

30-015-38230



OXY Permian

Location: Eddy County, NM
 Field: (Federal) Sand Dunes Dataware, West
 Facility: Federal 29 Pad

Sect: Federal 29 No 10 SHL
 Well: 29 Pad No 10
 Wellbore: No 10 PWB



Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	16.50	0.000	4.050	16.50	0.00	0.00	0.00	0.00
EST KOP	4200.00	0.000	4.050	4200.00	0.00	0.00	0.00	0.00
EOB	5315.97	22.319	4.050	5287.96	214.09	15.16	2.00	214.63
29 No 10 PBHL	8236.84	22.319	4.050	7990.00	1320.58	93.51	0.00	1323.89

Plot reference wellpath is Prelim 2

True vertical depths are referenced to Rig on No 10 (KB)

Measured depths are referenced to Rig on No 10 (KB)

Rig on No 10 (KB) to Mean Sea Level: 3371.4 feet

Mean Sea Level to Mud line (Facility: Federal 29 Pad): -3354.9 feet

Coordinates are in feet referenced to Slot

Grid System: NAD27 / TM New Mexico State Planes, Eastern Zone (3001), US feet

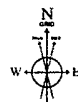
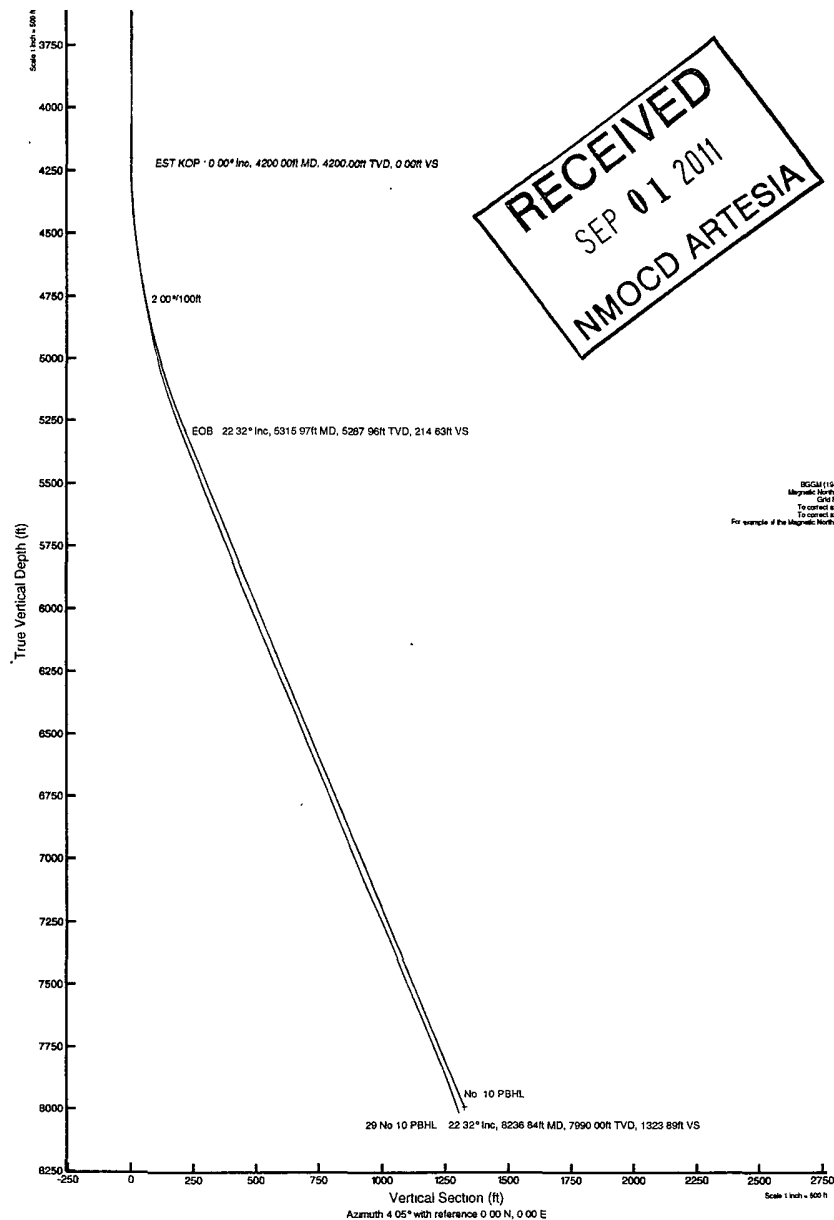
North Reference: Grid north

Scale: True distance

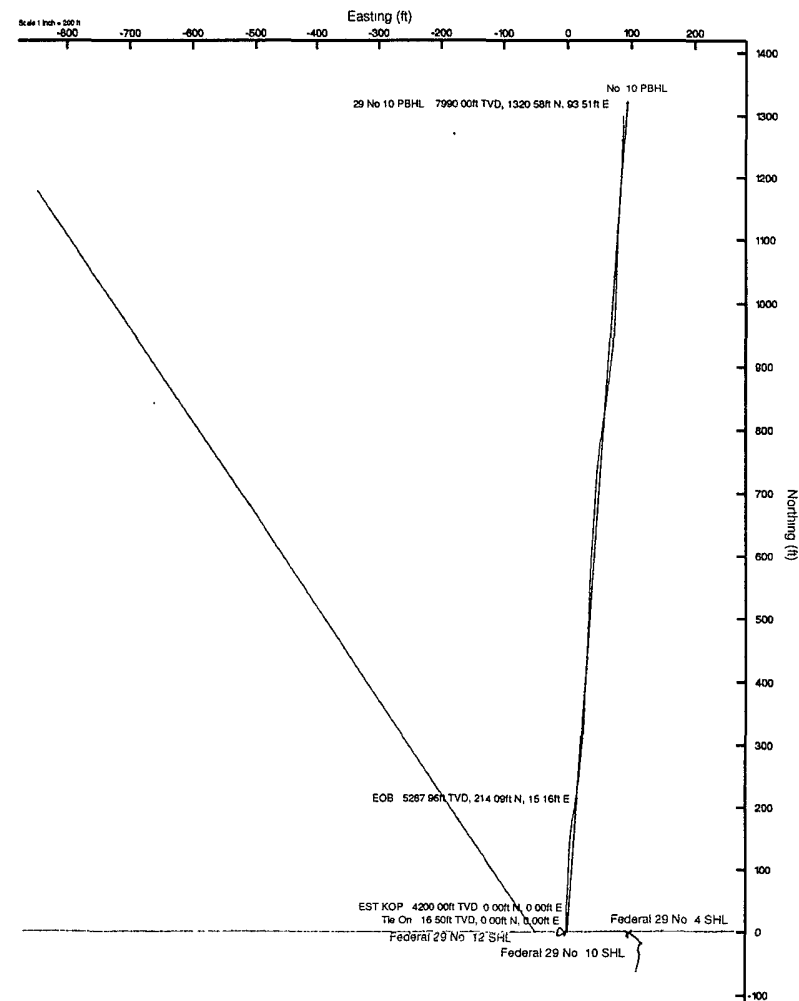
Depths are in feet

Created by gomeoscr on 2/15/2011

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BEGM (1/4/10 to 2/11) (Op: 40.22° Field: 48748.1 x 1.1
 Magnetic North is 7.75 degrees East of True North (at 12/8/2010)
 Grid North is 0.28 degrees East of True North
 To correct azimuth from True to Grid add 0.28 degrees
 To correct azimuth from Magnetic to Grid add 7.50 degrees
 For example if the Magnetic North Azimuth = 90 degrees, then the Grid North Azimuth = 90 + 7.50 = 97.50





Actual Wellpath Report

No. 10 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION

Operator	OXY Permian	Slot	Federal 29 No. 10 SHL
Area	Eddy County, NM	Well	29 Fed No. 10
Field	(Federal) Sand Dunes Delaware, West	Wellbore	No. 10 AWB
Facility	Federal 29 Pad		

REPORT SETUP INFORMATION

Projection System	NAD27 / TM New Mexico State Planes, Eastern Zone (3001), US feet	Software System	WellArchitect® 2.0
North Reference	Grid	User	Calhphik
Scale	0.99994	Report Generated	3/10/2011 at 8:37:55 AM
Convergence at slot	0.28° East	Database/Source file	WA Midland/No. 10_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[USft]	Northing[USft]	Latitude	Longitude
Slot Location - - -	- 0.00 - -	0.00 - -	664293.30	461972.80	32°16'08.262"N	103°48'06.450"W
Facility Reference Pt			664293.30	461972.80	32°16'08.262"N	103°48'06.450"W
Field Reference Pt			664293.30	461972.80	32°16'08.262"N	103°48'06.450"W

WELLPATH DATUM

Calculation method	Minimum curvature	Rig on No. 10 (KB) to Facility Vertical Datum	16.50ft
Horizontal Reference Pt	Slot	Rig on No. 10 (KB) to Mean Sea Level	3371.40ft
Vertical Reference Pt	Rig on No. 10 (KB)	Facility Vertical Datum to Mud Line (Facility)	0.00ft
MD Reference Pt	Rig on No. 10 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	4.05°



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INTEQ

REFERENCE WELLPATH IDENTIFICATION

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Area	Eddy County, NM	Well	29 Fed No. 10
Field	(Federal) Sand Dunes Delaware, West	Wellbore	No. 10 AWP
Facility	Federal 29 Pad		

WELLPATH DATA (105 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00	0.000	258.900	0.00	0.00	0.00	0.00	664293.30	461972.80	32°16'08.262"N	103°48'06.450"W	0.00	
851.00	0.300	258.900	851.00	-0.58	-0.43	-2.19	664291.11	461972.37	32°16'08.257"N	103°48'06.476"W	0.04	
986.00	0.300	256.900	985.99	-0.78	-0.58	-2.88	664290.42	461972.22	32°16'08.256"N	103°48'06.484"W	0.01	
1121.00	0.300	238.300	1120.99	-1.09	-0.84	-3.52	664289.78	461971.96	32°16'08.253"N	103°48'06.491"W	0.07	
1257.00	0.400	247.000	1256.99	-1.51	-1.22	-4.26	664289.04	461971.58	32°16'08.250"N	103°48'06.500"W	0.08	
1392.00	0.200	235.700	1391.99	-1.87	-1.53	-4.89	664288.41	461971.27	32°16'08.247"N	103°48'06.507"W	0.15	
1527.00	0.600	227.400	1526.98	-2.53	-2.14	-5.61	664287.69	461970.66	32°16'08.241"N	103°48'06.516"W	0.30	
1663.00	0.500	254.800	1662.98	-3.25	-2.78	-6.70	664286.60	461970.02	32°16'08.234"N	103°48'06.528"W	0.20	
1798.00	0.500	223.100	1797.97	-3.90	-3.37	-7.67	664285.63	461969.43	32°16'08.229"N	103°48'06.540"W	0.20	
1933.00	0.600	244.900	1932.97	-4.70	-4.10	-8.72	664284.58	461968.70	32°16'08.222"N	103°48'06.552"W	0.17	
2068.00	0.500	229.600	2067.96	-5.46	-4.78	-9.80	664283.50	461968.02	32°16'08.215"N	103°48'06.565"W	0.13	
2204.00	0.800	233.700	2203.95	-6.49	-5.72	-11.02	664282.28	461967.08	32°16'08.206"N	103°48'06.579"W	0.22	
2339.00	0.800	275.400	2338.94	-7.08	-6.19	-12.72	664280.58	461966.61	32°16'08.201"N	103°48'06.599"W	0.42	
2474.00	0.600	327.000	2473.93	-6.49	-5.51	-14.04	664279.26	461967.29	32°16'08.208"N	103°48'06.614"W	0.47	
2610.00	0.900	332.300	2609.92	-5.01	-3.97	-14.93	664278.37	461968.83	32°16'08.223"N	103°48'06.624"W	0.23	
2745.00	0.900	18.200	2744.90	-3.08	-2.02	-15.09	664278.21	461970.78	32°16'08.242"N	103°48'06.626"W	0.52	
2880.00	0.900	10.500	2879.89	-1.00	0.03	-14.56	664278.74	461972.83	32°16'08.263"N	103°48'06.620"W	0.09	
3015.00	0.900	17.100	3014.87	1.08	2.08	-14.06	664279.24	461974.88	32°16'08.283"N	103°48'06.614"W	0.08	
3150.00	0.900	15.500	3149.85	3.16	4.12	-13.46	664279.84	461976.92	32°16'08.303"N	103°48'06.607"W	0.02	
3285.00	0.900	47.600	3284.84	4.96	5.85	-12.40	664280.90	461978.65	32°16'08.320"N	103°48'06.594"W	0.37	
3420.00	0.500	113.000	3419.83	5.54	6.34	-11.07	664282.23	461979.14	32°16'08.325"N	103°48'06.579"W	0.61	
3556.00	0.800	120.400	3555.82	4.93	5.63	-9.71	664283.59	461978.43	32°16'08.318"N	103°48'06.563"W	0.23	
3691.00	1.400	129.800	3690.80	3.55	4.09	-7.63	664285.67	461976.89	32°16'08.303"N	103°48'06.539"W	0.46	
3826.00	1.300	154.600	3825.76	1.25	1.66	-5.70	664287.60	461974.46	32°16'08.278"N	103°48'06.517"W	0.44	
3928.00	1.500	158.700	3927.73	-0.97	-0.63	-4.72	664288.58	461972.17	32°16'08.256"N	103°48'06.505"W	0.22	
4064.00	1.700	164.200	4063.68	-4.47	-4.23	-3.53	664289.77	461968.57	32°16'08.220"N	103°48'06.492"W	0.19	
4110.00	1.400	165.200	4109.66	-5.65	-5.43	-3.20	664290.10	461967.37	32°16'08.208"N	103°48'06.488"W	0.65	
4155.00	0.800	95.400	4154.65	-6.17	-5.99	-2.74	664290.56	461966.81	32°16'08.202"N	103°48'06.482"W	3.00	
4200.00	1.300	18.000	4199.65	-5.69	-5.54	-2.27	664291.03	461967.26	32°16'08.207"N	103°48'06.477"W	3.04	
4246.00	1.900	358.800	4245.63	-4.42	-4.28	-2.13	664291.17	461968.52	32°16'08.219"N	103°48'06.475"W	1.73	
4291.00	2.200	358.000	4290.60	-2.82	-2.67	-2.17	664291.13	461970.13	32°16'08.235"N	103°48'06.476"W	0.67	
4336.00	3.000	5.300	4335.55	-0.78	-0.63	-2.10	664291.20	461972.17	32°16'08.255"N	103°48'06.475"W	1.92	
4381.00	3.700	8.300	4380.48	1.84	1.97	-1.78	664291.52	461974.77	32°16'08.281"N	103°48'06.471"W	1.60	
4426.00	4.700	6.700	4425.35	5.13	5.24	-1.35	664291.95	461978.04	32°16'08.314"N	103°48'06.466"W	2.24	
4471.00	6.200	2.800	4470.15	9.41	9.50	-1.02	664292.28	461982.30	32°16'08.356"N	103°48'06.462"W	3.43	
4516.00	7.100	0.480	4514.85	14.61	14.71	-0.88	664292.42	461987.51	32°16'08.407"N	103°48'06.460"W	2.09	
4561.00	7.600	1.000	4559.48	20.36	20.47	-0.80	664292.50	461993.26	32°16'08.464"N	103°48'06.458"W	1.12	
4606.00	7.800	1.400	4604.07	26.38	26.49	-0.67	664292.63	461999.29	32°16'08.524"N	103°48'06.457"W	0.46	
4652.00	8.700	0.700	4649.60	32.97	33.09	-0.56	664292.74	462005.89	32°16'08.589"N	103°48'06.455"W	1.97	
4697.00	8.900	1.200	4694.07	39.84	39.98	-0.44	664292.86	462012.77	32°16'08.657"N	103°48'06.459"W	0.48	
4742.00	10.200	3.300	4738.44	47.31	47.43	-0.14	664293.16	462020.23	32°16'08.731"N	103°48'06.449"W	2.99	
4787.00	10.800	4.200	4782.69	55.51	55.62	0.40	664293.70	462028.41	32°16'08.812"N	103°48'06.442"W	1.38	
4832.00	11.100	3.600	4826.87	64.05	64.14	0.98	664294.28	462036.94	32°16'08.896"N	103°48'06.435"W	0.71	
4877.00	11.800	3.200	4870.97	72.99	73.06	1.51	664294.81	462045.86	32°16'08.985"N	103°48'06.428"W	1.57	
4922.00	13.100	1.800	4914.91	82.68	82.75	1.93	664295.23	462055.55	32°16'09.080"N	103°48'06.423"W	2.97	



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REFERENCE WELLPATH IDENTIFICATION			
Operator	OXY Permian	Slot	Federal 29 No. 10 SHL
Area	Eddy County, NM	Well	29 Fed No. 10
Field	(Federal) Sand Dunes Delaware, West	Wellbore	No. 10 AWP
Facility	Federal 29 Pad		

WELLPATH DATA (105 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4967.00	14.400	2.200	4958.62	93.37	93.44	2.30	664295.60	462066.24	32°16'09.186"N	103°48'06.418"W	2.90	
5012.00	14.900	1.500	5002.16	104.74	104.82	2.67	664295.97	462077.61	32°16'09.299"N	103°48'06.413"W	1.18	
5057.00	15.900	1.800	5045.54	116.68	116.76	3.01	664296.31	462089.56	32°16'09.417"N	103°48'06.408"W	2.23	
5103.00	16.700	3.400	5089.69	129.59	129.66	3.60	664296.90	462102.45	32°16'09.544"N	103°48'06.401"W	1.99	
5148.00	17.500	5.000	5132.70	142.82	142.85	4.57	664297.87	462115.64	32°16'09.675"N	103°48'06.389"W	2.06	
5192.00	18.600	6.300	5174.54	156.45	156.42	5.92	664299.22	462129.21	32°16'09.809"N	103°48'06.372"W	2.66	
5238.00	19.400	8.400	5218.03	171.39	171.27	7.84	664301.14	462144.06	32°16'09.956"N	103°48'06.349"W	2.29	
5283.00	20.400	8.900	5260.35	186.66	186.41	10.15	664303.45	462159.20	32°16'10.106"N	103°48'06.321"W	2.25	
5328.00	21.500	8.800	5302.37	202.70	202.31	12.62	664305.92	462175.10	32°16'10.263"N	103°48'06.292"W	2.45	
5419.00	21.800	8.200	5386.95	236.17	235.51	17.58	664310.88	462208.30	32°16'10.591"N	103°48'06.232"W	0.41	
5509.00	22.000	5.200	5470.46	269.69	268.84	21.50	664314.79	462241.63	32°16'10.921"N	103°48'06.184"W	1.26	
5554.00	21.600	5.400	5512.24	286.40	285.48	23.04	664316.34	462258.27	32°16'11.085"N	103°48'06.165"W	0.90	
5644.00	21.400	2.600	5595.98	319.37	318.38	25.34	664318.64	462291.16	32°16'11.411"N	103°48'06.137"W	1.16	
5734.00	21.800	2.100	5679.66	352.49	351.48	26.70	664320.00	462324.26	32°16'11.738"N	103°48'06.119"W	0.49	
5824.00	22.500	2.200	5763.02	386.40	385.39	27.97	664321.27	462358.17	32°16'12.074"N	103°48'06.102"W	0.78	
5915.00	21.000	3.100	5847.54	420.11	419.07	29.52	664322.82	462391.85	32°16'12.407"N	103°48'06.082"W	1.69	
5960.00	21.400	2.600	5889.49	436.38	435.33	30.33	664323.63	462408.10	32°16'12.568"N	103°48'06.072"W	0.98	
6095.00	22.600	2.500	6014.66	486.94	485.85	32.58	664325.88	462458.62	32°16'13.068"N	103°48'06.043"W	0.89	
6185.00	22.500	2.600	6097.78	521.44	520.33	34.12	664327.41	462493.09	32°16'13.409"N	103°48'06.023"W	0.12	
6230.00	22.400	2.300	6139.37	538.62	537.50	34.85	664328.15	462510.26	32°16'13.579"N	103°48'06.013"W	0.34	
6275.00	22.200	2.800	6181.00	555.68	554.55	35.61	664328.91	462527.32	32°16'13.747"N	103°48'06.003"W	0.61	
6320.00	23.200	3.000	6222.52	573.05	571.90	36.49	664329.79	462544.66	32°16'13.919"N	103°48'05.992"W	2.23	
6366.00	23.600	3.600	6264.73	591.31	590.14	37.54	664330.84	462562.90	32°16'14.099"N	103°48'05.979"W	1.01	
6411.00	23.100	4.200	6306.05	609.15	607.93	38.75	664332.05	462580.69	32°16'14.275"N	103°48'05.964"W	1.23	
6501.00	22.100	4.200	6389.13	643.73	642.42	41.29	664334.58	462615.18	32°16'14.617"N	103°48'05.932"W	1.11	
6592.00	21.500	3.200	6473.63	677.53	676.15	43.47	664336.77	462648.90	32°16'14.950"N	103°48'05.905"W	0.78	
6636.00	21.300	2.900	6514.59	693.58	692.18	44.33	664337.62	462664.93	32°16'15.109"N	103°48'05.894"W	0.52	
6679.00	22.600	3.200	6554.47	709.65	708.23	45.18	664338.48	462680.98	32°16'15.268"N	103°48'05.883"W	3.03	
6726.00	23.100	4.500	6597.79	727.90	726.44	46.41	664339.71	462699.19	32°16'15.448"N	103°48'05.868"W	1.51	
6771.00	22.800	5.700	6639.22	745.44	743.91	47.97	664341.27	462716.67	32°16'15.620"N	103°48'05.849"W	1.24	
6816.00	21.900	6.100	6680.84	762.55	760.93	49.73	664343.02	462733.69	32°16'15.789"N	103°48'05.827"W	2.03	
6861.00	20.900	7.200	6722.74	778.95	777.24	51.62	664344.92	462749.99	32°16'15.950"N	103°48'05.804"W	2.39	
6907.00	20.900	8.400	6765.71	795.32	793.50	53.85	664347.15	462766.25	32°16'16.111"N	103°48'05.777"W	0.93	
6952.00	21.200	7.900	6807.71	811.44	809.50	56.14	664349.44	462782.25	32°16'16.269"N	103°48'05.750"W	0.78	
6997.00	22.200	8.300	6849.52	828.04	825.97	58.49	664351.78	462798.72	32°16'16.432"N	103°48'05.721"W	2.25	
7042.00	21.400	7.800	6891.30	844.71	842.52	60.83	664354.13	462815.27	32°16'16.596"N	103°48'05.693"W	1.83	
7087.00	21.500	7.600	6933.19	861.13	858.83	63.03	664356.33	462831.57	32°16'16.757"N	103°48'05.667"W	0.28	
7132.00	21.900	6.900	6975.00	877.75	875.33	65.13	664358.43	462848.08	32°16'16.920"N	103°48'05.641"W	1.06	
7177.00	22.000	6.900	7016.74	894.55	892.03	67.15	664360.45	462864.77	32°16'17.085"N	103°48'05.617"W	0.22	
7222.00	22.200	7.300	7058.43	911.45	908.83	69.25	664362.54	462881.57	32°16'17.251"N	103°48'05.591"W	0.56	
7267.00	22.700	6.000	7100.02	928.62	925.90	71.23	664364.53	462898.64	32°16'17.420"N	103°48'05.567"W	1.57	
7312.00	24.200	3.600	7141.30	946.52	943.74	72.72	664366.02	462916.48	32°16'17.597"N	103°48'05.549"W	3.95	
7402.00	24.400	2.100	7223.33	983.54	980.73	74.56	664367.86	462953.47	32°16'17.963"N	103°48'05.525"W	0.72	
7448.00	23.900	2.100	7265.30	1002.35	999.53	75.25	664368.55	462972.27	32°16'18.149"N	103°48'05.516"W	1.09	
7493.00	23.100	2.300	7306.57	1020.29	1017.47	75.94	664369.23	462990.20	32°16'18.326"N	103°48'05.507"W	1.79	



Actual Wellpath Report

No. 10 AWP

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INTEQ

REFERENCE WELLPATH IDENTIFICATION			
Operator	OXY Permian	Slot	Federal 29 No. 10 SHL
Area	Eddy County, NM	Well	29 Fed No. 10
Field	(Federal) Sand Dunes Delaware, West	Wellbore	No. 10 AWB
Facility	Federal 29 Pad		

WELLPATH DATA (105 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7538.00	21.800	3.200	7348.16	1037.47	1034.63	76.76	664370.05	463007.36	32°16'18.496"N	103°48'05.497"W	2.99	
7628.00	21.400	2.700	7431.84	1070.59	1067.72	78.47	664371.76	463040.45	32°16'18.823"N	103°48'05.475"W	0.49	
7673.00	22.200	1.500	7473.62	1087.29	1084.42	79.08	664372.37	463057.15	32°16'18.988"N	103°48'05.467"W	2.03	
7718.00	23.300	2.000	7515.12	1104.68	1101.81	79.61	664372.90	463074.54	32°16'19.160"N	103°48'05.459"W	2.48	
7763.00	23.100	3.400	7556.48	1122.40	1119.52	80.44	664373.74	463092.25	32°16'19.336"N	103°48'05.449"W	1.30	
7808.00	22.800	3.800	7597.92	1139.95	1137.03	81.54	664374.84	463109.76	32°16'19.509"N	103°48'05.435"W	0.75	
7853.00	22.400	3.300	7639.46	1157.24	1154.29	82.62	664375.91	463127.02	32°16'19.680"N	103°48'05.421"W	0.99	
7898.00	22.500	3.100	7681.05	1174.42	1171.44	83.57	664376.87	463144.17	32°16'19.849"N	103°48'05.409"W	0.28	
7988.00	22.600	1.900	7764.17	1208.92	1205.92	85.08	664378.37	463178.65	32°16'20.190"N	103°48'05.390"W	0.52	
8033.00	22.000	1.700	7805.81	1225.98	1222.99	85.62	664378.91	463195.72	32°16'20.359"N	103°48'05.383"W	1.34	
8079.00	21.330	2.000	7848.56	1242.95	1239.96	86.16	664379.46	463212.69	32°16'20.527"N	103°48'05.375"W	1.48	
8124.00	20.200	1.700	7890.63	1258.90	1255.91	86.68	664379.97	463228.63	32°16'20.685"N	103°48'05.368"W	2.52	
8169.00	19.200	1.600	7933.00	1274.05	1271.07	87.12	664380.41	463243.79	32°16'20.835"N	103°48'05.362"W	2.22	
8205.00	19.200	1.600	7967.00	1285.88	1282.91	87.45	664380.74	463255.63	32°16'20.952"N	103°48'05.358"W	0.00	
8258.00	18.304	1.432	8017.18	1302.90	1299.94	87.90	664381.19	463272.66	32°16'21.121"N	103°48'05.351"W	1.69	Proj to Bit

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [srv ft]	Grid North [srv ft]	Latitude	Longitude	Shape
No. 10 PBHL	-	7990.00	1320.58	93.51	664386.80	463293.30	32°16'21.325"N	103°48'05.285"W	point

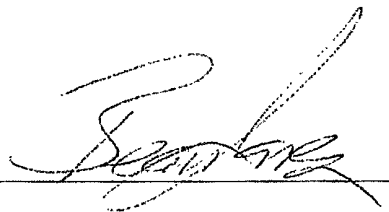
WELLPATH COMPOSITION					Ref Wellbore: No. 10 AWB	Ref Wellpath: No. 10 AWP
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment	Wellbore
0.00	8258.00	NaviTrak (Standard)			MWD	No. 10 AWB

2105 MARKET STREET
MIDLAND, TX 79703
24 HR (432) 694-9517

STATE OF NEW MEXICO

COUNTY OF Eddy

I, Toby Sanders, Directional Driller certify that I am employed by Baker Hughes INTEQ; did conduct or supervise on the day(s) of 3/2/2011 through 3/9/2011 the taking of MWD surveys from a depth of 685 to a depth of 8,258 that the data is true, correct, complete and within the limitations of the tool as set forth by Baker Hughes INTEQ; that I am authorized and qualified to make this report; that this survey was conducted at the request of Oxy for the Federal 29 #10 in Eddy County, NM; and that I have reviewed this report and find that it conforms to the principles and procedures as set forth by INTEQ.



Field Service Engineer: Toby Sanders