JC PC No. 19H PWB Offset Wellpath: PLU CVX JC PC No. 19H Rev A.0

Facility: PLU CVX JC PC {19H} Sec. 21, TSP 24S, Rnge 30E Slot: No. 19H Well: No. 19H Threshold Value=1.00 † = interpolated/extrapolated station

Ref MD [ft]	Ref TVD [ft]	Ref North [ft]	Ref East [ft]	Offset MD [ft]	Offset TVD [ft]	Offset North [ft]	Offset East [ft]	Horiz Bearing [°]	C-C Clear Dist [ft]	ACR MASD [ft]	Sep Ratio	ACR Status
17435.22	9547.00	-675.65	-7947.16	8862.82	8866.69	42.42	2.46	84.84	8010.93	76.91	105.14	PASS

POSITIONAL UNCERTAINTY - Offset Wellbore: PLU CVX JC PC No. 19H PWB Offset Wellpath: PLU CVX JC PC No. 19H Rev A.0

Slot Surface Uncertainty @1SD	Horizontal	0.000ft	Vertical	0.000ft
Facility Surface Uncertainty @1SD	Horizontal	3.300ft	Vertical	1.000ft

HOLE & CASING SECTIONS - Offset Wellbore: PLU CVX JC PC No. 19H PWB Offset Wellpath: PLU CVX JC PC No. 19H Rev A.0

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
8.75in Open Hole	0.00	20544.98	20544.98	4.00	NA	24.39	0.00	NA	NA

SURVEY PROGRAM - Offset Wellbore: PLU CVX JC PC No. 19H PWB Offset Wellpath: PLU CVX JC PC No. 19H Rev A.0

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
29.00	500.00	Generic gyro - northseeking (Standard)		PLU CVX JC PC No. 19H PWB
500.00	20544.98	NaviTrak (Standard)		PLU CVX JC PC No. 19H PWB

OFFSET WELLPATH MD REFERENCE -

Offset Wellbore: PLU CVX JC PC No. 19H PWB Offset Wellpath: PLU CVX JC PC No. 19H Rev A.0

MD Reference: **Latshaw 18 (KB)**	*Offset TVD & local coordinates use Reference Wellpath settings (See WELLPATH DATUM on page 1 of this report)*
Ellipse Start MD	**29.00ft**

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	BOPCO, L.P.
LEASE NO.:	NMLC-068430
WELL NAME & NO.:	Poker Lake Unit CVX JV PC 20H
SURFACE HOLE FOOTAGE:	0065' FNL & 2410' FEL
BOTTOM HOLE FOOTAGE	2310' FNL & 1980' FEL Sec. 28, T. 24 S., R 30 E.
LOCATION:	Section 21, T. 24 S., R 30 E., NMPM
COUNTY:	Eddy County, New Mexico
API:	30-015-42668

The original COAs still stand with the following drilling modification:

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. **Operator has stated that Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. Operator has also stated that 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. Report measured values and formation to the BLM. 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 or are Non-API. 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.). The initial wellhead installed on the well will remain on the well with spools used as needed.

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.

Possibility of water flows in the Salado and Castile.
Possibility of lost circulation in the Red Beds, Rustler, and Delaware.

1. The **13-3/8** inch surface casing shall be set at approximately **958** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above 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, which shall be set at approximately **3800** feet (Lamar Limestone or basal anhydrite of the Castile formation), is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above.

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:

Operator has proposed DV tool at depth of 5000', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

    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 approved top of cement on the next stage.

b. Second stage above DV tool:

☒ 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. 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. These documents shall be posted in the company man's trailer and on the rig floor.** 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. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. 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. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
   b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
   c. **Manufacturer representative shall install the test plug for the initial BOP test.**
   d. **Operator shall perform the 9-5/8" and 7" casing integrity tests to 70% of the casing burst. This will test the multi-bowl seals.**
   e. **If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

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**.

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, 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. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two 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.

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