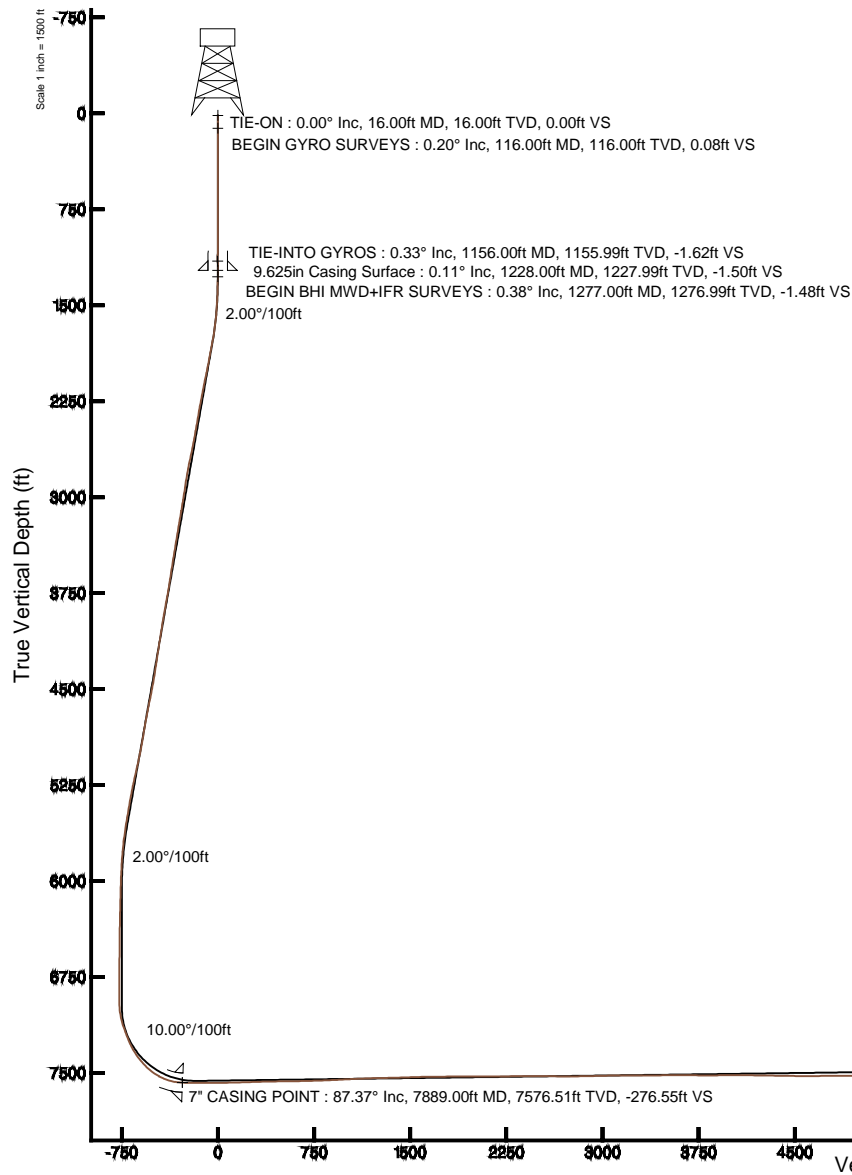


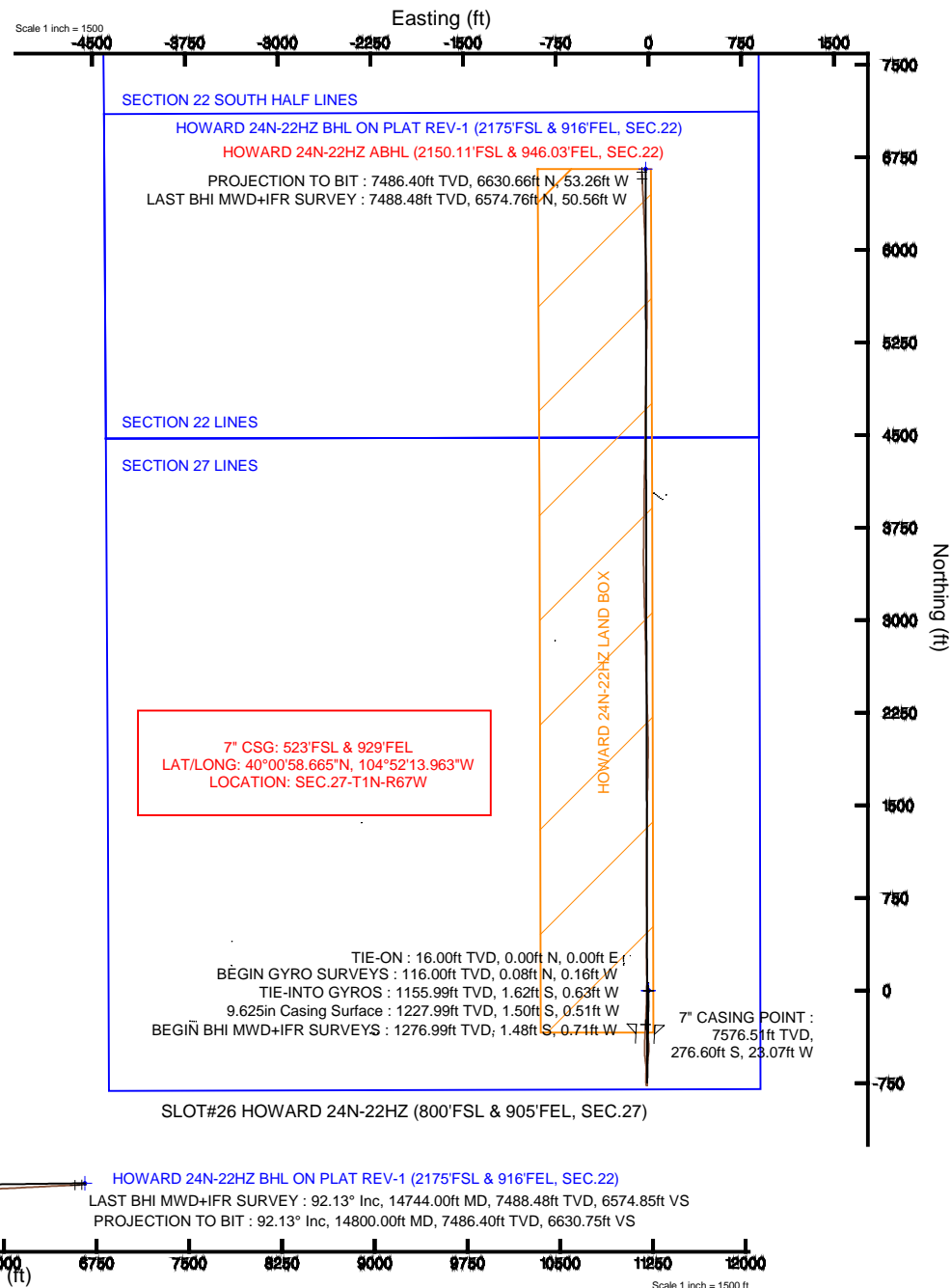
KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#26 HOWARD 24N-22HZ (800'FSL & 905'FEL, SEC.27)
 Field: WELD COUNTY (KERR MCGEE) Well: HOWARD 24N-22HZ
 Facility: SEC.27-T1N-R67W Wellbore: HOWARD 24N-22HZ PWB



Plot reference wellpath is HOWARD 24N-22HZ (REV-A.1) PWP

True vertical depths are referenced to XTREME 24 (RKB 16) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to XTREME 24 (RKB 16) (RKB)	North Reference: True north
XTREME 24 (RKB 16) (RKB) to Mean Sea Level: 5068 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#26 HOWARD 24N-22HZ (800'FSL & 905'FEL, SEC.27)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: wilsjef02 on 1/2/2014





Actual Wellpath Report

HOWARD 24N-22HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 HOWARD 24N-22HZ (800'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 24N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-22HZ AWB
Facility	SEC.27-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	Wilsjef02
Scale	0.999965	Report Generated	1/2/2014 at 15:01:41
Convergence at slot	n/a	Database/Source file	WellArchitectDB/HOWARD_24N-22HZ_AWB.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-3305.71	3200.62	3176321.45	1249685.42	40°01'01.398"N	104°52'13.667"W
Facility Reference Pt			3173097.99	1252968.61	40°01'34.068"N	104°52'54.804"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 24 (RKB 16') (RKB) to Facility Vertical Datum	5068.00ft
Horizontal Reference Pt	Slot	XTREME 24 (RKB 16') (RKB) to Mean Sea Level	5068.00ft
Vertical Reference Pt	XTREME 24 (RKB 16') (RKB)	XTREME 24 (RKB 16') (RKB) to Mud Line at Slot (SLOT#26 HOWARD 24N-22HZ (800'FSL & 905'FEL, SEC.27))	5068.00ft
MD Reference Pt	XTREME 24 (RKB 16') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	359.54°



Actual Wellpath Report

HOWARD 24N-22HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 HOWARD 24N-22HZ (800'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 24N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-22HZ AWB
Facility	SEC.27-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	296.320	0.00	0.00	0.00	0.00	40°01'01.398"N	104°52'13.667"W	0.00	
16.00	0.000	296.320	16.00	0.00	0.00	0.00	40°01'01.398"N	104°52'13.667"W	0.00	TIE-ON
116.00	0.200	296.320	116.00	0.08	0.08	-0.16	40°01'01.399"N	104°52'13.669"W	0.20	BEGIN GYRO SURVEYS
216.00	0.250	291.180	216.00	0.24	0.23	-0.52	40°01'01.400"N	104°52'13.674"W	0.05	
316.00	0.210	287.860	316.00	0.38	0.37	-0.89	40°01'01.402"N	104°52'13.678"W	0.04	
416.00	0.080	215.410	416.00	0.38	0.37	-1.11	40°01'01.402"N	104°52'13.681"W	0.20	
516.00	0.270	172.940	516.00	0.09	0.08	-1.12	40°01'01.399"N	104°52'13.681"W	0.22	
616.00	0.270	187.520	616.00	-0.38	-0.39	-1.12	40°01'01.394"N	104°52'13.681"W	0.07	
716.00	0.170	161.260	716.00	-0.76	-0.76	-1.11	40°01'01.390"N	104°52'13.681"W	0.14	
816.00	0.260	82.660	816.00	-0.87	-0.88	-0.83	40°01'01.389"N	104°52'13.678"W	0.28	
916.00	0.100	184.570	915.99	-0.93	-0.93	-0.61	40°01'01.389"N	104°52'13.675"W	0.30	
1016.00	0.250	194.990	1015.99	-1.23	-1.23	-0.68	40°01'01.386"N	104°52'13.676"W	0.15	
1116.00	0.180	181.210	1115.99	-1.59	-1.60	-0.74	40°01'01.382"N	104°52'13.676"W	0.09	
1156.00	0.330	66.800	1155.99	-1.61	-1.62	-0.63	40°01'01.382"N	104°52'13.675"W	1.09	TIE-INTO GYROS
1277.00	0.380	269.280	1276.99	-1.48	-1.48	-0.71	40°01'01.383"N	104°52'13.676"W	0.58	BEGIN BHI MWD+IFR SURVEYS
1372.00	1.390	205.080	1371.98	-2.52	-2.53	-1.52	40°01'01.373"N	104°52'13.687"W	1.34	
1465.00	3.090	182.790	1464.91	-6.04	-6.06	-2.12	40°01'01.338"N	104°52'13.694"W	2.02	
1560.00	4.720	176.840	1559.68	-12.50	-12.52	-2.03	40°01'01.274"N	104°52'13.693"W	1.77	
1654.00	7.150	182.180	1653.17	-22.21	-22.23	-2.04	40°01'01.178"N	104°52'13.693"W	2.65	
1748.00	9.620	182.280	1746.16	-35.90	-35.92	-2.57	40°01'01.043"N	104°52'13.700"W	2.63	
1842.00	11.010	177.330	1838.64	-52.72	-52.74	-2.47	40°01'00.877"N	104°52'13.699"W	1.75	
1936.00	10.540	176.360	1930.99	-70.27	-70.29	-1.50	40°01'00.703"N	104°52'13.686"W	0.54	
2032.00	11.760	179.400	2025.17	-88.82	-88.83	-0.84	40°01'00.520"N	104°52'13.678"W	1.41	
2124.00	11.180	179.920	2115.33	-107.12	-107.12	-0.73	40°01'00.339"N	104°52'13.676"W	0.64	
2216.00	10.830	179.870	2205.64	-124.68	-124.69	-0.70	40°01'00.166"N	104°52'13.676"W	0.38	
2308.00	10.380	183.500	2296.07	-141.59	-141.60	-1.19	40°01'00.000"N	104°52'13.682"W	0.88	
2400.00	9.650	183.780	2386.67	-157.55	-157.57	-2.20	40°00'59.841"N	104°52'13.695"W	0.80	
2492.00	10.030	182.390	2477.32	-173.24	-173.27	-3.04	40°00'59.686"N	104°52'13.706"W	0.49	
2584.00	10.520	180.240	2567.84	-189.64	-189.67	-3.41	40°00'59.524"N	104°52'13.711"W	0.68	
2676.00	12.250	176.950	2658.03	-207.79	-207.82	-2.93	40°00'59.344"N	104°52'13.705"W	2.01	
2768.00	11.250	180.110	2748.10	-226.51	-226.54	-2.43	40°00'59.159"N	104°52'13.698"W	1.29	
2860.00	9.810	181.800	2838.55	-243.32	-243.35	-2.69	40°00'58.993"N	104°52'13.702"W	1.60	
2952.00	8.190	184.390	2929.41	-257.68	-257.72	-3.44	40°00'58.851"N	104°52'13.711"W	1.81	
3044.00	9.180	190.160	3020.36	-271.42	-271.48	-5.23	40°00'58.715"N	104°52'13.734"W	1.43	
3135.00	9.450	185.220	3110.16	-285.99	-286.06	-7.19	40°00'58.571"N	104°52'13.759"W	0.93	
3227.00	10.210	181.870	3200.81	-301.66	-301.73	-8.15	40°00'58.416"N	104°52'13.772"W	1.03	
3319.00	9.170	180.590	3291.50	-317.13	-317.21	-8.49	40°00'58.263"N	104°52'13.776"W	1.15	
3411.00	9.410	174.280	3382.29	-331.95	-332.03	-7.81	40°00'58.117"N	104°52'13.767"W	1.14	
3503.00	9.430	176.350	3473.05	-346.97	-347.03	-6.58	40°00'57.969"N	104°52'13.752"W	0.37	
3595.00	8.660	174.840	3563.91	-361.39	-361.45	-5.48	40°00'57.826"N	104°52'13.737"W	0.88	
3687.00	9.070	175.590	3654.81	-375.53	-375.58	-4.30	40°00'57.686"N	104°52'13.722"W	0.46	
3779.00	9.630	175.310	3745.59	-390.44	-390.48	-3.11	40°00'57.539"N	104°52'13.707"W	0.61	
3872.00	10.430	172.080	3837.16	-406.55	-406.57	-1.32	40°00'57.380"N	104°52'13.684"W	1.05	
3966.00	9.690	172.440	3929.72	-422.83	-422.84	0.89	40°00'57.219"N	104°52'13.655"W	0.79	
4059.00	8.850	181.630	4021.51	-437.75	-437.75	1.72	40°00'57.072"N	104°52'13.645"W	1.83	



Actual Wellpath Report

HOWARD 24N-22HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 HOWARD 24N-22HZ (800'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 24N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-22HZ AWB
Facility	SEC.27-T1N-R67W		

WELLPATH DATA (153 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4153.00	9.770	174.960	4114.27	-452.93	-452.92	2.22	40°00'56.922"N	104°52'13.639"W	1.51	
4246.00	8.030	173.920	4206.15	-467.26	-467.24	3.60	40°00'56.781"N	104°52'13.621"W	1.88	
4341.00	8.690	186.630	4300.15	-480.98	-480.97	3.47	40°00'56.645"N	104°52'13.622"W	2.06	
4435.00	9.380	185.630	4392.98	-495.65	-495.65	1.90	40°00'56.500"N	104°52'13.643"W	0.75	
4528.00	10.260	187.420	4484.62	-511.39	-511.40	0.09	40°00'56.344"N	104°52'13.666"W	1.00	
4622.00	11.750	189.250	4576.89	-529.12	-529.15	-2.53	40°00'56.169"N	104°52'13.700"W	1.63	
4715.00	11.050	183.760	4668.05	-547.34	-547.39	-4.64	40°00'55.988"N	104°52'13.727"W	1.39	
4888.00	9.650	184.520	4838.23	-578.32	-578.39	-6.87	40°00'55.682"N	104°52'13.755"W	0.81	
4973.00	9.910	190.000	4922.00	-592.61	-592.70	-8.70	40°00'55.541"N	104°52'13.779"W	1.14	
5058.00	11.930	187.390	5005.46	-608.51	-608.62	-11.10	40°00'55.383"N	104°52'13.810"W	2.45	
5228.00	12.740	186.440	5171.53	-644.52	-644.67	-15.46	40°00'55.027"N	104°52'13.866"W	0.49	
5313.00	11.910	186.680	5254.57	-662.53	-662.69	-17.54	40°00'54.849"N	104°52'13.892"W	0.98	
5398.00	10.490	184.230	5337.95	-678.95	-679.12	-19.13	40°00'54.687"N	104°52'13.913"W	1.76	
5484.00	9.830	181.790	5422.60	-694.09	-694.27	-19.93	40°00'54.537"N	104°52'13.923"W	0.92	
5569.00	9.330	178.150	5506.42	-708.22	-708.41	-19.94	40°00'54.397"N	104°52'13.923"W	0.92	
5654.00	8.720	174.820	5590.37	-721.53	-721.71	-19.13	40°00'54.266"N	104°52'13.913"W	0.94	
5740.00	7.370	178.800	5675.52	-733.55	-733.72	-18.43	40°00'54.147"N	104°52'13.904"W	1.70	
5825.00	4.880	181.100	5760.03	-742.61	-742.78	-18.38	40°00'54.058"N	104°52'13.903"W	2.94	
5910.00	3.800	175.000	5844.78	-749.04	-749.21	-18.21	40°00'53.994"N	104°52'13.901"W	1.38	
5993.00	2.670	165.790	5927.65	-753.66	-753.82	-17.49	40°00'53.949"N	104°52'13.892"W	1.49	
6079.00	1.750	162.780	6013.58	-756.86	-757.02	-16.61	40°00'53.917"N	104°52'13.881"W	1.08	
6164.00	1.660	173.620	6098.55	-759.33	-759.48	-16.09	40°00'53.893"N	104°52'13.874"W	0.39	
6249.00	1.530	165.560	6183.51	-761.65	-761.80	-15.67	40°00'53.870"N	104°52'13.868"W	0.30	
6334.00	1.390	156.030	6268.49	-763.70	-763.84	-14.97	40°00'53.849"N	104°52'13.859"W	0.33	
6590.00	0.560	134.460	6524.45	-767.43	-767.56	-12.82	40°00'53.813"N	104°52'13.832"W	0.35	
6931.00	0.520	80.540	6865.43	-768.36	-768.47	-10.10	40°00'53.804"N	104°52'13.797"W	0.14	
7016.00	0.500	84.010	6950.43	-768.27	-768.37	-9.35	40°00'53.805"N	104°52'13.787"W	0.04	
7058.00	3.580	355.190	6992.40	-766.94	-767.04	-9.28	40°00'53.818"N	104°52'13.786"W	8.58	
7101.00	8.160	359.230	7035.17	-762.55	-762.65	-9.43	40°00'53.861"N	104°52'13.788"W	10.69	
7144.00	13.400	357.130	7077.39	-754.51	-754.62	-9.72	40°00'53.941"N	104°52'13.792"W	12.22	
7186.00	17.190	354.220	7117.90	-743.47	-743.58	-10.59	40°00'54.050"N	104°52'13.803"W	9.20	
7229.00	19.390	354.640	7158.72	-730.03	-730.15	-11.90	40°00'54.182"N	104°52'13.820"W	5.13	
7272.00	21.120	356.590	7199.06	-715.18	-715.30	-13.03	40°00'54.329"N	104°52'13.834"W	4.32	
7314.00	21.860	357.650	7238.14	-699.81	-699.94	-13.80	40°00'54.481"N	104°52'13.844"W	1.99	
7357.00	24.920	358.150	7277.61	-682.74	-682.88	-14.42	40°00'54.650"N	104°52'13.852"W	7.13	
7399.00	29.330	357.310	7314.98	-663.61	-663.75	-15.19	40°00'54.839"N	104°52'13.862"W	10.54	
7442.00	33.490	356.240	7351.67	-641.23	-641.39	-16.46	40°00'55.060"N	104°52'13.879"W	9.76	
7484.00	37.830	355.040	7385.78	-616.81	-616.98	-18.33	40°00'55.301"N	104°52'13.903"W	10.47	
7527.00	40.700	352.990	7419.07	-589.73	-589.92	-21.19	40°00'55.568"N	104°52'13.939"W	7.32	
7567.00	45.010	352.550	7448.39	-562.72	-562.94	-24.61	40°00'55.835"N	104°52'13.983"W	10.80	
7612.00	50.050	354.710	7478.77	-529.72	-529.96	-28.27	40°00'56.161"N	104°52'14.030"W	11.75	
7655.00	55.590	359.080	7504.75	-495.52	-495.78	-30.08	40°00'56.499"N	104°52'14.054"W	15.21	
7698.00	61.250	0.890	7527.26	-458.90	-459.16	-30.07	40°00'56.860"N	104°52'14.053"W	13.64	
7740.00	67.320	1.670	7545.48	-421.10	-421.35	-29.22	40°00'57.234"N	104°52'14.043"W	14.55	
7783.00	73.300	2.350	7559.96	-380.67	-380.91	-27.79	40°00'57.634"N	104°52'14.024"W	13.99	



Actual Wellpath Report

HOWARD 24N-22HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 HOWARD 24N-22HZ (800'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 24N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-22HZ AWB
Facility	SEC.27-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
7825.00	79.740	2.740	7569.74	-339.91	-340.13	-25.98	40°00'58.037"N	104°52'14.001"W	15.36	
7845.00	82.870	2.530	7572.77	-320.17	-320.38	-25.07	40°00'58.232"N	104°52'13.989"W	15.68	
7889.00†	87.366	2.702	7576.51	-276.40	-276.60	-23.07	40°00'58.665"N	104°52'13.963"W	10.23	7" CASING POINT
7909.00	89.410	2.780	7577.07	-256.44	-256.63	-22.11	40°00'58.862"N	104°52'13.951"W	10.23	
8001.00	89.500	2.540	7577.95	-164.58	-164.73	-17.84	40°00'59.770"N	104°52'13.896"W	0.28	
8093.00	90.210	1.230	7578.18	-72.66	-72.78	-14.82	40°01'00.679"N	104°52'13.857"W	1.62	
8185.00	90.220	0.390	7577.84	19.31	19.21	-13.52	40°01'01.588"N	104°52'13.841"W	0.91	
8277.00	91.570	359.830	7576.40	111.30	111.19	-13.34	40°01'02.497"N	104°52'13.838"W	1.59	
8369.00	91.850	359.770	7573.65	203.25	203.15	-13.66	40°01'03.406"N	104°52'13.843"W	0.31	
8461.00	91.780	0.060	7570.74	295.21	295.10	-13.80	40°01'04.314"N	104°52'13.844"W	0.32	
8552.00	91.200	0.430	7568.37	386.17	386.07	-13.41	40°01'05.213"N	104°52'13.839"W	0.76	
8644.00	90.700	0.100	7566.85	478.15	478.06	-12.98	40°01'06.122"N	104°52'13.834"W	0.65	
8736.00	90.860	359.920	7565.60	570.14	570.05	-12.97	40°01'07.031"N	104°52'13.834"W	0.26	
8828.00	91.270	359.680	7563.89	662.12	662.03	-13.29	40°01'07.940"N	104°52'13.838"W	0.52	
8922.00	91.600	359.410	7561.53	756.09	756.00	-14.03	40°01'08.869"N	104°52'13.847"W	0.45	
9015.00	92.190	359.930	7558.46	849.04	848.95	-14.57	40°01'09.788"N	104°52'13.854"W	0.85	
9109.00	93.030	0.310	7554.18	942.93	942.85	-14.37	40°01'10.716"N	104°52'13.852"W	0.98	
9202.00	93.190	0.430	7549.13	1035.79	1035.71	-13.77	40°01'11.633"N	104°52'13.844"W	0.21	
9296.00	92.530	359.630	7544.44	1129.66	1129.59	-13.72	40°01'12.561"N	104°52'13.843"W	1.10	
9390.00	91.140	0.550	7541.43	1223.61	1223.54	-13.58	40°01'13.489"N	104°52'13.842"W	1.77	
9484.00	91.230	0.510	7539.49	1317.57	1317.52	-12.71	40°01'14.418"N	104°52'13.830"W	0.10	
9671.00	91.880	0.840	7534.41	1504.47	1504.43	-10.51	40°01'16.265"N	104°52'13.802"W	0.39	
9765.00	91.470	1.400	7531.66	1598.39	1598.37	-8.67	40°01'17.194"N	104°52'13.778"W	0.74	
9850.00	90.490	1.350	7530.21	1683.33	1683.34	-6.63	40°01'18.033"N	104°52'13.752"W	1.15	
9935.00	90.430	0.930	7529.53	1768.30	1768.32	-4.94	40°01'18.873"N	104°52'13.730"W	0.50	
10105.00	90.610	0.400	7527.98	1938.26	1938.30	-2.97	40°01'20.553"N	104°52'13.705"W	0.33	
10190.00	90.090	359.510	7527.47	2023.25	2023.29	-3.03	40°01'21.393"N	104°52'13.706"W	1.21	
10360.00	90.150	358.000	7527.11	2193.23	2193.25	-6.73	40°01'23.072"N	104°52'13.753"W	0.89	
10531.00	90.030	358.290	7526.84	2364.18	2364.16	-12.26	40°01'24.761"N	104°52'13.825"W	0.18	
10701.00	90.030	358.490	7526.75	2534.15	2534.09	-17.04	40°01'26.441"N	104°52'13.886"W	0.12	
10871.00	89.620	359.080	7527.27	2704.13	2704.05	-20.64	40°01'28.120"N	104°52'13.932"W	0.42	
11041.00	91.350	358.340	7525.83	2874.10	2873.99	-24.47	40°01'29.800"N	104°52'13.982"W	1.11	
11212.00	91.320	358.350	7521.85	3045.01	3044.88	-29.41	40°01'31.488"N	104°52'14.045"W	0.02	
11297.00	90.580	358.280	7520.44	3129.98	3129.83	-31.91	40°01'32.328"N	104°52'14.077"W	0.87	
11382.00	89.750	358.940	7520.19	3214.97	3214.80	-33.97	40°01'33.168"N	104°52'14.104"W	1.25	
11467.00	89.780	358.680	7520.54	3299.96	3299.78	-35.73	40°01'34.007"N	104°52'14.126"W	0.31	
11552.00	90.580	358.790	7520.28	3384.95	3384.76	-37.61	40°01'34.847"N	104°52'14.150"W	0.95	
11637.00	91.040	359.740	7519.07	3469.94	3469.74	-38.70	40°01'35.687"N	104°52'14.164"W	1.24	
11722.00	90.340	0.410	7518.05	3554.93	3554.74	-38.59	40°01'36.527"N	104°52'14.163"W	1.14	
11807.00	89.350	0.500	7518.28	3639.92	3639.73	-37.91	40°01'37.367"N	104°52'14.154"W	1.17	
11892.00	89.380	0.800	7519.22	3724.90	3724.72	-36.95	40°01'38.207"N	104°52'14.142"W	0.35	
12062.00	90.460	0.530	7519.46	3894.86	3894.71	-34.98	40°01'39.887"N	104°52'14.117"W	0.65	
12147.00	90.990	0.360	7518.38	3979.84	3979.70	-34.32	40°01'40.727"N	104°52'14.108"W	0.65	
12232.00	89.470	0.860	7518.04	4064.83	4064.69	-33.41	40°01'41.566"N	104°52'14.096"W	1.88	
12318.00	89.150	1.420	7519.08	4150.79	4150.67	-31.70	40°01'42.416"N	104°52'14.074"W	0.75	



Actual Wellpath Report

HOWARD 24N-22HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 HOWARD 24N-22HZ (800'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 24N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-22HZ AWB
Facility	SEC.27-T1N-R67W		

WELLPATH DATA (153 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12488.00	89.040	0.990	7521.76	4320.69	4320.61	-28.13	40°01'44.095"N	104°52'14.029"W	0.26	
12659.00	89.260	0.680	7524.30	4491.63	4491.57	-25.63	40°01'45.785"N	104°52'13.997"W	0.22	
12829.00	90.490	0.350	7524.67	4661.60	4661.56	-24.11	40°01'47.465"N	104°52'13.977"W	0.75	
13000.00	90.210	1.080	7523.63	4832.56	4832.54	-21.97	40°01'49.155"N	104°52'13.949"W	0.46	
13170.00	88.940	0.710	7524.89	5002.50	5002.51	-19.32	40°01'50.834"N	104°52'13.915"W	0.78	
13341.00	89.290	1.270	7527.53	5173.43	5173.46	-16.36	40°01'52.524"N	104°52'13.877"W	0.39	
13511.00	89.560	0.620	7529.23	5343.37	5343.43	-13.56	40°01'54.203"N	104°52'13.841"W	0.41	
13596.00	90.300	359.980	7529.34	5428.36	5428.43	-13.11	40°01'55.043"N	104°52'13.836"W	1.15	
13681.00	90.980	0.370	7528.39	5513.35	5513.42	-12.85	40°01'55.883"N	104°52'13.832"W	0.92	
13852.00	91.080	359.240	7525.32	5684.32	5684.39	-13.44	40°01'57.573"N	104°52'13.840"W	0.66	
14022.00	91.940	358.260	7520.84	5854.24	5854.29	-17.14	40°01'59.252"N	104°52'13.887"W	0.77	
14107.00	91.750	357.540	7518.10	5939.16	5939.19	-20.26	40°02'00.091"N	104°52'13.927"W	0.88	
14278.00	93.170	357.240	7510.76	6109.88	6109.85	-28.03	40°02'01.777"N	104°52'14.027"W	0.85	
14363.00	92.660	357.510	7506.44	6194.70	6194.65	-31.92	40°02'02.615"N	104°52'14.077"W	0.68	
14448.00	92.950	357.390	7502.28	6279.55	6279.46	-35.70	40°02'03.453"N	104°52'14.126"W	0.37	
14619.00	92.740	356.910	7493.79	6450.19	6450.04	-44.19	40°02'05.139"N	104°52'14.235"W	0.31	
14744.00	92.130	357.240	7488.48	6574.96	6574.76	-50.56	40°02'06.372"N	104°52'14.317"W	0.55	LAST BHI MWD+IFR SURVEY
14800.00	92.130	357.240	7486.40	6630.87	6630.66	-53.26	40°02'06.924"N	104°52'14.352"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: HOWARD 24N-22HZ AWB Ref Wellpath: HOWARD 24N-22HZ 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	1156.00	1140.00	16.00	1155.99	0.00	0.00	-1.62	-0.63
9.625in Casing Surface	16.00	1228.00	1212.00	16.00	1227.99	0.00	0.00	-1.50	-0.51
8.75in Open Hole	1156.00	7900.00	6744.00	1155.99	7576.91	-1.62	-0.63	-265.61	-22.55
7in Casing Intermediate	16.00	7889.00	7873.00	16.00	7576.51	0.00	0.00	-276.60	-23.07
6.125in Open Hole	7889.00	14800.00	6911.00	7576.51	7486.40	-276.60	-23.07	6630.66	-53.26



Actual Wellpath Report

HOWARD 24N-22HZ AWP

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REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#26 HOWARD 24N-22HZ (800'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 24N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-22HZ AWB
Facility	SEC.27-T1N-R67W		

TARGETS

Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SECTION 22 SOUTH HALF LINES		7400.00	0.00	0.00	3176321.45	1249685.42	40°01'01.398"N	104°52'13.667"W	polygon
HOWARD 24N-22HZ BHL ON PLAT REV-1 (2175'FSL & 916'FEL, SEC.22)		7473.00	6655.55	-23.23	3176250.98	1256340.38	40°02'07.170"N	104°52'13.966"W	point
HOWARD 24N-22HZ LAND BOX		7500.00	0.00	0.00	3176321.45	1249685.42	40°01'01.398"N	104°52'13.667"W	polygon
HOWARD SECTION 22 LINES		7500.00	0.00	0.00	3176321.45	1249685.42	40°01'01.398"N	104°52'13.667"W	polygon
HOWARD SECTION 27 LINES		7500.00	0.00	0.00	3176321.45	1249685.42	40°01'01.398"N	104°52'13.667"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: HOWARD 24N-22HZ AWB Ref Wellpath: HOWARD 24N-22HZ AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	1156.00	Generic gyro - continuous (Standard)	MS GYRODATA SURVEYS <116-1156>	HOWARD 24N-22HZ AWB
1156.00	7845.00	NaviTrak (MAGCORR,IFR)	BHI MWD+IFR SURVEYS 8 3/4" HOLE <1277-7845>	HOWARD 24N-22HZ AWB
7845.00	14744.00	NaviTrak (MAGCORR,IFR)	BHI MWD+IFR SURVEYS 6 1/8" HOLE <7909-14744>	HOWARD 24N-22HZ AWB
14744.00	14800.00	Blind Drilling (std)	Projection to bit	HOWARD 24N-22HZ AWB



Actual Wellpath Report

HOWARD 24N-22HZ AWP

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Area	COLORADO	Well	HOWARD 24N-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 24N-22HZ AWB
Facility	SEC.27-T1N-R67W		

WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
16.00	0.000	296.320	16.00	TIE-ON
116.00	0.200	296.320	116.00	BEGIN GYRO SURVEYS
1156.00	0.330	66.800	1155.99	TIE-INTO GYROS
1277.00	0.380	269.280	1276.99	BEGIN BHI MWD+IFR SURVEYS
7889.00	87.366	2.702	7576.51	7" CASING POINT
14744.00	92.130	357.240	7488.48	LAST BHI MWD+IFR SURVEY
14800.00	92.130	357.240	7486.40	PROJECTION TO BIT