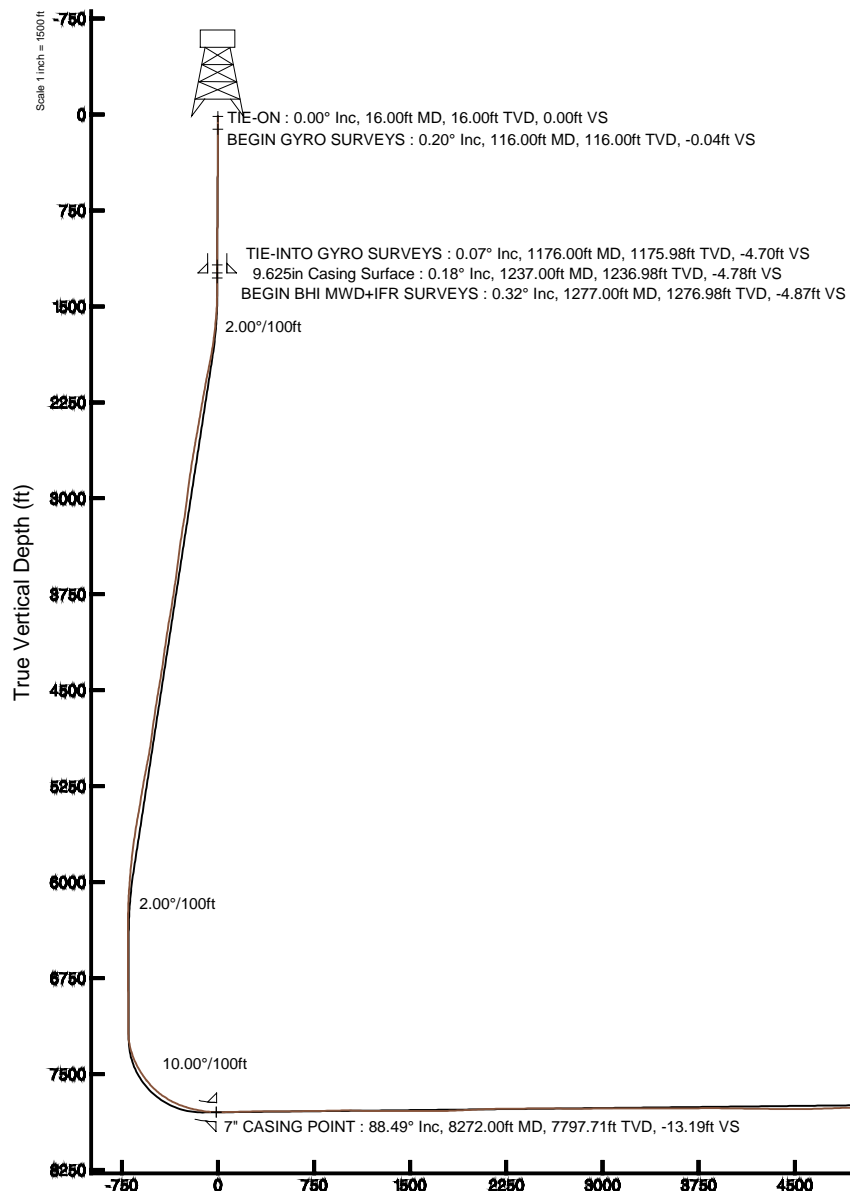


# KERR-MCGEE OIL & GAS ONSHORE LP

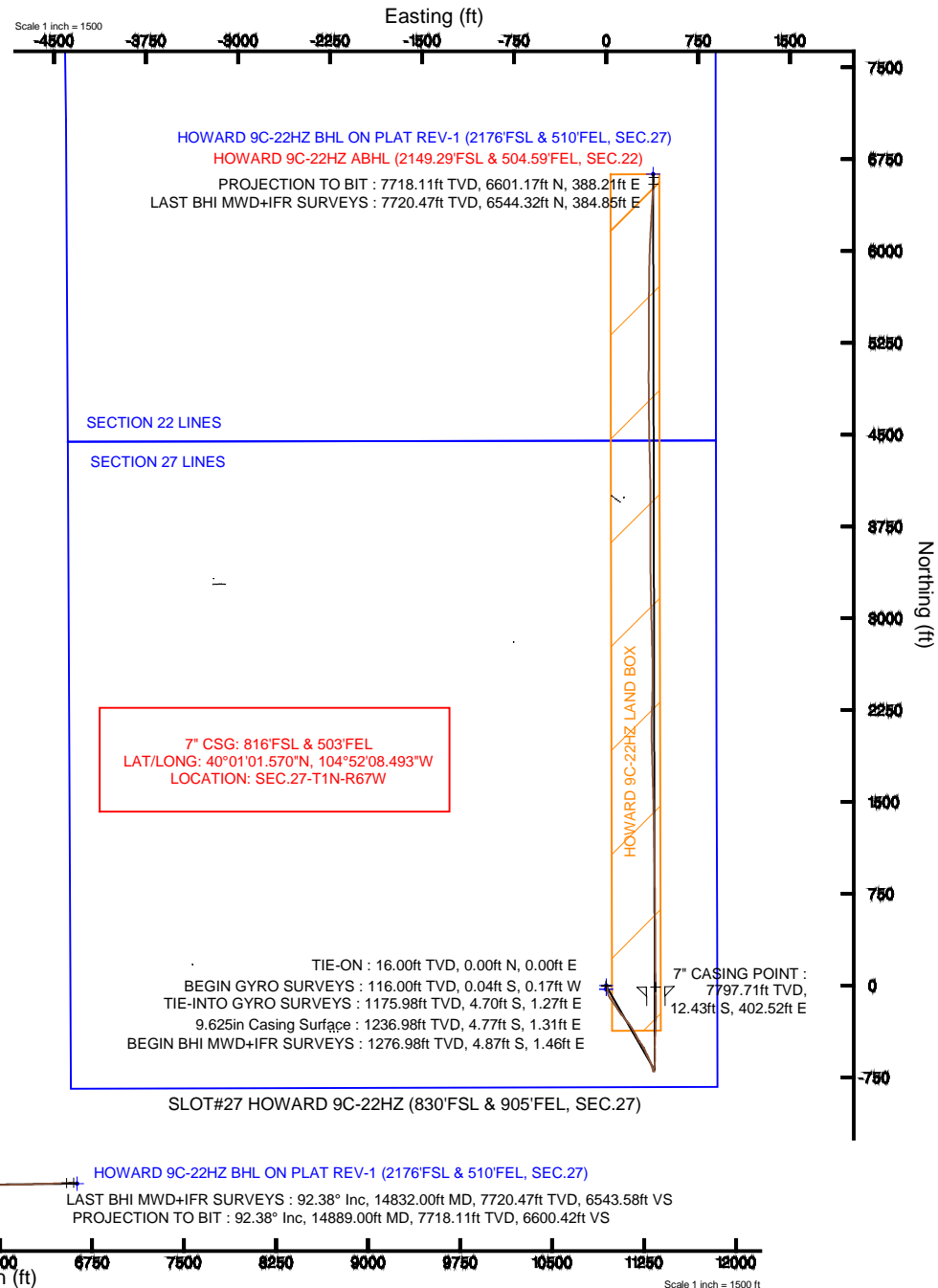
Location: COLORADO Slot: SLOT#27 HOWARD 9C-22HZ (830'FSL & 905'FEL, SEC.27)  
 Field: WELD COUNTY (KERR MCGEE) Well: HOWARD 9C-22HZ  
 Facility: SEC.27-T1N-R67W Wellbore: HOWARD 9C-22HZ PWB



Azimuth 359.89° with reference 0.00 N, 0.00 E

Plot reference wellpath is HOWARD 9C-22HZ (REV-C.0) 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#27 HOWARD 9C-22HZ (830'FSL & 905'FEL, SEC.27)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: wilsje02 on 1/3/2014





# Actual Wellpath Report

HOWARD 9C-22HZ AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#27 HOWARD 9C-22HZ (830'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 9C-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 9C-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	1/3/2014 at 11:04:42
Convergence at slot	n/a	Database/Source file	WellArchitectDB/HOWARD_9C-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	-3275.86	3200.62	3176321.24	1249715.27	40°01'01.693"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#27 HOWARD 9C-22HZ (830'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	3.37°



# Actual Wellpath Report

HOWARD 9C-22HZ AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#27 HOWARD 9C-22HZ (830'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 9C-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 9C-22HZ AWB
Facility	SEC.27-T1N-R67W		

## WELLPATH DATA (162 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	255.460	0.00	0.00	0.00	0.00	40°01'01.693"N	104°52'13.667"W	0.00	
16.00	0.000	255.460	16.00	0.00	0.00	0.00	40°01'01.693"N	104°52'13.667"W	0.00	TIE-ON
116.00	0.200	255.460	116.00	-0.05	-0.04	-0.17	40°01'01.693"N	104°52'13.669"W	0.20	BEGIN GYRO SURVEYS
216.00	0.140	206.100	216.00	-0.22	-0.20	-0.39	40°01'01.691"N	104°52'13.672"W	0.15	
316.00	0.290	174.420	316.00	-0.58	-0.56	-0.42	40°01'01.687"N	104°52'13.672"W	0.19	
416.00	0.410	152.150	416.00	-1.14	-1.13	-0.23	40°01'01.682"N	104°52'13.670"W	0.18	
516.00	0.550	158.720	515.99	-1.88	-1.89	0.11	40°01'01.674"N	104°52'13.666"W	0.15	
616.00	0.540	156.790	615.99	-2.74	-2.77	0.47	40°01'01.666"N	104°52'13.661"W	0.02	
716.00	0.360	136.010	715.99	-3.37	-3.43	0.88	40°01'01.659"N	104°52'13.656"W	0.24	
816.00	0.220	171.970	815.98	-3.77	-3.85	1.12	40°01'01.655"N	104°52'13.653"W	0.22	
916.00	0.230	174.650	915.98	-4.16	-4.24	1.17	40°01'01.651"N	104°52'13.652"W	0.01	
1016.00	0.110	145.180	1015.98	-4.43	-4.51	1.24	40°01'01.648"N	104°52'13.651"W	0.14	
1116.00	0.060	177.040	1115.98	-4.56	-4.65	1.30	40°01'01.647"N	104°52'13.650"W	0.07	
1176.00	0.070	239.880	1175.98	-4.61	-4.70	1.27	40°01'01.647"N	104°52'13.651"W	0.11	TIE-INTO GYRO SURVEYS
1277.00	0.320	120.060	1276.98	-4.77	-4.87	1.46	40°01'01.645"N	104°52'13.648"W	0.36	BEGIN BHI MWD+IFR SURVEYS
1371.00	0.680	216.960	1370.98	-5.36	-5.45	1.35	40°01'01.639"N	104°52'13.650"W	0.84	
1465.00	2.680	139.860	1464.94	-7.42	-7.57	2.43	40°01'01.618"N	104°52'13.636"W	2.78	
1559.00	4.500	153.300	1558.75	-12.20	-12.55	5.51	40°01'01.569"N	104°52'13.596"W	2.12	
1654.00	6.600	161.850	1653.31	-20.51	-21.06	8.88	40°01'01.485"N	104°52'13.553"W	2.37	
1748.00	6.870	178.570	1746.67	-31.14	-31.82	10.70	40°01'01.379"N	104°52'13.529"W	2.10	
1842.00	9.390	174.320	1839.71	-44.31	-45.07	11.60	40°01'01.248"N	104°52'13.518"W	2.75	
1936.00	11.500	170.570	1932.15	-61.03	-61.95	13.90	40°01'01.081"N	104°52'13.488"W	2.36	
2032.00	12.270	158.480	2026.11	-79.61	-80.88	19.21	40°01'00.894"N	104°52'13.420"W	2.71	
2124.00	12.300	146.910	2116.02	-96.37	-98.19	28.15	40°01'00.723"N	104°52'13.305"W	2.67	
2216.00	11.990	145.090	2205.96	-111.75	-114.24	38.97	40°01'00.564"N	104°52'13.166"W	0.54	
2308.00	11.980	144.060	2295.95	-126.64	-129.80	50.04	40°01'00.410"N	104°52'13.024"W	0.23	
2400.00	11.240	146.410	2386.07	-141.19	-145.00	60.60	40°01'00.260"N	104°52'12.888"W	0.95	
2492.00	12.290	145.100	2476.14	-156.05	-160.50	71.17	40°01'00.107"N	104°52'12.752"W	1.18	
2584.00	11.700	146.340	2566.13	-171.18	-176.30	81.94	40°00'59.951"N	104°52'12.614"W	0.70	
2676.00	11.370	147.640	2656.27	-185.99	-191.72	91.96	40°00'59.798"N	104°52'12.485"W	0.46	
2767.00	10.420	146.460	2745.63	-199.86	-206.16	101.31	40°00'59.656"N	104°52'12.365"W	1.07	
2859.00	10.100	143.420	2836.16	-212.69	-219.57	110.72	40°00'59.523"N	104°52'12.244"W	0.68	
2951.00	9.130	137.410	2926.87	-223.95	-231.42	120.46	40°00'59.406"N	104°52'12.119"W	1.52	
3043.00	9.410	142.490	3017.67	-234.71	-242.76	129.98	40°00'59.294"N	104°52'11.996"W	0.94	
3135.00	10.190	140.160	3108.32	-246.33	-254.98	139.78	40°00'59.173"N	104°52'11.870"W	0.95	
3227.00	11.800	143.060	3198.63	-259.44	-268.75	150.64	40°00'59.037"N	104°52'11.731"W	1.85	
3319.00	10.900	141.730	3288.83	-273.11	-283.09	161.68	40°00'58.895"N	104°52'11.589"W	1.02	
3411.00	9.650	143.060	3379.35	-285.50	-296.09	171.71	40°00'58.767"N	104°52'11.460"W	1.38	
3503.00	8.620	142.080	3470.19	-296.56	-307.69	180.58	40°00'58.652"N	104°52'11.346"W	1.13	
3595.00	9.690	140.290	3561.01	-307.39	-319.08	189.76	40°00'58.540"N	104°52'11.228"W	1.20	
3687.00	9.950	146.810	3651.67	-319.43	-331.69	199.06	40°00'58.415"N	104°52'11.109"W	1.24	
3779.00	10.190	148.610	3742.25	-332.51	-345.29	207.65	40°00'58.281"N	104°52'10.998"W	0.43	
3872.00	9.960	149.770	3833.82	-345.96	-359.26	215.98	40°00'58.143"N	104°52'10.891"W	0.33	
3965.00	11.970	148.460	3925.11	-360.57	-374.43	225.08	40°00'57.993"N	104°52'10.774"W	2.18	
4059.00	10.370	150.940	4017.33	-375.71	-390.14	234.29	40°00'57.838"N	104°52'10.656"W	1.78	



# Actual Wellpath Report

HOWARD 9C-22HZ AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#27 HOWARD 9C-22HZ (830'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 9C-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 9C-22HZ AWB
Facility	SEC.27-T1N-R67W		

## WELLPATH DATA (162 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4153.00	9.440	152.480	4109.93	-389.47	-404.37	241.96	40°00'57.697"N	104°52'10.557"W	1.03	
4246.00	8.120	156.250	4201.84	-401.86	-417.15	248.13	40°00'57.571"N	104°52'10.478"W	1.55	
4341.00	9.540	150.710	4295.71	-414.46	-430.15	254.68	40°00'57.442"N	104°52'10.394"W	1.74	
4434.00	10.600	148.930	4387.28	-428.00	-444.20	262.87	40°00'57.303"N	104°52'10.288"W	1.19	
4528.00	12.040	142.390	4479.45	-442.54	-459.38	273.31	40°00'57.153"N	104°52'10.154"W	2.05	
4621.00	11.190	145.300	4570.55	-456.97	-474.48	284.37	40°00'57.004"N	104°52'10.012"W	1.11	
4715.00	10.110	148.510	4662.93	-470.92	-489.01	293.87	40°00'56.860"N	104°52'09.890"W	1.31	
4800.00	8.740	150.400	4746.78	-482.46	-500.99	300.96	40°00'56.742"N	104°52'09.799"W	1.65	
4886.00	8.210	147.550	4831.84	-492.92	-511.85	307.48	40°00'56.635"N	104°52'09.715"W	0.79	
4971.00	9.420	155.900	4915.84	-504.01	-523.33	313.58	40°00'56.521"N	104°52'09.637"W	2.07	
5056.00	11.020	158.480	4999.49	-517.56	-537.23	319.40	40°00'56.384"N	104°52'09.562"W	1.96	
5141.00	12.540	152.720	5082.70	-532.87	-552.99	326.61	40°00'56.228"N	104°52'09.469"W	2.26	
5226.00	12.210	152.960	5165.72	-548.56	-569.20	334.93	40°00'56.068"N	104°52'09.362"W	0.39	
5311.00	10.450	156.070	5249.06	-563.16	-584.25	342.14	40°00'55.919"N	104°52'09.270"W	2.19	
5396.00	9.620	158.130	5332.76	-576.44	-597.89	347.91	40°00'55.784"N	104°52'09.195"W	1.06	
5482.00	10.530	156.550	5417.43	-589.95	-611.77	353.72	40°00'55.647"N	104°52'09.121"W	1.11	
5567.00	10.590	157.820	5500.99	-603.93	-626.13	359.76	40°00'55.505"N	104°52'09.043"W	0.28	
5652.00	9.700	158.900	5584.66	-617.49	-640.04	365.28	40°00'55.368"N	104°52'08.972"W	1.07	
5737.00	8.590	161.400	5668.58	-629.90	-652.74	369.89	40°00'55.242"N	104°52'08.913"W	1.39	
5822.00	7.260	162.240	5752.77	-640.80	-663.87	373.55	40°00'55.132"N	104°52'08.866"W	1.57	
5908.00	6.150	164.570	5838.18	-650.23	-673.49	376.43	40°00'55.037"N	104°52'08.829"W	1.33	
5993.00	5.250	164.360	5922.76	-658.21	-681.62	378.69	40°00'54.957"N	104°52'08.800"W	1.06	
6078.00	4.350	163.930	6007.46	-664.93	-688.46	380.63	40°00'54.889"N	104°52'08.775"W	1.06	
6164.00	3.630	162.100	6093.25	-670.54	-694.19	382.37	40°00'54.833"N	104°52'08.753"W	0.85	
6249.00	2.540	136.950	6178.13	-674.35	-698.13	384.49	40°00'54.794"N	104°52'08.725"W	2.02	
6334.00	1.950	123.830	6263.07	-676.38	-700.31	386.97	40°00'54.772"N	104°52'08.693"W	0.92	
6419.00	1.480	106.260	6348.03	-677.36	-701.42	389.23	40°00'54.761"N	104°52'08.664"W	0.82	
6504.00	1.200	94.350	6433.00	-677.62	-701.79	391.17	40°00'54.758"N	104°52'08.640"W	0.46	
6589.00	0.800	72.020	6517.99	-677.42	-701.68	392.62	40°00'54.759"N	104°52'08.621"W	0.65	
6675.00	0.500	75.930	6603.99	-677.09	-701.40	393.56	40°00'54.762"N	104°52'08.609"W	0.35	
6845.00	0.740	318.260	6773.98	-676.09	-700.40	393.54	40°00'54.771"N	104°52'08.609"W	0.63	
7016.00	0.680	272.390	6944.97	-675.33	-699.54	391.80	40°00'54.780"N	104°52'08.631"W	0.33	
7186.00	0.740	293.940	7114.96	-674.96	-699.05	389.78	40°00'54.785"N	104°52'08.657"W	0.16	
7229.00	0.700	308.300	7157.95	-674.71	-698.77	389.32	40°00'54.787"N	104°52'08.663"W	0.43	
7271.00	3.560	5.530	7199.92	-673.26	-697.32	389.25	40°00'54.802"N	104°52'08.664"W	7.70	
7314.00	8.090	4.730	7242.69	-668.90	-692.97	389.63	40°00'54.845"N	104°52'08.659"W	10.54	
7356.00	12.810	5.500	7283.98	-661.29	-685.39	390.32	40°00'54.920"N	104°52'08.650"W	11.24	
7399.00	17.170	7.620	7325.51	-650.19	-674.34	391.62	40°00'55.029"N	104°52'08.634"W	10.22	
7442.00	20.830	6.230	7366.16	-636.22	-660.45	393.29	40°00'55.166"N	104°52'08.612"W	8.58	
7484.00	24.820	4.990	7404.86	-619.94	-644.24	394.87	40°00'55.326"N	104°52'08.592"W	9.57	
7527.00	28.110	4.530	7443.35	-600.79	-625.14	396.45	40°00'55.515"N	104°52'08.572"W	7.67	
7569.00	31.350	2.960	7479.82	-579.97	-604.36	397.80	40°00'55.720"N	104°52'08.554"W	7.93	
7612.00	34.650	0.210	7515.88	-556.57	-580.96	398.42	40°00'55.952"N	104°52'08.546"W	8.43	
7655.00	37.830	357.790	7550.56	-531.23	-555.55	397.96	40°00'56.203"N	104°52'08.552"W	8.11	
7697.00	42.260	358.190	7582.70	-504.33	-528.55	397.01	40°00'56.470"N	104°52'08.564"W	10.57	



# Actual Wellpath Report

HOWARD 9C-22HZ AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#27 HOWARD 9C-22HZ (830'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 9C-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 9C-22HZ AWB
Facility	SEC.27-T1N-R67W		

## WELLPATH DATA (162 stations) † = interpolated/extrapolated station

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7740.00	45.730	0.220	7613.63	-474.55	-498.69	396.62	40°00'56.765"N	104°52'08.569"W	8.71	
7782.00	50.810	1.240	7641.58	-443.25	-467.36	397.03	40°00'57.074"N	104°52'08.564"W	12.23	
7825.00	54.990	2.350	7667.51	-408.97	-433.09	398.11	40°00'57.413"N	104°52'08.550"W	9.94	
7868.00	58.500	4.320	7691.09	-373.02	-397.21	400.21	40°00'57.768"N	104°52'08.523"W	9.02	
7910.00	61.590	2.740	7712.06	-336.64	-360.89	402.45	40°00'58.127"N	104°52'08.495"W	8.05	
7953.00	65.910	0.820	7731.08	-298.10	-322.36	403.63	40°00'58.507"N	104°52'08.479"W	10.81	
7995.00	69.920	1.020	7746.86	-259.23	-283.45	404.26	40°00'58.892"N	104°52'08.471"W	9.56	
8038.00	73.390	0.960	7760.39	-218.45	-242.65	404.96	40°00'59.295"N	104°52'08.462"W	8.07	
8081.00	76.670	1.610	7771.50	-176.95	-201.12	405.89	40°00'59.705"N	104°52'08.450"W	7.77	
8123.00	77.570	359.780	7780.86	-136.05	-160.19	406.39	40°01'00.110"N	104°52'08.444"W	4.76	
8166.00	81.190	357.980	7788.79	-93.93	-117.94	405.56	40°01'00.527"N	104°52'08.454"W	9.37	
8224.00	85.840	358.240	7795.34	-36.56	-60.36	403.66	40°01'01.097"N	104°52'08.479"W	8.03	
8272.00†	88.490	359.036	7797.71	11.22	-12.43	402.52	40°01'01.570"N	104°52'08.493"W	5.76	7" CASING POINT
8320.00	91.140	359.830	7797.87	59.10	35.56	402.05	40°01'02.044"N	104°52'08.500"W	5.76	
8412.00	91.420	359.510	7795.81	150.89	127.53	401.52	40°01'02.953"N	104°52'08.506"W	0.46	
8504.00	91.600	359.790	7793.39	242.66	219.50	400.96	40°01'03.862"N	104°52'08.514"W	0.36	
8596.00	90.270	359.680	7791.89	334.46	311.48	400.53	40°01'04.771"N	104°52'08.519"W	1.45	
8689.00	90.150	359.760	7791.54	427.27	404.48	400.08	40°01'05.690"N	104°52'08.525"W	0.16	
8876.00	90.460	359.430	7790.55	613.87	591.48	398.75	40°01'07.538"N	104°52'08.542"W	0.24	
9063.00	90.890	359.380	7788.35	800.41	778.45	396.81	40°01'09.386"N	104°52'08.567"W	0.23	
9251.00	91.260	359.260	7784.82	987.90	966.41	394.58	40°01'11.243"N	104°52'08.595"W	0.21	
9345.00	87.810	358.740	7785.58	1081.61	1060.37	392.94	40°01'12.172"N	104°52'08.616"W	3.71	
9438.00	89.070	358.950	7788.11	1174.29	1153.32	391.07	40°01'13.090"N	104°52'08.640"W	1.37	
9618.00	89.870	359.050	7789.78	1353.76	1333.28	387.93	40°01'14.869"N	104°52'08.681"W	0.45	
9788.00	90.520	358.790	7789.20	1523.24	1503.25	384.72	40°01'16.549"N	104°52'08.722"W	0.41	
9873.00	89.690	358.360	7789.04	1607.94	1588.22	382.61	40°01'17.388"N	104°52'08.749"W	1.10	
9958.00	90.300	358.280	7789.05	1692.61	1673.18	380.12	40°01'18.228"N	104°52'08.781"W	0.72	
10043.00	90.980	358.580	7788.10	1777.29	1758.15	377.79	40°01'19.067"N	104°52'08.811"W	0.87	
10213.00	92.950	358.200	7782.27	1946.54	1927.97	373.01	40°01'20.746"N	104°52'08.872"W	1.18	
10299.00	93.070	359.580	7777.76	2032.16	2013.83	371.35	40°01'21.594"N	104°52'08.894"W	1.61	
10384.00	91.910	359.940	7774.06	2116.91	2098.75	370.99	40°01'22.433"N	104°52'08.898"W	1.43	
10469.00	91.660	0.850	7771.42	2201.76	2183.71	371.58	40°01'23.273"N	104°52'08.891"W	1.11	
10555.00	90.030	1.810	7770.15	2287.69	2269.67	373.58	40°01'24.123"N	104°52'08.865"W	2.20	
10640.00	90.090	0.980	7770.06	2372.64	2354.65	375.65	40°01'24.962"N	104°52'08.838"W	0.98	
10725.00	90.890	1.310	7769.33	2457.57	2439.62	377.34	40°01'25.802"N	104°52'08.817"W	1.02	
10810.00	91.050	0.780	7767.89	2542.49	2524.60	378.89	40°01'26.642"N	104°52'08.797"W	0.65	
10895.00	88.760	358.620	7768.03	2627.30	2609.59	378.45	40°01'27.482"N	104°52'08.802"W	3.70	
10981.00	88.240	358.310	7770.29	2712.96	2695.52	376.15	40°01'28.331"N	104°52'08.832"W	0.70	
11066.00	90.270	358.930	7771.39	2797.66	2780.49	374.10	40°01'29.171"N	104°52'08.858"W	2.50	
11236.00	91.040	358.440	7769.45	2967.08	2950.43	370.20	40°01'30.850"N	104°52'08.908"W	0.54	
11321.00	90.150	358.760	7768.56	3051.78	3035.40	368.12	40°01'31.690"N	104°52'08.935"W	1.11	
11407.00	89.510	358.890	7768.82	3137.51	3121.38	366.36	40°01'32.539"N	104°52'08.958"W	0.76	
11577.00	90.000	358.820	7769.55	3306.98	3291.34	362.96	40°01'34.219"N	104°52'09.001"W	0.29	
11747.00	90.490	359.560	7768.82	3476.52	3461.32	360.56	40°01'35.899"N	104°52'09.032"W	0.52	
11918.00	89.970	0.090	7768.13	3647.19	3632.32	360.04	40°01'37.589"N	104°52'09.039"W	0.43	



# Actual Wellpath Report

HOWARD 9C-22HZ AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#27 HOWARD 9C-22HZ (830'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 9C-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 9C-22HZ AWB
Facility	SEC.27-T1N-R67W		

## WELLPATH DATA (162 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12089.00	90.830	0.110	7766.94	3817.91	3803.32	360.33	40°01'39.278"N	104°52'09.035"W	0.50	
12174.00	89.100	0.170	7766.99	3902.77	3888.31	360.54	40°01'40.118"N	104°52'09.032"W	2.04	
12344.00	89.320	359.580	7769.34	4072.44	4058.29	360.17	40°01'41.798"N	104°52'09.037"W	0.37	
12515.00	89.220	358.630	7771.51	4242.95	4229.26	357.50	40°01'43.488"N	104°52'09.071"W	0.56	
12685.00	89.350	358.560	7773.64	4412.35	4399.19	353.33	40°01'45.167"N	104°52'09.125"W	0.09	
12856.00	90.640	359.120	7773.65	4582.81	4570.15	349.87	40°01'46.857"N	104°52'09.169"W	0.82	
12941.00	91.380	359.380	7772.15	4667.58	4655.13	348.76	40°01'47.696"N	104°52'09.184"W	0.92	
13026.00	92.210	359.450	7769.49	4752.33	4740.09	347.89	40°01'48.536"N	104°52'09.195"W	0.98	
13196.00	91.970	359.790	7763.29	4921.86	4909.97	346.76	40°01'50.215"N	104°52'09.209"W	0.24	
13281.00	92.090	0.030	7760.28	5006.65	4994.91	346.63	40°01'51.054"N	104°52'09.211"W	0.32	
13366.00	89.690	0.760	7758.96	5091.52	5079.90	347.22	40°01'51.894"N	104°52'09.203"W	2.95	
13451.00	90.030	0.490	7759.17	5176.42	5164.89	348.14	40°01'52.734"N	104°52'09.191"W	0.51	
13621.00	90.610	359.650	7758.22	5346.13	5334.89	348.35	40°01'54.414"N	104°52'09.189"W	0.60	
13791.00	92.270	359.600	7753.94	5515.71	5504.82	347.24	40°01'56.093"N	104°52'09.203"W	0.98	
13876.00	90.730	1.240	7751.72	5600.57	5589.79	347.86	40°01'56.933"N	104°52'09.195"W	2.65	
13961.00	91.840	1.040	7749.81	5685.48	5674.75	349.55	40°01'57.772"N	104°52'09.173"W	1.33	
14046.00	92.120	0.690	7746.88	5770.35	5759.68	350.84	40°01'58.612"N	104°52'09.157"W	0.53	
14131.00	92.310	0.180	7743.59	5855.17	5844.62	351.48	40°01'59.451"N	104°52'09.148"W	0.64	
14216.00	93.170	1.320	7739.53	5939.98	5929.51	352.59	40°02'00.290"N	104°52'09.134"W	1.68	
14300.00	91.440	2.270	7736.15	6023.88	6013.40	355.22	40°02'01.119"N	104°52'09.100"W	2.35	
14385.00	90.990	2.740	7734.35	6108.85	6098.30	358.94	40°02'01.958"N	104°52'09.053"W	0.77	
14470.00	91.380	3.020	7732.59	6193.83	6183.17	363.21	40°02'02.797"N	104°52'08.998"W	0.56	
14555.00	91.960	3.310	7730.11	6278.79	6268.01	367.90	40°02'03.635"N	104°52'08.937"W	0.76	
14640.00	91.660	3.560	7727.43	6363.75	6352.81	372.99	40°02'04.473"N	104°52'08.872"W	0.46	
14725.00	92.090	3.630	7724.65	6448.70	6437.60	378.31	40°02'05.311"N	104°52'08.803"W	0.51	
14832.00	92.380	3.380	7720.47	6555.62	6544.32	384.85	40°02'06.366"N	104°52'08.719"W	0.36	LAST BHI MWD+IFR SURVEYS
14889.00	92.380	3.380	7718.11	6612.57	6601.17	388.21	40°02'06.928"N	104°52'08.676"W	0.00	PROJECTION TO BIT

## HOLE & CASING SECTIONS - Ref Wellbore: HOWARD 9C-22HZ AWB Ref Wellpath: HOWARD 9C-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	1237.00	1221.00	16.00	1236.98	0.00	0.00	-4.77	1.31
9.625in Casing Surface	16.00	1237.00	1221.00	16.00	1236.98	0.00	0.00	-4.77	1.31
8.75in Open Hole	1237.00	8282.00	7045.00	1236.98	7797.93	-4.77	1.31	-2.44	402.37
7in Casing Intermediate	16.00	8272.00	8256.00	16.00	7797.71	0.00	0.00	-12.43	402.52
6.125in Open Hole	8272.00	14889.00	6617.00	7797.71	7718.11	-12.43	402.52	6601.17	388.21





# Actual Wellpath Report

HOWARD 9C-22HZ AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#27 HOWARD 9C-22HZ (830'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 9C-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 9C-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
HOWARD SECTION 22 LINES		7500.00	-29.85	0.00	3176321.45	1249685.42	40°01'01.398"N	104°52'13.667"W	polygon
HOWARD SECTION 27 LINES		7500.00	-29.85	0.00	3176321.45	1249685.42	40°01'01.398"N	104°52'13.667"W	polygon
HOWARD 9C-22HZ BHL ON PLAT REV-1 (2176'FSL & 510'FEL, SEC.27)		7726.00	6627.88	382.80	3176656.96	1256345.46	40°02'07.192"N	104°52'08.746"W	point
HOWARD 9C-22HZ LAND BOX		7800.00	0.00	0.00	3176321.24	1249715.26	40°01'01.693"N	104°52'13.667"W	polygon

## WELLPATH COMPOSITION - Ref Wellbore: HOWARD 9C-22HZ AWB Ref Wellpath: HOWARD 9C-22HZ AWP

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	1176.00	Generic gyro - continuous (Standard)	MS GYRODATA SURVEYS <116-1176>	HOWARD 9C-22HZ AWB
1176.00	8224.00	NaviTrak (MAGCORR,IFR)	BHI MWD+IFR SURVEYS 8 3/4" HOLE <1277--8224>	HOWARD 9C-22HZ AWB
8224.00	14832.00	NaviTrak (MAGCORR,IFR)	BHI MWD+IFE SURVEYS 6 1/8" HOLE <8320-14832>	HOWARD 9C-22HZ AWB
14832.00	14889.00	Blind Drilling (std)	Projection to bit	HOWARD 9C-22HZ AWB



# Actual Wellpath Report

HOWARD 9C-22HZ AWP

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## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#27 HOWARD 9C-22HZ (830'FSL & 905'FEL, SEC.27)
Area	COLORADO	Well	HOWARD 9C-22HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	HOWARD 9C-22HZ AWB
Facility	SEC.27-T1N-R67W		

## WELLPATH COMMENTS

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
16.00	0.000	255.460	16.00	TIE-ON
116.00	0.200	255.460	116.00	BEGIN GYRO SURVEYS
1176.00	0.070	239.880	1175.98	TIE-INTO GYRO SURVEYS
1277.00	0.320	120.060	1276.98	BEGIN BHI MWD+IFR SURVEYS
8272.00	88.490	359.036	7797.71	7" CASING POINT
14832.00	92.380	3.380	7720.47	LAST BHI MWD+IFR SURVEYS
14889.00	92.380	3.380	7718.11	PROJECTION TO BIT