

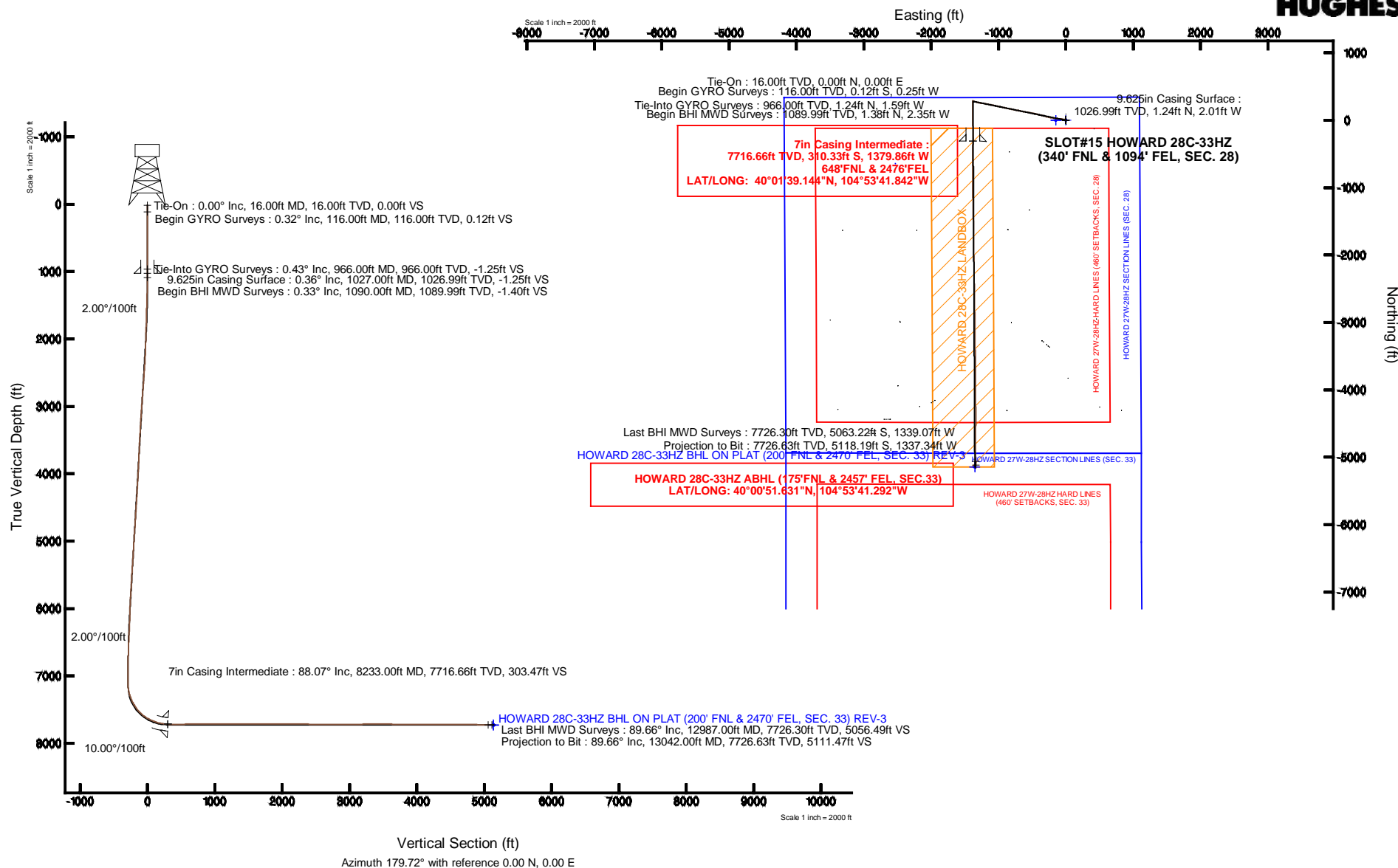
KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#15 HOWARD 28C-33HZ (340' FNL & 1094' FEL, SEC. 28)
 Field: WELD COUNTY (KERR MCGEE) Well: HOWARD 28C-33HZ
 Facility: SEC.28-T1N-R67W Wellbore: HOWARD 28C-33HZ PWB



Plot reference wellpath is HOWARD 28C-33HZ (REV-A.0) PWP

True vertical depths are referenced to XTREME 20 (16KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to XTREME 20 (16KB) (RKB)	North Reference: True north
XTREME 20 (16KB) (RKB) to Mean Sea Level: 4999 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#15 HOWARD 28C-33HZ (340' FNL & 1094' FEL, SEC. 28)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: precain on 08/Jan/2014



Actual Wellpath Report

HOWARD 28C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#15 HOWARD 28C-33HZ (340' FNL & 1094' FEL, SEC. 28)
Area	COLORADO	Well	HOWARD 28C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 28C-33HZ AWB
Facility	SEC.28-T1N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Precain
Scale	0.999964	Report Generated	08/Jan/2014 at 13:25
Convergence at slot	n/a	Database/Source file	WellArchitectDB/HOWARD_28C-33HZ_AWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	1416827.57	2716930.04	3170813.11	1253776.78	40°01'42.211"N	104°53'24.104"W
Facility Reference Pt			316923.76	121463.46	36°32'36.656"N	114°37'52.006"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	XTREME 20 (16'KB) (RKB) to Facility Vertical Datum	4999.00ft
Horizontal Reference Pt	Slot	XTREME 20 (16'KB) (RKB) to Mean Sea Level	4999.00ft
Vertical Reference Pt	XTREME 20 (16'KB) (RKB)	XTREME 20 (16'KB) (RKB) to Mud Line at Slot (SLOT#15 HOWARD 28C-33HZ (340' FNL & 1094' FEL, SEC. 28))	4999.00ft
MD Reference Pt	XTREME 20 (16'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.72°

Actual Wellpath Report

HOWARD 28C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#15 HOWARD 28C-33HZ (340' FNL & 1094' FEL, SEC. 28)
Area	COLORADO	Well	HOWARD 28C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 28C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH DATA (159 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	243.940	0.00	0.00	0.00	0.00	40°01'42.211"N	104°53'24.104"W	0.00	
16.00	0.000	243.940	16.00	0.00	0.00	0.00	40°01'42.211"N	104°53'24.104"W	0.00	Tie-On
116.00	0.320	243.940	116.00	0.12	-0.12	-0.25	40°01'42.210"N	104°53'24.107"W	0.32	Begin GYRO Surveys
216.00	0.160	307.960	216.00	0.16	-0.16	-0.61	40°01'42.209"N	104°53'24.112"W	0.29	
316.00	0.120	23.790	316.00	-0.03	0.02	-0.68	40°01'42.211"N	104°53'24.113"W	0.17	
416.00	0.140	356.720	416.00	-0.24	0.24	-0.64	40°01'42.213"N	104°53'24.112"W	0.06	
516.00	0.240	352.140	516.00	-0.57	0.57	-0.68	40°01'42.217"N	104°53'24.113"W	0.10	
616.00	0.120	290.910	616.00	-0.82	0.81	-0.81	40°01'42.219"N	104°53'24.114"W	0.21	
716.00	0.080	22.930	716.00	-0.92	0.92	-0.88	40°01'42.220"N	104°53'24.115"W	0.15	
816.00	0.200	306.430	816.00	-1.09	1.08	-0.99	40°01'42.222"N	104°53'24.117"W	0.20	
916.00	0.220	285.170	916.00	-1.24	1.24	-1.32	40°01'42.223"N	104°53'24.121"W	0.08	
966.00	0.430	262.630	966.00	-1.25	1.24	-1.59	40°01'42.223"N	104°53'24.125"W	0.48	Tie-Into GYRO Surveys
1090.00	0.330	305.110	1089.99	-1.40	1.38	-2.35	40°01'42.225"N	104°53'24.134"W	0.23	Begin BHI MWD Surveys
1183.00	1.240	300.050	1182.98	-2.06	2.04	-3.44	40°01'42.231"N	104°53'24.148"W	0.98	
1401.00	6.150	290.730	1400.46	-7.44	7.36	-16.41	40°01'42.284"N	104°53'24.315"W	2.26	
1495.00	7.370	280.910	1493.81	-10.42	10.28	-27.04	40°01'42.313"N	104°53'24.452"W	1.78	
1560.00	8.720	280.490	1558.17	-12.15	11.97	-35.98	40°01'42.329"N	104°53'24.567"W	2.08	
1652.00	11.260	277.240	1648.77	-14.63	14.37	-51.75	40°01'42.353"N	104°53'24.769"W	2.83	
1744.00	11.150	277.970	1739.02	-17.08	16.74	-69.47	40°01'42.376"N	104°53'24.997"W	0.20	
1835.00	12.670	276.100	1828.05	-19.46	19.02	-88.11	40°01'42.399"N	104°53'25.237"W	1.72	
1927.00	14.290	277.140	1917.52	-22.05	21.50	-109.41	40°01'42.423"N	104°53'25.510"W	1.78	
2019.00	14.080	275.130	2006.71	-24.57	23.91	-131.82	40°01'42.447"N	104°53'25.799"W	0.58	
2111.00	15.490	277.610	2095.67	-27.31	26.54	-155.14	40°01'42.473"N	104°53'26.098"W	1.68	
2202.00	15.820	277.970	2183.29	-30.76	29.87	-179.47	40°01'42.506"N	104°53'26.411"W	0.38	
2294.00	15.620	277.660	2271.85	-34.28	33.26	-204.17	40°01'42.540"N	104°53'26.729"W	0.24	
2386.00	16.390	282.830	2360.29	-38.93	37.79	-229.10	40°01'42.584"N	104°53'27.049"W	1.76	
2479.00	16.250	284.090	2449.54	-45.14	43.88	-254.51	40°01'42.645"N	104°53'27.376"W	0.41	
2570.00	16.130	284.620	2536.93	-51.55	50.17	-279.09	40°01'42.707"N	104°53'27.692"W	0.21	
2662.00	15.910	284.330	2625.36	-58.02	56.51	-303.68	40°01'42.769"N	104°53'28.008"W	0.25	
2754.00	15.410	284.770	2713.94	-64.38	62.75	-327.71	40°01'42.831"N	104°53'28.317"W	0.56	
2846.00	14.930	286.220	2802.74	-70.92	69.18	-350.91	40°01'42.895"N	104°53'28.615"W	0.67	
2938.00	15.440	283.560	2891.53	-77.22	75.36	-374.20	40°01'42.956"N	104°53'28.914"W	0.94	
3029.00	16.810	283.770	2978.94	-83.31	81.33	-398.76	40°01'43.015"N	104°53'29.230"W	1.51	
3121.00	16.200	283.320	3067.15	-89.56	87.45	-424.17	40°01'43.075"N	104°53'29.557"W	0.68	
3213.00	15.560	283.900	3155.64	-95.61	93.37	-448.63	40°01'43.134"N	104°53'29.871"W	0.72	
3305.00	16.720	281.350	3244.01	-101.30	98.94	-473.59	40°01'43.189"N	104°53'30.192"W	1.48	
3397.00	15.960	281.270	3332.30	-106.50	104.02	-498.97	40°01'43.239"N	104°53'30.518"W	0.83	
3579.00	14.660	280.950	3507.83	-116.00	113.29	-546.12	40°01'43.330"N	104°53'31.124"W	0.72	
3669.00	14.950	279.800	3594.85	-120.25	117.42	-568.74	40°01'43.371"N	104°53'31.415"W	0.46	
3761.00	14.130	277.880	3683.90	-123.93	120.98	-591.56	40°01'43.407"N	104°53'31.709"W	1.03	
3846.00	14.490	280.480	3766.26	-127.39	124.34	-612.29	40°01'43.440"N	104°53'31.975"W	0.87	
3931.00	14.990	280.280	3848.47	-131.39	128.24	-633.57	40°01'43.478"N	104°53'32.249"W	0.59	
4017.00	15.730	280.660	3931.39	-135.64	132.38	-655.97	40°01'43.519"N	104°53'32.536"W	0.87	
4102.00	15.330	279.860	4013.29	-139.81	136.43	-678.36	40°01'43.559"N	104°53'32.824"W	0.53	
4187.00	15.000	284.250	4095.33	-144.55	141.07	-700.09	40°01'43.605"N	104°53'33.104"W	1.41	

Actual Wellpath Report

HOWARD 28C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#15 HOWARD 28C-33HZ (340' FNL & 1094' FEL, SEC. 28)
Area	COLORADO	Well	HOWARD 28C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 28C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH DATA (159 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4272.00	15.280	280.730	4177.38	-149.45	145.86	-721.76	40°01'43.652"N	104°53'33.382"W	1.13	
4357.00	16.230	280.600	4259.19	-153.83	150.13	-744.44	40°01'43.695"N	104°53'33.674"W	1.12	
4443.00	17.190	282.290	4341.56	-158.87	155.04	-768.67	40°01'43.743"N	104°53'33.985"W	1.25	
4528.00	17.860	280.990	4422.61	-164.15	160.20	-793.74	40°01'43.794"N	104°53'34.308"W	0.91	
4613.00	16.470	280.130	4503.82	-168.88	164.81	-818.40	40°01'43.840"N	104°53'34.625"W	1.66	
4698.00	16.370	281.920	4585.36	-173.59	169.40	-841.98	40°01'43.885"N	104°53'34.928"W	0.61	
4784.00	16.230	281.590	4667.90	-178.62	174.32	-865.61	40°01'43.934"N	104°53'35.231"W	0.20	
4869.00	17.570	283.030	4749.23	-184.02	179.60	-889.75	40°01'43.986"N	104°53'35.542"W	1.65	
4954.00	16.970	282.290	4830.40	-189.68	185.13	-914.36	40°01'44.040"N	104°53'35.858"W	0.75	
5039.00	16.480	282.820	4911.80	-195.11	190.45	-938.24	40°01'44.093"N	104°53'36.165"W	0.60	
5124.00	15.540	282.710	4993.50	-200.41	195.63	-961.10	40°01'44.144"N	104°53'36.459"W	1.11	
5209.00	15.950	280.870	5075.31	-205.23	200.33	-983.68	40°01'44.191"N	104°53'36.749"W	0.76	
5295.00	16.140	282.430	5157.96	-210.14	205.14	-1006.96	40°01'44.238"N	104°53'37.049"W	0.55	
5380.00	16.370	282.720	5239.57	-215.44	210.32	-1030.18	40°01'44.289"N	104°53'37.347"W	0.29	
5465.00	16.900	281.160	5321.01	-220.59	215.35	-1053.99	40°01'44.339"N	104°53'37.653"W	0.82	
5550.00	15.880	280.800	5402.55	-225.27	219.92	-1077.53	40°01'44.384"N	104°53'37.956"W	1.21	
5635.00	15.430	282.640	5484.40	-230.04	224.57	-1099.99	40°01'44.430"N	104°53'38.244"W	0.79	
5720.00	15.810	283.110	5566.26	-235.25	229.67	-1122.30	40°01'44.480"N	104°53'38.531"W	0.47	
5806.00	16.130	280.870	5648.94	-240.28	234.58	-1145.44	40°01'44.529"N	104°53'38.829"W	0.81	
5891.00	15.770	281.800	5730.67	-244.98	239.17	-1168.34	40°01'44.574"N	104°53'39.123"W	0.52	
5976.00	16.290	281.940	5812.37	-249.92	244.00	-1191.31	40°01'44.622"N	104°53'39.418"W	0.61	
6061.00	16.280	280.110	5893.96	-254.59	248.56	-1214.71	40°01'44.667"N	104°53'39.719"W	0.60	
6146.00	14.610	277.560	5975.88	-258.21	252.06	-1237.06	40°01'44.702"N	104°53'40.007"W	2.12	
6232.00	12.870	274.640	6059.42	-260.51	254.26	-1257.36	40°01'44.723"N	104°53'40.268"W	2.18	
6317.00	13.230	278.880	6142.23	-262.87	256.53	-1276.41	40°01'44.746"N	104°53'40.512"W	1.20	
6402.00	12.310	283.760	6225.13	-266.62	260.18	-1294.82	40°01'44.782"N	104°53'40.749"W	1.67	
6487.00	10.540	279.230	6308.44	-270.11	263.59	-1311.30	40°01'44.815"N	104°53'40.961"W	2.33	
6572.00	10.260	286.640	6392.05	-273.59	267.00	-1326.22	40°01'44.849"N	104°53'41.153"W	1.61	
6657.00	9.150	284.920	6475.83	-277.57	270.91	-1340.01	40°01'44.888"N	104°53'41.330"W	1.35	
6742.00	7.240	288.420	6559.96	-281.06	274.34	-1351.62	40°01'44.922"N	104°53'41.479"W	2.32	
6827.00	6.480	283.460	6644.35	-283.92	277.15	-1361.37	40°01'44.950"N	104°53'41.605"W	1.13	
6912.00	5.230	284.010	6728.91	-286.01	279.20	-1369.79	40°01'44.970"N	104°53'41.713"W	1.47	
6997.00	3.380	291.650	6813.66	-287.91	281.07	-1375.88	40°01'44.988"N	104°53'41.791"W	2.27	
7082.00	2.020	298.490	6898.57	-289.56	282.71	-1379.53	40°01'45.004"N	104°53'41.838"W	1.64	
7166.00	1.060	297.840	6982.54	-290.64	283.78	-1381.51	40°01'45.015"N	104°53'41.864"W	1.14	
7252.00	0.240	102.980	7068.53	-290.98	284.11	-1382.04	40°01'45.018"N	104°53'41.870"W	1.50	
7295.00	2.270	167.900	7111.52	-290.12	283.25	-1381.78	40°01'45.010"N	104°53'41.867"W	5.07	
7337.00	4.720	181.210	7153.44	-287.58	280.71	-1381.64	40°01'44.985"N	104°53'41.865"W	6.11	
7380.00	8.660	182.180	7196.14	-282.58	275.71	-1381.80	40°01'44.935"N	104°53'41.867"W	9.17	
7422.00	12.430	181.640	7237.42	-274.90	268.03	-1382.05	40°01'44.859"N	104°53'41.870"W	8.98	
7465.00	16.930	179.610	7279.01	-264.01	257.13	-1382.14	40°01'44.752"N	104°53'41.872"W	10.53	
7507.00	20.770	178.630	7318.75	-250.44	243.57	-1381.92	40°01'44.618"N	104°53'41.869"W	9.17	
7550.00	24.510	179.490	7358.43	-233.89	227.02	-1381.66	40°01'44.454"N	104°53'41.865"W	8.73	
7593.00	27.690	179.990	7397.04	-214.98	208.11	-1381.58	40°01'44.267"N	104°53'41.864"W	7.41	
7633.00	30.760	181.490	7431.94	-195.45	188.58	-1381.84	40°01'44.074"N	104°53'41.868"W	7.89	

REFERENCE WELLPATH IDENTIFICATION

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WELLPATH DATA (159 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7678.00	33.150	180.150	7470.12	-171.64	164.77	-1382.17	40°01'43.839"N	104°53'41.872"W	5.54	
7721.00	38.600	181.240	7504.95	-146.46	139.59	-1382.49	40°01'43.590"N	104°53'41.876"W	12.76	
7763.00	43.970	180.280	7536.50	-118.76	111.89	-1382.85	40°01'43.316"N	104°53'41.881"W	12.87	
7806.00	48.650	180.130	7566.19	-87.68	80.80	-1382.96	40°01'43.009"N	104°53'41.882"W	10.89	
7848.00	53.260	181.270	7592.64	-55.08	48.20	-1383.37	40°01'42.687"N	104°53'41.887"W	11.18	
7891.00	57.790	179.430	7616.98	-19.64	12.76	-1383.57	40°01'42.337"N	104°53'41.890"W	11.11	
7933.00	62.650	178.670	7637.83	16.80	-23.68	-1382.96	40°01'41.977"N	104°53'41.882"W	11.68	
7976.00	65.020	177.870	7656.79	55.38	-62.25	-1381.79	40°01'41.595"N	104°53'41.867"W	5.76	
8019.00	68.130	179.060	7673.89	94.82	-101.69	-1380.74	40°01'41.206"N	104°53'41.853"W	7.67	
8062.00	72.140	179.420	7688.49	135.25	-142.12	-1380.20	40°01'40.806"N	104°53'41.846"W	9.36	
8104.00	77.390	179.990	7699.53	175.76	-182.62	-1380.00	40°01'40.406"N	104°53'41.844"W	12.57	
8147.00	81.470	179.730	7707.41	218.02	-224.89	-1379.89	40°01'39.988"N	104°53'41.842"W	9.51	
8189.00	82.810	179.640	7713.16	259.62	-266.49	-1379.66	40°01'39.577"N	104°53'41.839"W	3.20	
8233.00†	88.065	180.856	7716.66	303.47	-310.33	-1379.86	40°01'39.144"N	104°53'41.842"W	12.26	7" Casing Point
8243.00	89.260	181.130	7716.89	313.46	-320.33	-1380.03	40°01'39.045"N	104°53'41.844"W	12.26	
8328.00	90.240	181.170	7717.26	398.43	-405.31	-1381.73	40°01'38.205"N	104°53'41.866"W	1.15	
8413.00	89.900	180.870	7717.16	483.41	-490.30	-1383.25	40°01'37.365"N	104°53'41.885"W	0.53	
8499.00	90.920	180.770	7716.54	569.39	-576.28	-1384.48	40°01'36.516"N	104°53'41.901"W	1.19	
8669.00	91.080	180.270	7713.57	739.35	-746.25	-1386.02	40°01'34.836"N	104°53'41.921"W	0.31	
8754.00	90.800	179.330	7712.18	824.33	-831.24	-1385.72	40°01'33.996"N	104°53'41.917"W	1.15	
8840.00	90.620	180.190	7711.11	910.33	-917.23	-1385.36	40°01'33.146"N	104°53'41.912"W	1.02	
8925.00	89.440	178.850	7711.07	995.32	-1002.22	-1384.65	40°01'32.306"N	104°53'41.903"W	2.10	
9010.00	89.810	178.830	7711.63	1080.31	-1087.20	-1382.93	40°01'31.467"N	104°53'41.881"W	0.44	
9095.00	89.620	178.280	7712.05	1165.29	-1172.18	-1380.79	40°01'30.627"N	104°53'41.853"W	0.68	
9265.00	90.800	178.820	7711.43	1335.25	-1342.12	-1376.49	40°01'28.947"N	104°53'41.798"W	0.76	
9350.00	90.090	178.890	7710.77	1420.24	-1427.10	-1374.79	40°01'28.108"N	104°53'41.776"W	0.84	
9435.00	90.060	179.880	7710.65	1505.24	-1512.09	-1373.88	40°01'27.268"N	104°53'41.764"W	1.17	
9521.00	89.040	179.720	7711.33	1591.23	-1598.09	-1373.58	40°01'26.418"N	104°53'41.760"W	1.20	
9606.00	89.930	180.450	7712.09	1676.23	-1683.08	-1373.70	40°01'25.578"N	104°53'41.762"W	1.35	
9691.00	89.590	179.420	7712.45	1761.22	-1768.08	-1373.61	40°01'24.738"N	104°53'41.760"W	1.28	
9776.00	88.820	177.760	7713.63	1846.20	-1853.04	-1371.51	40°01'23.898"N	104°53'41.733"W	2.15	
9861.00	90.150	178.770	7714.39	1931.16	-1938.00	-1368.94	40°01'23.059"N	104°53'41.700"W	1.96	
9946.00	88.980	177.970	7715.04	2016.13	-2022.96	-1366.52	40°01'22.219"N	104°53'41.669"W	1.67	
10032.00	90.670	179.650	7715.30	2102.12	-2108.93	-1364.74	40°01'21.370"N	104°53'41.646"W	2.77	
10117.00	90.060	178.920	7714.76	2187.11	-2193.92	-1363.68	40°01'20.530"N	104°53'41.632"W	1.12	
10202.00	88.950	178.640	7715.49	2272.10	-2278.90	-1361.87	40°01'19.690"N	104°53'41.609"W	1.35	
10287.00	89.810	179.730	7716.41	2357.09	-2363.88	-1360.66	40°01'18.850"N	104°53'41.594"W	1.63	
10372.00	88.350	178.450	7717.78	2442.07	-2448.86	-1359.31	40°01'18.010"N	104°53'41.576"W	2.28	
10458.00	88.970	178.580	7719.79	2528.02	-2534.80	-1357.08	40°01'17.161"N	104°53'41.547"W	0.74	
10542.00	90.670	179.160	7720.05	2612.01	-2618.78	-1355.42	40°01'16.331"N	104°53'41.526"W	2.14	
10628.00	88.490	179.300	7720.68	2698.00	-2704.77	-1354.27	40°01'15.481"N	104°53'41.511"W	2.54	
10713.00	89.410	179.430	7722.24	2782.98	-2789.75	-1353.33	40°01'14.642"N	104°53'41.499"W	1.09	
10798.00	90.610	179.980	7722.23	2867.98	-2874.75	-1352.89	40°01'13.802"N	104°53'41.493"W	1.55	
10883.00	90.990	179.760	7721.04	2952.97	-2959.74	-1352.70	40°01'12.962"N	104°53'41.491"W	0.52	
10968.00	91.630	179.350	7719.10	3037.95	-3044.71	-1352.04	40°01'12.122"N	104°53'41.482"W	0.89	

Actual Wellpath Report

HOWARD 28C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#15 HOWARD 28C-33HZ (340' FNL & 1094' FEL, SEC. 28)
Area	COLORADO	Well	HOWARD 28C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 28C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH DATA (159 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11054.00	90.270	179.270	7717.67	3123.93	-3130.69	-1351.00	40°01'11.272"N	104°53'41.469"W	1.58	
11139.00	91.420	178.710	7716.42	3208.91	-3215.67	-1349.50	40°01'10.433"N	104°53'41.450"W	1.50	
11224.00	90.890	178.770	7714.70	3293.88	-3300.63	-1347.63	40°01'09.593"N	104°53'41.425"W	0.63	
11309.00	90.180	179.260	7713.91	3378.87	-3385.61	-1346.17	40°01'08.753"N	104°53'41.407"W	1.01	
11394.00	89.780	178.720	7713.94	3463.87	-3470.60	-1344.67	40°01'07.913"N	104°53'41.387"W	0.79	
11479.00	89.100	179.520	7714.77	3548.86	-3555.58	-1343.37	40°01'07.073"N	104°53'41.370"W	1.24	
11564.00	87.990	179.980	7716.93	3633.83	-3640.55	-1343.00	40°01'06.234"N	104°53'41.366"W	1.41	
11650.00	88.110	179.380	7719.86	3719.78	-3726.50	-1342.52	40°01'05.384"N	104°53'41.359"W	0.71	
11735.00	88.240	178.710	7722.56	3804.73	-3811.45	-1341.10	40°01'04.545"N	104°53'41.341"W	0.80	
11820.00	91.200	180.810	7722.98	3889.71	-3896.43	-1340.75	40°01'03.705"N	104°53'41.337"W	4.27	
11905.00	91.780	180.000	7720.77	3974.68	-3981.40	-1341.35	40°01'02.865"N	104°53'41.344"W	1.17	
11990.00	90.210	179.390	7719.29	4059.66	-4066.38	-1340.89	40°01'02.026"N	104°53'41.338"W	1.98	
12076.00	90.640	179.330	7718.65	4145.66	-4152.37	-1339.93	40°01'01.176"N	104°53'41.326"W	0.50	
12161.00	89.840	179.440	7718.30	4230.65	-4237.37	-1339.02	40°01'00.336"N	104°53'41.314"W	0.95	
12246.00	88.510	179.670	7719.52	4315.64	-4322.35	-1338.36	40°00'59.496"N	104°53'41.306"W	1.59	
12331.00	88.920	180.160	7721.43	4400.62	-4407.33	-1338.24	40°00'58.656"N	104°53'41.304"W	0.75	
12416.00	91.200	180.270	7721.34	4485.61	-4492.33	-1338.55	40°00'57.816"N	104°53'41.308"W	2.69	
12501.00	90.360	180.640	7720.18	4570.60	-4577.31	-1339.23	40°00'56.976"N	104°53'41.317"W	1.08	
12587.00	88.240	180.300	7721.23	4656.58	-4663.30	-1339.93	40°00'56.127"N	104°53'41.326"W	2.50	
12672.00	89.650	180.840	7722.80	4741.55	-4748.28	-1340.78	40°00'55.287"N	104°53'41.336"W	1.78	
12757.00	89.900	180.500	7723.13	4826.54	-4833.27	-1341.77	40°00'54.447"N	104°53'41.349"W	0.50	
12842.00	88.670	179.610	7724.19	4911.53	-4918.26	-1341.86	40°00'53.607"N	104°53'41.350"W	1.79	
12987.00	89.660	178.190	7726.30	5056.49	-5063.22	-1339.07	40°00'52.175"N	104°53'41.314"W	1.19	Last BHI MWD Surveys
13042.00	89.660	178.190	7726.63	5111.47	-5118.19	-1337.34	40°00'51.631"N	104°53'41.292"W	0.00	Projection to Bit

HOLE & CASING SECTIONS - Ref Wellbore: HOWARD 28C-33HZ AWB Ref Wellpath: HOWARD 28C-33HZ AWP

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]
13.5in Open Hole	16.00	1037.00	1021.00	16.00	1036.99	0.00	0.00	1.26	-2.07
9.625in Casing Surface	16.00	1027.00	1011.00	16.00	1026.99	0.00	0.00	1.24	-2.01
8.75in Open Hole	1037.00	8244.00	7207.00	1036.99	7716.90	1.26	-2.07	-321.33	-1380.05
7in Casing Intermediate	16.00	8233.00	8217.00	16.00	7716.66	0.00	0.00	-310.33	-1379.86
6.125in Open Hole	8233.00	13042.00	4809.00	7716.66	7726.63	-310.33	-1379.86	-5118.19	-1337.34

Actual Wellpath Report

HOWARD 28C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#15 HOWARD 28C-33HZ (340' FNL & 1094' FEL, SEC. 28)
Area	COLORADO	Well	HOWARD 28C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 28C-33HZ AWB
Facility	SEC.28-T1N-R67W		

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
HOWARD 27W-28HZ HARD LINES (460' SETBACKS, SEC. 28)		4999.00	0.00	-150.14	3170662.98	1253775.75	40°01'42.211"N	104°53'26.034"W	polygon
HOWARD 27W-28HZ HARD LINES (460' SETBACKS, SEC. 33)		4999.00	0.00	-150.14	3170662.98	1253775.75	40°01'42.211"N	104°53'26.034"W	polygon
HOWARD 27W-28HZ SECTION LINES (SEC. 28)		4999.00	0.00	-150.14	3170662.98	1253775.75	40°01'42.211"N	104°53'26.034"W	polygon
HOWARD 27W-28HZ SECTION LINES (SEC. 33)		4999.00	0.00	-150.14	3170662.98	1253775.75	40°01'42.211"N	104°53'26.034"W	polygon
HOWARD 28C-33HZ BHL ON PLAT (200' FNL & 2470' FEL, SEC. 33) REV-3		7724.00	-5143.72	-1351.82	3169496.75	1248624.08	40°00'51.379"N	104°53'41.478"W	point
HOWARD 28C-33HZ BHL ON PLAT (200' FNL & 2470' FEL, SEC. 33) REV-1		7730.00	-5143.72	-1351.82	3169496.75	1248624.08	40°00'51.379"N	104°53'41.478"W	point
HOWARD 28C-33HZ BHL ON PLAT (200' FNL & 2470' FEL, SEC. 33) REV-2		7734.00	-5143.72	-1351.82	3169496.75	1248624.08	40°00'51.379"N	104°53'41.478"W	point
HOWARD 28C-33HZ LANDBOX		7734.00	0.00	0.00	3170813.11	1253776.78	40°01'42.211"N	104°53'24.104"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: HOWARD 28C-33HZ AWB Ref Wellpath: HOWARD 28C-33HZ AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	966.00	Generic gyro - continuous (Standard)	MS ENERGY SERVICES GYRO SURVEYS <116-966>	HOWARD 28C-33HZ AWB
966.00	8189.00	NaviTrak (MagCorr)	BHI MWD SURVEYS 8 3/4" HOLE <1090-8189>	HOWARD 28C-33HZ AWB
8189.00	12987.00	NaviTrak (MagCorr)	BHI MWD SURVEYS 6 1/8" HOLE <8243-12987>	HOWARD 28C-33HZ AWB
12987.00	13042.00	Blind Drilling (std)	Projection to bit	HOWARD 28C-33HZ AWB

Actual Wellpath Report

HOWARD 28C-33HZ AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#15 HOWARD 28C-33HZ (340' FNL & 1094' FEL, SEC. 28)
Area	COLORADO	Well	HOWARD 28C-33HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 28C-33HZ AWB
Facility	SEC.28-T1N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
16.00	0.000	243.940	16.00	Tie-On
116.00	0.320	243.940	116.00	Begin GYRO Surveys
966.00	0.430	262.630	966.00	Tie-Into GYRO Surveys
1090.00	0.330	305.110	1089.99	Begin BHI MWD Surveys
8233.00	88.065	180.856	7716.66	7" Casing Point
12987.00	89.660	178.190	7726.30	Last BHI MWD Surveys
13042.00	89.660	178.190	7726.63	Projection to Bit