



Actual Wellpath Report

No.109H AWP

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30-015-38114



REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No.109H SHL
Area	Eddy County, NM	Well	No.109H
Field	JRU NAD27	Wellbore	No.109H AWB
Facility	JRU No. 109H		

REPORT SETUP INFORMATION			
Projection System	NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet	Software System	WellArchitect® 3.0.0
North Reference	Grid	User	Strosam
Scale	0.999937	Report Generated	1/10/2012 at 7:37:45 AM
Convergence at slot	0.27° East	Database/Source file	WA_Midland/No.109H_AWB.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	656438.42	485233.55	32°19'58.823"N	103°49'36.654"W
Facility Reference Pt			656438.42	485233.55	32°19'58.823"N	103°49'36.654"W
Field Reference Pt			652495.44	494904.92	32°21'34.711"N	103°50'22.090"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Rig on No.109H SHL (KB) to Facility Vertical Datum	22.00ft
Horizontal Reference Pt	Slot	Rig on No.109H SHL (KB) to Mean Sea Level	3316.00ft
Vertical Reference Pt	Rig on No.109H SHL (KB)	Rig on No.109H SHL (KB) to Mud Line at Slot (No.109H SHL)	22.00ft
MD Reference Pt	Rig on No.109H SHL (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	105.85°



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Field	JRU NAD27	Wellbore	No.109H AWP
Facility	JRU No. 109H		

WELLPATH DATA (157 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]	
0.00†	0.000	344.900	0.00	0.00	0.00	0.00	656438.42	485233.55	32°19'58.823"N	103°49'36.654"W	0.00	
22.00	0.000	344.900	22.00	0.00	0.00	0.00	656438.42	485233.55	32°19'58.823"N	103°49'36.654"W	0.00	
646.00	0.000	0.000	646.00	0.00	0.00	0.00	656438.42	485233.55	32°19'58.823"N	103°49'36.654"W	0.00	
706.00	1.800	344.900	705.99	-0.48	0.91	-0.25	656438.17	485234.46	32°19'58.832"N	103°49'36.657"W	3.00	
738.00	1.900	324.000	737.97	-1.16	1.82	-0.69	656437.73	485235.37	32°19'58.841"N	103°49'36.662"W	2.12	
798.00	2.600	304.000	797.93	-3.24	3.39	-2.40	656436.02	485236.94	32°19'58.857"N	103°49'36.682"W	1.74	
832.00	2.900	295.000	831.89	-4.82	4.18	-3.82	656434.60	485237.73	32°19'58.864"N	103°49'36.699"W	1.54	
888.00	2.600	274.800	887.83	-7.46	4.89	-6.37	656432.05	485238.44	32°19'58.872"N	103°49'36.728"W	1.80	
950.00	1.500	258.200	949.79	-9.56	4.84	-8.57	656429.85	485238.39	32°19'58.871"N	103°49'36.754"W	2.00	
1042.00	0.400	90.900	1041.78	-10.32	4.59	-9.42	656429.00	485238.14	32°19'58.869"N	103°49'36.764"W	2.06	
1134.00	1.600	183.500	1133.76	-9.73	3.30	-9.18	656429.24	485236.85	32°19'58.856"N	103°49'36.761"W	1.81	
1323.00	0.900	99.100	1322.73	-7.69	0.43	-7.88	656430.54	485233.98	32°19'58.828"N	103°49'36.746"W	0.93	
1510.00	1.000	7.200	1509.71	-6.48	1.82	-6.22	656432.20	485235.37	32°19'58.841"N	103°49'36.727"W	0.73	
1698.00	0.700	314.000	1697.70	-7.74	4.25	-6.84	656431.58	485237.80	32°19'58.865"N	103°49'36.734"W	0.43	
1888.00	0.900	194.900	1887.69	-8.74	3.61	-8.06	656430.36	485237.16	32°19'58.859"N	103°49'36.748"W	0.73	
2076.00	0.900	116.100	2075.67	-7.26	1.53	-7.11	656431.31	485235.08	32°19'58.838"N	103°49'36.737"W	0.61	
2264.00	0.700	62.900	2263.65	-4.97	1.41	-4.77	656433.65	485234.96	32°19'58.837"N	103°49'36.710"W	0.39	
2455.00	1.100	325.800	2454.64	-5.52	3.46	-4.76	656433.66	485237.00	32°19'58.857"N	103°49'36.710"W	0.72	
2643.00	1.000	264.800	2642.61	-8.43	4.80	-7.41	656431.01	485238.35	32°19'58.871"N	103°49'36.740"W	0.57	
2830.00	0.800	203.000	2829.59	-10.12	3.45	-9.54	656428.88	485237.00	32°19'58.857"N	103°49'36.765"W	0.50	
3018.00	1.000	237.300	3017.57	-11.37	1.36	-11.43	656426.99	485234.90	32°19'58.837"N	103°49'36.788"W	0.30	
3211.00	1.100	215.200	3210.54	-13.10	-1.07	-13.92	656424.50	485232.48	32°19'58.813"N	103°49'36.817"W	0.21	
3398.00	1.300	116.400	3397.51	-11.61	-3.48	-13.05	656425.37	485230.07	32°19'58.789"N	103°49'36.807"W	0.98	
3492.00	0.500	334.300	3491.51	-10.83	-3.58	-12.28	656426.14	485229.97	32°19'58.788"N	103°49'36.798"W	1.83	
3586.00	1.100	115.000	3585.50	-10.21	-3.59	-11.64	656426.78	485229.95	32°19'58.788"N	103°49'36.790"W	1.62	
3775.00	1.100	22.600	3774.48	-8.21	-2.69	-9.30	656429.12	485230.86	32°19'58.797"N	103°49'36.763"W	0.84	
3890.00	0.800	129.400	3889.47	-7.34	-2.18	-8.25	656430.17	485231.37	32°19'58.802"N	103°49'36.751"W	1.34	
4008.00	1.100	156.500	4007.45	-5.87	-3.74	-7.16	656431.26	485229.81	32°19'58.786"N	103°49'36.738"W	0.45	
4100.00	1.100	155.100	4099.44	-4.73	-5.35	-6.44	656431.98	485228.20	32°19'58.770"N	103°49'36.730"W	0.03	
4195.00	1.000	158.000	4194.42	-3.63	-6.95	-5.74	656432.68	485226.60	32°19'58.754"N	103°49'36.722"W	0.12	
4290.00	1.100	156.500	4289.40	-2.54	-8.55	-5.07	656433.35	485225.00	32°19'58.738"N	103°49'36.714"W	0.11	
4385.00	1.100	154.300	4384.39	-1.36	-10.21	-4.31	656434.11	485223.34	32°19'58.722"N	103°49'36.705"W	0.04	
4480.00	1.200	118.300	4479.37	0.22	-11.50	-3.04	656435.38	485222.05	32°19'58.709"N	103°49'36.690"W	0.75	
4572.00	2.700	70.800	4571.32	2.93	-11.25	-0.14	656438.27	485222.30	32°19'58.712"N	103°49'36.657"W	2.27	
4666.00	3.300	68.100	4665.19	6.88	-9.51	4.46	656442.88	485224.04	32°19'58.729"N	103°49'36.603"W	0.66	
4760.00	1.900	48.200	4759.09	9.86	-7.46	8.13	656446.55	485226.09	32°19'58.749"N	103°49'36.560"W	1.75	
4856.00	1.900	37.600	4855.04	11.30	-5.14	10.29	656448.70	485228.41	32°19'58.772"N	103°49'36.535"W	0.37	
4950.00	1.700	35.300	4948.99	12.34	-2.77	12.04	656450.46	485230.78	32°19'58.795"N	103°49'36.514"W	0.23	
5045.00	1.700	35.000	5043.95	13.27	-0.46	13.67	656452.08	485233.09	32°19'58.818"N	103°49'36.495"W	0.01	
5138.00	1.800	35.500	5136.91	14.22	1.86	15.30	656453.72	485235.41	32°19'58.841"N	103°49'36.476"W	0.11	
5231.00	1.000	21.100	5229.88	14.78	3.80	16.45	656454.86	485237.35	32°19'58.860"N	103°49'36.462"W	0.93	
5327.00	0.900	12.800	5325.87	14.82	5.32	16.91	656455.33	485238.87	32°19'58.875"N	103°49'36.457"W	0.18	
5420.00	0.800	10.400	5418.86	14.72	6.67	17.19	656455.61	485240.22	32°19'58.888"N	103°49'36.454"W	0.11	
5515.00	0.900	4.900	5513.85	14.51	8.07	17.38	656455.79	485241.62	32°19'58.902"N	103°49'36.451"W	0.14	
5610.00	0.900	7.600	5608.83	14.26	9.55	17.54	656455.96	485243.10	32°19'58.917"N	103°49'36.449"W	0.04	



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Field	JRU NAD27	Wellbore	No.109H AWB
Facility	JRU No. 109H		

WELLPATH DATA (157 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]
5704.00	0.800	11.100	5702.82	14.10	10.93	17.76	656456.18	485244.47	32°19'58.930"N	103°49'36.447"W	0.12
5798.00	0.500	21.800	5796.82	14.09	11.95	18.04	656456.46	485245.50	32°19'58.940"N	103°49'36.443"W	0.34
5891.00	0.300	13.500	5889.82	14.12	12.56	18.25	656456.67	485246.11	32°19'58.946"N	103°49'36.441"W	0.22
5985.00	0.200	27.200	5983.81	14.15	12.95	18.38	656456.80	485246.50	32°19'58.950"N	103°49'36.439"W	0.12
6078.00	0.200	5.600	6076.81	14.15	13.26	18.47	656456.89	485246.80	32°19'58.953"N	103°49'36.438"W	0.08
6173.00	0.200	298.100	6171.81	13.96	13.50	18.34	656456.76	485247.05	32°19'58.956"N	103°49'36.440"W	0.23
6266.00	0.400	283.000	6264.81	13.47	13.65	17.88	656456.30	485247.20	32°19'58.957"N	103°49'36.445"W	0.23
6360.00	0.500	273.200	6358.81	12.75	13.74	17.15	656455.57	485247.29	32°19'58.958"N	103°49'36.454"W	0.13
6453.00	0.600	276.700	6451.80	11.87	13.82	16.26	656454.68	485247.37	32°19'58.959"N	103°49'36.464"W	0.11
6547.00	0.700	269.900	6545.80	10.83	13.88	15.20	656453.62	485247.43	32°19'58.960"N	103°49'36.476"W	0.13
6640.00	0.700	265.300	6638.79	9.75	13.83	14.07	656452.48	485247.38	32°19'58.959"N	103°49'36.490"W	0.06
6734.00	0.800	259.300	6732.78	8.63	13.66	12.85	656451.27	485247.21	32°19'58.957"N	103°49'36.504"W	0.14
6828.00	0.700	257.200	6826.78	7.54	13.41	11.64	656450.06	485246.96	32°19'58.955"N	103°49'36.518"W	0.11
6922.00	0.700	261.900	6920.77	6.51	13.21	10.52	656448.93	485246.75	32°19'58.953"N	103°49'36.531"W	0.06
6984.00	0.800	253.000	6982.76	5.80	13.03	9.73	656448.15	485246.58	32°19'58.951"N	103°49'36.540"W	0.25
7016.00	0.900	201.100	7014.76	5.59	12.73	9.42	656447.84	485246.28	32°19'58.948"N	103°49'36.544"W	2.34
7047.00	2.700	165.200	7045.74	5.94	11.79	9.52	656447.94	485245.34	32°19'58.939"N	103°49'36.543"W	6.58
7078.00	5.300	154.300	7076.67	7.26	9.80	10.33	656448.75	485243.35	32°19'58.919"N	103°49'36.533"W	8.70
7108.00	8.400	152.400	7106.45	9.69	6.61	11.95	656450.36	485240.15	32°19'58.888"N	103°49'36.515"W	10.36
7140.00	11.600	155.200	7137.96	13.39	1.61	14.38	656452.80	485235.16	32°19'58.838"N	103°49'36.487"W	10.11
7171.00	15.000	155.600	7168.12	18.02	-4.87	17.34	656455.76	485228.68	32°19'58.774"N	103°49'36.452"W	10.97
7202.00	18.700	154.700	7197.79	23.88	-13.02	21.13	656459.54	485220.53	32°19'58.693"N	103°49'36.409"W	11.96
7234.00	22.100	156.300	7227.78	31.09	-23.17	25.74	656464.16	485210.38	32°19'58.592"N	103°49'36.356"W	10.77
7265.00	25.300	158.100	7256.16	38.86	-34.66	30.56	656468.97	485198.89	32°19'58.478"N	103°49'36.300"W	10.58
7296.00	29.000	159.500	7283.74	47.37	-47.85	35.66	656474.08	485185.70	32°19'58.348"N	103°49'36.241"W	12.11
7328.00	32.800	160.200	7311.19	57.03	-63.28	41.31	656479.73	485170.28	32°19'58.195"N	103°49'36.176"W	11.93
7359.00	36.600	160.600	7336.67	67.26	-79.90	47.23	656485.65	485153.65	32°19'58.030"N	103°49'36.108"W	12.28
7390.00	40.400	160.700	7360.93	78.38	-98.11	53.62	656492.04	485135.45	32°19'57.850"N	103°49'36.035"W	12.26
7421.00	44.500	160.200	7383.80	90.50	-117.82	60.63	656499.04	485115.74	32°19'57.654"N	103°49'35.954"W	13.27
7453.00	48.000	158.600	7405.92	104.24	-139.45	68.77	656507.18	485094.11	32°19'57.440"N	103°49'35.861"W	11.52
7484.00	51.000	156.500	7426.06	118.85	-161.22	77.78	656516.19	485072.34	32°19'57.224"N	103°49'35.757"W	10.96
7516.00	54.700	154.000	7445.38	135.46	-184.37	88.46	656526.88	485049.19	32°19'56.994"N	103°49'35.634"W	13.13
7547.00	58.100	152.800	7462.53	152.88	-207.46	100.03	656538.44	485026.11	32°19'56.765"N	103°49'35.500"W	11.43
7578.00	61.600	151.400	7478.10	171.42	-231.14	112.57	656550.98	485002.43	32°19'56.530"N	103°49'35.355"W	11.95
7609.00	65.900	150.200	7491.81	191.10	-255.40	126.14	656564.55	484978.17	32°19'56.290"N	103°49'35.198"W	14.30
7640.00	70.000	150.000	7503.44	211.68	-280.30	140.46	656578.87	484953.27	32°19'56.043"N	103°49'35.033"W	13.24
7671.00	73.700	148.200	7513.10	233.13	-305.57	155.59	656594.00	484928.00	32°19'55.792"N	103°49'34.858"W	13.15
7703.00	76.700	146.300	7521.27	256.34	-331.58	172.32	656610.73	484901.99	32°19'55.534"N	103°49'34.664"W	10.99
7734.00	79.400	143.100	7527.69	279.95	-356.33	189.85	656628.26	484877.24	32°19'55.288"N	103°49'34.461"W	13.34
7764.00	82.100	141.800	7532.52	303.72	-379.80	207.89	656646.30	484853.77	32°19'55.055"N	103°49'34.252"W	9.96
7795.00	84.400	141.700	7536.16	328.66	-403.97	226.95	656665.36	484829.60	32°19'54.815"N	103°49'34.032"W	7.43
7827.00	86.400	141.400	7538.73	354.56	-428.95	246.78	656685.19	484804.62	32°19'54.567"N	103°49'33.802"W	6.32
7858.00	87.300	141.300	7540.43	379.76	-453.13	266.12	656704.52	484780.45	32°19'54.327"N	103°49'33.578"W	2.92
7890.00	88.000	141.200	7541.74	405.82	-478.06	286.13	656724.53	484755.52	32°19'54.079"N	103°49'33.346"W	2.21
7921.00	88.600	140.500	7542.66	431.20	-502.09	305.69	656744.09	484731.49	32°19'53.840"N	103°49'33.119"W	2.97



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Area	Eddy County, NM	Well	No.109H
Field	JRU NAD27	Wellbore	No.109H AWB
Facility	JRU No. 109H		

WELLPATH DATA (157 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]
7952.00	89.400	140.000	7543.20	456.78	-525.92	325.51	656763.91	484707.66	32°19'53.604"N	103°49'32.890"W	3.04
8046.00	91.900	138.300	7542.14	535.33	-597.01	386.98	656825.38	484636.57	32°19'52.897"N	103°49'32.177"W	3.22
8141.00	92.400	139.000	7538.57	615.13	-668.28	449.70	656888.09	484565.32	32°19'52.189"N	103°49'31.450"W	0.91
8169.00	93.100	138.800	7537.23	638.57	-689.35	468.09	656906.48	484544.24	32°19'51.980"N	103°49'31.237"W	2.60
8252.00	94.000	137.600	7532.09	708.55	-751.11	523.30	656961.69	484482.49	32°19'51.366"N	103°49'30.597"W	1.80
8347.00	90.500	138.000	7528.36	789.08	-821.42	587.06	657025.44	484412.18	32°19'50.667"N	103°49'29.858"W	3.71
8443.00	89.900	137.900	7528.02	870.41	-892.70	651.35	657089.73	484340.90	32°19'49.959"N	103°49'29.113"W	0.63
8538.00	90.300	137.800	7527.86	950.97	-963.14	715.11	657153.48	484270.48	32°19'49.259"N	103°49'28.374"W	0.43
8633.00	89.100	135.300	7528.36	1032.65	-1032.10	780.43	657218.80	484201.52	32°19'48.573"N	103°49'27.616"W	2.92
8729.00	89.600	134.000	7529.45	1116.77	-1099.56	848.72	657287.08	484134.06	32°19'47.903"N	103°49'26.824"W	1.45
8824.00	90.400	132.700	7529.45	1201.03	-1164.77	917.80	657356.16	484068.86	32°19'47.254"N	103°49'26.023"W	1.61
8919.00	89.900	131.200	7529.20	1286.34	-1228.27	988.45	657426.81	484005.36	32°19'46.623"N	103°49'25.203"W	1.66
9014.00	88.300	128.000	7530.69	1373.27	-1288.81	1061.63	657499.98	483944.82	32°19'46.020"N	103°49'24.353"W	3.77
9109.00	86.600	120.700	7534.92	1463.20	-1342.32	1139.93	657578.27	483891.31	32°19'45.487"N	103°49'23.444"W	7.88
9205.00	87.100	114.300	7540.20	1557.04	-1386.56	1224.91	657663.25	483847.08	32°19'45.045"N	103°49'22.456"W	6.68
9300.00	86.900	112.600	7545.17	1651.07	-1424.31	1311.94	657750.27	483809.33	32°19'44.667"N	103°49'21.444"W	1.80
9395.00	87.700	111.100	7549.65	1745.44	-1459.63	1400.01	657838.34	483774.02	32°19'44.314"N	103°49'20.419"W	1.79
9490.00	87.100	107.300	7553.96	1840.16	-1490.83	1489.62	657927.94	483742.81	32°19'44.001"N	103°49'19.377"W	4.05
9585.00	87.200	101.700	7558.69	1934.98	-1514.58	1581.44	658019.76	483719.07	32°19'43.761"N	103°49'18.308"W	5.89
9680.00	87.100	94.500	7563.42	2028.93	-1527.94	1675.32	658113.63	483705.71	32°19'43.625"N	103°49'17.215"W	7.57
9776.00	87.000	90.300	7568.36	2122.16	-1531.95	1771.08	658209.39	483701.69	32°19'43.581"N	103°49'16.099"W	4.37
9871.00	86.500	90.200	7573.75	2213.51	-1532.37	1865.93	658304.23	483701.28	32°19'43.572"N	103°49'14.994"W	0.54
9966.00	86.400	90.400	7579.63	2304.86	-1532.87	1960.74	658399.04	483700.78	32°19'43.563"N	103°49'13.889"W	0.24
10062.00	86.500	90.800	7585.57	2397.30	-1533.87	2056.56	658494.84	483699.78	32°19'43.548"N	103°49'12.772"W	0.43
10157.00	86.600	90.100	7591.29	2488.72	-1534.61	2151.38	658589.66	483699.04	32°19'43.536"N	103°49'11.667"W	0.74
10252.00	86.600	91.000	7596.92	2580.19	-1535.52	2246.21	658684.48	483698.13	32°19'43.523"N	103°49'10.562"W	0.95
10347.00	86.300	93.700	7602.81	2672.38	-1539.41	2340.94	658779.20	483694.24	32°19'43.480"N	103°49'09.459"W	2.85
10442.00	86.200	93.200	7609.02	2764.96	-1545.12	2435.56	658873.82	483688.53	32°19'43.419"N	103°49'08.356"W	0.54
10538.00	86.200	93.600	7615.38	2858.50	-1550.80	2531.18	658969.44	483682.85	32°19'43.358"N	103°49'07.242"W	0.42
10633.00	87.300	94.100	7620.77	2951.27	-1557.16	2625.81	659064.06	483676.49	32°19'43.291"N	103°49'06.140"W	1.27
10728.00	87.300	94.600	7625.24	3044.26	-1564.36	2720.43	659158.68	483669.29	32°19'43.215"N	103°49'05.038"W	0.53
10824.00	87.300	94.300	7629.77	3138.26	-1571.80	2816.04	659254.27	483661.85	32°19'43.137"N	103°49'03.924"W	0.31
10919.00	88.500	95.700	7633.25	3231.50	-1580.08	2910.61	659348.84	483653.57	32°19'43.050"N	103°49'02.822"W	1.94
11014.00	89.300	96.000	7635.07	3325.04	-1589.76	3005.09	659443.32	483643.89	32°19'42.950"N	103°49'01.722"W	0.90
11109.00	89.300	94.500	7636.23	3418.41	-1598.45	3099.69	659537.90	483635.20	32°19'42.859"N	103°49'00.620"W	1.58
11205.00	89.300	92.500	7637.40	3512.17	-1604.31	3195.50	659633.71	483629.34	32°19'42.797"N	103°48'59.504"W	2.08
11300.00	89.200	92.000	7638.65	3604.50	-1608.04	3290.41	659728.62	483625.61	32°19'42.755"N	103°48'58.398"W	0.54
11395.00	89.500	92.300	7639.73	3696.79	-1611.60	3385.34	659823.54	483622.05	32°19'42.716"N	103°48'57.292"W	0.45
11490.00	89.400	91.900	7640.64	3789.07	-1615.08	3480.27	659918.47	483618.57	32°19'42.677"N	103°48'56.186"W	0.43
11585.00	89.600	91.800	7641.47	3881.24	-1618.15	3575.22	660013.41	483615.50	32°19'42.642"N	103°48'55.079"W	0.24
11681.00	89.500	91.600	7642.22	3974.32	-1621.00	3671.17	660109.35	483612.66	32°19'42.609"N	103°48'53.961"W	0.23
11776.00	89.700	91.500	7642.88	4066.38	-1623.57	3766.14	660204.31	483610.09	32°19'42.579"N	103°48'52.855"W	0.24
11871.00	89.300	92.100	7643.71	4158.53	-1626.55	3861.09	660299.25	483607.10	32°19'42.545"N	103°48'51.748"W	0.76
11966.00	89.200	93.000	7644.96	4250.98	-1630.78	3955.98	660394.14	483602.88	32°19'42.499"N	103°48'50.643"W	0.95
12061.00	89.100	93.000	7646.37	4343.59	-1635.75	4050.84	660489.00	483597.91	32°19'42.445"N	103°48'49.537"W	0.11



Actual Wellpath Report

No.109H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No.109H SHL
Area	Eddy County, NM	Well	No.109H
Field	JRU NAD27	Wellbore	No.109H AWB
Facility	JRU No. 109H		

WELLPATH DATA (157 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]
12156.00	88.900	92.900	7648.02	4436.17	-1640.64	4145.70	660583.85	483593.02	32°19'42.392"N	103°48'48.432"W	0.24
12251.00	88.900	93.500	7649.85	4528.85	-1645.94	4240.54	660678.68	483587.72	32°19'42.335"N	103°48'47.327"W	0.63
12347.00	88.800	94.100	7651.77	4622.72	-1652.30	4336.30	660774.44	483581.36	32°19'42.267"N	103°48'46.212"W	0.63
12442.00	88.800	95.700	7653.76	4715.96	-1660.41	4430.93	660869.06	483573.24	32°19'42.183"N	103°48'45.109"W	1.68
12537.00	88.800	96.000	7655.75	4809.50	-1670.09	4525.42	660963.54	483563.56	32°19'42.082"N	103°48'44.009"W	0.32
12633.00	88.700	95.800	7657.85	4904.03	-1679.96	4620.89	661059.01	483553.70	32°19'41.980"N	103°48'42.897"W	0.23
12728.00	88.700	93.500	7660.00	4997.19	-1687.66	4715.54	661153.66	483546.00	32°19'41.899"N	103°48'41.794"W	2.42
12823.00	89.400	91.500	7661.58	5089.61	-1691.80	4810.43	661248.54	483541.86	32°19'41.854"N	103°48'40.689"W	2.23
12918.00	89.300	91.400	7662.66	5181.62	-1694.21	4905.40	661343.50	483539.45	32°19'41.825"N	103°48'39.582"W	0.15
13013.00	89.300	92.200	7663.82	5273.77	-1697.19	5000.34	661438.44	483536.47	32°19'41.791"N	103°48'38.476"W	0.84
13108.00	89.300	91.500	7664.98	5365.94	-1700.26	5095.29	661533.37	483533.40	32°19'41.756"N	103°48'37.370"W	0.74
13198.00	89.300	91.400	7666.08	5453.10	-1702.53	5185.25	661623.33	483531.13	32°19'41.729"N	103°48'36.321"W	0.11
13293.00	89.300	93.300	7667.24	5545.47	-1706.43	5280.16	661718.24	483527.23	32°19'41.686"N	103°48'35.216"W	2.00
13388.00	89.200	93.500	7668.48	5638.23	-1712.06	5374.98	661813.05	483521.60	32°19'41.626"N	103°48'34.111"W	0.24
13483.00	89.200	94.700	7669.81	5731.22	-1718.85	5469.73	661907.79	483514.81	32°19'41.554"N	103°48'33.007"W	1.26
13578.00	89.200	95.200	7671.13	5824.50	-1727.05	5564.37	662002.42	483506.61	32°19'41.468"N	103°48'31.905"W	0.53
13674.00	89.300	93.800	7672.39	5918.61	-1734.58	5660.06	662098.11	483499.08	32°19'41.389"N	103°48'30.790"W	1.46
13769.00	89.300	93.700	7673.55	6011.49	-1740.79	5754.85	662192.89	483492.87	32°19'41.323"N	103°48'29.686"W	0.11
13864.00	89.300	93.400	7674.71	6104.31	-1746.68	5849.66	662287.70	483486.99	32°19'41.260"N	103°48'28.581"W	0.32
13959.00	89.200	93.500	7675.96	6197.08	-1752.39	5944.48	662382.51	483481.27	32°19'41.199"N	103°48'27.476"W	0.15
14030.00	89.200	93.500	7676.95	6266.43	-1756.73	6015.34	662453.37	483476.94	32°19'41.153"N	103°48'26.651"W	0.00
14100.00	89.200	93.500	7677.92	6334.81	-1761.00	6085.20	662523.23	483472.66	32°19'41.107"N	103°48'25.837"W	0.00



Actual Wellpath Report

No.109H AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	BOPCO, L.P.	Slot	No.109H SHL
Area	Eddy County, NM	Well	No.109H
Field	JRU NAD27	Wellbore	No.109H AWB
Facility	JRU No. 109H		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
No.109H Target #1		7538.00	-747.30	413.11	656851.50	484486.30	32°19'51.409"N	103°49'31.881"W	point
No.109H Target #2		7566.00	-1646.66	1412.07	657850.40	483587.00	32°19'42.463"N	103°49'20.289"W	point
No.109H Target #3		7631.00	-1830.67	2967.97	659406.20	483403.00	32°19'40.568"N	103°49'02.168"W	point
No.109H PBHL		7680.00	-1775.21	6252.55	662690.57	483458.45	32°19'40.958"N	103°48'23.888"W	point

WELLPATH COMPOSITION - Ref Wellbore: No.109H AWB					Ref Wellpath: No.109H AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment	Wellbore
22.00	3890.00	ISCWSA MWD, Rev. 2 (Standard)			GyroData MWD <646-3890>	No.109H AWB
3890.00	14100.00	NaviTrak (Standard)			MWD NaviTrak <4008-XXXX>	No.109H AWB



BOPCO, L.P.

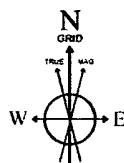
Location Eddy County, NM
Field JRU NAD27
Facility JRU No 109H

Slot No 109H SHL
Well No 109H
Wellbore No 109H PWB

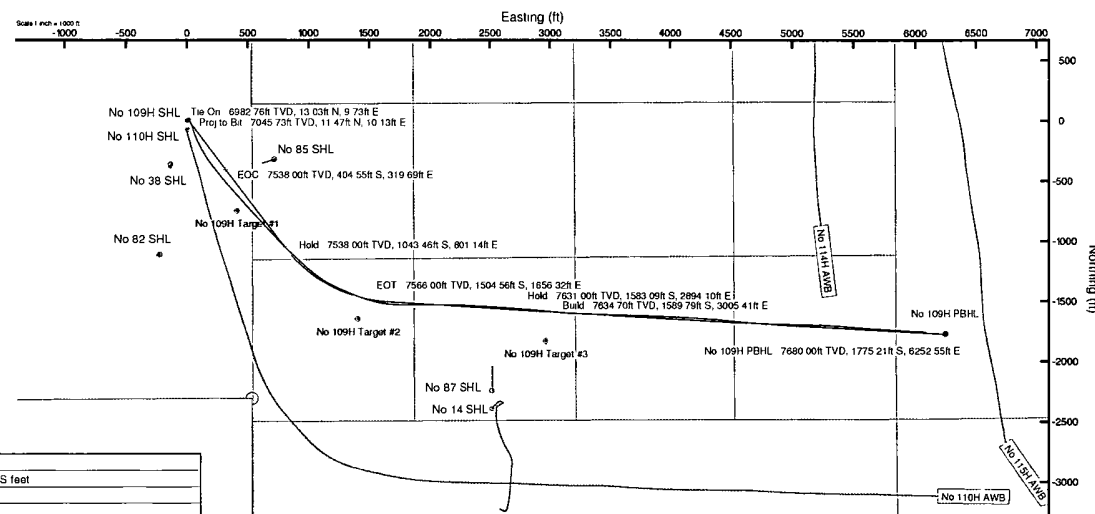


Well Profile Data

Design Comment	MD (ft)	Inc. (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	6984.00	0.800	253.000	6982.76	13.03	9.73	0.00	5.80
Proj to Bit	7047.00	3.000	150.000	7045.73	11.47	10.13	5.20	6.61
EOC	7835.65	90.000	143.000	7538.00	-404.55	319.69	11.03	418.03
Hold	8635.65	90.000	143.000	7538.00	-1043.46	801.14	0.00	1055.68
EOT	9638.44	87.000	93.630	7566.00	-1504.56	1656.32	4.93	2004.27
Hold	10880.41	87.000	93.630	7631.00	-1583.09	2894.10	0.00	3216.44
Build	10991.99	89.202	93.268	7634.70	-1589.79	3005.41	2.00	3325.35
No 109H PBHL	14244.74	89.202	93.268	7680.00	-1775.21	6252.55	0.00	6499.68



BGGM (1945.0 to 2012.0) Dip: 60.24° Field: 48638.3 nT
Magnetic North is 7.70 degrees East of True North (at 11/17/2011)
Grid North is 0.27 degrees East of True North
To correct azimuth from True to Grid subtract 0.27 degrees
To correct azimuth from Magnetic to Grid add 7.43 degrees
For example if the Magnetic North Azimuth = 90 degs, then the Grid North Azimuth = 90 + 7.43 = 97.43



Plot reference wellpath is Plan #2

True vertical depths are referenced to Rig on No 109H SHL (KB)	Grid System: NAD27 / TM New Mexico SP, Eastern Zone (3001), US feet
Measured depths are referenced to Rig on No 109H SHL (KB)	North Reference: Grid north
Rig on No 109H SHL (KB) to Mean Sea Level: 3316 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: No 109H SHL): -3294 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: gentbry on 12/23/2011

