





# Actual Wellpath Report

THOMSEN 3N-31HZ AWB

Page 1 of 7



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (LAMBERT STATE PLANE COORD)	Slot	SLOT#15 THOMSEN 3N-31HZ (2405'FNL & 830'FWL, SEC.07)
Area	COLORADO	Well	THOMSEN 3N-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMSEN 3N-31HZ AWB <16885>
Facility	SEC.07-T2N-R65W		

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	0.999958	Report Generated	1/21/2015 at 1:10:49 PM
Convergence at slot	n/a	Database/Source file	WellArchitectDB/THOMSEN_3N-31HZ_AWB_16885_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	2290.72	306.94	3220007.89	1299783.49	40°09'13.032"N	104°42'46.458"W
Facility Reference Pt			3219721.27	1297490.24	40°08'50.395"N	104°42'50.411"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	H&P 307 (25'KB) (RKB) to Facility Vertical Datum	4972.00ft
Horizontal Reference Pt	Slot	H&P 307 (25'KB) (RKB) to Mean Sea Level	4972.00ft
Vertical Reference Pt	H&P 307 (25'KB) (RKB)	H&P 307 (25'KB) (RKB) to Mud Line at Slot (SLOT#15 THOMSEN 3N-31HZ (2405'FNL & 830'FWL, SEC.07))	4972.00ft
MD Reference Pt	H&P 307 (25'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	1.17°

### REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (LAMBERT STATE PLANE COORD)	Slot	SLOT#15 THOMSEN 3N-31HZ (2405'FNL & 830'FWL, SEC.07)
Area	COLORADO	Well	THOMSEN 3N-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMSEN 3N-31HZ AWB <16885>
Facility	SEC.07-T2N-R65W		

### WELLPATH DATA (193 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	19.100	0.00	0.00	0.00	0.00	40°09'13.032"N	104°42'46.458"W	0.00	
25.00	0.000	19.100	25.00	0.00	0.00	0.00	40°09'13.032"N	104°42'46.458"W	0.00	TIE ON
101.00	0.400	19.100	101.00	0.25	0.25	0.09	40°09'13.034"N	104°42'46.457"W	0.53	BEGIN CATHEDRAL MWD SURVEYS
181.00	0.800	23.600	180.99	1.03	1.03	0.40	40°09'13.042"N	104°42'46.453"W	0.50	
270.00	0.900	17.300	269.99	2.28	2.26	0.86	40°09'13.054"N	104°42'46.447"W	0.15	
350.00	1.000	25.800	349.97	3.52	3.49	1.35	40°09'13.067"N	104°42'46.441"W	0.22	
430.00	0.200	30.300	429.97	4.27	4.24	1.72	40°09'13.074"N	104°42'46.436"W	1.00	
510.00	0.090	64.400	509.97	4.42	4.39	1.85	40°09'13.075"N	104°42'46.434"W	0.17	
590.00	0.200	301.600	589.97	4.52	4.49	1.79	40°09'13.076"N	104°42'46.435"W	0.33	
670.00	0.400	166.500	669.97	4.32	4.29	1.73	40°09'13.074"N	104°42'46.436"W	0.70	
750.00	0.400	145.400	749.97	3.83	3.79	1.96	40°09'13.069"N	104°42'46.433"W	0.18	
830.00	0.600	230.500	829.96	3.33	3.29	1.79	40°09'13.065"N	104°42'46.435"W	0.87	
910.00	0.500	236.600	909.96	2.86	2.83	1.18	40°09'13.060"N	104°42'46.443"W	0.14	
990.00	0.500	217.300	989.96	2.38	2.36	0.68	40°09'13.055"N	104°42'46.449"W	0.21	
1070.00	0.700	232.800	1069.95	1.79	1.79	0.08	40°09'13.050"N	104°42'46.457"W	0.32	
1150.00	0.900	237.600	1149.95	1.14	1.16	-0.84	40°09'13.043"N	104°42'46.469"W	0.26	
1230.00	1.100	239.200	1229.93	0.39	0.43	-2.03	40°09'13.036"N	104°42'46.484"W	0.25	
1321.00	0.600	263.000	1320.92	-0.14	-0.08	-3.26	40°09'13.031"N	104°42'46.500"W	0.66	TIE ONTO CATHEDRAL MWD SURVEYS
1378.00	0.770	298.620	1377.92	-0.01	0.07	-3.89	40°09'13.033"N	104°42'46.508"W	0.79	BEGIN BHI MWD+IFR SURVEYS
1470.00	1.330	168.640	1469.91	-0.77	-0.68	-4.22	40°09'13.025"N	104°42'46.512"W	2.08	
1564.00	2.800	161.420	1563.85	-3.99	-3.93	-3.28	40°09'12.993"N	104°42'46.500"W	1.59	
1656.00	4.990	164.680	1655.63	-9.94	-9.92	-1.50	40°09'12.934"N	104°42'46.477"W	2.39	
1749.00	5.910	172.140	1748.21	-18.55	-18.56	0.22	40°09'12.849"N	104°42'46.455"W	1.25	
1843.00	7.010	163.630	1841.61	-28.80	-28.86	2.50	40°09'12.747"N	104°42'46.426"W	1.55	
1936.00	8.420	162.580	1933.77	-40.67	-40.80	6.14	40°09'12.629"N	104°42'46.379"W	1.52	
2029.00	10.040	163.780	2025.56	-54.86	-55.08	10.44	40°09'12.488"N	104°42'46.324"W	1.75	
2123.00	11.260	166.640	2117.94	-71.56	-71.88	14.85	40°09'12.322"N	104°42'46.267"W	1.41	
2215.00	13.230	164.550	2207.84	-90.35	-90.77	19.73	40°09'12.135"N	104°42'46.204"W	2.19	
2308.00	15.200	165.730	2297.99	-112.30	-112.84	25.57	40°09'11.917"N	104°42'46.129"W	2.14	
2401.00	17.160	163.780	2387.31	-137.15	-137.83	32.41	40°09'11.670"N	104°42'46.041"W	2.19	
2494.00	20.020	162.080	2475.44	-165.29	-166.16	41.14	40°09'11.390"N	104°42'45.928"W	3.13	
2587.00	21.080	161.220	2562.53	-196.06	-197.14	51.42	40°09'11.084"N	104°42'45.796"W	1.19	
2680.00	21.780	161.230	2649.10	-228.00	-229.31	62.36	40°09'10.766"N	104°42'45.655"W	0.75	
2773.00	22.310	157.220	2735.30	-260.35	-261.93	74.75	40°09'10.444"N	104°42'45.495"W	1.72	
2866.00	22.730	158.790	2821.21	-293.10	-294.95	88.08	40°09'10.117"N	104°42'45.324"W	0.79	
2959.00	23.970	159.250	2906.59	-327.24	-329.37	101.28	40°09'09.777"N	104°42'45.154"W	1.35	
3051.00	23.440	159.020	2990.83	-361.53	-363.93	114.45	40°09'09.436"N	104°42'44.984"W	0.58	
3146.00	22.940	158.540	3078.15	-396.12	-398.80	127.99	40°09'09.091"N	104°42'44.810"W	0.56	
3241.00	23.390	162.120	3165.50	-431.03	-433.98	140.55	40°09'08.743"N	104°42'44.648"W	1.56	
3336.00	22.170	162.650	3253.09	-465.86	-469.04	151.69	40°09'08.397"N	104°42'44.505"W	1.30	
3431.00	22.320	163.170	3341.02	-500.01	-503.41	162.25	40°09'08.057"N	104°42'44.368"W	0.26	
3526.00	22.950	161.640	3428.70	-534.62	-538.26	173.31	40°09'07.713"N	104°42'44.226"W	0.91	
3621.00	21.550	161.200	3516.62	-568.48	-572.36	184.77	40°09'07.376"N	104°42'44.078"W	1.48	
3715.00	21.770	161.140	3603.99	-601.08	-605.20	195.97	40°09'07.051"N	104°42'43.934"W	0.24	
3810.00	21.600	161.710	3692.26	-634.12	-638.47	207.15	40°09'06.723"N	104°42'43.790"W	0.28	

# Actual Wellpath Report

THOMSEN 3N-31HZ AWP

Page 3 of 7

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (LAMBERT STATE PLANE COORD)		Slot	SLOT#15 THOMSEN 3N-31HZ (2405'FNL & 830'FWL, SEC.07)
Area	COLORADO		Well	THOMSEN 3N-31HZ
Field	WELD COUNTY (KERR MCGEE)		Wellbore	THOMSEN 3N-31HZ AWB <16885>
Facility	SEC.07-T2N-R65W			

WELLPATH DATA (193 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
3905.00	21.180	157.960	3780.72	-666.39	-670.98	219.08	40°09'06.401"N	104°42'43.637"W	1.51	
4000.00	22.370	158.610	3868.94	-698.86	-703.72	232.11	40°09'06.078"N	104°42'43.469"W	1.28	
4095.00	22.200	160.160	3956.85	-732.31	-737.44	244.80	40°09'05.745"N	104°42'43.305"W	0.64	
4189.00	23.600	160.720	4043.44	-766.52	-771.90	257.04	40°09'05.404"N	104°42'43.148"W	1.51	
4283.00	22.980	159.480	4129.78	-801.20	-806.85	269.68	40°09'05.059"N	104°42'42.985"W	0.84	
4378.00	24.750	158.930	4216.65	-836.84	-842.78	283.33	40°09'04.704"N	104°42'42.809"W	1.88	
4472.00	22.740	157.490	4302.69	-871.70	-877.93	297.36	40°09'04.356"N	104°42'42.629"W	2.23	
4566.00	22.090	158.730	4389.59	-904.67	-911.18	310.73	40°09'04.028"N	104°42'42.456"W	0.86	
4660.00	22.830	161.500	4476.46	-938.19	-944.95	322.93	40°09'03.694"N	104°42'42.299"W	1.37	
4754.00	23.370	163.060	4562.92	-973.08	-980.08	334.15	40°09'03.347"N	104°42'42.155"W	0.87	
4848.00	22.730	162.750	4649.42	-1008.03	-1015.26	344.97	40°09'02.999"N	104°42'42.016"W	0.69	
4943.00	23.560	163.510	4736.77	-1043.54	-1050.99	355.80	40°09'02.646"N	104°42'41.876"W	0.93	
5037.00	23.320	162.540	4823.02	-1079.07	-1086.75	366.71	40°09'02.293"N	104°42'41.735"W	0.48	
5131.00	23.130	161.760	4909.40	-1114.11	-1122.04	378.07	40°09'01.944"N	104°42'41.589"W	0.38	
5225.00	21.550	161.530	4996.34	-1147.79	-1155.95	389.32	40°09'01.609"N	104°42'41.444"W	1.68	
5320.00	21.500	162.140	5084.72	-1180.68	-1189.07	400.19	40°09'01.282"N	104°42'41.304"W	0.24	
5414.00	19.580	163.890	5172.74	-1212.01	-1220.60	409.84	40°09'00.970"N	104°42'41.180"W	2.14	
5509.00	19.530	160.790	5262.26	-1242.09	-1250.89	419.49	40°09'00.671"N	104°42'41.056"W	1.09	
5603.00	16.960	159.090	5351.53	-1269.53	-1278.53	429.55	40°09'00.397"N	104°42'40.926"W	2.79	
5697.00	17.070	160.370	5441.41	-1295.14	-1304.34	439.08	40°09'00.142"N	104°42'40.804"W	0.42	
5791.00	15.100	160.130	5531.73	-1319.46	-1328.85	447.88	40°08'59.900"N	104°42'40.690"W	2.10	
5886.00	13.760	161.990	5623.73	-1341.69	-1351.23	455.58	40°08'59.679"N	104°42'40.591"W	1.49	
5980.00	11.420	158.980	5715.46	-1360.86	-1370.55	462.37	40°08'59.488"N	104°42'40.504"W	2.58	
6074.00	10.160	155.480	5807.80	-1376.95	-1386.78	469.15	40°08'59.328"N	104°42'40.416"W	1.51	
6169.00	7.840	154.750	5901.62	-1390.31	-1400.27	475.39	40°08'59.194"N	104°42'40.336"W	2.45	
6263.00	6.750	154.270	5994.86	-1400.98	-1411.04	480.53	40°08'59.088"N	104°42'40.270"W	1.16	
6357.00	4.680	154.420	6088.39	-1409.33	-1419.48	484.58	40°08'59.005"N	104°42'40.218"W	2.20	
6452.00	3.270	170.390	6183.16	-1415.45	-1425.65	486.71	40°08'58.944"N	104°42'40.190"W	1.87	
6546.00	0.730	213.260	6277.10	-1418.59	-1428.79	486.83	40°08'58.913"N	104°42'40.189"W	2.96	
6640.00	1.060	154.540	6371.09	-1419.88	-1430.08	486.87	40°08'58.900"N	104°42'40.188"W	0.98	
6734.00	0.680	145.050	6465.08	-1421.11	-1431.32	487.56	40°08'58.888"N	104°42'40.179"W	0.43	
6829.00	5.100	349.690	6559.97	-1417.42	-1427.63	487.13	40°08'58.924"N	104°42'40.185"W	6.03	
6876.00	11.660	351.260	6606.44	-1410.69	-1420.87	486.03	40°08'58.991"N	104°42'40.199"W	13.96	
6923.00	16.610	352.460	6652.00	-1399.36	-1409.51	484.43	40°08'59.103"N	104°42'40.220"W	10.55	
6970.00	19.250	350.630	6696.72	-1385.10	-1395.20	482.29	40°08'59.244"N	104°42'40.247"W	5.74	
7018.00	22.890	350.300	6741.50	-1368.15	-1378.19	479.42	40°08'59.413"N	104°42'40.284"W	7.59	
7065.00	26.570	352.290	6784.18	-1348.78	-1358.75	476.47	40°08'59.605"N	104°42'40.322"W	8.03	
7112.00	30.510	355.160	6825.47	-1326.52	-1336.44	474.06	40°08'59.825"N	104°42'40.353"W	8.87	
7159.00	35.880	355.960	6864.78	-1300.92	-1310.79	472.08	40°09'00.079"N	104°42'40.379"W	11.46	
7206.00	41.590	356.220	6901.43	-1271.64	-1281.46	470.08	40°09'00.368"N	104°42'40.404"W	12.15	
7253.00	45.550	357.760	6935.48	-1239.34	-1249.12	468.39	40°09'00.688"N	104°42'40.426"W	8.72	
7301.00	49.210	358.770	6967.97	-1204.07	-1213.82	467.33	40°09'01.037"N	104°42'40.440"W	7.78	
7348.00	52.120	358.950	6997.76	-1167.75	-1177.48	466.61	40°09'01.396"N	104°42'40.449"W	6.20	
7395.00	55.220	359.000	7025.60	-1129.92	-1139.63	465.93	40°09'01.770"N	104°42'40.458"W	6.60	
7442.00	58.280	358.760	7051.37	-1090.65	-1100.34	465.16	40°09'02.158"N	104°42'40.468"W	6.52	

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (LAMBERT STATE PLANE COORD)		Slot	SLOT#15 THOMSEN 3N-31HZ (2405'FNL & 830'FWL, SEC.07)
Area	COLORADO		Well	THOMSEN 3N-31HZ
Field	WELD COUNTY (KERR MCGEE)		Wellbore	THOMSEN 3N-31HZ AWB <16885>
Facility	SEC.07-T2N-R65W			

WELLPATH DATA (193 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7490.00	62.790	358.690	7074.97	-1048.90	-1058.57	464.23	40°09'02.571"N	104°42'40.480"W	9.40	
7537.00	67.710	357.440	7094.65	-1006.30	-1015.92	462.78	40°09'02.993"N	104°42'40.498"W	10.74	
7584.00	72.110	356.660	7110.79	-962.28	-971.85	460.51	40°09'03.428"N	104°42'40.528"W	9.49	
7631.00	75.360	357.000	7123.95	-917.30	-926.81	458.01	40°09'03.873"N	104°42'40.560"W	6.95	
7678.00	80.150	356.740	7133.91	-871.51	-880.96	455.51	40°09'04.326"N	104°42'40.592"W	10.21	
7728.00	84.330	356.850	7140.66	-822.12	-831.51	452.74	40°09'04.815"N	104°42'40.628"W	8.36	
7759.00†	86.643	356.985	7143.10	-791.31	-800.65	451.08	40°09'05.120"N	104°42'40.649"W	7.47	7" CASING POINT
7804.00	90.000	357.180	7144.42	-746.45	-755.73	448.79	40°09'05.564"N	104°42'40.678"W	7.47	
7898.00	90.210	357.700	7144.25	-652.65	-661.83	444.59	40°09'06.492"N	104°42'40.733"W	0.60	
7992.00	89.720	358.160	7144.31	-558.80	-567.89	441.19	40°09'07.420"N	104°42'40.776"W	0.71	
8087.00	90.060	358.830	7144.49	-463.90	-472.92	438.70	40°09'08.359"N	104°42'40.808"W	0.79	
8181.00	90.000	359.210	7144.44	-369.97	-378.94	437.09	40°09'09.287"N	104°42'40.829"W	0.41	
8276.00	89.660	358.980	7144.72	-275.03	-283.95	435.59	40°09'10.226"N	104°42'40.848"W	0.43	
8370.00	90.400	0.730	7144.67	-181.06	-189.95	435.35	40°09'11.155"N	104°42'40.851"W	2.02	
8464.00	91.110	1.010	7143.43	-87.07	-95.97	436.78	40°09'12.084"N	104°42'40.833"W	0.81	
8559.00	90.400	359.610	7142.18	7.91	-0.99	437.29	40°09'13.022"N	104°42'40.826"W	1.65	
8653.00	89.960	358.630	7141.89	101.85	93.00	435.85	40°09'13.951"N	104°42'40.845"W	1.14	
8747.00	89.840	359.230	7142.05	195.78	186.98	434.09	40°09'14.880"N	104°42'40.867"W	0.65	
8842.00	91.630	0.010	7140.83	290.73	281.97	433.46	40°09'15.818"N	104°42'40.876"W	2.06	
8937.00	90.330	359.950	7139.21	385.69	376.95	433.43	40°09'16.757"N	104°42'40.876"W	1.37	
9031.00	89.290	358.870	7139.52	479.64	470.95	432.46	40°09'17.686"N	104°42'40.888"W	1.60	
9125.00	89.780	358.990	7140.28	573.57	564.93	430.71	40°09'18.615"N	104°42'40.911"W	0.54	
9220.00	89.560	357.760	7140.83	668.45	659.88	428.01	40°09'19.553"N	104°42'40.946"W	1.32	
9314.00	89.260	357.260	7141.80	762.26	753.79	423.93	40°09'20.481"N	104°42'40.998"W	0.62	
9503.00	90.520	358.740	7142.16	950.96	942.67	417.33	40°09'22.347"N	104°42'41.083"W	1.03	
9597.00	89.940	358.770	7141.78	1044.88	1036.64	415.29	40°09'23.276"N	104°42'41.109"W	0.62	
9691.00	88.860	358.180	7142.77	1138.76	1130.60	412.79	40°09'24.205"N	104°42'41.142"W	1.31	
9785.00	90.000	357.100	7143.70	1232.58	1224.51	408.92	40°09'25.133"N	104°42'41.191"W	1.67	
9880.00	90.590	357.890	7143.21	1327.38	1319.42	404.77	40°09'26.071"N	104°42'41.245"W	1.04	
9974.00	90.220	358.120	7142.55	1421.24	1413.36	401.50	40°09'26.999"N	104°42'41.287"W	0.46	
10069.00	88.890	357.580	7143.29	1516.07	1508.29	397.93	40°09'27.937"N	104°42'41.333"W	1.51	
10163.00	88.310	358.490	7145.58	1609.90	1602.21	394.71	40°09'28.865"N	104°42'41.374"W	1.15	
10258.00	88.920	357.300	7147.88	1704.72	1697.11	391.22	40°09'29.803"N	104°42'41.419"W	1.41	
10352.00	88.670	357.890	7149.85	1798.51	1791.01	387.28	40°09'30.731"N	104°42'41.470"W	0.68	
10447.00	89.410	356.790	7151.45	1893.29	1885.89	382.87	40°09'31.668"N	104°42'41.527"W	1.40	
10541.00	88.860	356.680	7152.87	1986.99	1979.73	377.52	40°09'32.596"N	104°42'41.596"W	0.60	
10636.00	89.380	356.390	7154.32	2081.67	2074.54	371.77	40°09'33.533"N	104°42'41.670"W	0.63	
10730.00	90.430	357.700	7154.48	2175.43	2168.41	366.93	40°09'34.460"N	104°42'41.732"W	1.79	
10824.00	89.590	356.420	7154.46	2269.18	2262.29	362.11	40°09'35.388"N	104°42'41.794"W	1.63	
10919.00	90.400	358.190	7154.47	2363.96	2357.18	357.64	40°09'36.326"N	104°42'41.852"W	2.05	
11014.00	90.240	357.990	7153.94	2458.82	2452.12	354.47	40°09'37.264"N	104°42'41.892"W	0.27	
11108.00	89.130	357.980	7154.46	2552.68	2546.06	351.17	40°09'38.192"N	104°42'41.935"W	1.18	
11202.00	89.500	359.140	7155.58	2646.57	2640.02	348.81	40°09'39.121"N	104°42'41.965"W	1.30	
11296.00	90.670	0.690	7155.44	2740.54	2734.02	348.67	40°09'40.050"N	104°42'41.967"W	2.07	
11391.00	91.230	0.380	7153.87	2835.52	2829.00	349.56	40°09'40.988"N	104°42'41.956"W	0.67	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (LAMBERT STATE PLANE COORD)	Slot	SLOT#15 THOMSEN 3N-31HZ (2405'FNL & 830'FWL, SEC.07)
Area	COLORADO	Well	THOMSEN 3N-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMSEN 3N-31HZ AWB <16885>
Facility	SEC.07-T2N-R65W		

WELLPATH DATA (193 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11485.00	91.470	0.130	7151.65	2929.49	2922.97	349.97	40°09'41.917"N	104°42'41.950"W	0.37	
11580.00	91.440	359.840	7149.24	3024.44	3017.94	349.95	40°09'42.855"N	104°42'41.951"W	0.31	
11674.00	91.750	0.200	7146.62	3118.38	3111.91	349.98	40°09'43.784"N	104°42'41.950"W	0.51	
11768.00	91.410	359.370	7144.03	3212.32	3205.87	349.63	40°09'44.713"N	104°42'41.955"W	0.95	
11870.00	90.240	359.590	7142.56	3314.26	3307.85	348.70	40°09'45.720"N	104°42'41.967"W	1.17	
11964.00	90.360	359.460	7142.07	3408.22	3401.85	347.92	40°09'46.649"N	104°42'41.977"W	0.19	
12030.00	90.000	359.730	7141.86	3474.19	3467.84	347.46	40°09'47.301"N	104°42'41.983"W	0.68	
12123.00	88.920	358.510	7142.74	3567.13	3560.83	346.03	40°09'48.220"N	104°42'42.001"W	1.75	
12217.00	89.010	358.390	7144.44	3661.01	3654.78	343.49	40°09'49.149"N	104°42'42.034"W	0.16	
12333.00	88.020	356.650	7147.45	3776.73	3770.62	338.47	40°09'50.293"N	104°42'42.098"W	1.73	
12427.00	88.980	356.810	7149.91	3870.41	3864.44	333.11	40°09'51.221"N	104°42'42.167"W	1.04	
12522.00	86.940	357.010	7153.29	3965.09	3959.23	327.99	40°09'52.157"N	104°42'42.233"W	2.16	
12616.00	87.250	357.060	7158.05	4058.72	4052.99	323.14	40°09'53.084"N	104°42'42.296"W	0.33	
12710.00	88.610	357.550	7161.45	4152.44	4146.82	318.72	40°09'54.011"N	104°42'42.353"W	1.54	
12805.00	89.870	356.450	7162.71	4247.18	4241.68	313.75	40°09'54.948"N	104°42'42.417"W	1.76	
12899.00	88.670	357.620	7163.90	4340.93	4335.54	308.89	40°09'55.876"N	104°42'42.479"W	1.78	
12994.00	88.640	357.340	7166.13	4435.70	4430.42	304.71	40°09'56.814"N	104°42'42.533"W	0.30	
13088.00	89.510	357.560	7167.65	4529.49	4524.32	300.53	40°09'57.742"N	104°42'42.587"W	0.95	
13183.00	88.670	358.500	7169.16	4624.34	4619.25	297.26	40°09'58.680"N	104°42'42.629"W	1.33	
13277.00	89.200	358.160	7170.91	4718.20	4713.19	294.53	40°09'59.608"N	104°42'42.664"W	0.67	
13371.00	88.740	357.040	7172.60	4812.01	4807.09	290.59	40°10'00.536"N	104°42'42.715"W	1.29	
13466.00	89.880	357.720	7173.74	4906.79	4901.98	286.25	40°10'01.474"N	104°42'42.771"W	1.40	
13560.00	88.740	357.760	7174.87	5000.61	4995.90	282.54	40°10'02.402"N	104°42'42.819"W	1.21	
13655.00	89.230	357.870	7176.56	5095.44	5090.82	278.92	40°10'03.340"N	104°42'42.865"W	0.53	
13749.00	88.060	358.220	7178.78	5189.27	5184.73	275.71	40°10'04.268"N	104°42'42.906"W	1.30	
13843.00	88.520	357.130	7181.58	5283.05	5278.61	271.90	40°10'05.195"N	104°42'42.956"W	1.26	
13937.00	89.230	357.340	7183.43	5376.81	5372.48	267.37	40°10'06.123"N	104°42'43.014"W	0.79	
14031.00	90.960	357.790	7183.27	5470.62	5466.40	263.37	40°10'07.051"N	104°42'43.065"W	1.90	
14126.00	89.110	358.830	7183.22	5565.50	5561.35	260.57	40°10'07.990"N	104°42'43.101"W	2.23	
14220.00	90.280	358.670	7183.72	5659.41	5655.32	258.52	40°10'08.918"N	104°42'43.128"W	1.26	
14315.00	89.100	359.660	7184.23	5754.35	5750.31	257.14	40°10'09.857"N	104°42'43.146"W	1.62	
14409.00	90.030	0.550	7184.94	5848.33	5844.30	257.31	40°10'10.786"N	104°42'43.143"W	1.37	
14503.00	89.840	358.170	7185.05	5942.28	5938.29	256.26	40°10'11.714"N	104°42'43.157"W	2.54	
14597.00	89.100	357.660	7185.92	6036.12	6032.22	252.84	40°10'12.643"N	104°42'43.201"W	0.96	
14691.00	89.470	357.450	7187.09	6129.92	6126.13	248.83	40°10'13.571"N	104°42'43.253"W	0.45	
14786.00	88.860	355.170	7188.48	6224.57	6220.92	242.72	40°10'14.507"N	104°42'43.331"W	2.48	
14880.00	87.710	355.720	7191.29	6318.06	6314.58	235.26	40°10'15.433"N	104°42'43.427"W	1.36	
14974.00	87.870	355.320	7194.92	6411.53	6408.22	227.92	40°10'16.358"N	104°42'43.522"W	0.46	
15068.00	87.840	355.180	7198.43	6504.96	6501.83	220.14	40°10'17.283"N	104°42'43.622"W	0.15	
15162.00	88.180	356.030	7201.70	6598.46	6595.50	212.94	40°10'18.209"N	104°42'43.715"W	0.97	
15257.00	87.940	357.980	7204.91	6693.15	6690.31	207.98	40°10'19.146"N	104°42'43.779"W	2.07	
15351.00	88.430	358.290	7207.89	6786.98	6784.21	204.92	40°10'20.074"N	104°42'43.818"W	0.62	
15445.00	88.980	359.370	7210.02	6880.87	6878.17	203.01	40°10'21.002"N	104°42'43.843"W	1.29	
15540.00	88.670	359.030	7211.96	6975.80	6973.14	201.68	40°10'21.941"N	104°42'43.860"W	0.48	
15634.00	89.100	359.220	7213.79	7069.72	7067.11	200.24	40°10'22.869"N	104°42'43.878"W	0.50	

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (LAMBERT STATE PLANE COORD)		Slot	SLOT#15 THOMSEN 3N-31HZ (2405'FNL & 830'FWL, SEC.07)
Area	COLORADO		Well	THOMSEN 3N-31HZ
Field	WELD COUNTY (KERR MCGEE)		Wellbore	THOMSEN 3N-31HZ AWB <16885>
Facility	SEC.07-T2N-R65W			

WELLPATH DATA (193 stations)										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
15728.00	89.820	358.300	7214.68	7163.63	7161.08	198.21	40°10'23.798"N	104°42'43.905"W	1.24	
15822.00	89.630	357.600	7215.13	7257.48	7255.02	194.85	40°10'24.726"N	104°42'43.948"W	0.77	
15917.00	88.430	357.790	7216.74	7352.29	7349.92	191.03	40°10'25.664"N	104°42'43.997"W	1.28	
16011.00	88.420	359.400	7219.32	7446.16	7443.86	188.72	40°10'26.593"N	104°42'44.027"W	1.71	
16105.00	88.580	358.630	7221.78	7540.06	7537.81	187.11	40°10'27.521"N	104°42'44.048"W	0.84	
16199.00	89.260	359.000	7223.56	7633.96	7631.77	185.16	40°10'28.450"N	104°42'44.073"W	0.82	
16294.00	88.090	359.380	7225.75	7728.88	7726.74	183.82	40°10'29.388"N	104°42'44.090"W	1.29	
16388.00	89.100	358.990	7228.06	7822.79	7820.70	182.49	40°10'30.316"N	104°42'44.107"W	1.15	
16483.00	89.900	358.540	7228.89	7917.70	7915.67	180.44	40°10'31.255"N	104°42'44.133"W	0.97	
16577.00	89.410	358.020	7229.45	8011.58	8009.63	177.62	40°10'32.183"N	104°42'44.170"W	0.76	
16671.00	88.700	358.110	7231.00	8105.43	8103.56	174.44	40°10'33.112"N	104°42'44.211"W	0.76	
16831.00	87.100	358.890	7236.87	8265.14	8263.39	170.26	40°10'34.691"N	104°42'44.265"W	1.11	LAST BHI MWD+IFR SURVEY
16885.00	87.100	358.890	7239.60	8319.03	8317.31	169.21	40°10'35.224"N	104°42'44.278"W	0.00	PROJECTION TO BIT

HOLE & CASING SECTIONS - Ref Wellbore: THOMSEN 3N-31HZ AWB <16885> Ref Wellpath: THOMSEN 3N-31HZ 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	1356.00	1331.00	25.00	1355.92	0.00	0.00	-0.04	-3.64	
9.625in Casing Surface	25.00	1356.00	1331.00	25.00	1355.92	0.00	0.00	-0.04	-3.64	
8.75in Open Hole	1356.00	7776.00	6420.00	1355.92	7143.91	-0.04	-3.64	-783.69	450.19	
7in Casing Intermediate	25.00	7759.00	7734.00	25.00	7143.10	0.00	0.00	-800.65	451.08	
6.125in Open Hole	7776.00	16885.00	9109.00	7143.91	7239.60	-783.69	450.19	8317.31	169.21	

WELLPATH COMPOSITION - Ref Wellbore: THOMSEN 3N-31HZ AWB <16885> Ref Wellpath: THOMSEN 3N-31HZ AWP					
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore	
25.00	1321.00	ISCWSA MWD, Rev. 2 (Standard)	CATHEDRAL MWD SURVEYS <101-1321>	THOMSEN 3N-31HZ AWB <16885>	
1321.00	7728.00	NaviTrak (MAGCORR,IFR)	BHI NAVITRAK MWD+IFR 8 3/4" <1378-7728>	THOMSEN 3N-31HZ AWB <16885>	
7728.00	16831.00	NaviTrak (MAGCORR,IFR)	BHI NAVITRAK MWD+IFR 6 1/8" <7804-16831>	THOMSEN 3N-31HZ AWB <16885>	
16831.00	16885.00	Blind Drilling (std)	Projection to bit	THOMSEN 3N-31HZ AWB <16885>	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (LAMBERT STATE PLANE COORD)	Slot	SLOT#15 THOMSEN 3N-31HZ (2405'FNL & 830'FWL, SEC.07)
Area	COLORADO	Well	THOMSEN 3N-31HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	THOMSEN 3N-31HZ AWB <16885>
Facility	SEC.07-T2N-R65W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
25.00	0.000	19.100	25.00	TIE ON
101.00	0.400	19.100	101.00	BEGIN CATHEDRAL MWD SURVEYS
1321.00	0.600	263.000	1320.92	TIE ONTO CATHEDRAL MWD SURVEYS
1378.00	0.770	298.620	1377.92	BEGIN BHI MWD+IFR SURVEYS
7759.00	86.643	356.985	7143.10	7" CASING POINT
16831.00	87.100	358.890	7236.87	LAST BHI MWD+IFR SURVEY
16885.00	87.100	358.890	7239.60	PROJECTION TO BIT