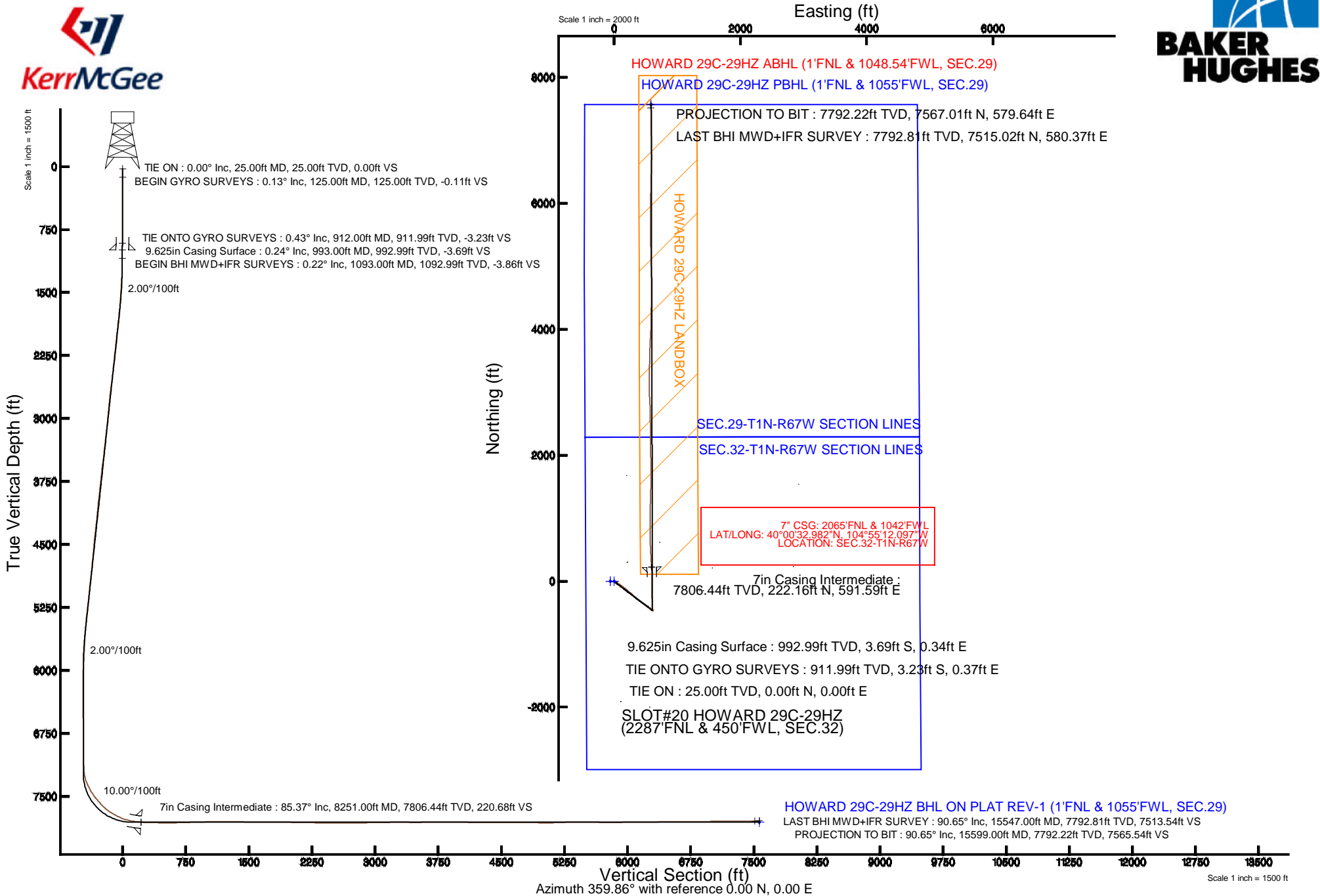


Location:	COLORADO	Slot:	SLOT#20 HOWARD 29C-29HZ (2287°FNL & 450°FWL, SEC.32)
Field:	WELD COUNTY (KERR MCGEE)	Well:	HOWARD 29C-29HZ
Facility:	SEC.32-T1N-R67W	Wellbore:	HOWARD 29C-29HZ PWB

True vertical depths are referenced to PRECISION 595 (25KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PRECISION 595 (25KB) (RKB)	North Reference: True north
PRECISION 595 (25KB) (RKB) to Mean Sea Level: 5056 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot#20 HOWARD 29C-29HZ (2287FNL & 450FWL, SEC.32)): 0 feet	Depths are in feet
Coordinates are in feet referenced to SLOT	Created by: robiale01 on 9/11/2014



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 29C-29HZ (2287'FNL & 450'FWL, SEC.32)
Area	COLORADO	Well	HOWARD 29C-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 29C-29HZ AWB
Facility	SEC.32-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	Robiale01
Scale	0.999966	Report Generated	9/11/2014 at 8:56:59 AM
Convergence at slot	n/a	Database/Source file	WellArchitectDB/HOWARD_29C-29HZ_AWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	201.99	-3292.60	3161868.42	1246489.50	40°00'30.787"N	104°55'19.700"W
Facility Reference Pt			3165162.17	1246309.41	40°00'28.793"N	104°54'37.386"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	PRECISION 595 (25'KB) (RKB) to Facility Vertical Datum	5056.00ft
Horizontal Reference Pt	Slot	PRECISION 595 (25'KB) (RKB) to Mean Sea Level	5056.00ft
Vertical Reference Pt	PRECISION 595 (25'KB) (RKB)	PRECISION 595 (25'KB) (RKB) to Mud Line at Slot (SLOT#20 HOWARD 29C-29HZ (2287'FNL & 450'FWL, SEC.32))	5056.00ft
MD Reference Pt	PRECISION 595 (25'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	4.38°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 29C-29HZ (2287'FNL & 450'FWL, SEC.32)
Area	COLORADO	Well	HOWARD 29C-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 29C-29HZ AWP
Facility	SEC.32-T1N-R67W		

WELLPATH DATA (164 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	159.640	0.00	0.00	0.00	0.00	40°00'30.787"N	104°55'19.700"W	0.00	
25.00	0.000	159.640	25.00	0.00	0.00	0.00	40°00'30.787"N	104°55'19.700"W	0.00	TIE ON
125.00	0.130	159.640	125.00	-0.10	-0.11	0.04	40°00'30.786"N	104°55'19.699"W	0.13	BEGIN GYRO SURVEYS
225.00	0.020	49.990	225.00	-0.19	-0.20	0.09	40°00'30.785"N	104°55'19.699"W	0.14	
325.00	0.100	182.470	325.00	-0.27	-0.28	0.10	40°00'30.784"N	104°55'19.699"W	0.11	
425.00	0.080	168.430	425.00	-0.42	-0.43	0.11	40°00'30.783"N	104°55'19.699"W	0.03	
525.00	0.230	192.690	525.00	-0.69	-0.70	0.08	40°00'30.780"N	104°55'19.699"W	0.16	
625.00	0.350	167.200	625.00	-1.18	-1.19	0.11	40°00'30.775"N	104°55'19.699"W	0.17	
725.00	0.460	180.790	725.00	-1.87	-1.89	0.17	40°00'30.768"N	104°55'19.698"W	0.15	
825.00	0.390	163.640	824.99	-2.59	-2.62	0.26	40°00'30.761"N	104°55'19.697"W	0.14	
912.00	0.430	175.330	911.99	-3.19	-3.23	0.37	40°00'30.755"N	104°55'19.695"W	0.11	TIE ONTO GYRO SURVEYS
1093.00	0.220	276.990	1092.99	-3.84	-3.86	0.08	40°00'30.749"N	104°55'19.699"W	0.29	BEGIN BHI MWD+IFR SURVEYS
1188.00	2.030	108.400	1187.97	-4.24	-4.37	1.49	40°00'30.744"N	104°55'19.681"W	2.36	
1282.00	4.100	129.140	1281.83	-6.56	-7.02	5.68	40°00'30.718"N	104°55'19.627"W	2.46	
1377.00	6.160	126.030	1376.45	-11.18	-12.16	12.44	40°00'30.667"N	104°55'19.540"W	2.19	
1472.00	7.480	119.790	1470.78	-16.50	-18.23	21.93	40°00'30.607"N	104°55'19.418"W	1.59	
1566.00	7.960	116.200	1563.92	-21.55	-24.14	33.08	40°00'30.548"N	104°55'19.275"W	0.72	
1661.00	8.270	120.760	1657.97	-27.03	-30.54	44.85	40°00'30.485"N	104°55'19.124"W	0.75	
1756.00	9.540	119.070	1751.83	-33.35	-37.86	57.60	40°00'30.413"N	104°55'18.960"W	1.36	
1850.00	11.280	121.920	1844.28	-40.86	-46.51	72.22	40°00'30.327"N	104°55'18.772"W	1.93	
1945.00	10.840	127.210	1937.51	-50.00	-56.82	87.22	40°00'30.225"N	104°55'18.579"W	1.16	
2040.00	9.850	121.970	2030.97	-58.60	-66.53	101.22	40°00'30.130"N	104°55'18.399"W	1.44	
2135.00	10.350	125.500	2124.50	-66.78	-75.79	115.07	40°00'30.038"N	104°55'18.221"W	0.84	
2229.00	10.850	128.430	2216.90	-76.10	-86.19	128.87	40°00'29.935"N	104°55'18.044"W	0.78	
2324.00	10.830	131.410	2310.20	-86.48	-97.65	142.57	40°00'29.822"N	104°55'17.868"W	0.59	
2419.00	11.760	127.400	2403.36	-97.13	-109.44	156.95	40°00'29.706"N	104°55'17.683"W	1.28	
2513.00	11.760	124.790	2495.39	-107.20	-120.72	172.43	40°00'29.594"N	104°55'17.484"W	0.57	
2608.00	10.890	131.400	2588.54	-117.50	-132.18	187.11	40°00'29.481"N	104°55'17.295"W	1.64	
2703.00	9.600	131.590	2682.03	-127.69	-143.37	199.77	40°00'29.370"N	104°55'17.133"W	1.36	
2798.00	8.570	131.180	2775.83	-136.73	-153.29	211.02	40°00'29.272"N	104°55'16.988"W	1.09	
2892.00	8.760	131.170	2868.76	-145.21	-162.61	221.68	40°00'29.180"N	104°55'16.851"W	0.20	
2984.00	8.900	123.180	2959.67	-152.83	-171.12	232.91	40°00'29.096"N	104°55'16.707"W	1.34	
3074.00	10.100	125.400	3048.44	-160.25	-179.50	245.17	40°00'29.013"N	104°55'16.549"W	1.39	
3164.00	10.610	125.790	3136.97	-168.64	-188.92	258.33	40°00'28.920"N	104°55'16.380"W	0.57	
3254.00	10.710	131.210	3225.42	-177.97	-199.28	271.34	40°00'28.818"N	104°55'16.213"W	1.12	
3344.00	9.200	129.640	3314.06	-187.14	-209.38	283.17	40°00'28.718"N	104°55'16.061"W	1.70	
3433.00	8.460	135.360	3402.01	-195.54	-218.57	293.25	40°00'28.627"N	104°55'15.931"W	1.29	
3523.00	10.720	136.210	3490.75	-205.46	-229.33	303.70	40°00'28.521"N	104°55'15.797"W	2.52	
3613.00	9.420	139.350	3579.36	-216.25	-240.96	314.29	40°00'28.406"N	104°55'15.661"W	1.57	
3703.00	8.210	131.960	3668.30	-225.37	-250.84	323.86	40°00'28.308"N	104°55'15.538"W	1.84	
3793.00	8.560	133.540	3757.33	-233.52	-259.75	333.50	40°00'28.220"N	104°55'15.414"W	0.47	
3883.00	9.530	130.870	3846.21	-242.18	-269.24	343.99	40°00'28.126"N	104°55'15.279"W	1.17	
3972.00	10.210	132.120	3933.90	-251.39	-279.35	355.41	40°00'28.026"N	104°55'15.133"W	0.80	
4062.00	9.780	124.270	4022.53	-260.09	-289.01	367.64	40°00'27.931"N	104°55'14.975"W	1.59	
4152.00	9.780	122.230	4111.23	-267.47	-297.39	380.43	40°00'27.848"N	104°55'14.811"W	0.39	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 29C-29HZ (2287'FNL & 450'FWL, SEC.32)
Area	COLORADO	Well	HOWARD 29C-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 29C-29HZ AWP
Facility	SEC.32-T1N-R67W		

WELLPATH DATA (164 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4242.00	10.100	126.630	4199.88	-275.25	-306.18	393.23	40°00'27.761"N	104°55'14.647"W	0.92	
4331.00	10.560	127.710	4287.43	-283.89	-315.82	405.94	40°00'27.666"N	104°55'14.483"W	0.56	
4422.00	9.910	128.640	4376.99	-292.88	-325.81	418.65	40°00'27.567"N	104°55'14.320"W	0.74	
4511.00	9.340	121.220	4464.74	-300.46	-334.34	430.81	40°00'27.483"N	104°55'14.164"W	1.53	
4601.00	10.110	119.080	4553.44	-307.05	-341.96	443.96	40°00'27.408"N	104°55'13.995"W	0.95	
4691.00	9.450	127.030	4642.14	-314.34	-350.25	456.77	40°00'27.326"N	104°55'13.830"W	1.67	
4780.00	10.140	124.200	4729.84	-322.18	-359.05	469.08	40°00'27.239"N	104°55'13.672"W	0.95	
4870.00	10.940	121.550	4818.32	-330.02	-367.98	482.91	40°00'27.151"N	104°55'13.494"W	1.04	
4960.00	10.780	125.000	4906.71	-338.20	-377.27	497.08	40°00'27.059"N	104°55'13.312"W	0.74	
5050.00	10.610	124.640	4995.15	-346.67	-386.81	510.79	40°00'26.964"N	104°55'13.136"W	0.20	
5140.00	9.830	125.160	5083.72	-354.77	-395.94	523.89	40°00'26.874"N	104°55'12.967"W	0.87	
5230.00	9.600	127.910	5172.43	-362.85	-404.98	536.09	40°00'26.785"N	104°55'12.811"W	0.58	
5319.00	10.390	130.780	5260.08	-371.71	-414.78	548.02	40°00'26.688"N	104°55'12.657"W	1.05	
5409.00	9.480	129.340	5348.73	-380.78	-424.78	559.90	40°00'26.589"N	104°55'12.505"W	1.05	
5499.00	8.880	128.990	5437.57	-388.97	-433.85	571.03	40°00'26.500"N	104°55'12.362"W	0.67	
5589.00	7.730	127.090	5526.63	-396.18	-441.87	581.26	40°00'26.420"N	104°55'12.230"W	1.31	
5678.00	5.930	121.950	5614.99	-401.55	-447.91	589.94	40°00'26.361"N	104°55'12.119"W	2.13	
5768.00	5.150	122.980	5704.57	-405.63	-452.57	597.27	40°00'26.314"N	104°55'12.024"W	0.87	
5858.00	3.830	134.260	5794.30	-409.49	-456.87	602.81	40°00'26.272"N	104°55'11.953"W	1.76	
5948.00	3.440	144.970	5884.12	-413.51	-461.18	606.52	40°00'26.229"N	104°55'11.906"W	0.87	
6038.00	2.720	151.680	5973.99	-417.39	-465.27	609.08	40°00'26.189"N	104°55'11.873"W	0.89	
6217.00	0.920	153.800	6152.89	-422.20	-470.30	611.73	40°00'26.139"N	104°55'11.839"W	1.01	
6307.00	0.570	26.290	6242.88	-422.41	-470.54	612.25	40°00'26.137"N	104°55'11.832"W	1.49	
6487.00	0.470	4.560	6422.88	-420.84	-469.01	612.70	40°00'26.152"N	104°55'11.826"W	0.12	
6666.00	1.930	6.740	6601.83	-417.09	-465.28	613.11	40°00'26.189"N	104°55'11.821"W	0.82	
6756.00	0.840	11.370	6691.81	-414.92	-463.13	613.42	40°00'26.210"N	104°55'11.817"W	1.22	
6846.00	1.100	287.340	6781.80	-414.08	-462.22	612.73	40°00'26.219"N	104°55'11.826"W	1.46	
6936.00	1.220	278.450	6871.78	-413.81	-461.83	610.95	40°00'26.223"N	104°55'11.849"W	0.24	
7025.00	0.440	282.670	6960.77	-413.70	-461.61	609.68	40°00'26.225"N	104°55'11.865"W	0.88	
7115.00	0.280	138.680	7050.77	-413.80	-461.70	609.49	40°00'26.224"N	104°55'11.867"W	0.76	
7205.00	0.940	1.700	7140.76	-413.22	-461.13	609.66	40°00'26.230"N	104°55'11.865"W	1.29	
7250.00	4.980	350.580	7185.69	-410.95	-458.83	609.35	40°00'26.253"N	104°55'11.869"W	9.03	
7295.00	9.640	352.510	7230.32	-405.36	-453.17	608.54	40°00'26.309"N	104°55'11.880"W	10.37	
7340.00	13.710	353.070	7274.38	-396.44	-444.13	607.40	40°00'26.398"N	104°55'11.894"W	9.05	
7385.00	18.520	354.070	7317.60	-384.18	-431.72	606.02	40°00'26.521"N	104°55'11.912"W	10.71	
7430.00	24.070	355.940	7359.51	-368.05	-415.45	604.63	40°00'26.681"N	104°55'11.930"W	12.42	
7474.00	27.820	358.280	7399.07	-348.96	-396.23	603.69	40°00'26.871"N	104°55'11.942"W	8.83	
7519.00	29.990	359.150	7438.46	-327.32	-374.48	603.21	40°00'27.086"N	104°55'11.948"W	4.91	
7564.00	34.530	358.580	7476.50	-303.42	-350.48	602.72	40°00'27.323"N	104°55'11.954"W	10.11	
7609.00	37.900	357.420	7512.80	-277.00	-323.91	601.78	40°00'27.586"N	104°55'11.966"W	7.64	
7654.00	39.700	356.760	7547.87	-249.03	-295.75	600.35	40°00'27.864"N	104°55'11.985"W	4.10	
7699.00	41.660	358.320	7582.00	-219.91	-266.45	599.10	40°00'28.154"N	104°55'12.001"W	4.91	
7744.00	45.460	359.030	7614.60	-189.06	-235.45	598.39	40°00'28.460"N	104°55'12.010"W	8.51	
7789.00	50.310	358.230	7644.77	-155.86	-202.09	597.58	40°00'28.790"N	104°55'12.020"W	10.86	
7833.00	55.490	358.210	7671.30	-120.98	-167.03	596.49	40°00'29.136"N	104°55'12.034"W	11.77	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 29C-29HZ (2287'FNL & 450'FWL, SEC.32)
Area	COLORADO	Well	HOWARD 29C-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 29C-29HZ AWP
Facility	SEC.32-T1N-R67W		

WELLPATH DATA (164 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7878.00	58.090	358.240	7695.95	-83.55	-129.40	595.33	40°00'29.508"N	104°55'12.049"W	5.78	
7923.00	61.100	359.290	7718.72	-44.93	-90.60	594.49	40°00'29.892"N	104°55'12.060"W	6.98	
7968.00	62.830	1.420	7739.87	-5.31	-50.89	594.75	40°00'30.284"N	104°55'12.057"W	5.68	
8013.00	68.010	1.030	7758.58	35.53	-9.99	595.62	40°00'30.688"N	104°55'12.046"W	11.54	
8058.00	72.750	0.250	7773.69	77.82	32.38	596.09	40°00'31.107"N	104°55'12.040"W	10.66	
8102.00	77.770	359.660	7784.88	120.23	74.92	596.05	40°00'31.527"N	104°55'12.040"W	11.48	
8147.00	80.230	358.740	7793.47	164.22	119.09	595.43	40°00'31.964"N	104°55'12.048"W	5.82	
8192.00	82.180	358.300	7800.35	208.45	163.54	594.28	40°00'32.403"N	104°55'12.063"W	4.44	
8212.00	83.860	357.280	7802.78	228.17	183.38	593.52	40°00'32.599"N	104°55'12.072"W	9.81	
8251.00†	85.373	357.031	7806.44	266.69	222.16	591.59	40°00'32.982"N	104°55'12.097"W	3.93	7" CASING POINT
8344.00	88.980	356.440	7811.02	358.74	314.88	586.30	40°00'33.899"N	104°55'12.165"W	3.93	
8524.00	89.410	357.030	7813.55	537.12	494.56	576.05	40°00'35.674"N	104°55'12.297"W	0.41	
8703.00	91.620	358.760	7811.94	714.95	673.42	569.48	40°00'37.442"N	104°55'12.381"W	1.57	
8883.00	91.760	0.090	7806.63	894.19	853.33	567.67	40°00'39.220"N	104°55'12.404"W	0.74	
8973.00	91.600	0.460	7803.99	983.92	943.29	568.10	40°00'40.109"N	104°55'12.399"W	0.45	
9152.00	90.710	0.930	7800.38	1162.51	1122.24	570.27	40°00'41.877"N	104°55'12.371"W	0.56	
9242.00	89.790	2.150	7799.99	1252.40	1212.20	572.69	40°00'42.766"N	104°55'12.340"W	1.70	
9332.00	89.480	1.570	7800.56	1342.31	1302.15	575.61	40°00'43.655"N	104°55'12.302"W	0.73	
9422.00	88.830	1.410	7801.89	1432.18	1392.11	577.95	40°00'44.544"N	104°55'12.272"W	0.74	
9512.00	89.750	0.890	7803.01	1522.03	1482.08	579.76	40°00'45.433"N	104°55'12.249"W	1.17	
9601.00	89.630	359.710	7803.49	1610.81	1571.08	580.23	40°00'46.313"N	104°55'12.243"W	1.33	
9691.00	89.690	359.910	7804.02	1700.52	1661.08	579.93	40°00'47.202"N	104°55'12.247"W	0.23	
9781.00	89.600	0.280	7804.58	1790.26	1751.07	580.08	40°00'48.092"N	104°55'12.245"W	0.42	
9871.00	88.920	359.870	7805.74	1880.00	1841.07	580.19	40°00'48.981"N	104°55'12.243"W	0.88	
9961.00	89.380	359.630	7807.08	1969.70	1931.06	579.80	40°00'49.870"N	104°55'12.248"W	0.58	
10051.00	89.380	359.670	7808.05	2059.39	2021.05	579.25	40°00'50.760"N	104°55'12.255"W	0.04	
10140.00	89.290	359.410	7809.08	2148.06	2110.04	578.54	40°00'51.639"N	104°55'12.264"W	0.31	
10230.00	88.680	358.920	7810.68	2237.68	2200.01	577.23	40°00'52.528"N	104°55'12.281"W	0.87	
10320.00	88.580	359.170	7812.83	2327.26	2289.98	575.73	40°00'53.417"N	104°55'12.301"W	0.30	
10410.00	89.510	359.510	7814.33	2416.90	2379.96	574.69	40°00'54.306"N	104°55'12.314"W	1.10	
10500.00	88.990	359.230	7815.51	2506.55	2469.94	573.70	40°00'55.196"N	104°55'12.327"W	0.66	
10590.00	89.350	359.470	7816.81	2596.19	2559.93	572.68	40°00'56.085"N	104°55'12.340"W	0.48	
10679.00	90.370	359.450	7817.03	2684.86	2648.92	571.84	40°00'56.964"N	104°55'12.350"W	1.15	
10769.00	90.990	357.200	7815.96	2774.35	2738.87	569.21	40°00'57.853"N	104°55'12.384"W	2.59	
10859.00	91.080	357.090	7814.33	2863.61	2828.75	564.73	40°00'58.741"N	104°55'12.442"W	0.16	
10949.00	91.150	357.110	7812.58	2952.87	2918.61	560.18	40°00'59.630"N	104°55'12.500"W	0.08	
11039.00	91.170	357.930	7810.76	3042.21	3008.51	556.28	40°01'00.518"N	104°55'12.550"W	0.91	
11129.00	90.800	359.160	7809.21	3131.73	3098.47	554.00	40°01'01.407"N	104°55'12.580"W	1.43	
11218.00	91.170	0.680	7807.68	3220.44	3187.45	553.87	40°01'02.286"N	104°55'12.581"W	1.76	
11308.00	89.940	1.410	7806.81	3310.28	3277.43	555.51	40°01'03.175"N	104°55'12.560"W	1.59	
11398.00	89.230	1.470	7807.46	3400.16	3367.40	557.78	40°01'04.065"N	104°55'12.531"W	0.79	
11578.00	90.520	1.230	7807.86	3579.91	3547.34	562.02	40°01'05.843"N	104°55'12.476"W	0.73	
11757.00	90.860	2.290	7805.70	3758.70	3726.24	567.51	40°01'07.611"N	104°55'12.406"W	0.62	
11937.00	89.540	3.230	7805.07	3938.62	3906.03	576.18	40°01'09.387"N	104°55'12.294"W	0.90	
12027.00	89.140	2.260	7806.11	4028.58	3995.92	580.49	40°01'10.276"N	104°55'12.239"W	1.17	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 29C-29HZ (2287'FNL & 450'FWL, SEC.32)
Area	COLORADO	Well	HOWARD 29C-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 29C-29HZ AWB
Facility	SEC.32-T1N-R67W		

WELLPATH DATA (164 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12162.00	88.800	0.820	7808.54	4163.39	4130.84	584.12	40°01'11.609"N	104°55'12.192"W	1.10	
12296.00	89.850	0.400	7810.12	4297.09	4264.82	585.55	40°01'12.933"N	104°55'12.174"W	0.84	
12386.00	89.720	0.570	7810.45	4386.88	4354.82	586.31	40°01'13.823"N	104°55'12.164"W	0.24	
12476.00	89.910	0.650	7810.74	4476.68	4444.81	587.27	40°01'14.712"N	104°55'12.152"W	0.23	
12566.00	90.740	0.480	7810.23	4566.48	4534.81	588.15	40°01'15.601"N	104°55'12.140"W	0.94	
12655.00	90.770	1.140	7809.06	4655.30	4623.79	589.41	40°01'16.481"N	104°55'12.124"W	0.74	
12745.00	89.660	0.060	7808.72	4745.10	4713.78	590.35	40°01'17.370"N	104°55'12.112"W	1.72	
12835.00	88.760	359.770	7809.96	4834.82	4803.77	590.22	40°01'18.259"N	104°55'12.113"W	1.05	
12925.00	88.860	358.840	7811.83	4924.44	4893.74	589.13	40°01'19.148"N	104°55'12.127"W	1.04	
13015.00	88.860	358.230	7813.62	5013.96	4983.70	586.83	40°01'20.037"N	104°55'12.157"W	0.68	
13104.00	91.020	358.600	7813.72	5102.47	5072.66	584.37	40°01'20.916"N	104°55'12.189"W	2.46	
13194.00	91.880	359.150	7811.44	5192.03	5162.61	582.60	40°01'21.805"N	104°55'12.211"W	1.13	
13284.00	92.130	358.480	7808.29	5281.55	5252.53	580.74	40°01'22.694"N	104°55'12.235"W	0.79	
13374.00	90.460	359.400	7806.26	5371.11	5342.49	579.08	40°01'23.583"N	104°55'12.257"W	2.12	
13464.00	89.600	359.610	7806.21	5460.79	5432.49	578.30	40°01'24.472"N	104°55'12.267"W	0.98	
13553.00	89.720	359.840	7806.74	5549.49	5521.48	577.87	40°01'25.352"N	104°55'12.272"W	0.29	
13643.00	89.510	359.900	7807.34	5639.21	5611.48	577.67	40°01'26.241"N	104°55'12.275"W	0.24	
13743.00	89.140	359.350	7808.52	5738.86	5711.47	577.01	40°01'27.229"N	104°55'12.283"W	0.66	
13922.00	90.890	0.030	7808.47	5917.25	5890.46	576.04	40°01'28.998"N	104°55'12.295"W	1.05	
14102.00	90.650	1.050	7806.05	6096.83	6070.44	577.74	40°01'30.777"N	104°55'12.274"W	0.58	
14281.00	90.710	1.070	7803.93	6275.52	6249.39	581.05	40°01'32.545"N	104°55'12.231"W	0.04	
14461.00	90.250	1.580	7802.42	6455.25	6429.34	585.21	40°01'34.324"N	104°55'12.177"W	0.38	
14641.00	89.940	2.160	7802.12	6635.08	6609.24	591.09	40°01'36.101"N	104°55'12.102"W	0.37	
14821.00	90.400	358.890	7801.59	6814.65	6789.21	592.74	40°01'37.880"N	104°55'12.081"W	1.83	
15000.00	91.730	358.490	7798.26	6992.73	6968.12	588.64	40°01'39.648"N	104°55'12.133"W	0.78	
15179.00	90.250	359.120	7795.17	7170.85	7147.05	584.91	40°01'41.416"N	104°55'12.181"W	0.90	
15359.00	90.280	359.430	7794.34	7350.13	7327.04	582.63	40°01'43.195"N	104°55'12.210"W	0.17	
15547.00	90.650	359.190	7792.81	7537.39	7515.02	580.37	40°01'45.053"N	104°55'12.239"W	0.23	LAST BHI MWD+IFR SURVEY
15599.00	90.650	359.190	7792.22	7589.18	7567.01	579.64	40°01'45.566"N	104°55'12.249"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: HOWARD 29C-29HZ AWB Ref Wellpath: HOWARD 29C-29HZ 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	25.00	993.00	968.00	25.00	992.99	0.00	0.00	-3.69	0.34
9.625in Casing Surface	25.00	993.00	968.00	25.00	992.99	0.00	0.00	-3.69	0.34
8.75in Open Hole	993.00	8262.00	7269.00	992.99	7807.28	-3.69	0.34	233.11	591.02
7in Casing Intermediate	25.00	8251.00	8226.00	25.00	7806.44	0.00	0.00	222.16	591.59
6.125in Open Hole	8262.00	15599.00	7337.00	7807.28	7792.22	233.11	591.02	7567.01	579.64



Actual Wellpath Report

HOWARD 29C-29HZ AWP

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REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 29C-29HZ (2287'FNL & 450'FWL, SEC.32)
Area	COLORADO	Well	HOWARD 29C-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 29C-29HZ AWB
Facility	SEC.32-T1N-R67W		

WELLPATH COMPOSITION - Ref Wellbore: HOWARD 29C-29HZ AWB Ref Wellpath: HOWARD 29C-29HZ AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	912.00	Generic gyro - continuous (Standard)	MS GYRO SURVEYS <125-912>	HOWARD 29C-29HZ AWB
912.00	8344.00	NaviTrak (MAGCORR,IFR)	BHI NAVITRAK MWD+IFR 8 3/4" <1093-8344>	HOWARD 29C-29HZ AWB
8344.00	15547.00	NaviTrak (MAGCORR,IFR)	BHI NAVITRAK MWD+IFR 6 1/8" <8524-15547>	HOWARD 29C-29HZ AWB
15547.00	15599.00	Blind Drilling (std)	Projection to bit	HOWARD 29C-29HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#20 HOWARD 29C-29HZ (2287'FNL & 450'FWL, SEC.32)
Area	COLORADO	Well	HOWARD 29C-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 29C-29HZ AWB
Facility	SEC.32-T1N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
25.00	0.000	159.640	25.00	TIE ON
125.00	0.130	159.640	125.00	BEGIN GYRO SURVEYS
912.00	0.430	175.330	911.99	TIE ONTO GYRO SURVEYS
1093.00	0.220	276.990	1092.99	BEGIN BHI MWD+IFR SURVEYS
8251.00	85.373	357.031	7806.44	7" CASING POINT
15547.00	90.650	359.190	7792.81	LAST BHI MWD+IFR SURVEY
15599.00	90.650	359.190	7792.22	PROJECTION TO BIT