

30-015-42390



Job Number: SVMO-141193
 Company: BOPCO, LP
 Lease/Well: Poker Lake Unit CVX JV PC 021H.
 Location: Eddy County, NM
 Rig Name: Latshaw #4
 RKB: 22'
 G.L. or M.S.L.: GL

State/Country: New Mexico/USA
 Declination: 7.14°
 Grid: East To Grid North
 File name: S:\2014SU-1\BOPCO\MO\POKER\LAKEUN-1\CVXJV\PC021H.SVY
 Date/Time: 02-Sep-14 / 16:12
 Curve Name: Surface - 1019' M.D. (Rate Gyro)

MS SURVEY

WINSERVE SURVEY CALCULATIONS
 Minimum Curvature Method
 Vertical Section Plane .00
 Vertical Section Referenced to Wellhead
 Rectangular Coordinates Referenced to Wellhead

We hereby certify that our survey data from
 Surface MD to 4019' MD is, to the best of
 our knowledge a true and accurate account of
 the well bore
 Harley Patterson 9/2/14
 MS Energy Services Date

NM OIL CONSERVATION
 ARTESIA DISTRICT
 JAN 23 2015
 RECEIVED

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	C L O S U R E		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
100.00	.27	311.02	100.00	.15	-.18	.15	.24	311.02	.27
200.00	.32	316.36	200.00	.51	-.55	.51	.75	313.01	.06
300.00	.53	345.41	300.00	1.16	-.86	1.16	1.44	323.55	.29
400.00	.60	356.61	399.99	2.13	-1.00	2.13	2.36	334.76	.13
500.00	.57	357.99	499.99	3.15	-1.05	3.15	3.32	341.52	.03
600.00	.41	5.87	599.98	4.00	-1.03	4.00	4.14	345.52	.17
700.00	.26	34.05	699.98	4.55	-.87	4.55	4.63	349.16	.22
800.00	.30	36.90	799.98	4.95	-.59	4.95	4.98	353.24	.04
900.00	.42	35.16	899.98	5.45	-.22	5.45	5.46	357.71	.12

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	True Vertical Depth	N-S FT	E-W FT	Vertical Section FT	CLOSURE		Dogleg Severity Deg/100
							Distance FT	Direction Deg	
1000.00	.46	58.09	999.97	5.97	.33	5.97	5.98	3.20	.18
Last Survey Depth Recorded									
1019.00	.49	66.13	1018.97	6.04	.47	6.04	6.06	4.48	.38

30-015-42390

BOPCO, LP



Location: Eddy County, NM
 Field: Eddy County, NM (NAD 27 / Grid)
 Facility: PLU CVX JV (RR #010H and PC #021H (Pad)) Sec. 17-255-30E
 Slot: Pater Lake Unit CVX JV PC #021H (Lathaw #4)
 Well: SL 330 FSL, 675 FEL
 Wellbore: PLU CVX JV PC #021H Actual

Scale 1 inch = 1000 ft
 Easting (ft)
 -2000 -1000 0 1000

Plot reference wellpath is No. 021H AWP

True vertical section are referenced to Lathaw #4 (R-02)
 Measured depth are referenced to Lathaw #4 (R-02)
 Lathaw #4 (R-02) to Mean Sea Level 3253.27 feet
 Mean Sea Level to Mud line (at Slot: Pater Lake Unit CVX JV PC #021H (Lathaw #4)) -3232.71 feet
 Coordinates are in feet references to Slot
 Grid System: NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet
 North Reference: Grid north
 Scale: True distance
 Depth are in feet
 Created by: janette on 11/10/2014

Location Information

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
PLU CVX JV (RR #010H and PC #021H (Pad)) Sec. 17-255-30E	630542.800	408978.500	32°07'55.10"N	103°53'47.304"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Pater Lake Unit CVX JV PC #021H (Lathaw #4)	40.30	-20.30	630542.800	408978.500
Lathaw #4 (R-02) to Mud line (at Slot: Pater Lake Unit CVX JV PC #021H (Lathaw #4))			630542.800	408978.500
Mean Sea Level to Mud line (at Slot: Pater Lake Unit CVX JV PC #021H (Lathaw #4))				3232.71 ft
Lathaw #4 (R-02) to Mean Sea Level				3253.27 ft

Bottom Hole Location

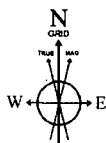
MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
17202.00	91.80	0.60	10119.82	7309.07	-36.26	635206.24	416325.24	32°08'37.82"N	103°53'47.383"W

Wellpath Composition

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
23.56	1019.00	Generic gyro - northseeking	Generic gyro - northseeking (Standard)	MS Gyro Surveys -100 - 1019-	PLU CVX JV PC #021H Actual
1019.00	17150.00	NavTrak	NavTrak (Standard)	Shel MWD NavTrak -1091 - 17150-	PLU CVX JV PC #021H Actual
17150.00	17202.00	Blind Drilling	Blind Drilling (test)	Projection to bit	PLU CVX JV PC #021H Actual

Projection to Bit : 10119.82ft TVD, 7309.07ft N, 36.26ft W

Tie On : 0.49° Inc, 1019.00ft MD, 1018.97ft TVD, 6.00ft VS



BGGM (1945.0 to 2016.0) Dip: 59.95° Field: 48181.6 nT
 Magnetic North is 7.52 degrees East of True North (at 6/23/2014)
 Grid North is 0.23 degrees East of True North
 To correct azimuth from True to Grid subtract 0.23 degrees
 To correct azimuth from Magnetic to Grid add 7.29 degrees

Tie On : 1018.97ft TVD, 6.01ft N, 0.51ft E

PLU CVX JV PC #021H Planned

PLU CVX JV PC #021H Actual

Projection to Bit : 91.80° Inc, 17202.00ft MD, 10119.82ft TVD, 7309.16ft VS

Vertical Section (ft)

Scale 1 inch = 1500 ft
 Azimuth 359.69° with reference 0.00 N, 0.00 E

Northing (ft)



Actual Wellpath Report

No. 021H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	Poker Lake Unit CVX JV PC #021H (Latshaw #4)
Area	Eddy County, NM	Well	SL 330 FSL, 675 FEL
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JV PC #021H Actual
Facility	PLU CVX JV (RR #010H and PC #021H {Pad}) Sec. 17-25S-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	0.99993	Report Generated	11/10/2014 at 2:30:44 PM
Convergence at slot	0.23° East	Database/Source file	WA_Midland/PLU_CVX_JV_PC_#021H_Actual.xml

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	40.20	-0.30	635242.50	409016.70	32°07'25.499"N	103°53'47.306"W
Facility Reference Pt			635242.80	408976.50	32°07'25.101"N	103°53'47.304"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 #4 (RKB) to Facility Vertical Datum	20.56ft
Horizontal Reference Pt	Slot	Latshaw #4 (RKB) to Mean Sea Level	3253.27ft
Vertical Reference Pt	Latshaw #4 (RKB)	Latshaw #4 (RKB) to Mud Line at Slot (Poker Lake Unit CVX JV PC #021H (Latshaw #4))	20.56ft
MD Reference Pt	Latshaw #4 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.69°



Actual Wellpath Report

No. 021H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	Poker Lake Unit CVX JV PC #021H (Latshaw #4)
Area	Eddy County, NM	Well	SL 330 FSL, 675 FEL
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JV PC #021H Actual
Facility	PLU CVX JV (RR #010H and PC #021H {Pad}) Sec. 17-25S-30E		

WELLPATH DATA (195 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
1019.00	0.490	66.130	1018.97	6.00	6.01	0.51	635243.01	409022.71	32°07'25.558"N	103°53'47.300"W	0.38	Tie On
1091.00	0.600	55.200	1090.97	6.34	6.35	1.10	635243.60	409023.05	32°07'25.562"N	103°53'47.293"W	0.21	
1120.00	0.400	34.300	1119.97	6.51	6.52	1.28	635243.78	409023.22	32°07'25.563"N	103°53'47.291"W	0.92	
1266.00	0.300	96.300	1265.97	6.89	6.90	1.95	635244.45	409023.60	32°07'25.567"N	103°53'47.283"W	0.25	
1361.00	0.100	345.800	1360.97	6.94	6.95	2.18	635244.68	409023.65	32°07'25.568"N	103°53'47.280"W	0.37	
1457.00	0.600	323.800	1456.96	7.43	7.44	1.86	635244.36	409024.14	32°07'25.572"N	103°53'47.284"W	0.53	
1552.00	1.100	327.100	1551.95	8.60	8.60	1.07	635243.57	409025.30	32°07'25.584"N	103°53'47.293"W	0.53	
1647.00	1.000	307.700	1646.94	9.88	9.88	-0.08	635242.42	409026.58	32°07'25.597"N	103°53'47.306"W	0.39	
1742.00	1.600	303.600	1741.91	11.13	11.12	-1.84	635240.66	409027.82	32°07'25.609"N	103°53'47.327"W	0.64	
1837.00	1.600	279.700	1836.88	12.10	12.07	-4.25	635238.25	409028.77	32°07'25.618"N	103°53'47.355"W	0.70	
1932.00	1.500	283.900	1931.84	12.63	12.60	-6.77	635235.73	409029.30	32°07'25.624"N	103°53'47.384"W	0.16	
2027.00	0.800	277.800	2026.82	13.03	12.99	-8.63	635233.87	409029.68	32°07'25.628"N	103°53'47.406"W	0.75	
2122.00	1.000	275.400	2121.81	13.21	13.15	-10.12	635232.39	409029.85	32°07'25.629"N	103°53'47.423"W	0.21	
2217.00	1.300	276.900	2216.79	13.43	13.36	-12.01	635230.49	409030.06	32°07'25.632"N	103°53'47.445"W	0.32	
2313.00	1.700	276.200	2312.76	13.72	13.65	-14.51	635227.99	409030.34	32°07'25.634"N	103°53'47.474"W	0.42	
2408.00	1.000	240.500	2407.73	13.48	13.39	-16.63	635225.87	409030.09	32°07'25.632"N	103°53'47.499"W	1.12	
2503.00	0.700	230.400	2502.72	12.71	12.61	-17.80	635224.70	409029.31	32°07'25.624"N	103°53'47.512"W	0.35	
2598.00	0.600	217.400	2597.72	11.95	11.85	-18.55	635223.95	409028.55	32°07'25.617"N	103°53'47.521"W	0.19	
2693.00	0.500	109.400	2692.71	11.41	11.31	-18.46	635224.04	409028.01	32°07'25.612"N	103°53'47.520"W	0.94	
2788.00	0.900	95.500	2787.71	11.20	11.10	-17.32	635225.18	409027.80	32°07'25.609"N	103°53'47.507"W	0.45	
2883.00	1.100	101.800	2882.69	10.93	10.85	-15.69	635226.81	409027.55	32°07'25.607"N	103°53'47.488"W	0.24	
2978.00	1.100	107.700	2977.67	10.46	10.38	-13.93	635228.57	409027.08	32°07'25.602"N	103°53'47.467"W	0.12	
3073.00	1.900	116.700	3072.64	9.46	9.40	-11.65	635230.85	409026.10	32°07'25.592"N	103°53'47.441"W	0.88	
3168.00	2.400	106.600	3167.57	8.17	8.12	-8.34	635234.16	409024.82	32°07'25.580"N	103°53'47.402"W	0.66	
3263.00	2.100	109.400	3262.50	7.00	6.98	-4.79	635237.71	409023.67	32°07'25.568"N	103°53'47.361"W	0.34	
3358.00	2.500	123.200	3357.43	5.27	5.26	-1.42	635241.08	409021.96	32°07'25.551"N	103°53'47.322"W	0.72	
3453.00	2.500	128.000	3452.34	2.84	2.85	1.95	635244.45	409019.55	32°07'25.527"N	103°53'47.283"W	0.22	
3548.00	2.600	137.600	3547.24	-0.04	-0.01	5.04	635247.54	409016.69	32°07'25.498"N	103°53'47.247"W	0.46	
3643.00	2.100	145.700	3642.16	-3.08	-3.04	7.47	635249.97	409013.66	32°07'25.468"N	103°53'47.219"W	0.63	
3675.00	1.800	143.200	3674.14	-3.97	-3.93	8.10	635250.60	409012.77	32°07'25.460"N	103°53'47.212"W	0.97	
3743.00	1.300	139.500	3742.12	-5.42	-5.37	9.24	635251.74	409011.33	32°07'25.445"N	103°53'47.199"W	0.75	
3838.00	1.300	141.000	3837.09	-7.09	-7.03	10.62	635253.12	409009.67	32°07'25.429"N	103°53'47.183"W	0.04	
3933.00	0.100	72.800	3932.09	-7.90	-7.84	11.38	635253.88	409008.86	32°07'25.421"N	103°53'47.174"W	1.33	
4028.00	0.400	343.500	4027.08	-7.56	-7.50	11.36	635253.86	409009.20	32°07'25.424"N	103°53'47.174"W	0.43	
4123.00	0.400	350.000	4122.08	-6.92	-6.85	11.21	635253.71	409009.85	32°07'25.431"N	103°53'47.176"W	0.05	
4218.00	0.200	0.000	4217.08	-6.42	-6.36	11.15	635253.65	409010.34	32°07'25.435"N	103°53'47.176"W	0.22	
4313.00	0.300	312.500	4312.08	-6.09	-6.03	10.97	635253.47	409010.67	32°07'25.439"N	103°53'47.179"W	0.23	
4408.00	0.100	318.500	4407.08	-5.86	-5.80	10.73	635253.23	409010.90	32°07'25.441"N	103°53'47.181"W	0.21	
4504.00	0.200	315.200	4503.08	-5.67	-5.62	10.56	635253.06	409011.08	32°07'25.443"N	103°53'47.183"W	0.10	
4599.00	0.300	352.500	4598.08	-5.31	-5.25	10.41	635252.91	409011.45	32°07'25.446"N	103°53'47.185"W	0.20	
4694.00	0.400	309.400	4693.08	-4.85	-4.80	10.12	635252.62	409011.90	32°07'25.451"N	103°53'47.188"W	0.29	
4789.00	0.500	297.600	4788.07	-4.44	-4.39	9.50	635252.00	409012.31	32°07'25.455"N	103°53'47.196"W	0.14	
4884.00	0.700	296.200	4883.07	-3.99	-3.94	8.61	635251.11	409012.76	32°07'25.459"N	103°53'47.206"W	0.21	
4979.00	0.700	286.700	4978.06	-3.56	-3.52	7.53	635250.03	409013.18	32°07'25.464"N	103°53'47.218"W	0.12	
5074.00	0.400	133.900	5073.06	-3.62	-3.58	7.21	635249.71	409013.12	32°07'25.463"N	103°53'47.222"W	1.13	



Actual Wellpath Report

No. 021H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	Poker Lake Unit CVX JV PC #021H (Latshaw #4)
Area	Eddy County, NM	Well	SL 330 FSL, 675 FEL
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JV PC #021H Actual
Facility	PLU CVX JV (RR #010H and PC #021H {Pad}) Sec. 17-25S-30E		

WELLPATH DATA (195 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
5169.00	0.800	134.000	5168.05	-4.32	-4.28	7.93	635250.43	409012.42	32°07'25.456"N	103°53'47.214"W	0.42	
5265.00	0.100	115.300	5264.05	-4.82	-4.78	8.49	635250.99	409011.92	32°07'25.451"N	103°53'47.207"W	0.74	
5360.00	0.400	270.000	5359.05	-4.86	-4.81	8.23	635250.73	409011.89	32°07'25.451"N	103°53'47.210"W	0.52	
5455.00	0.500	274.000	5454.05	-4.82	-4.78	7.49	635249.99	409011.92	32°07'25.451"N	103°53'47.219"W	0.11	
5550.00	0.600	280.600	5549.04	-4.70	-4.66	6.58	635249.08	409012.04	32°07'25.452"N	103°53'47.229"W	0.12	
5645.00	0.800	287.000	5644.04	-4.41	-4.38	5.46	635247.96	409012.32	32°07'25.455"N	103°53'47.242"W	0.23	
5740.00	0.600	268.000	5739.03	-4.22	-4.20	4.33	635246.83	409012.50	32°07'25.457"N	103°53'47.256"W	0.32	
5835.00	0.600	142.100	5834.03	-4.63	-4.61	4.14	635246.64	409012.09	32°07'25.453"N	103°53'47.258"W	1.12	
5930.00	0.900	79.600	5929.02	-4.90	-4.87	5.18	635247.68	409011.83	32°07'25.450"N	103°53'47.246"W	0.86	
6026.00	1.000	97.400	6025.01	-4.88	-4.84	6.75	635249.25	409011.86	32°07'25.451"N	103°53'47.228"W	0.32	
6121.00	0.800	353.900	6120.00	-4.33	-4.29	7.50	635250.00	409012.41	32°07'25.456"N	103°53'47.219"W	1.49	
6216.00	1.000	351.400	6214.99	-2.85	-2.81	7.31	635249.81	409013.89	32°07'25.471"N	103°53'47.221"W	0.21	
6311.00	0.800	336.300	6309.98	-1.42	-1.38	6.92	635249.42	409015.32	32°07'25.485"N	103°53'47.225"W	0.32	
6406.00	0.900	325.200	6404.97	-0.20	-0.16	6.22	635248.72	409016.54	32°07'25.497"N	103°53'47.233"W	0.20	
6501.00	0.600	318.600	6499.96	0.79	0.82	5.47	635247.97	409017.52	32°07'25.507"N	103°53'47.242"W	0.33	
6596.00	0.600	350.000	6594.95	1.66	1.69	5.05	635247.55	409018.39	32°07'25.515"N	103°53'47.247"W	0.34	
6692.00	0.800	353.200	6690.94	2.82	2.85	4.89	635247.39	409019.55	32°07'25.527"N	103°53'47.249"W	0.21	
6786.00	0.700	349.300	6784.94	4.04	4.06	4.70	635247.20	409020.76	32°07'25.539"N	103°53'47.251"W	0.12	
6882.00	0.600	336.500	6880.93	5.08	5.10	4.39	635246.89	409021.80	32°07'25.549"N	103°53'47.254"W	0.18	
6977.00	0.300	272.400	6975.93	5.55	5.57	3.95	635246.45	409022.27	32°07'25.554"N	103°53'47.260"W	0.57	
7072.00	0.400	48.200	7070.93	5.78	5.80	3.95	635246.45	409022.50	32°07'25.556"N	103°53'47.260"W	0.68	
7167.00	0.400	47.600	7165.92	6.22	6.24	4.44	635246.94	409022.94	32°07'25.560"N	103°53'47.254"W	0.00	
7262.00	0.100	88.400	7260.92	6.44	6.47	4.77	635247.27	409023.17	32°07'25.563"N	103°53'47.250"W	0.35	
7357.00	0.400	182.900	7355.92	6.11	6.14	4.83	635247.33	409022.84	32°07'25.559"N	103°53'47.249"W	0.44	
7452.00	0.400	284.800	7450.92	5.87	5.89	4.49	635246.99	409022.59	32°07'25.557"N	103°53'47.253"W	0.65	
7547.00	0.800	256.700	7545.92	5.81	5.83	3.53	635246.03	409022.53	32°07'25.556"N	103°53'47.264"W	0.51	
7643.00	0.800	60.200	7641.91	5.99	6.00	3.46	635245.96	409022.70	32°07'25.558"N	103°53'47.265"W	1.65	
7737.00	1.200	63.600	7735.90	6.74	6.77	4.91	635247.41	409023.47	32°07'25.566"N	103°53'47.248"W	0.43	
7833.00	1.300	63.600	7831.88	7.66	7.70	6.78	635249.28	409024.40	32°07'25.575"N	103°53'47.227"W	0.10	
7927.00	0.700	64.200	7925.86	8.38	8.42	8.26	635250.76	409025.12	32°07'25.582"N	103°53'47.209"W	0.64	
8022.00	0.300	352.300	8020.86	8.87	8.92	8.75	635251.25	409025.62	32°07'25.587"N	103°53'47.204"W	0.71	
8117.00	1.300	273.700	8115.85	9.20	9.24	7.64	635250.14	409025.94	32°07'25.590"N	103°53'47.217"W	1.34	
8212.00	2.000	236.800	8210.81	8.37	8.40	5.17	635247.67	409025.10	32°07'25.582"N	103°53'47.245"W	1.30	
8307.00	1.200	247.600	8305.77	7.10	7.11	2.87	635245.37	409023.81	32°07'25.569"N	103°53'47.272"W	0.90	
8401.00	0.800	204.300	8399.76	6.13	6.14	1.69	635244.19	409022.84	32°07'25.560"N	103°53'47.286"W	0.88	
8496.00	0.600	146.400	8494.75	5.11	5.12	1.69	635244.19	409021.82	32°07'25.549"N	103°53'47.286"W	0.74	
8592.00	0.800	82.100	8590.75	4.78	4.80	2.63	635245.13	409021.49	32°07'25.546"N	103°53'47.275"W	0.80	
8715.00	0.300	195.600	8713.74	4.58	4.60	3.40	635245.90	409021.30	32°07'25.544"N	103°53'47.266"W	0.78	
8809.00	0.200	35.100	8807.74	4.48	4.50	3.42	635245.92	409021.20	32°07'25.543"N	103°53'47.266"W	0.52	
8905.00	0.200	136.900	8903.74	4.50	4.51	3.64	635246.13	409021.21	32°07'25.543"N	103°53'47.263"W	0.32	
8999.00	0.400	197.500	8997.74	4.06	4.08	3.65	635246.15	409020.78	32°07'25.539"N	103°53'47.263"W	0.37	
9094.00	0.400	124.800	9092.74	3.56	3.58	3.82	635246.32	409020.28	32°07'25.534"N	103°53'47.261"W	0.50	
9189.00	0.700	61.100	9187.74	3.64	3.67	4.60	635247.10	409020.37	32°07'25.535"N	103°53'47.252"W	0.67	
9284.00	0.700	76.200	9282.73	4.06	4.09	5.67	635248.17	409020.79	32°07'25.539"N	103°53'47.240"W	0.19	
9379.00	0.500	96.200	9377.73	4.14	4.18	6.65	635249.15	409020.88	32°07'25.540"N	103°53'47.228"W	0.30	



Actual Wellpath Report

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	Poker Lake Unit CVX JV PC #021H (Latshaw #4)
Area	Eddy County, NM	Well	SL 330 FSL, 675 FEL
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JV PC #021H Actual
Facility	PLU CVX JV (RR #010H and PC #021H {Pad}) Sec. 17-25S-30E		

WELLPATH DATA (195 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
9478.00	0.600	97.100	9476.72	4.03	4.07	7.59	635250.09	409020.77	32°07'25.539"N	103°53'47.217"W	0.10	
9510.00	1.100	126.900	9508.72	3.82	3.86	8.00	635250.50	409020.56	32°07'25.537"N	103°53'47.213"W	2.04	
9541.00	1.300	8.300	9539.71	3.99	4.03	8.29	635250.79	409020.73	32°07'25.538"N	103°53'47.209"W	6.66	
9573.00	3.500	14.400	9571.68	5.29	5.34	8.59	635251.09	409022.04	32°07'25.551"N	103°53'47.206"W	6.91	
9605.00	6.800	12.700	9603.55	8.08	8.13	9.25	635251.75	409024.83	32°07'25.579"N	103°53'47.198"W	10.32	
9636.00	9.900	11.100	9634.22	12.48	12.54	10.16	635252.66	409029.24	32°07'25.623"N	103°53'47.187"W	10.03	
9668.00	12.600	9.600	9665.60	18.62	18.68	11.28	635253.78	409035.38	32°07'25.683"N	103°53'47.174"W	8.49	
9700.00	15.400	10.600	9696.65	26.23	26.30	12.64	635255.14	409043.00	32°07'25.759"N	103°53'47.158"W	8.78	
9731.00	18.000	8.500	9726.34	35.01	35.09	14.11	635256.61	409051.78	32°07'25.845"N	103°53'47.140"W	8.61	
9763.00	20.500	2.600	9756.55	45.49	45.58	15.09	635257.59	409062.27	32°07'25.949"N	103°53'47.128"W	9.89	
9795.00	23.500	356.100	9786.22	57.46	57.54	14.91	635257.41	409074.24	32°07'26.068"N	103°53'47.130"W	12.06	
9826.00	26.800	351.400	9814.28	70.55	70.63	13.45	635255.94	409087.32	32°07'26.197"N	103°53'47.146"W	12.44	
9858.00	30.400	348.900	9842.37	85.65	85.71	10.81	635253.31	409102.40	32°07'26.347"N	103°53'47.176"W	11.85	
9890.00	32.900	349.400	9869.61	102.16	102.20	7.65	635250.15	409118.89	32°07'26.510"N	103°53'47.212"W	7.86	
9922.00	36.000	350.700	9895.99	120.00	120.03	4.53	635247.03	409136.72	32°07'26.686"N	103°53'47.247"W	9.96	
9954.00	39.000	353.000	9921.38	139.30	139.31	1.78	635244.28	409156.00	32°07'26.877"N	103°53'47.278"W	10.34	
9985.00	42.400	355.300	9944.88	159.41	159.41	-0.26	635242.24	409176.10	32°07'27.076"N	103°53'47.301"W	11.99	
10017.00	44.900	356.300	9968.03	181.45	181.44	-1.88	635240.62	409198.13	32°07'27.294"N	103°53'47.319"W	8.10	
10049.00	46.500	358.100	9990.38	204.33	204.31	-2.99	635239.51	409221.00	32°07'27.521"N	103°53'47.331"W	6.42	
10080.00	48.800	0.400	10011.27	227.23	227.22	-3.28	635239.22	409243.90	32°07'27.747"N	103°53'47.333"W	9.22	
10112.00	51.800	0.900	10031.70	251.85	251.83	-3.00	635239.50	409268.51	32°07'27.991"N	103°53'47.329"W	9.45	
10143.00	55.000	1.700	10050.19	276.72	276.71	-2.43	635240.07	409293.39	32°07'28.237"N	103°53'47.321"W	10.53	
10175.00	58.500	1.900	10067.73	303.46	303.45	-1.59	635240.91	409320.13	32°07'28.502"N	103°53'47.310"W	10.95	
10207.00	61.700	1.700	10083.68	331.18	331.18	-0.72	635241.78	409347.85	32°07'28.776"N	103°53'47.299"W	10.01	
10239.00	65.500	1.400	10097.90	359.82	359.82	-0.05	635242.55	409376.50	32°07'29.059"N	103°53'47.288"W	11.90	
10270.00	69.400	1.800	10109.79	388.43	388.44	0.85	635243.35	409405.11	32°07'29.343"N	103°53'47.278"W	12.64	
10302.00	73.000	2.300	10120.10	418.69	418.71	1.94	635244.44	409435.38	32°07'29.642"N	103°53'47.263"W	11.35	
10334.00	75.700	3.200	10128.73	449.45	449.48	3.42	635245.92	409466.15	32°07'29.947"N	103°53'47.245"W	8.86	
10365.00	78.100	2.600	10135.76	479.60	479.63	4.95	635247.45	409496.30	32°07'30.245"N	103°53'47.226"W	7.97	
10397.00	80.100	1.700	10141.81	510.99	511.03	6.12	635248.62	409527.69	32°07'30.556"N	103°53'47.210"W	6.83	
10429.00	83.400	1.000	10146.40	542.64	542.69	6.87	635249.37	409559.35	32°07'30.869"N	103°53'47.200"W	10.54	
10460.00	87.300	0.800	10148.91	573.53	573.57	7.35	635249.85	409590.23	32°07'31.174"N	103°53'47.193"W	12.60	
10492.00	91.000	0.600	10149.39	605.51	605.56	7.74	635250.24	409622.22	32°07'31.491"N	103°53'47.187"W	11.58	
10524.00	92.100	359.700	10148.52	637.50	637.55	7.83	635250.33	409654.20	32°07'31.807"N	103°53'47.185"W	4.44	
10619.00	93.800	0.100	10143.63	732.37	732.42	7.66	635250.16	409749.07	32°07'32.746"N	103°53'47.182"W	1.84	
10714.00	91.700	359.900	10139.07	827.25	827.31	7.66	635250.16	409843.95	32°07'33.685"N	103°53'47.178"W	2.22	
10809.00	89.400	0.000	10138.16	922.24	922.30	7.58	635250.08	409938.93	32°07'34.625"N	103°53'47.174"W	2.42	
10905.00	91.500	358.200	10137.41	1018.22	1018.27	6.07	635248.57	410034.90	32°07'35.575"N	103°53'47.187"W	2.88	
10999.00	91.500	359.500	10134.95	1112.18	1112.22	4.19	635246.69	410128.84	32°07'36.505"N	103°53'47.205"W	1.38	
11095.00	87.900	358.500	10135.45	1208.15	1208.19	2.51	635245.01	410224.80	32°07'37.454"N	103°53'47.220"W	3.89	
11190.00	88.400	358.400	10138.52	1303.08	1303.10	-0.06	635242.44	410319.71	32°07'38.394"N	103°53'47.245"W	0.54	
11285.00	89.000	358.200	10140.67	1398.03	1398.03	-2.87	635239.63	410414.63	32°07'39.333"N	103°53'47.273"W	0.67	
11380.00	89.400	358.600	10142.00	1492.99	1492.99	-5.53	635236.97	410509.58	32°07'40.273"N	103°53'47.300"W	0.60	
11475.00	89.800	358.400	10142.66	1587.97	1587.95	-8.01	635234.49	410604.54	32°07'41.213"N	103°53'47.324"W	0.47	
11570.00	90.100	0.000	10142.75	1682.97	1682.94	-9.34	635233.16	410699.52	32°07'42.153"N	103°53'47.335"W	1.71	



Actual Wellpath Report

No. 021H AWP

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REFERENCE WELL PATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	Poker Lake Unit CVX JV PC #021H (Latshaw #4)
Area	Eddy County, NM	Well	SL 330 FSL, 675 FEL
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JV PC #021H Actual
Facility	PLU CVX JV (RR #010H and PC #021H {Pad}) Sec. 17-25S-30E		

WELLPATH DATA (195 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
11665.00	90.800	0.000	10142.00	1777.96	1777.94	-9.34	635233.16	410794.51	32°07'43.093"N	103°53'47.331"W	0.74	
11760.00	89.500	359.600	10141.75	1872.96	1872.93	-9.67	635232.83	410889.50	32°07'44.033"N	103°53'47.330"W	1.43	
11855.00	89.700	359.400	10142.41	1967.95	1967.93	-10.50	635232.00	410984.49	32°07'44.973"N	103°53'47.335"W	0.30	
11950.00	89.800	359.000	10142.83	2062.95	2062.92	-11.83	635230.67	411079.47	32°07'45.913"N	103°53'47.346"W	0.43	
12045.00	89.800	356.700	10143.16	2157.89	2157.84	-15.39	635227.11	411174.39	32°07'46.852"N	103°53'47.383"W	2.42	
12140.00	90.600	357.000	10142.83	2252.78	2252.70	-20.61	635221.89	411269.24	32°07'47.791"N	103°53'47.439"W	0.90	
12235.00	90.500	354.600	10141.92	2347.55	2347.43	-27.57	635214.93	411363.96	32°07'48.729"N	103°53'47.516"W	2.53	
12330.00	90.600	356.500	10141.00	2442.29	2442.14	-34.94	635207.56	411458.66	32°07'49.666"N	103°53'47.597"W	2.00	
12425.00	90.500	356.400	10140.09	2537.13	2536.95	-40.82	635201.68	411553.47	32°07'50.605"N	103°53'47.661"W	0.15	
12520.00	89.700	358.000	10139.93	2632.04	2631.83	-45.46	635197.04	411648.34	32°07'51.544"N	103°53'47.710"W	1.88	
12615.00	90.200	0.900	10140.01	2727.03	2726.82	-46.37	635196.13	411743.32	32°07'52.484"N	103°53'47.716"W	3.10	
12710.00	90.400	0.400	10139.51	2822.02	2821.81	-45.29	635197.21	411838.31	32°07'53.424"N	103°53'47.699"W	0.57	
12805.00	91.300	2.000	10138.10	2916.97	2916.77	-43.31	635199.20	411933.26	32°07'54.364"N	103°53'47.672"W	1.93	
12900.00	90.600	0.700	10136.53	3011.91	3011.73	-41.07	635201.43	412028.22	32°07'55.303"N	103°53'47.641"W	1.55	
12995.00	90.800	358.400	10135.37	3106.90	3106.72	-41.81	635200.69	412123.19	32°07'56.243"N	103°53'47.646"W	2.43	
13091.00	90.100	0.300	10134.61	3202.89	3202.70	-42.90	635199.60	412219.17	32°07'57.193"N	103°53'47.654"W	2.11	
13186.00	90.000	359.600	10134.53	3297.89	3297.70	-42.99	635199.52	412314.16	32°07'58.133"N	103°53'47.650"W	0.74	
13280.00	90.900	357.400	10133.79	3391.86	3391.66	-45.45	635197.06	412408.11	32°07'59.063"N	103°53'47.674"W	2.53	
13375.00	90.200	358.600	10132.88	3486.81	3486.59	-48.76	635193.74	412503.04	32°08'00.003"N	103°53'47.708"W	1.46	
13470.00	91.000	1.900	10131.88	3581.79	3581.57	-48.35	635194.16	412598.02	32°08'00.942"N	103°53'47.699"W	3.57	
13566.00	92.600	1.600	10128.87	3677.67	3677.48	-45.42	635197.09	412693.91	32°08'01.891"N	103°53'47.661"W	1.70	
13661.00	89.200	3.300	10127.38	3772.53	3772.36	-41.36	635201.15	412788.79	32°08'02.830"N	103°53'47.609"W	4.00	
13756.00	88.100	4.400	10129.61	3867.25	3867.12	-34.98	635207.52	412883.54	32°08'03.767"N	103°53'47.530"W	1.64	
13851.00	88.200	4.100	10132.68	3961.90	3961.81	-27.94	635214.56	412978.22	32°08'04.704"N	103°53'47.444"W	0.33	
13946.00	87.900	4.200	10135.91	4056.56	4056.50	-21.07	635221.43	413072.91	32°08'05.641"N	103°53'47.360"W	0.33	
14041.00	89.500	4.100	10138.07	4151.24	4151.23	-14.20	635228.30	413167.63	32°08'06.578"N	103°53'47.275"W	1.69	
14136.00	89.000	5.900	10139.31	4245.82	4245.85	-5.92	635236.58	413262.25	32°08'07.514"N	103°53'47.174"W	1.97	
14231.00	90.400	4.300	10139.81	4340.39	4340.47	2.52	635245.02	413356.86	32°08'08.450"N	103°53'47.072"W	2.24	
14326.00	90.500	4.500	10139.06	4435.07	4435.19	9.81	635252.31	413451.57	32°08'09.387"N	103°53'46.983"W	0.24	
14451.00	91.000	2.000	10137.43	4559.81	4559.97	16.90	635259.40	413576.34	32°08'10.621"N	103°53'46.894"W	2.04	
14547.00	90.200	359.700	10136.42	4655.77	4655.94	18.32	635260.82	413672.31	32°08'11.571"N	103°53'46.873"W	2.54	
14641.00	90.900	0.200	10135.52	4749.77	4749.94	18.24	635260.74	413766.30	32°08'12.501"N	103°53'46.870"W	0.92	
14736.00	90.800	359.300	10134.11	4844.76	4844.93	17.82	635260.32	413861.28	32°08'13.441"N	103°53'46.870"W	0.95	
14831.00	90.100	358.500	10133.36	4939.74	4939.90	16.00	635258.50	413956.25	32°08'14.381"N	103°53'46.887"W	1.12	
14926.00	91.800	359.600	10131.79	5034.72	5034.87	14.43	635256.92	414051.21	32°08'15.321"N	103°53'46.901"W	2.13	
15021.00	89.800	358.700	10130.46	5129.70	5129.85	13.02	635255.52	414146.18	32°08'16.261"N	103°53'46.912"W	2.31	
15116.00	90.600	358.700	10130.13	5224.68	5224.82	10.86	635253.36	414241.15	32°08'17.201"N	103°53'46.933"W	0.84	
15211.00	87.300	357.400	10131.87	5319.61	5319.74	7.63	635250.13	414336.05	32°08'18.140"N	103°53'46.966"W	3.73	
15306.00	88.300	357.300	10135.52	5414.46	5414.56	3.24	635245.74	414430.87	32°08'19.079"N	103°53'47.013"W	1.06	
15401.00	89.500	357.800	10137.34	5509.38	5509.46	-0.82	635241.68	414525.76	32°08'20.018"N	103°53'47.055"W	1.37	
15496.00	90.000	357.300	10137.76	5604.31	5604.37	-4.88	635237.62	414620.66	32°08'20.957"N	103°53'47.098"W	0.74	
15591.00	90.800	357.400	10137.09	5699.23	5699.26	-9.27	635233.23	414715.55	32°08'21.896"N	103°53'47.145"W	0.85	
15686.00	92.000	357.500	10134.77	5794.13	5794.14	-13.50	635229.00	414810.42	32°08'22.835"N	103°53'47.189"W	1.27	
15781.00	91.000	356.600	10132.29	5888.99	5888.98	-18.38	635224.12	414905.25	32°08'23.774"N	103°53'47.242"W	1.42	
15876.00	88.700	357.000	10132.54	5983.86	5983.82	-23.69	635218.81	415000.09	32°08'24.713"N	103°53'47.299"W	2.46	



Actual Wellpath Report

No. 021H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, LP	Slot	Poker Lake Unit CVX JV PC #021H (Latshaw #4)
Area	Eddy County, NM	Well	SL 330 FSL, 675 FEL
Field	Eddy County, NM (NAD 27 / Grid)	Wellbore	PLU CVX JV PC #021H Actual
Facility	PLU CVX JV (RR #010H and PC #021H {Pad}) Sec. 17-25S-30E		

WELLPATH DATA (195 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
15971.00	89.200	357.300	10134.28	6078.75	6078.69	-28.41	635214.09	415094.95	32°08'25.652"N	103°53'47.349"W	0.61	
16066.00	89.600	357.100	10135.27	6173.66	6173.57	-33.05	635209.45	415189.83	32°08'26.591"N	103°53'47.399"W	0.47	
16161.00	90.400	356.800	10135.27	6268.55	6268.44	-38.11	635204.40	415284.68	32°08'27.530"N	103°53'47.453"W	0.90	
16249.00	90.600	358.600	10134.50	6356.49	6356.36	-41.64	635200.87	415372.60	32°08'28.400"N	103°53'47.490"W	2.06	
16344.00	90.100	359.900	10133.92	6451.48	6451.35	-42.88	635199.62	415467.58	32°08'29.340"N	103°53'47.500"W	1.47	
16439.00	91.300	0.200	10132.76	6546.47	6546.34	-42.80	635199.71	415562.57	32°08'30.280"N	103°53'47.495"W	1.30	
16534.00	92.400	0.700	10129.70	6641.41	6641.28	-42.05	635200.45	415657.50	32°08'31.220"N	103°53'47.482"W	1.27	
16629.00	92.300	0.800	10125.80	6736.32	6736.19	-40.81	635201.69	415752.41	32°08'32.159"N	103°53'47.463"W	0.15	
16723.00	91.000	0.400	10123.09	6830.26	6830.15	-39.83	635202.68	415846.36	32°08'33.088"N	103°53'47.447"W	1.45	
16818.00	89.300	0.400	10122.84	6925.25	6925.14	-39.16	635203.34	415941.34	32°08'34.028"N	103°53'47.435"W	1.79	
16913.00	89.500	0.300	10123.84	7020.24	7020.13	-38.58	635203.92	416036.33	32°08'34.968"N	103°53'47.423"W	0.24	
17008.00	90.200	0.400	10124.09	7115.23	7115.13	-38.00	635204.50	416131.32	32°08'35.908"N	103°53'47.412"W	0.74	
17103.00	91.400	0.500	10122.76	7210.21	7210.12	-37.26	635205.25	416226.30	32°08'36.848"N	103°53'47.399"W	1.27	
17150.00	91.800	0.600	10121.45	7257.19	7257.10	-36.80	635205.70	416273.28	32°08'37.313"N	103°53'47.392"W	0.88	
17202.00	91.800	0.600	10119.82	7309.16	7309.07	-36.26	635206.24	416325.24	32°08'37.827"N	103°53'47.383"W	0.00	Projection to Bit

WELLPATH COMPOSITION - Ref Wellbore: PLU CVX JV PC #021H Actual - Ref Wellpath: No. 021H AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
20.56	1019.00	Generic gyro - northseeking (Standard)	MS Gyro Surveys <100 - 1019>	PLU CVX JV PC #021H Actual
1019.00	17150.00	NaviTrak (Standard)	BHI MWD Navitrak <1091 - 17150>	PLU CVX JV PC #021H Actual
17150.00	17202.00	Blind Drilling (std)	Projection to bit	PLU CVX JV PC #021H Actual