

# KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#02 HOWARD 24N-29HZ (2491'FNL & 1525'FEL,SEC.32)  
Field: WELD COUNTY (KERR MCGEE) Well: HOWARD 24N-29HZ  
Facility: SEC.32-T1N-R67W Wellbore: HOWARD 24N-29HZ PWB

Plot reference wellpath is HOWARD 24N-29HZ (REV-B.0) PWB

True vertical depths are referenced to XTREME 20 (RKB)

Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet

Measured depths are referenced to XTREME 20 (RKB)

North Reference: True north

XTREME 20 (RKB) to Mean Sea Level: 5073 feet

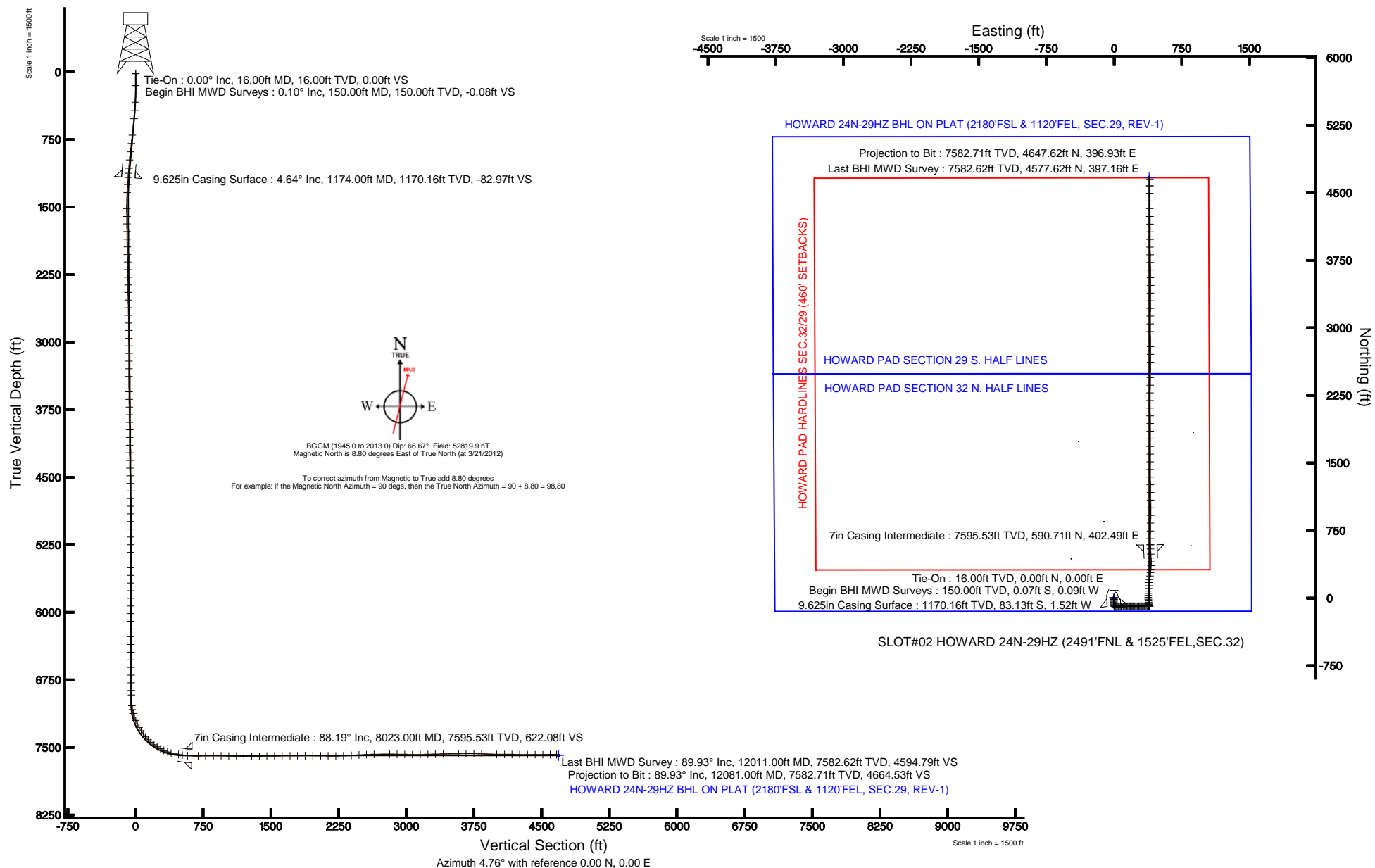
Scale: True distance

Mean Sea Level to Mud line (At Slot: SLOT#02 HOWARD 24N-29HZ (2491'FNL & 1525'FEL,SEC.32)): 0 feet

Depths are in feet

Coordinates are in feet referenced to Slot

Created by: wilsje02 on 3/29/2012





# Actual Wellpath Report

HOWARD 24N-29HZ AWP

Page 1 of 6



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 HOWARD 24N-29HZ (2491'FNL & 1525'FEL,SEC.32)
Area	COLORADO	Well	HOWARD 24N-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-29HZ AWB
Facility	SEC.32-T1N-R67W		

## REPORT SETUP INFORMATION

Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 3.0.2
North Reference	True	User	Wilsjef02
Scale	0.999966	Report Generated	3/29/2012 at 14:11:25
Convergence at slot	0.38° East	Database/Source file	WellArchitectDB/HOWARD_24N-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	0.00	24.12	3165186.29	1246309.57	40°00'28.793"N	104°54'37.076"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	XTREME 20 (RKB) to Facility Vertical Datum	5073.00ft
Horizontal Reference Pt	Slot	XTREME 20 (RKB) to Mean Sea Level	5073.00ft
Vertical Reference Pt	XTREME 20 (RKB)	XTREME 20 (RKB) to Mud Line at Slot (SLOT#02 HOWARD 24N-29HZ (2491'FNL & 1525'FEL,SEC.32))	5073.00ft
MD Reference Pt	XTREME 20 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	4.76°



# Actual Wellpath Report

HOWARD 24N-29HZ AWP

Page 2 of 6



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 HOWARD 24N-29HZ (2491'FNL & 1525'FEL,SEC.32)
Area	COLORADO	Well	HOWARD 24N-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-29HZ AWB
Facility	SEC.32-T1N-R67W		

## WELLPATH DATA (153 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	232.360	0.00	0.00	0.00	0.00	40°00'28.793"N	104°54'37.076"W	0.00	
16.00	0.000	232.360	16.00	0.00	0.00	0.00	40°00'28.793"N	104°54'37.076"W	0.00	Tie-On
150.00	0.100	232.360	150.00	-0.08	-0.07	-0.09	40°00'28.792"N	104°54'37.077"W	0.07	Begin BHI MWD Surveys
243.00	1.960	179.190	242.98	-1.72	-1.71	-0.13	40°00'28.776"N	104°54'37.078"W	2.04	
335.00	2.670	188.520	334.91	-5.42	-5.40	-0.43	40°00'28.740"N	104°54'37.082"W	0.87	
427.00	4.250	185.990	426.74	-10.97	-10.91	-1.10	40°00'28.685"N	104°54'37.090"W	1.72	
519.00	4.810	184.440	518.45	-18.23	-18.15	-1.76	40°00'28.614"N	104°54'37.099"W	0.62	
610.00	6.220	178.480	609.02	-26.95	-26.88	-1.92	40°00'28.527"N	104°54'37.101"W	1.67	
703.00	6.450	176.920	701.46	-37.13	-37.13	-1.51	40°00'28.426"N	104°54'37.095"W	0.31	
795.00	6.500	181.690	792.87	-47.45	-47.50	-1.38	40°00'28.324"N	104°54'37.094"W	0.59	
887.00	6.220	180.240	884.30	-57.62	-57.69	-1.56	40°00'28.223"N	104°54'37.096"W	0.35	
978.00	5.040	182.200	974.86	-66.53	-66.61	-1.73	40°00'28.135"N	104°54'37.098"W	1.31	
1071.00	4.930	182.660	1067.51	-74.60	-74.69	-2.07	40°00'28.055"N	104°54'37.103"W	0.13	
1128.00	4.660	176.110	1124.31	-79.34	-79.44	-2.03	40°00'28.008"N	104°54'37.102"W	1.07	
1252.00	4.820	154.610	1247.90	-88.82	-89.18	0.54	40°00'27.912"N	104°54'37.069"W	1.43	
1342.00	4.430	134.000	1337.61	-94.29	-95.01	4.67	40°00'27.854"N	104°54'37.016"W	1.89	
1435.00	5.050	111.250	1430.30	-97.73	-98.99	11.07	40°00'27.815"N	104°54'36.934"W	2.11	
1522.00	6.110	95.240	1516.89	-98.85	-100.80	19.25	40°00'27.797"N	104°54'36.829"W	2.15	
1608.00	5.990	84.940	1602.42	-98.12	-100.82	28.27	40°00'27.797"N	104°54'36.713"W	1.27	
1693.00	7.070	88.060	1686.86	-96.76	-100.25	37.92	40°00'27.802"N	104°54'36.589"W	1.34	
1778.00	6.630	87.410	1771.26	-95.52	-99.85	48.05	40°00'27.806"N	104°54'36.459"W	0.53	
1864.00	7.370	86.610	1856.62	-94.10	-99.30	58.52	40°00'27.812"N	104°54'36.324"W	0.87	
1949.00	7.190	87.370	1940.93	-92.65	-98.73	69.27	40°00'27.817"N	104°54'36.186"W	0.24	
2034.00	6.840	87.760	2025.29	-91.34	-98.29	79.64	40°00'27.822"N	104°54'36.052"W	0.42	
2119.00	7.130	85.340	2109.66	-89.86	-97.67	89.96	40°00'27.828"N	104°54'35.920"W	0.49	
2205.00	7.500	85.810	2194.96	-88.12	-96.82	100.88	40°00'27.836"N	104°54'35.780"W	0.44	
2290.00	6.790	83.250	2279.30	-86.25	-95.83	111.40	40°00'27.846"N	104°54'35.644"W	0.92	
2375.00	6.380	89.120	2363.74	-84.78	-95.16	121.11	40°00'27.853"N	104°54'35.520"W	0.93	
2460.00	7.210	86.650	2448.15	-83.57	-94.78	131.16	40°00'27.856"N	104°54'35.390"W	1.04	
2545.00	6.400	85.740	2532.55	-82.07	-94.12	141.21	40°00'27.863"N	104°54'35.261"W	0.96	
2631.00	6.810	84.640	2617.97	-80.42	-93.28	151.06	40°00'27.871"N	104°54'35.135"W	0.50	
2716.00	7.640	81.160	2702.30	-78.21	-91.94	161.66	40°00'27.884"N	104°54'34.998"W	1.10	
2801.00	6.880	92.250	2786.62	-76.66	-91.28	172.34	40°00'27.891"N	104°54'34.861"W	1.87	
2886.00	5.960	92.760	2871.09	-76.28	-91.69	181.83	40°00'27.887"N	104°54'34.739"W	1.08	
2972.00	6.150	94.990	2956.61	-76.14	-92.30	190.88	40°00'27.881"N	104°54'34.623"W	0.35	
3057.00	5.710	91.130	3041.15	-75.89	-92.78	199.64	40°00'27.876"N	104°54'34.510"W	0.70	
3142.00	4.050	90.830	3125.84	-75.42	-92.91	206.87	40°00'27.875"N	104°54'34.417"W	1.95	
3227.00	4.800	87.930	3210.59	-74.79	-92.83	213.43	40°00'27.876"N	104°54'34.333"W	0.92	
3313.00	5.420	93.730	3296.25	-74.29	-92.96	221.08	40°00'27.874"N	104°54'34.235"W	0.94	
3398.00	6.100	93.380	3380.82	-74.11	-93.49	229.59	40°00'27.869"N	104°54'34.125"W	0.80	
3483.00	5.960	94.590	3465.35	-73.99	-94.11	238.50	40°00'27.863"N	104°54'34.011"W	0.22	
3568.00	6.020	85.190	3549.88	-73.23	-94.09	247.34	40°00'27.863"N	104°54'33.897"W	1.15	
3654.00	6.140	87.800	3635.40	-71.93	-93.53	256.43	40°00'27.869"N	104°54'33.781"W	0.35	
3739.00	5.370	81.590	3719.97	-70.47	-92.78	264.91	40°00'27.876"N	104°54'33.672"W	1.16	
3824.00	6.220	91.390	3804.54	-69.29	-92.31	273.44	40°00'27.881"N	104°54'33.562"W	1.53	
3910.00	7.350	90.430	3889.94	-68.60	-92.46	283.60	40°00'27.879"N	104°54'33.431"W	1.32	
3995.00	6.340	93.260	3974.33	-68.07	-92.77	293.73	40°00'27.876"N	104°54'33.301"W	1.25	
4080.00	6.090	88.430	4058.83	-67.45	-92.91	302.92	40°00'27.875"N	104°54'33.183"W	0.68	
4165.00	6.750	93.120	4143.30	-66.81	-93.06	312.41	40°00'27.873"N	104°54'33.061"W	0.99	
4251.00	6.560	88.580	4228.72	-66.14	-93.21	322.37	40°00'27.872"N	104°54'32.933"W	0.65	
4336.00	5.030	90.130	4313.28	-65.31	-93.10	330.95	40°00'27.873"N	104°54'32.823"W	1.81	
4421.00	5.830	82.460	4397.90	-64.09	-92.54	338.96	40°00'27.878"N	104°54'32.720"W	1.27	
4507.00	5.910	85.040	4483.45	-62.41	-91.59	347.70	40°00'27.888"N	104°54'32.608"W	0.32	
4592.00	6.290	82.600	4567.97	-60.69	-90.61	356.68	40°00'27.898"N	104°54'32.492"W	0.54	
4677.00	5.560	88.840	4652.51	-59.29	-89.93	365.41	40°00'27.904"N	104°54'32.380"W	1.14	
4762.00	4.690	83.430	4737.17	-58.18	-89.44	372.98	40°00'27.909"N	104°54'32.283"W	1.17	
4848.00	3.690	74.380	4822.94	-56.53	-88.30	379.14	40°00'27.920"N	104°54'32.204"W	1.39	
4933.00	3.520	86.210	4907.78	-55.19	-87.39	384.38	40°00'27.929"N	104°54'32.136"W	0.90	
5018.00	2.830	99.930	4992.65	-54.99	-87.58	389.05	40°00'27.928"N	104°54'32.076"W	1.20	
5103.00	1.540	133.310	5077.59	-55.89	-88.72	391.95	40°00'27.916"N	104°54'32.039"W	2.07	



# Actual Wellpath Report

HOWARD 24N-29HZ AWP

Page 3 of 6



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 HOWARD 24N-29HZ (2491'FNL & 1525'FEL,SEC.32)
Area	COLORADO	Well	HOWARD 24N-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-29HZ AWB
Facility	SEC.32-T1N-R67W		

## WELLPATH DATA (153 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
5189.00	1.280	135.950	5163.56	-57.24	-90.21	393.45	40°00'27.902"N	104°54'32.020"W	0.31	
5274.00	0.000	8.790	5248.55	-57.87	-90.89	394.12	40°00'27.895"N	104°54'32.011"W	1.51	
5359.00	0.350	285.740	5333.55	-57.82	-90.82	393.87	40°00'27.895"N	104°54'32.014"W	0.41	
5445.00	0.340	321.640	5419.55	-57.58	-90.55	393.45	40°00'27.898"N	104°54'32.020"W	0.25	
5530.00	0.520	336.990	5504.55	-57.05	-89.99	393.15	40°00'27.904"N	104°54'32.024"W	0.25	
5615.00	1.140	273.470	5589.54	-56.73	-89.59	392.15	40°00'27.908"N	104°54'32.036"W	1.20	
5701.00	2.090	280.870	5675.51	-56.58	-89.24	389.76	40°00'27.911"N	104°54'32.067"W	1.13	
5786.00	0.680	284.910	5760.48	-56.33	-88.82	387.75	40°00'27.915"N	104°54'32.093"W	1.66	
5871.00	0.200	306.400	5845.48	-56.16	-88.60	387.14	40°00'27.917"N	104°54'32.101"W	0.59	
5956.00	0.340	344.850	5930.48	-55.85	-88.27	386.96	40°00'27.921"N	104°54'32.103"W	0.26	
6042.00	0.370	346.760	6016.47	-55.34	-87.75	386.83	40°00'27.926"N	104°54'32.105"W	0.04	
6127.00	0.350	321.210	6101.47	-54.90	-87.28	386.60	40°00'27.930"N	104°54'32.108"W	0.19	
6212.00	0.250	12.560	6186.47	-54.52	-86.90	386.48	40°00'27.934"N	104°54'32.109"W	0.32	
6297.00	0.430	20.450	6271.47	-54.03	-86.42	386.63	40°00'27.939"N	104°54'32.107"W	0.22	
6383.00	0.480	30.950	6357.47	-53.40	-85.81	386.93	40°00'27.945"N	104°54'32.104"W	0.11	
6468.00	0.480	14.700	6442.46	-52.73	-85.16	387.20	40°00'27.951"N	104°54'32.100"W	0.16	
6553.00	0.370	19.760	6527.46	-52.11	-84.56	387.38	40°00'27.957"N	104°54'32.098"W	0.14	
6638.00	0.670	15.860	6612.46	-51.36	-83.82	387.61	40°00'27.965"N	104°54'32.095"W	0.36	
6724.00	0.580	22.750	6698.45	-50.45	-82.93	387.92	40°00'27.973"N	104°54'32.091"W	0.14	
6809.00	0.630	29.790	6783.45	-49.62	-82.13	388.32	40°00'27.981"N	104°54'32.086"W	0.11	
6894.00	0.650	22.530	6868.44	-48.74	-81.28	388.73	40°00'27.990"N	104°54'32.080"W	0.10	
6945.00	0.960	32.320	6919.44	-48.08	-80.65	389.07	40°00'27.996"N	104°54'32.076"W	0.66	
7065.00	4.570	341.270	7039.29	-42.81	-75.27	388.08	40°00'28.049"N	104°54'32.089"W	3.36	
7107.00	10.630	348.030	7080.90	-37.56	-69.89	386.73	40°00'28.102"N	104°54'32.106"W	14.56	
7150.00	15.310	351.380	7122.79	-28.23	-60.40	385.06	40°00'28.196"N	104°54'32.128"W	11.02	
7192.00	19.830	353.560	7162.82	-15.84	-47.83	383.43	40°00'28.320"N	104°54'32.149"W	10.87	
7235.00	23.290	353.640	7202.81	-0.34	-32.13	381.67	40°00'28.475"N	104°54'32.171"W	8.05	
7278.00	26.930	357.060	7241.74	17.66	-13.95	380.23	40°00'28.655"N	104°54'32.190"W	9.11	
7321.00	29.200	357.290	7279.68	37.71	6.26	379.23	40°00'28.855"N	104°54'32.202"W	5.29	
7363.00	32.290	1.750	7315.78	59.08	27.71	379.09	40°00'29.067"N	104°54'32.204"W	9.14	
7406.00	34.440	2.730	7351.69	82.70	51.34	380.02	40°00'29.300"N	104°54'32.192"W	5.15	
7448.00	39.780	5.020	7385.17	108.03	76.61	381.76	40°00'29.550"N	104°54'32.170"W	13.13	
7491.00	44.880	4.020	7416.95	136.97	105.46	384.03	40°00'29.835"N	104°54'32.141"W	11.96	
7533.00	49.630	6.450	7445.45	167.80	136.16	386.87	40°00'30.139"N	104°54'32.104"W	12.08	
7576.00	54.160	6.480	7471.98	201.61	169.78	390.68	40°00'30.471"N	104°54'32.055"W	10.54	
7618.00	57.750	7.380	7495.49	236.38	204.32	394.88	40°00'30.812"N	104°54'32.001"W	8.73	
7662.00	61.830	6.390	7517.63	274.37	242.06	399.43	40°00'31.185"N	104°54'31.943"W	9.47	
7704.00	66.660	5.620	7535.87	312.18	279.67	403.38	40°00'31.557"N	104°54'31.892"W	11.62	
7747.00	69.970	5.280	7551.76	352.13	319.44	407.18	40°00'31.950"N	104°54'31.843"W	7.73	
7789.00	75.900	3.260	7564.08	392.26	359.46	410.15	40°00'32.345"N	104°54'31.805"W	14.85	
7832.00	78.600	358.100	7573.58	434.07	401.38	410.64	40°00'32.759"N	104°54'31.799"W	13.28	
7874.00	81.540	356.920	7580.82	475.11	442.70	408.84	40°00'33.168"N	104°54'31.822"W	7.53	
7917.00	82.060	356.440	7586.95	517.24	485.19	406.38	40°00'33.588"N	104°54'31.854"W	1.64	
7976.00	85.930	358.160	7593.12	575.41	543.79	403.62	40°00'34.167"N	104°54'31.889"W	7.17	
8023.00†	88.191	359.085	7595.53	622.08	590.71	402.49	40°00'34.631"N	104°54'31.903"W	5.20	7" Casing Point
8092.00	91.510	0.440	7595.71	690.80	659.70	402.20	40°00'35.312"N	104°54'31.907"W	5.20	
8177.00	90.270	0.970	7594.39	775.58	744.68	403.25	40°00'36.152"N	104°54'31.894"W	1.59	
8263.00	89.660	0.930	7594.45	861.39	830.67	404.67	40°00'37.002"N	104°54'31.875"W	0.71	
8348.00	89.130	0.120	7595.34	946.15	915.66	405.45	40°00'37.842"N	104°54'31.865"W	1.14	
8433.00	88.820	0.060	7596.86	1030.85	1000.64	405.59	40°00'38.682"N	104°54'31.864"W	0.37	
8518.00	88.980	359.280	7598.50	1115.50	1085.63	405.10	40°00'39.521"N	104°54'31.870"W	0.94	
8603.00	90.330	359.160	7599.01	1200.10	1170.61	403.94	40°00'40.361"N	104°54'31.885"W	1.59	
8689.00	89.870	359.540	7598.86	1285.72	1256.61	402.96	40°00'41.211"N	104°54'31.897"W	0.69	
8774.00	90.430	359.580	7598.63	1370.37	1341.61	402.31	40°00'42.051"N	104°54'31.906"W	0.66	
8859.00	90.700	359.630	7597.80	1455.02	1426.60	401.73	40°00'42.891"N	104°54'31.913"W	0.32	
8944.00	90.860	359.910	7596.64	1539.69	1511.59	401.38	40°00'43.731"N	104°54'31.917"W	0.38	
9029.00	90.490	359.720	7595.64	1624.37	1596.58	401.11	40°00'44.571"N	104°54'31.921"W	0.49	
9115.00	90.430	359.680	7594.95	1710.03	1682.58	400.66	40°00'45.421"N	104°54'31.927"W	0.08	
9200.00	90.770	0.220	7594.06	1794.72	1767.57	400.59	40°00'46.261"N	104°54'31.928"W	0.75	
9285.00	90.700	0.970	7592.97	1879.49	1852.56	401.47	40°00'47.101"N	104°54'31.916"W	0.89	



# Actual Wellpath Report

HOWARD 24N-29HZ AWP

Page 4 of 6



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 HOWARD 24N-29HZ (2491'FNL & 1525'FEL,SEC.32)
Area	COLORADO	Well	HOWARD 24N-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-29HZ AWB
Facility	SEC.32-T1N-R67W		

## WELLPATH DATA (153 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
9370.00	88.730	359.360	7593.39	1964.21	1937.55	401.71	40°00'47.940"N	104°54'31.913"W	2.99	
9456.00	89.440	359.000	7594.76	2049.79	2023.53	400.48	40°00'48.790"N	104°54'31.929"W	0.93	
9541.00	89.040	359.470	7595.89	2134.39	2108.52	399.35	40°00'49.630"N	104°54'31.943"W	0.73	
9626.00	89.840	0.050	7596.72	2219.06	2193.51	398.99	40°00'50.470"N	104°54'31.948"W	1.16	
9711.00	92.520	0.690	7594.97	2303.78	2278.48	399.54	40°00'51.310"N	104°54'31.941"W	3.24	
9797.00	93.230	0.720	7590.66	2389.46	2364.37	400.60	40°00'52.158"N	104°54'31.927"W	0.83	
9882.00	93.390	1.080	7585.75	2474.12	2449.22	401.93	40°00'52.997"N	104°54'31.910"W	0.46	
9967.00	91.720	0.160	7581.96	2558.81	2534.12	402.85	40°00'53.836"N	104°54'31.898"W	2.24	
10052.00	90.980	0.290	7579.96	2643.52	2619.10	403.18	40°00'54.676"N	104°54'31.894"W	0.88	
10138.00	91.500	0.340	7578.10	2729.25	2705.08	403.65	40°00'55.525"N	104°54'31.888"W	0.61	
10223.00	89.410	359.410	7577.42	2813.93	2790.07	403.47	40°00'56.365"N	104°54'31.890"W	2.69	
10308.00	89.320	359.650	7578.36	2898.57	2875.06	402.77	40°00'57.205"N	104°54'31.899"W	0.30	
10393.00	88.640	359.630	7579.88	2983.22	2960.04	402.24	40°00'58.045"N	104°54'31.906"W	0.80	
10478.00	89.530	0.250	7581.23	3067.90	3045.03	402.15	40°00'58.885"N	104°54'31.907"W	1.28	
10564.00	90.330	0.150	7581.34	3153.63	3131.03	402.45	40°00'59.735"N	104°54'31.903"W	0.94	
10649.00	92.000	0.650	7579.61	3238.36	3216.01	403.04	40°01'00.575"N	104°54'31.896"W	2.05	
10734.00	91.380	0.630	7577.10	3323.11	3300.97	403.99	40°01'01.414"N	104°54'31.884"W	0.73	
10820.00	91.380	0.510	7575.03	3408.85	3386.94	404.85	40°01'02.264"N	104°54'31.873"W	0.14	
10905.00	91.320	359.680	7573.03	3493.55	3471.91	404.99	40°01'03.103"N	104°54'31.871"W	0.98	
10990.00	91.220	359.900	7571.15	3578.20	3556.89	404.68	40°01'03.943"N	104°54'31.875"W	0.28	
11075.00	91.010	358.830	7569.49	3662.81	3641.87	403.73	40°01'04.783"N	104°54'31.887"W	1.28	
11161.00	88.520	358.990	7569.85	3748.36	3727.84	402.10	40°01'05.633"N	104°54'31.908"W	2.90	
11246.00	87.500	358.730	7572.80	3832.85	3812.78	400.41	40°01'06.472"N	104°54'31.930"W	1.24	
11331.00	87.870	359.430	7576.23	3917.37	3897.69	399.04	40°01'07.311"N	104°54'31.947"W	0.93	
11416.00	88.700	359.950	7578.77	4001.99	3982.65	398.58	40°01'08.151"N	104°54'31.953"W	1.15	
11502.00	89.630	0.080	7580.03	4087.69	4068.64	398.61	40°01'09.001"N	104°54'31.953"W	1.09	
11587.00	89.720	0.080	7580.51	4172.40	4153.64	398.73	40°01'09.841"N	104°54'31.951"W	0.11	
11672.00	88.850	358.910	7581.57	4257.04	4238.63	397.98	40°01'10.680"N	104°54'31.961"W	1.72	
11758.00	90.210	0.010	7582.28	4342.66	4324.62	397.17	40°01'11.530"N	104°54'31.971"W	2.03	
11843.00	90.000	0.110	7582.12	4427.38	4409.62	397.26	40°01'12.370"N	104°54'31.970"W	0.27	
11929.00	89.690	359.970	7582.35	4513.08	4495.62	397.32	40°01'13.220"N	104°54'31.969"W	0.40	
12011.00	89.930	359.810	7582.62	4594.79	4577.62	397.16	40°01'14.030"N	104°54'31.971"W	0.35	Last BHI MWD Survey
12081.00	89.930	359.810	7582.71	4664.53	4647.62	396.93	40°01'14.722"N	104°54'31.974"W	0.00	Projection to Bit

## HOLE & CASING SECTIONS - Ref Wellbore: HOWARD 24N-29HZ AWB Ref Wellpath: HOWARD 24N-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	16.00	1174.00	1158.00	16.00	1170.16	0.00	0.00	-83.13	-1.52
9.625in Casing Surface	16.00	1174.00	1158.00	16.00	1170.16	0.00	0.00	-83.13	-1.52
8.75in Open Hole	1174.00	8031.00	6857.00	1170.16	7595.76	-83.13	-1.52	598.71	402.37
7in Casing Intermediate	16.00	8023.00	8007.00	16.00	7595.53	0.00	0.00	590.71	402.49
6.125in Open Hole	8023.00	12081.00	4058.00	7595.53	7582.71	590.71	402.49	4647.62	396.93



# Actual Wellpath Report

HOWARD 24N-29HZ AWP

Page 5 of 6



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 HOWARD 24N-29HZ (2491'FNL & 1525'FEL,SEC.32)
Area	COLORADO	Well	HOWARD 24N-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-29HZ AWB
Facility	SEC.32-T1N-R67W		

## TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
HOWARD PAD SECTION 29 S. HALF LINES		0.00	0.00	0.00	3165186.29	1246309.57	40°00'28.793"N	104°54'37.076"W	polygon
HOWARD PAD SECTION 32 N. HALF LINES		0.00	0.00	0.00	3165186.29	1246309.57	40°00'28.793"N	104°54'37.076"W	polygon
HOWARD 24N-29HZ BHL ON PLAT (2180'FSL & 1120'FEL, SEC.29, REV-1)		7592.00	4670.88	389.00	3165544.21	1250982.76	40°01'14.952"N	104°54'32.076"W	point
HOWARD PAD HARDLINES SEC.32/29 (460' SETBACKS)		7850.00	0.00	0.00	3165186.29	1246309.57	40°00'28.793"N	104°54'37.076"W	polygon

## WELLPATH COMPOSITION - Ref Wellbore: HOWARD 24N-29HZ AWB Ref Wellpath: HOWARD 24N-29HZ AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	1128.00	NaviTrak (Standard)	BHI MWD SURVEYS 13 1/2" HOLE <150-1128>	HOWARD 24N-29HZ AWB
1128.00	7976.00	NaviTrak (Standard)	BHI MWD SURVEYS 8 3/4" HOLE <1252-7976>	HOWARD 24N-29HZ AWB
7976.00	12011.00	OnTrak (Standard)	BHI MWD SURVEYS 6 1/8" HOLE <8092-12011>	HOWARD 24N-29HZ AWB
12011.00	12081.00	Blind Drilling (std)	Projection to bit	HOWARD 24N-29HZ AWB



# Actual Wellpath Report

HOWARD 24N-29HZ AWP

Page 6 of 6



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#02 HOWARD 24N-29HZ (2491'FNL & 1525'FEL,SEC.32)
Area	COLORADO	Well	HOWARD 24N-29HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-29HZ AWB
Facility	SEC.32-T1N-R67W		

## WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
16.00	0.000	232.360	16.00	Tie-On
150.00	0.100	232.360	150.00	Begin BHI MWD Surveys
8023.00	88.191	359.085	7595.53	7" Casing Point
12011.00	89.930	359.810	7582.62	Last BHI MWD Survey
12081.00	89.930	359.810	7582.71	Projection to Bit