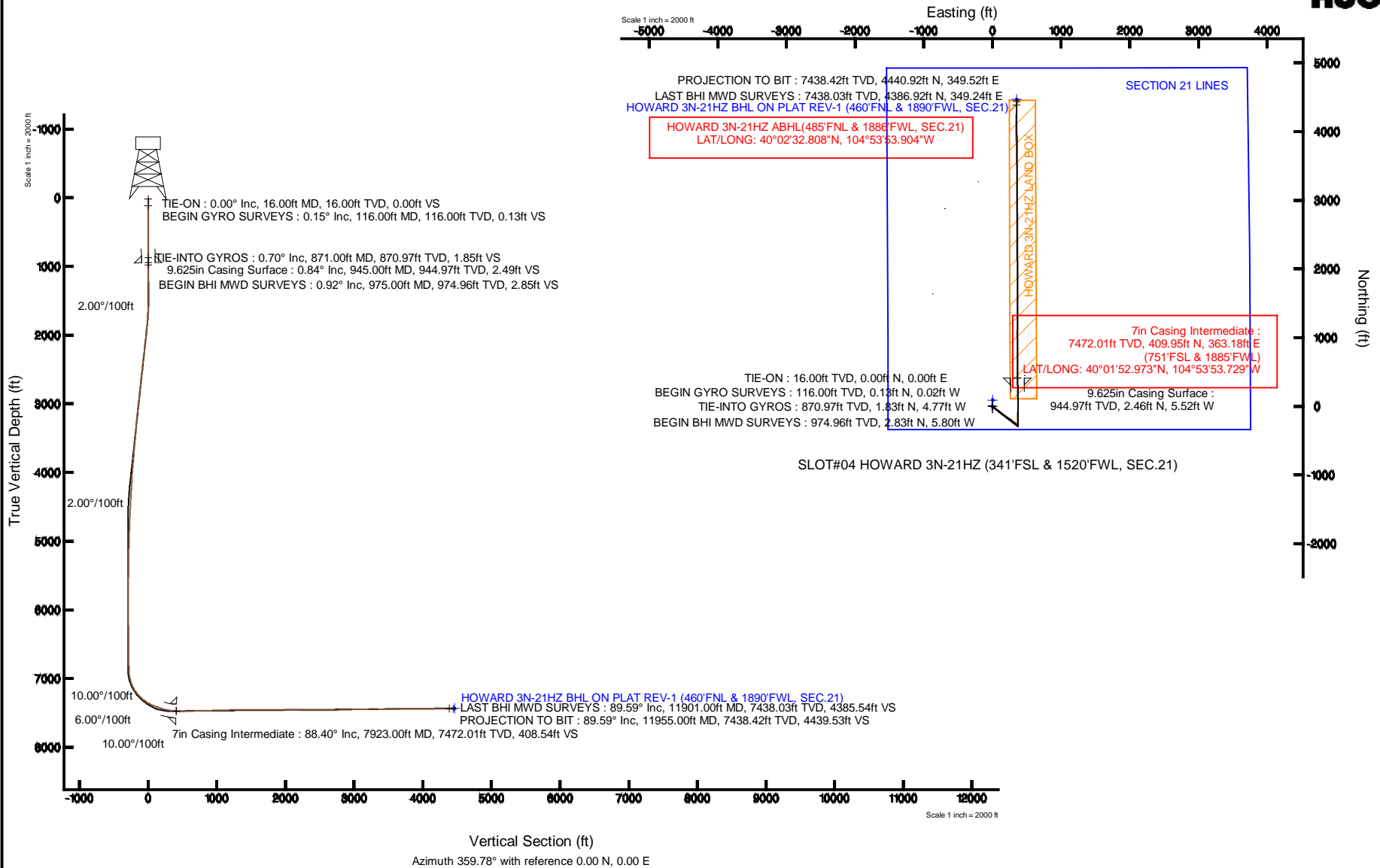


KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#04 HOWARD 3N-21HZ (341'FSL & 1520'FWL, SEC.21)
 Field: WELD COUNTY (KERR MCGEE) Well: HOWARD 3N-21HZ
 Facility: SEC.21-T1N-R67W Wellbore: HOWARD 3N-21HZ PWB

Plot reference wellpath is HOWARD 3N-21HZ (REV-B.0) PWP

True vertical depths are referenced to XTREME 6 (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to XTREME 6 (RKB)	North Reference: True north
XTREME 6 (RKB) to Mean Sea Level: 5041 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#04 HOWARD 3N-21HZ (341'FSL & 1520'FWL, SEC.21)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: preccain on 17/Dec/2013



Azimuth 359.78° with reference 0.00 N, 0.00 E

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 HOWARD 3N-21HZ (341'FSL & 1520'FWL, SEC.21)
Area	COLORADO	Well	HOWARD 3N-21HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 3N-21HZ AWB
Facility	SEC.21-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	17/Dec/2013 at 09:07
Convergence at slot	n/a	Database/Source file	WellArchitectDB/HOWARD_3N-21HZ_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-90.06	-1.71	3168140.91	1254437.63	40°01'48.922"N	104°53'58.398"W
Facility Reference Pt			3168142.01	1254527.69	40°01'49.812"N	104°53'58.376"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 6 (RKB) to Facility Vertical Datum	5041.00ft
Horizontal Reference Pt	Slot	XTREME 6 (RKB) to Mean Sea Level	5041.00ft
Vertical Reference Pt	XTREME 6 (RKB)	XTREME 6 (RKB) to Mud Line at Slot (SLOT#04 HOWARD 3N-21HZ (341'FSL & 1520'FWL, SEC.21))	5041.00ft
MD Reference Pt	XTREME 6 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.78°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 HOWARD 3N-21HZ (341'FSL & 1520'FWL, SEC.21)
Area	COLORADO	Well	HOWARD 3N-21HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 3N-21HZ AWB
Facility	SEC.21-T1N-R67W		

WELLPATH DATA (137 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	351.590	0.00	0.00	0.00	0.00	40°01'48.922"N	104°53'58.398"W	0.00	
16.00	0.000	351.590	16.00	0.00	0.00	0.00	40°01'48.922"N	104°53'58.398"W	0.00	TIE-ON
116.00	0.150	351.590	116.00	0.13	0.13	-0.02	40°01'48.923"N	104°53'58.398"W	0.15	BEGIN GYRO SURVEYS
216.00	0.210	249.830	216.00	0.20	0.20	-0.21	40°01'48.924"N	104°53'58.401"W	0.28	
316.00	0.320	229.440	316.00	-0.05	-0.05	-0.59	40°01'48.922"N	104°53'58.406"W	0.14	
416.00	0.010	284.040	416.00	-0.23	-0.23	-0.82	40°01'48.920"N	104°53'58.408"W	0.31	
516.00	0.490	270.560	516.00	-0.22	-0.22	-1.25	40°01'48.920"N	104°53'58.414"W	0.48	
616.00	0.630	310.520	615.99	0.15	0.14	-2.10	40°01'48.923"N	104°53'58.425"W	0.40	
716.00	0.670	283.330	715.99	0.64	0.63	-3.08	40°01'48.928"N	104°53'58.438"W	0.31	
816.00	0.900	317.310	815.98	1.36	1.34	-4.18	40°01'48.935"N	104°53'58.452"W	0.51	
871.00	0.700	299.810	870.97	1.85	1.83	-4.77	40°01'48.940"N	104°53'58.459"W	0.57	TIE-INTO GYROS
975.00	0.920	325.310	974.96	2.85	2.83	-5.80	40°01'48.950"N	104°53'58.473"W	0.40	BEGIN BHI MWD SURVEYS
1066.00	1.000	327.040	1065.95	4.12	4.10	-6.64	40°01'48.962"N	104°53'58.483"W	0.09	
1158.00	0.910	334.730	1157.94	5.46	5.43	-7.39	40°01'48.976"N	104°53'58.493"W	0.17	
1249.00	0.930	330.770	1248.92	6.76	6.73	-8.06	40°01'48.989"N	104°53'58.502"W	0.07	
1340.00	1.150	335.670	1339.91	8.24	8.21	-8.80	40°01'49.003"N	104°53'58.511"W	0.26	
1432.00	0.610	59.530	1431.90	9.33	9.30	-8.76	40°01'49.014"N	104°53'58.511"W	1.35	
1527.00	2.420	129.520	1526.87	8.30	8.28	-6.77	40°01'49.004"N	104°53'58.485"W	2.40	
1618.00	4.920	132.300	1617.67	4.44	4.43	-2.40	40°01'48.966"N	104°53'58.429"W	2.75	
1710.00	5.920	132.660	1709.26	-1.46	-1.44	4.00	40°01'48.908"N	104°53'58.347"W	1.09	
1802.00	7.820	128.140	1800.60	-8.57	-8.53	12.42	40°01'48.838"N	104°53'58.238"W	2.15	
1894.00	8.130	130.310	1891.71	-16.69	-16.60	22.30	40°01'48.758"N	104°53'58.111"W	0.47	
1979.00	10.100	128.030	1975.63	-25.21	-25.08	32.75	40°01'48.674"N	104°53'57.977"W	2.36	
2064.00	10.210	127.970	2059.30	-34.48	-34.31	44.56	40°01'48.583"N	104°53'57.825"W	0.13	
2149.00	10.320	129.590	2142.94	-44.01	-43.79	56.37	40°01'48.489"N	104°53'57.673"W	0.36	
2235.00	10.410	132.040	2227.54	-54.17	-53.91	68.08	40°01'48.389"N	104°53'57.523"W	0.52	
2320.00	10.500	131.820	2311.13	-64.52	-64.21	79.55	40°01'48.287"N	104°53'57.375"W	0.12	
2405.00	10.050	130.940	2394.76	-74.59	-74.24	90.93	40°01'48.188"N	104°53'57.229"W	0.56	
2490.00	9.420	129.000	2478.54	-83.87	-83.47	101.93	40°01'48.097"N	104°53'57.088"W	0.84	
2576.00	9.800	129.940	2563.33	-93.04	-92.60	113.02	40°01'48.007"N	104°53'56.945"W	0.48	
2661.00	10.860	125.840	2646.95	-102.42	-101.94	125.05	40°01'47.915"N	104°53'56.790"W	1.52	
2746.00	10.670	124.480	2730.46	-111.61	-111.08	138.03	40°01'47.824"N	104°53'56.624"W	0.37	
2831.00	10.320	121.580	2814.04	-120.10	-119.52	151.00	40°01'47.741"N	104°53'56.457"W	0.75	
2916.00	11.360	126.990	2897.52	-129.18	-128.55	164.18	40°01'47.652"N	104°53'56.287"W	1.71	
3002.00	10.960	127.350	2981.89	-139.29	-138.60	177.44	40°01'47.552"N	104°53'56.117"W	0.47	
3087.00	10.440	123.010	3065.42	-148.44	-147.70	190.32	40°01'47.462"N	104°53'55.951"W	1.13	
3172.00	10.230	120.960	3149.04	-156.56	-155.78	203.25	40°01'47.383"N	104°53'55.785"W	0.50	
3257.00	9.890	121.740	3232.73	-164.34	-163.50	215.93	40°01'47.306"N	104°53'55.622"W	0.43	
3342.00	9.740	119.430	3316.49	-171.76	-170.87	228.41	40°01'47.233"N	104°53'55.462"W	0.50	
3428.00	9.820	122.190	3401.24	-179.29	-178.36	240.95	40°01'47.159"N	104°53'55.301"W	0.55	
3513.00	9.680	123.100	3485.01	-187.10	-186.12	253.07	40°01'47.083"N	104°53'55.145"W	0.24	
3598.00	9.330	122.380	3568.84	-194.74	-193.71	264.87	40°01'47.008"N	104°53'54.993"W	0.43	
3684.00	8.800	123.520	3653.77	-202.15	-201.08	276.25	40°01'46.935"N	104°53'54.847"W	0.65	
3769.00	8.200	121.570	3737.84	-208.95	-207.84	286.83	40°01'46.868"N	104°53'54.711"W	0.78	
3854.00	7.500	131.460	3822.04	-215.83	-214.69	296.15	40°01'46.800"N	104°53'54.591"W	1.79	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 HOWARD 3N-21HZ (341'FSL & 1520'FWL, SEC.21)
Area	COLORADO	Well	HOWARD 3N-21HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 3N-21HZ AWB
Facility	SEC.21-T1N-R67W		

WELLPATH DATA (137 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3939.00	7.260	133.050	3906.34	-223.21	-222.03	304.24	40°01'46.728"N	104°53'54.487"W	0.37	
4024.00	6.540	128.890	3990.72	-229.94	-228.73	311.93	40°01'46.662"N	104°53'54.388"W	1.03	
4110.00	5.840	125.110	4076.22	-235.56	-234.32	319.32	40°01'46.606"N	104°53'54.293"W	0.94	
4195.00	5.440	117.600	4160.81	-239.94	-238.68	326.43	40°01'46.563"N	104°53'54.202"W	0.99	
4280.00	4.870	138.070	4245.47	-244.52	-243.23	332.41	40°01'46.518"N	104°53'54.125"W	2.25	
4365.00	4.550	139.340	4330.19	-249.78	-248.47	337.02	40°01'46.467"N	104°53'54.066"W	0.40	
4450.00	4.380	138.120	4414.93	-254.77	-253.45	341.38	40°01'46.417"N	104°53'54.009"W	0.23	
4534.00	4.390	135.250	4498.68	-259.46	-258.12	345.79	40°01'46.371"N	104°53'53.953"W	0.26	
4620.00	3.930	132.960	4584.46	-263.82	-262.46	350.26	40°01'46.328"N	104°53'53.895"W	0.57	
4705.00	3.720	128.090	4669.27	-267.52	-266.15	354.56	40°01'46.292"N	104°53'53.840"W	0.45	
4790.00	3.520	125.870	4754.10	-270.77	-269.38	358.85	40°01'46.260"N	104°53'53.785"W	0.29	
4875.00	3.510	120.060	4838.94	-273.62	-272.21	363.21	40°01'46.232"N	104°53'53.729"W	0.42	
4960.00	2.990	122.610	4923.80	-276.13	-274.71	367.33	40°01'46.207"N	104°53'53.676"W	0.63	
5045.00	2.250	133.680	5008.71	-278.49	-277.06	370.41	40°01'46.184"N	104°53'53.636"W	1.05	
5131.00	1.870	146.230	5094.66	-280.83	-279.39	372.41	40°01'46.161"N	104°53'53.611"W	0.68	
5216.00	1.390	158.650	5179.62	-282.95	-281.50	373.55	40°01'46.140"N	104°53'53.596"W	0.70	
5301.00	1.010	149.910	5264.60	-284.56	-283.11	374.30	40°01'46.124"N	104°53'53.586"W	0.49	
5386.00	0.880	156.680	5349.59	-285.81	-284.36	374.94	40°01'46.112"N	104°53'53.578"W	0.20	
5471.00	0.770	156.980	5434.58	-286.94	-285.48	375.42	40°01'46.101"N	104°53'53.572"W	0.13	
5556.00	0.960	162.900	5519.57	-288.14	-286.69	375.85	40°01'46.089"N	104°53'53.566"W	0.25	
5641.00	0.860	166.850	5604.56	-289.45	-287.99	376.21	40°01'46.076"N	104°53'53.562"W	0.14	
5726.00	0.580	183.300	5689.56	-290.50	-289.04	376.33	40°01'46.066"N	104°53'53.560"W	0.41	
5812.00	0.190	225.020	5775.55	-291.03	-289.58	376.20	40°01'46.060"N	104°53'53.562"W	0.53	
5897.00	0.150	286.410	5860.55	-291.10	-289.65	376.00	40°01'46.060"N	104°53'53.565"W	0.21	
5982.00	0.220	347.070	5945.55	-290.91	-289.46	375.85	40°01'46.061"N	104°53'53.566"W	0.23	
6067.00	0.640	322.460	6030.55	-290.37	-288.92	375.53	40°01'46.067"N	104°53'53.571"W	0.53	
6152.00	0.750	314.870	6115.54	-289.60	-288.15	374.84	40°01'46.074"N	104°53'53.579"W	0.17	
6238.00	0.850	329.330	6201.54	-288.65	-287.21	374.12	40°01'46.084"N	104°53'53.589"W	0.26	
6323.00	0.840	325.740	6286.53	-287.59	-286.15	373.45	40°01'46.094"N	104°53'53.597"W	0.06	
6408.00	1.310	326.110	6371.51	-286.27	-284.83	372.55	40°01'46.107"N	104°53'53.609"W	0.55	
6493.00	1.070	322.250	6456.49	-284.83	-283.39	371.53	40°01'46.121"N	104°53'53.622"W	0.30	
6578.00	1.510	290.680	6541.47	-283.80	-282.37	369.99	40°01'46.132"N	104°53'53.642"W	0.96	
6663.00	0.680	312.860	6626.46	-283.06	-281.63	368.57	40°01'46.139"N	104°53'53.660"W	1.08	
6748.00	0.740	313.900	6711.45	-282.33	-280.91	367.81	40°01'46.146"N	104°53'53.670"W	0.07	
6834.00	1.260	312.530	6797.44	-281.30	-279.88	366.71	40°01'46.156"N	104°53'53.684"W	0.61	
6917.00	1.680	341.080	6880.41	-279.53	-278.11	365.65	40°01'46.174"N	104°53'53.698"W	1.00	
6958.00	6.070	355.040	6921.31	-276.80	-275.39	365.26	40°01'46.201"N	104°53'53.702"W	10.87	
6999.00	8.850	359.320	6961.96	-271.48	-270.07	365.04	40°01'46.253"N	104°53'53.705"W	6.91	
7042.00	13.010	0.630	7004.17	-263.33	-261.92	365.05	40°01'46.334"N	104°53'53.705"W	9.69	
7084.00	17.300	2.740	7044.70	-252.36	-250.95	365.40	40°01'46.442"N	104°53'53.701"W	10.30	
7127.00	22.220	2.780	7085.15	-237.85	-236.43	366.10	40°01'46.585"N	104°53'53.692"W	11.44	
7170.00	26.360	0.800	7124.34	-220.18	-218.76	366.63	40°01'46.760"N	104°53'53.685"W	9.81	
7212.00	30.950	0.940	7161.18	-200.05	-198.63	366.94	40°01'46.959"N	104°53'53.681"W	10.93	
7255.00	35.350	0.260	7197.18	-176.54	-175.12	367.18	40°01'47.191"N	104°53'53.678"W	10.27	
7298.00	40.230	0.780	7231.15	-150.20	-148.78	367.42	40°01'47.452"N	104°53'53.675"W	11.37	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 HOWARD 3N-21HZ (341'FSL & 1520'FWL, SEC.21)
Area	COLORADO	Well	HOWARD 3N-21HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 3N-21HZ AWB
Facility	SEC.21-T1N-R67W		

WELLPATH DATA (137 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7340.00	44.660	1.400	7262.13	-121.87	-120.45	367.97	40°01'47.732"N	104°53'53.668"W	10.59	
7382.00	49.990	2.160	7290.59	-91.02	-89.60	368.94	40°01'48.037"N	104°53'53.655"W	12.76	
7425.00	53.800	1.170	7317.12	-57.21	-55.78	369.91	40°01'48.371"N	104°53'53.643"W	9.04	
7467.00	56.050	1.580	7341.26	-22.86	-21.42	370.74	40°01'48.710"N	104°53'53.632"W	5.42	
7510.00	59.830	0.320	7364.08	13.57	15.01	371.33	40°01'49.070"N	104°53'53.624"W	9.13	
7552.00	64.180	359.560	7383.79	50.65	52.09	371.29	40°01'49.437"N	104°53'53.625"W	10.48	
7595.00	68.200	357.760	7401.15	89.97	91.40	370.36	40°01'49.825"N	104°53'53.637"W	10.10	
7638.00	71.180	357.380	7416.07	130.26	131.69	368.65	40°01'50.223"N	104°53'53.659"W	6.98	
7680.00	73.170	357.790	7428.93	170.21	171.64	366.97	40°01'50.618"N	104°53'53.681"W	4.83	
7723.00	74.780	358.680	7440.80	211.53	212.94	365.69	40°01'51.026"N	104°53'53.697"W	4.24	
7766.00	76.670	359.210	7451.40	253.19	254.61	364.93	40°01'51.438"N	104°53'53.707"W	4.55	
7808.00	79.520	358.950	7460.06	294.28	295.69	364.27	40°01'51.844"N	104°53'53.715"W	6.81	
7851.00	82.920	359.270	7466.62	336.77	338.18	363.61	40°01'52.264"N	104°53'53.724"W	7.94	
7887.00	85.750	359.510	7470.18	372.59	374.00	363.23	40°01'52.618"N	104°53'53.729"W	7.89	
7923.00†	88.405	0.343	7472.01	408.54	409.95	363.18	40°01'52.973"N	104°53'53.729"W	7.73	7" CASING POINT
7935.00	89.290	0.620	7472.25	420.53	421.94	363.28	40°01'53.092"N	104°53'53.728"W	7.73	
8020.00	89.870	0.440	7472.88	505.52	506.94	364.07	40°01'53.932"N	104°53'53.718"W	0.71	
8105.00	90.300	0.550	7472.75	590.52	591.93	364.80	40°01'54.772"N	104°53'53.708"W	0.52	
8190.00	90.860	359.720	7471.89	675.51	676.93	365.00	40°01'55.612"N	104°53'53.706"W	1.18	
8275.00	91.290	359.430	7470.30	760.49	761.91	364.37	40°01'56.451"N	104°53'53.714"W	0.61	
8361.00	91.660	359.470	7468.08	846.46	847.88	363.55	40°01'57.301"N	104°53'53.724"W	0.43	
8446.00	92.460	359.360	7465.03	931.41	932.82	362.68	40°01'58.140"N	104°53'53.735"W	0.95	
8531.00	92.160	359.640	7461.60	1016.34	1017.75	361.94	40°01'58.980"N	104°53'53.745"W	0.48	
8615.00	90.730	0.540	7459.48	1100.30	1101.72	362.07	40°01'59.809"N	104°53'53.743"W	2.01	
8701.00	91.470	0.220	7457.83	1186.28	1187.70	362.64	40°02'00.659"N	104°53'53.736"W	0.94	
8786.00	91.070	0.640	7455.95	1271.26	1272.67	363.28	40°02'01.499"N	104°53'53.728"W	0.68	
8871.00	90.370	359.950	7454.88	1356.25	1357.66	363.72	40°02'02.339"N	104°53'53.722"W	1.16	
8956.00	89.190	0.310	7455.21	1441.24	1442.66	363.91	40°02'03.179"N	104°53'53.720"W	1.45	
9127.00	89.320	359.460	7457.43	1612.23	1613.65	363.57	40°02'04.868"N	104°53'53.724"W	0.50	
9298.00	91.570	0.090	7456.10	1783.21	1784.63	362.89	40°02'06.558"N	104°53'53.733"W	1.37	
9468.00	89.720	0.920	7454.19	1953.17	1954.60	364.39	40°02'08.238"N	104°53'53.713"W	1.19	
9639.00	88.670	0.520	7456.59	2124.13	2125.57	366.54	40°02'09.927"N	104°53'53.686"W	0.66	
9809.00	89.290	0.730	7459.62	2294.09	2295.53	368.39	40°02'11.607"N	104°53'53.662"W	0.39	
9980.00	89.190	359.020	7461.88	2465.06	2466.51	368.02	40°02'13.297"N	104°53'53.666"W	1.00	
10150.00	91.010	358.880	7461.59	2635.04	2636.47	364.91	40°02'14.976"N	104°53'53.707"W	1.07	
10320.00	92.300	359.290	7456.68	2804.95	2806.38	362.19	40°02'16.655"N	104°53'53.741"W	0.80	
10489.00	91.750	359.880	7450.71	2973.84	2975.26	360.97	40°02'18.324"N	104°53'53.757"W	0.48	
10660.00	91.760	0.240	7445.47	3144.76	3146.18	361.15	40°02'20.013"N	104°53'53.755"W	0.21	
10830.00	89.560	358.660	7443.51	3314.73	3316.15	359.52	40°02'21.693"N	104°53'53.776"W	1.59	
11001.00	89.290	358.640	7445.23	3485.69	3487.09	355.49	40°02'23.382"N	104°53'53.827"W	0.16	
11171.00	91.330	358.780	7444.31	3655.65	3657.04	351.66	40°02'25.062"N	104°53'53.877"W	1.20	
11341.00	91.100	358.990	7440.70	3825.59	3826.97	348.35	40°02'26.741"N	104°53'53.919"W	0.18	
11512.00	90.520	359.920	7438.29	3996.57	3997.94	346.73	40°02'28.431"N	104°53'53.940"W	0.64	
11682.00	90.150	0.490	7437.29	4166.56	4167.94	347.34	40°02'30.111"N	104°53'53.932"W	0.40	
11851.00	89.590	0.550	7437.67	4335.54	4336.93	348.87	40°02'31.781"N	104°53'53.912"W	0.33	

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 HOWARD 3N-21HZ (341'FSL & 1520'FWL, SEC.21)
Area	COLORADO	Well	HOWARD 3N-21HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 3N-21HZ AWB
Facility	SEC.21-T1N-R67W		

WELLPATH DATA (137 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11901.00	89.590	0.300	7438.03	4385.54	4386.92	349.24	40°02'32.275"N	104°53'53.908"W	0.50	LAST BHI MWD SURVEYS
11955.00	89.590	0.300	7438.42	4439.53	4440.92	349.52	40°02'32.808"N	104°53'53.904"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: HOWARD 3N-21HZ AWB Ref Wellpath: HOWARD 3N-21HZ 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	947.00	931.00	16.00	946.97	0.00	0.00	2.49	-5.53
9.625in Casing Surface	16.00	945.00	929.00	16.00	944.97	0.00	0.00	2.46	-5.52
8.75in Open Hole	947.00	7933.00	6986.00	946.97	7472.23	2.49	-5.53	419.94	363.26
7in Casing Intermediate	16.00	7923.00	7907.00	16.00	7472.01	0.00	0.00	409.95	363.18
6.125in Open Hole	7933.00	11955.00	4022.00	7472.23	7438.42	419.94	363.26	4440.92	349.52

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SECTION 21 LINES		0.00	89.96	1.71	3168142.01	1254527.59	40°01'49.811"N	104°53'58.376"W	polygon
HOWARD 3N-21HZ LAND BOX		7400.00	0.00	0.00	3168140.91	1254437.63	40°01'48.922"N	104°53'58.398"W	polygon
HOWARD 3N-21HZ BHL ON PLAT REV-1 (460'FNL & 1890'FWL, SEC.21)		7434.00	4465.78	353.07	3168463.72	1258905.53	40°02'33.054"N	104°53'53.858"W	point

WELLPATH COMPOSITION - Ref Wellbore: HOWARD 3N-21HZ AWB Ref Wellpath: HOWARD 3N-21HZ AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	871.00	Generic gyro - continuous (Standard)	MS ENERGY GYRODATA SURVEYS <116-871>	HOWARD 3N-21HZ AWB
871.00	7935.00	NaviTrak (MagCorr)	BHI MWD SURVEYS 8 3/4" HOLE <975-7935>	HOWARD 3N-21HZ AWB
7935.00	11901.00	NaviTrak (MagCorr)	BHI MWD SURVEYS 6 1/8" HOLE <8020-11901>	HOWARD 3N-21HZ AWB
11901.00	11955.00	Blind Drilling (std)	Projection to bit	HOWARD 3N-21HZ AWB

Actual Wellpath Report

HOWARD 3N-21HZ AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#04 HOWARD 3N-21HZ (341'FSL & 1520'FWL, SEC.21)
Area	COLORADO	Well	HOWARD 3N-21HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 3N-21HZ AWB
Facility	SEC.21-T1N-R67W		

WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment	
16.00	0.000	351.590	16.00	TIE-ON	
116.00	0.150	351.590	116.00	BEGIN GYRO SURVEYS	
871.00	0.700	299.810	870.97	TIE-INTO GYROS	
975.00	0.920	325.310	974.96	BEGIN BHI MWD SURVEYS	
7923.00	88.405	0.343	7472.01	7" CASING POINT	
11901.00	89.590	0.300	7438.03	LAST BHI MWD SURVEYS	
11955.00	89.590	0.300	7438.42	PROJECTION TO BIT	