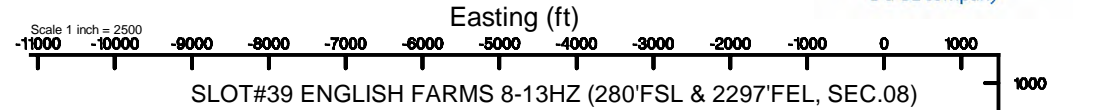


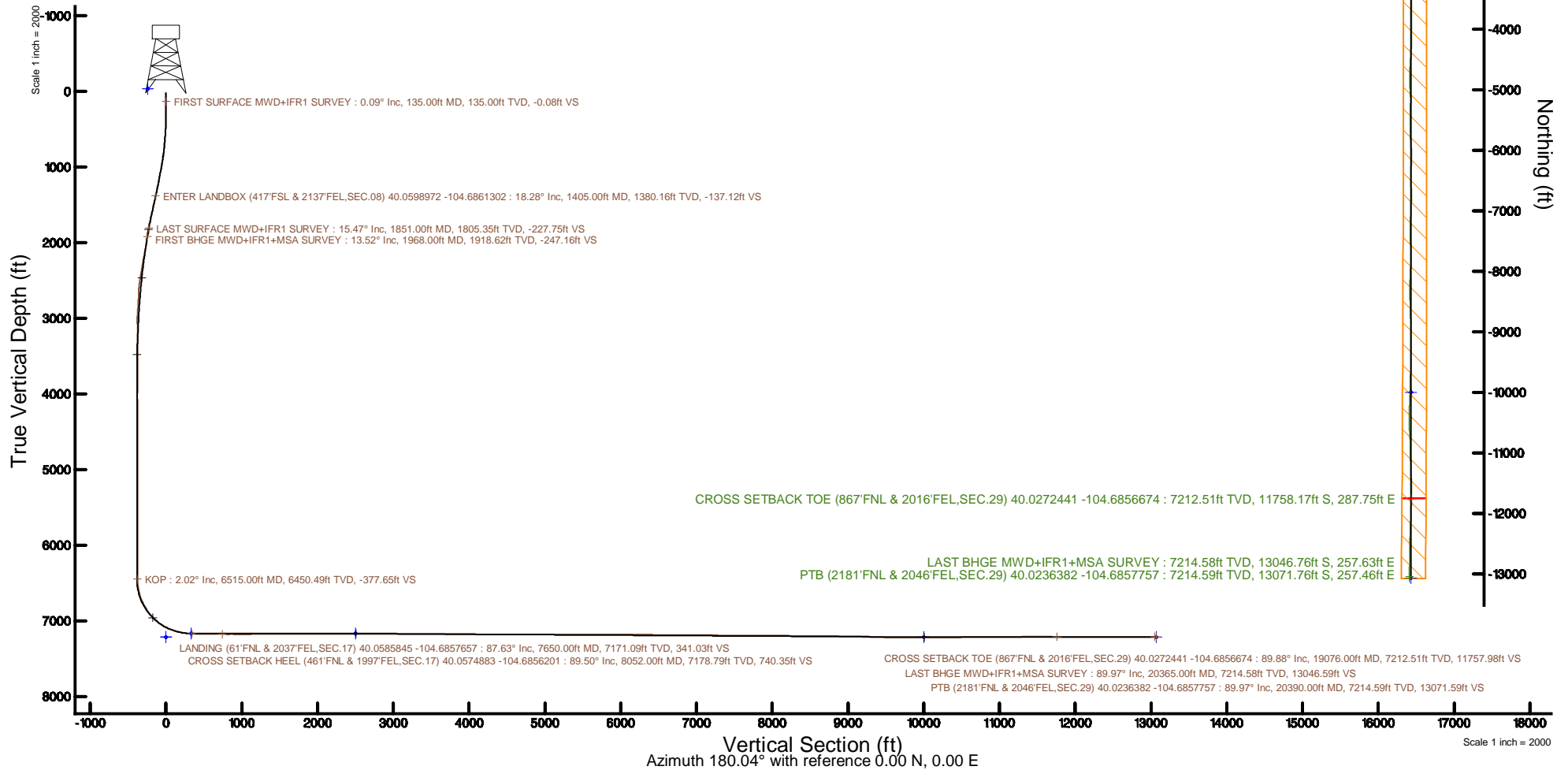
KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08)
Field: WELD COUNTY (UTM/TRUE NORTH) Well: ENGLISH FARMS 8-13HZ
Facility: SEC.08-T1N-R65W Wellbore: ENGLISH FARMS 8-13HZ PWB

Plot reference wellpath is ENGLISH FARMS 8-13HZ PWB Rev.A.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to PD 564 (26) (RT)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to PD 564 (26) (RT)	North Reference: True north
PD 564 (26) (RT) to Mean Sea Level: 4971 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painettr on 2018-06-19
	Database: WA_DEN_Anadarko_Defn



KOP : 6450.49ft TVD, 377.46ft N, 306.82ft E
FIRST BHGE MWD+IFR1+MSA SURVEY : 1918.62ft TVD, 246.98ft N, 279.51ft E
LAST SURFACE MWD+IFR1 SURVEY : 1805.35ft TVD, 227.58ft N, 257.57ft E
ENTER LANDBOX (417'FSL & 2137'FEL, SEC.08) 40.0598972 -104.6861302 : 1380.16ft TVD, 137.01ft N, 158.10ft E
FIRST SURFACE MWD+IFR1 SURVEY : 135.00ft TVD, 0.08ft N, 0.02ft E
LANDING (61'FNL & 2037'FEL, SEC.17) 40.0585845 -104.6857657 : 7171.09ft TVD, 341.19ft S, 260.15ft E
CROSS SETBACK HEEL (461'FNL & 1997'FEL, SEC.17) 40.0574883 -104.6856201 : 7178.79ft TVD, 740.54ft S, 300.89ft E



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-13HZ AWP
Facility	SEC.08-T1N-R65W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Painsetr
Scale	0.999609	Report Generated	6/19/2018 at 9:33 AM
Convergence at slot	0.21° East	Database/Source file	WA_DEN_Anadarko_Defn/ENGLISH_FARMS_8-13HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-4272.67	-1655.73	1728081.88	14548561.89	40°03'34.276"N	104°41'12.102"W
Facility Reference Pt			1729721.63	14552838.79	40°04'16.500"N	104°40'50.808"W
Field Reference Pt			1698235.31	14552047.82	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	PD 564 (26') (RT) to Facility Vertical Datum	4971.00ft
Horizontal Reference Pt	Slot	PD 564 (26') (RT) to Mean Sea Level	4971.00ft
Vertical Reference Pt	PD 564 (26') (RT)	PD 564 (26') (RT) to Mud Line at Slot (SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08))	4971.00ft
MD Reference Pt	PD 564 (26') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	180.04°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-13HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (268 stations) † = interpolated/extrapolated station												Comments
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS ["/100ft]	
0.00†	0.000	15.700	0.00	0.00	0.00	0.00	1728081.88	14548561.89	40°03'34.276"N	104°41'12.102"W	0.00	
26.00	0.000	15.700	26.00	0.00	0.00	0.00	1728081.88	14548561.89	40°03'34.276"N	104°41'12.102"W	0.00	
135.00	0.090	15.700	135.00	-0.08	0.08	0.02	1728081.90	14548561.97	40°03'34.277"N	104°41'12.102"W	0.08	FIRST SURFACE MWD+IFR1 SURVEY
167.00	0.400	43.650	167.00	-0.19	0.19	0.11	1728081.98	14548562.07	40°03'34.278"N	104°41'12.101"W	1.01	
199.00	0.400	36.440	199.00	-0.36	0.36	0.25	1728082.12	14548562.25	40°03'34.280"N	104°41'12.099"W	0.16	
231.00	0.620	64.920	231.00	-0.52	0.52	0.47	1728082.35	14548562.41	40°03'34.281"N	104°41'12.096"W	1.03	
262.00	1.010	50.850	261.99	-0.77	0.76	0.84	1728082.71	14548562.65	40°03'34.284"N	104°41'12.091"W	1.40	
294.00	1.360	48.300	293.99	-1.20	1.20	1.34	1728083.21	14548563.09	40°03'34.288"N	104°41'12.085"W	1.11	
325.00	1.450	51.640	324.98	-1.69	1.68	1.92	1728083.79	14548563.58	40°03'34.293"N	104°41'12.077"W	0.39	
357.00	1.850	52.350	356.96	-2.25	2.25	2.65	1728084.51	14548564.15	40°03'34.298"N	104°41'12.068"W	1.25	
389.00	2.330	52.000	388.94	-2.97	2.97	3.57	1728085.43	14548564.86	40°03'34.305"N	104°41'12.056"W	1.50	
421.00	3.030	53.400	420.91	-3.87	3.87	4.76	1728086.62	14548565.77	40°03'34.314"N	104°41'12.041"W	2.20	
452.00	3.600	52.960	451.86	-4.95	4.95	6.20	1728088.05	14548566.85	40°03'34.325"N	104°41'12.022"W	1.84	
484.00	4.260	51.290	483.78	-6.30	6.29	7.93	1728089.78	14548568.21	40°03'34.338"N	104°41'12.000"W	2.09	
515.00	4.660	47.950	514.69	-7.86	7.86	9.76	1728091.60	14548569.78	40°03'34.354"N	104°41'11.976"W	1.54	
547.00	5.190	48.480	546.57	-9.70	9.69	11.81	1728093.64	14548571.61	40°03'34.372"N	104°41'11.950"W	1.66	
579.00	5.490	47.160	578.43	-11.70	11.69	14.01	1728095.84	14548573.62	40°03'34.392"N	104°41'11.922"W	1.01	
610.00	6.200	47.250	609.27	-13.84	13.83	16.33	1728098.15	14548575.77	40°03'34.413"N	104°41'11.892"W	2.29	
642.00	6.860	47.250	641.06	-16.32	16.30	19.00	1728100.81	14548578.25	40°03'34.437"N	104°41'11.858"W	2.06	
674.00	7.650	49.180	672.80	-19.01	18.99	22.02	1728103.82	14548580.95	40°03'34.464"N	104°41'11.819"W	2.58	
706.00	8.220	50.410	704.50	-21.86	21.84	25.39	1728107.18	14548583.81	40°03'34.492"N	104°41'11.775"W	1.86	
737.00	9.140	51.030	735.14	-24.82	24.80	29.02	1728110.79	14548586.78	40°03'34.521"N	104°41'11.729"W	2.98	
769.00	9.710	49.180	766.71	-28.19	28.17	33.03	1728114.80	14548590.16	40°03'34.554"N	104°41'11.677"W	2.02	
801.00	10.460	50.500	798.22	-31.80	31.78	37.32	1728119.07	14548593.78	40°03'34.590"N	104°41'11.622"W	2.45	
833.00	11.340	49.620	829.64	-35.69	35.66	41.96	1728123.69	14548597.68	40°03'34.628"N	104°41'11.562"W	2.80	
864.00	11.780	49.530	860.01	-39.72	39.69	46.68	1728128.40	14548601.73	40°03'34.668"N	104°41'11.502"W	1.42	
928.00	13.620	48.390	922.44	-48.97	48.94	57.29	1728138.97	14548611.01	40°03'34.760"N	104°41'11.365"W	2.90	
959.00	14.410	47.690	952.52	-54.00	53.96	62.87	1728144.53	14548616.04	40°03'34.809"N	104°41'11.293"W	2.61	
990.00	14.900	48.480	982.51	-59.24	59.20	68.71	1728150.35	14548621.30	40°03'34.861"N	104°41'11.218"W	1.71	
1022.00	15.380	48.220	1013.40	-64.80	64.75	74.95	1728156.57	14548626.88	40°03'34.916"N	104°41'11.138"W	1.51	
1054.00	15.600	47.510	1044.24	-70.54	70.48	81.29	1728162.88	14548632.63	40°03'34.973"N	104°41'11.057"W	0.91	
1086.00	15.600	48.740	1075.06	-76.28	76.23	87.70	1728169.27	14548638.39	40°03'35.029"N	104°41'10.974"W	1.03	
1118.00	15.690	48.390	1105.87	-82.00	81.94	94.17	1728175.72	14548644.12	40°03'35.086"N	104°41'10.891"W	0.41	
1149.00	16.080	49.710	1135.69	-87.56	87.50	100.58	1728182.10	14548649.70	40°03'35.141"N	104°41'10.809"W	1.71	
1213.00	16.610	49.800	1197.10	-99.21	99.13	114.32	1728195.80	14548661.38	40°03'35.256"N	104°41'10.632"W	0.83	
1244.00	16.830	49.010	1226.79	-105.02	104.94	121.09	1728202.55	14548667.21	40°03'35.313"N	104°41'10.545"W	1.02	
1276.00	17.400	49.620	1257.37	-111.16	111.08	128.24	1728209.67	14548673.37	40°03'35.374"N	104°41'10.453"W	1.87	
1308.00	17.400	49.450	1287.91	-117.37	117.29	135.52	1728216.92	14548679.60	40°03'35.435"N	104°41'10.359"W	0.16	
1339.00	17.890	48.660	1317.45	-123.54	123.45	142.61	1728224.00	14548685.78	40°03'35.496"N	104°41'10.268"W	1.76	
1371.00	18.240	49.180	1347.87	-130.06	129.97	150.09	1728231.45	14548692.33	40°03'35.560"N	104°41'10.172"W	1.20	
1402.00	18.330	48.220	1377.31	-136.49	136.38	157.40	1728238.73	14548698.77	40°03'35.624"N	104°41'10.078"W	1.01	
1405.00†	18.275	48.140	1380.16	-137.12	137.01	158.10	1728239.43	14548699.40	40°03'35.630"N	104°41'10.069"W	2.00	ENTER LANDBOX (417'FSL & 2137'FEL, SEC.08) 40.0598972 -104.6861302
1434.00	17.750	47.340	1407.73	-143.15	143.04	164.74	1728246.05	14548705.45	40°03'35.690"N	104°41'09.983"W	2.00	
1465.00	17.710	45.840	1437.26	-149.64	149.53	171.60	1728252.88	14548711.96	40°03'35.754"N	104°41'09.895"W	1.48	
1497.00	17.970	45.580	1467.72	-156.49	156.38	178.61	1728259.87	14548718.83	40°03'35.821"N	104°41'09.805"W	0.85	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-13HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (268 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
1529.00	17.710	48.300	1498.19	-163.19	163.07	185.77	1728267.00	14548725.54	40°03'35.887"N	104°41'09.713"W	2.73	
1560.00	17.580	48.660	1527.73	-169.42	169.30	192.81	1728274.01	14548731.79	40°03'35.949"N	104°41'09.622"W	0.55	
1592.00	17.620	48.040	1558.23	-175.86	175.73	200.04	1728281.22	14548738.25	40°03'36.013"N	104°41'09.529"W	0.60	
1624.00	18.020	47.420	1588.69	-182.45	182.32	207.29	1728288.44	14548744.86	40°03'36.078"N	104°41'09.436"W	1.38	
1656.00	18.330	47.420	1619.10	-189.21	189.07	214.64	1728295.76	14548751.64	40°03'36.144"N	104°41'09.342"W	0.97	
1687.00	18.630	47.070	1648.50	-195.88	195.74	221.85	1728302.95	14548758.33	40°03'36.210"N	104°41'09.249"W	1.03	
1719.00	17.090	48.740	1678.96	-202.47	202.32	229.13	1728310.20	14548764.93	40°03'36.275"N	104°41'09.155"W	5.07	
1750.00	17.270	48.220	1708.57	-208.54	208.39	235.98	1728317.03	14548771.03	40°03'36.335"N	104°41'09.067"W	0.76	
1782.00	17.450	47.860	1739.12	-214.93	214.78	243.08	1728324.11	14548777.43	40°03'36.398"N	104°41'08.976"W	0.66	
1814.00	16.130	48.740	1769.75	-221.09	220.93	249.98	1728330.98	14548783.60	40°03'36.459"N	104°41'08.887"W	4.20	
1845.00	15.640	48.830	1799.57	-226.68	226.52	256.37	1728337.34	14548789.22	40°03'36.514"N	104°41'08.805"W	1.58	
1851.00	15.470	48.300	1805.35	-227.75	227.58	257.57	1728338.54	14548790.28	40°03'36.525"N	104°41'08.789"W	3.69	LAST SURFACE MWD+IFR1 SURVEY
1968.00	13.520	48.760	1918.62	-247.16	246.98	279.51	1728360.40	14548809.75	40°03'36.717"N	104°41'08.507"W	1.67	FIRST BHGE MWD+IFR1+MSA SURVEY
2058.00	13.680	46.700	2006.09	-261.40	261.21	295.16	1728376.00	14548824.03	40°03'36.857"N	104°41'08.306"W	0.57	
2147.00	12.100	37.180	2092.86	-276.07	275.87	308.46	1728389.24	14548838.73	40°03'37.002"N	104°41'08.135"W	2.97	
2237.00	11.240	26.060	2181.01	-291.47	291.26	318.02	1728398.74	14548854.15	40°03'37.154"N	104°41'08.012"W	2.67	
2327.00	10.590	15.560	2269.39	-307.32	307.11	324.09	1728404.76	14548870.02	40°03'37.311"N	104°41'07.934"W	2.32	
2416.00	10.120	15.510	2356.94	-322.74	322.53	328.38	1728408.98	14548885.44	40°03'37.463"N	104°41'07.879"W	0.53	
2506.00	9.680	10.920	2445.60	-337.79	337.57	331.92	1728412.48	14548900.49	40°03'37.612"N	104°41'07.833"W	1.00	
2595.00	9.430	351.760	2533.39	-352.35	352.14	332.30	1728412.80	14548915.06	40°03'37.756"N	104°41'07.828"W	3.57	
2685.00	7.190	303.490	2622.54	-362.77	362.56	326.53	1728407.00	14548925.45	40°03'37.859"N	104°41'07.902"W	7.86	
2774.00	5.370	268.880	2711.03	-365.76	365.55	317.72	1728398.18	14548928.41	40°03'37.888"N	104°41'08.016"W	4.62	
2864.00	5.780	303.330	2800.63	-368.16	367.96	309.72	1728390.18	14548930.79	40°03'37.912"N	104°41'08.119"W	3.69	
2954.00	5.280	332.710	2890.23	-374.33	374.13	304.04	1728384.47	14548936.94	40°03'37.973"N	104°41'08.192"W	3.16	
3043.00	3.940	315.860	2978.94	-380.16	379.97	300.03	1728380.45	14548942.76	40°03'38.031"N	104°41'08.243"W	2.13	
3133.00	4.250	219.320	3068.80	-379.80	379.60	295.76	1728376.18	14548942.38	40°03'38.027"N	104°41'08.298"W	6.79	
3222.00	0.700	38.980	3157.73	-377.66	377.47	294.01	1728374.44	14548940.24	40°03'38.006"N	104°41'08.321"W	5.56	
3312.00	0.070	347.480	3247.73	-378.15	377.96	294.34	1728374.77	14548940.73	40°03'38.011"N	104°41'08.316"W	0.73	
3402.00	0.980	201.240	3337.72	-377.48	377.29	294.05	1728374.48	14548940.06	40°03'38.004"N	104°41'08.320"W	1.15	
3491.00	0.510	152.170	3426.71	-376.42	376.23	293.96	1728374.40	14548939.00	40°03'37.994"N	104°41'08.321"W	0.85	
3581.00	2.160	87.010	3516.69	-376.16	375.97	295.84	1728376.28	14548938.74	40°03'37.991"N	104°41'08.297"W	2.22	
3670.00	2.000	24.630	3605.64	-377.66	377.47	298.17	1728378.59	14548940.25	40°03'38.006"N	104°41'08.267"W	2.43	
3760.00	0.090	186.900	3695.62	-379.02	378.82	298.81	1728379.23	14548941.61	40°03'38.020"N	104°41'08.259"W	2.32	
3849.00	0.250	185.750	3784.62	-378.75	378.56	298.78	1728379.21	14548941.35	40°03'38.017"N	104°41'08.259"W	0.18	
3939.00	0.460	270.510	3874.62	-378.56	378.37	298.40	1728378.83	14548941.15	40°03'38.015"N	104°41'08.264"W	0.56	
4028.00	1.200	54.560	3963.62	-379.10	378.91	298.80	1728379.23	14548941.70	40°03'38.020"N	104°41'08.259"W	1.79	
4118.00	0.650	114.000	4053.61	-379.44	379.25	300.04	1728380.46	14548942.04	40°03'38.024"N	104°41'08.243"W	1.15	
4207.00	0.680	218.760	4142.60	-378.83	378.63	300.17	1728380.59	14548941.42	40°03'38.018"N	104°41'08.242"W	1.18	
4297.00	0.100	183.120	4232.60	-378.33	378.14	299.83	1728380.26	14548940.93	40°03'38.013"N	104°41'08.246"W	0.67	
4386.00	1.110	136.090	4321.59	-377.63	377.44	300.42	1728380.85	14548940.23	40°03'38.006"N	104°41'08.238"W	1.17	
4476.00	0.490	174.860	4411.59	-376.62	376.43	301.06	1728381.49	14548939.22	40°03'37.996"N	104°41'08.230"W	0.88	
4565.00	0.150	244.730	4500.58	-376.19	376.00	300.99	1728381.42	14548938.80	40°03'37.992"N	104°41'08.231"W	0.52	
4655.00	0.110	6.690	4590.58	-376.23	376.04	300.90	1728381.33	14548938.83	40°03'37.992"N	104°41'08.232"W	0.25	
4744.00	0.220	341.890	4679.58	-376.48	376.28	300.85	1728381.28	14548939.08	40°03'37.994"N	104°41'08.233"W	0.14	
4834.00	0.070	131.700	4769.58	-376.60	376.41	300.84	1728381.27	14548939.20	40°03'37.996"N	104°41'08.233"W	0.31	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-13HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (268 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4923.00	0.060	205.550	4858.58	-376.53	376.33	300.86	1728381.29	14548939.13	40°03'37.995"N	104°41'08.233"W	0.09	
5013.00	0.500	261.650	4948.58	-376.43	376.23	300.45	1728380.88	14548939.03	40°03'37.994"N	104°41'08.238"W	0.52	
5103.00	0.740	357.100	5038.58	-376.95	376.76	300.03	1728380.46	14548939.55	40°03'37.999"N	104°41'08.243"W	1.04	
5192.00	1.640	60.820	5127.56	-378.15	377.95	301.12	1728381.54	14548940.75	40°03'38.011"N	104°41'08.229"W	1.65	
5282.00	0.070	350.140	5217.55	-378.83	378.63	302.23	1728382.65	14548941.43	40°03'38.018"N	104°41'08.215"W	1.80	
5371.00	0.070	26.540	5306.55	-378.93	378.74	302.25	1728382.67	14548941.53	40°03'38.019"N	104°41'08.215"W	0.05	
5461.00	0.040	82.190	5396.55	-378.98	378.79	302.30	1728382.72	14548941.59	40°03'38.019"N	104°41'08.214"W	0.06	
5550.00	0.150	59.970	5485.55	-379.05	378.85	302.43	1728382.86	14548941.65	40°03'38.020"N	104°41'08.212"W	0.13	
5640.00	0.090	59.070	5575.55	-379.14	378.95	302.60	1728383.02	14548941.75	40°03'38.021"N	104°41'08.210"W	0.07	
5729.00	0.150	206.370	5664.55	-379.07	378.88	302.60	1728383.03	14548941.68	40°03'38.020"N	104°41'08.210"W	0.26	
5818.00	0.090	228.600	5753.55	-378.92	378.73	302.50	1728382.92	14548941.53	40°03'38.019"N	104°41'08.212"W	0.08	
5908.00	0.090	196.760	5843.55	-378.81	378.61	302.43	1728382.85	14548941.41	40°03'38.018"N	104°41'08.212"W	0.05	
6087.00	1.540	89.900	6022.53	-378.68	378.48	304.79	1728385.21	14548941.29	40°03'38.016"N	104°41'08.182"W	0.88	
6177.00	0.570	204.470	6112.52	-378.27	378.08	305.82	1728386.24	14548940.89	40°03'38.012"N	104°41'08.169"W	2.06	
6266.00	0.130	110.890	6201.52	-377.84	377.64	305.73	1728386.15	14548940.45	40°03'38.008"N	104°41'08.170"W	0.67	
6356.00	1.010	12.980	6291.51	-378.57	378.37	306.00	1728386.42	14548941.19	40°03'38.015"N	104°41'08.167"W	1.15	
6445.00	0.650	120.440	6380.51	-379.08	378.88	306.61	1728387.03	14548941.70	40°03'38.020"N	104°41'08.159"W	1.52	
6515.00†	2.022	186.424	6450.49	-377.65	377.46	306.82	1728387.24	14548940.27	40°03'38.006"N	104°41'08.156"W	2.65	KOP
6535.00	2.530	190.270	6470.47	-376.87	376.67	306.70	1728387.13	14548939.49	40°03'37.998"N	104°41'08.158"W	2.65	
6624.00	9.400	208.080	6558.94	-368.51	368.31	302.92	1728383.38	14548931.12	40°03'37.916"N	104°41'08.206"W	7.90	
6714.00	16.970	206.520	6646.51	-350.24	350.05	293.58	1728374.11	14548912.83	40°03'37.735"N	104°41'08.326"W	8.42	
6804.00	24.290	197.590	6730.70	-320.79	320.61	282.11	1728362.74	14548883.36	40°03'37.444"N	104°41'08.474"W	8.83	
6893.00	29.490	182.090	6810.15	-281.37	281.19	275.76	1728356.54	14548843.93	40°03'37.055"N	104°41'08.555"W	9.76	
6983.00	34.840	175.480	6886.33	-233.55	233.37	276.98	1728357.93	14548796.14	40°03'36.582"N	104°41'08.540"W	7.11	
7072.00	41.790	180.430	6956.13	-178.48	178.30	278.77	1728359.90	14548741.09	40°03'36.038"N	104°41'08.517"W	8.53	
7162.00	49.910	182.860	7018.77	-113.99	113.81	276.82	1728358.19	14548676.63	40°03'35.401"N	104°41'08.542"W	9.23	
7251.00	59.890	183.670	7069.89	-41.39	41.21	272.65	1728354.27	14548604.04	40°03'34.683"N	104°41'08.596"W	11.24	
7341.00	69.860	183.860	7108.05	39.82	-40.00	267.30	1728349.21	14548522.85	40°03'33.881"N	104°41'08.664"W	11.08	
7430.00	74.920	181.790	7134.97	124.52	-124.69	263.14	1728345.35	14548438.17	40°03'33.044"N	104°41'08.718"W	6.10	
7520.00	78.630	180.640	7155.56	212.10	-212.27	261.29	1728343.81	14548350.62	40°03'32.178"N	104°41'08.742"W	4.31	
7609.00	84.790	180.580	7168.38	300.12	-300.29	260.35	1728343.18	14548262.63	40°03'31.308"N	104°41'08.754"W	6.92	
7650.00	87.630	180.000	7171.09	341.03	-341.19	260.15	1728343.12	14548221.74	40°03'30.904"N	104°41'08.756"W	7.07	LANDING (61'FNL & 2037'FEL, SEC.17) 40.0585845 -104.6857657
7699.00	88.920	178.950	7172.57	390.00	-390.17	260.60	1728343.74	14548172.79	40°03'30.420"N	104°41'08.751"W	3.39	
7788.00	88.980	173.760	7174.20	478.77	-478.94	266.25	1728349.70	14548084.07	40°03'29.543"N	104°41'08.678"W	5.83	
7878.00	88.950	169.930	7175.83	567.82	-568.00	279.01	1728362.77	14547995.09	40°03'28.663"N	104°41'08.514"W	4.25	
7967.00	88.830	173.230	7177.55	655.83	-656.01	292.04	1728376.11	14547907.16	40°03'27.793"N	104°41'08.346"W	3.71	
8052.00†	89.501	174.817	7178.79	740.35	-740.54	300.89	1728385.25	14547822.70	40°03'26.958"N	104°41'08.232"W	2.03	CROSS SETBACK HEEL (461'FNL & 1997'FEL, SEC.17) 40.0574883 -104.6856201
8057.00	89.540	174.910	7178.83	745.32	-745.52	301.34	1728385.71	14547817.72	40°03'26.909"N	104°41'08.227"W	2.03	
8146.00	90.150	177.190	7179.07	834.10	-834.30	307.47	1728392.16	14547729.00	40°03'26.031"N	104°41'08.148"W	2.65	
8236.00	89.750	180.850	7179.15	924.07	-924.27	309.01	1728394.01	14547639.07	40°03'25.142"N	104°41'08.128"W	4.09	
8325.00	90.030	182.430	7179.32	1013.04	-1013.23	306.46	1728391.78	14547550.14	40°03'24.263"N	104°41'08.161"W	1.80	
8415.00	90.180	184.260	7179.16	1102.88	-1103.08	301.21	1728386.84	14547460.31	40°03'23.375"N	104°41'08.228"W	2.04	
8504.00	90.490	184.100	7178.64	1191.65	-1191.84	294.72	1728380.67	14547371.56	40°03'22.498"N	104°41'08.312"W	0.39	
8594.00	90.180	182.210	7178.11	1281.51	-1281.70	289.77	1728376.04	14547281.72	40°03'21.610"N	104°41'08.376"W	2.13	
8683.00	90.310	181.490	7177.73	1370.46	-1370.65	286.90	1728373.48	14547192.80	40°03'20.731"N	104°41'08.412"W	0.82	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-13HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (268 stations)												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
8773.00	90.370	181.200	7177.20	1460.44	-1460.62	284.78	1728371.68	14547102.85	40°03'19.842"N	104°41'08.440"W	0.33	
8863.00	90.060	180.220	7176.86	1550.43	-1550.61	283.67	1728370.88	14547012.89	40°03'18.952"N	104°41'08.454"W	1.14	
8952.00	90.120	179.520	7176.72	1639.43	-1639.61	283.87	1728371.40	14546923.93	40°03'18.073"N	104°41'08.451"W	0.79	
9042.00	90.180	178.700	7176.48	1729.42	-1729.60	285.27	1728373.11	14546833.98	40°03'17.184"N	104°41'08.433"W	0.91	
9131.00	88.710	179.870	7177.34	1818.40	-1818.58	286.38	1728374.54	14546745.04	40°03'16.304"N	104°41'08.419"W	2.11	
9221.00	89.910	184.740	7178.43	1908.29	-1908.48	282.76	1728371.24	14546655.17	40°03'15.416"N	104°41'08.466"W	5.57	
9310.00	90.250	182.570	7178.30	1997.11	-1997.29	277.09	1728365.88	14546566.37	40°03'14.538"N	104°41'08.539"W	2.47	
9400.00	90.280	180.650	7177.89	2087.07	-2087.25	274.56	1728363.67	14546476.44	40°03'13.649"N	104°41'08.571"W	2.13	
9489.00	90.220	178.910	7177.50	2176.07	-2176.24	274.90	1728364.32	14546387.48	40°03'12.770"N	104°41'08.567"W	1.96	
9578.00	90.060	177.720	7177.28	2265.02	-2265.20	277.52	1728367.25	14546298.56	40°03'11.891"N	104°41'08.533"W	1.35	
9668.00	89.970	177.540	7177.26	2354.94	-2355.13	281.24	1728371.29	14546208.69	40°03'11.002"N	104°41'08.485"W	0.22	
9757.00	90.120	177.970	7177.19	2443.87	-2444.06	284.72	1728375.08	14546119.81	40°03'10.123"N	104°41'08.441"W	0.51	
9847.00	90.030	178.230	7177.07	2533.82	-2534.01	287.71	1728378.38	14546029.90	40°03'09.234"N	104°41'08.402"W	0.31	
9936.00	90.120	179.020	7176.95	2622.79	-2622.98	289.84	1728380.83	14545940.97	40°03'08.355"N	104°41'08.375"W	0.89	
10026.00	90.060	180.230	7176.81	2712.79	-2712.98	290.43	1728381.74	14545851.01	40°03'07.466"N	104°41'08.367"W	1.35	
10115.00	90.120	179.950	7176.67	2801.79	-2801.98	290.29	1728381.91	14545762.05	40°03'06.586"N	104°41'08.369"W	0.32	
10205.00	89.910	179.030	7176.65	2891.79	-2891.97	291.09	1728383.03	14545672.09	40°03'05.697"N	104°41'08.359"W	1.05	
10295.00	90.030	179.550	7176.70	2981.78	-2981.97	292.21	1728384.46	14545582.14	40°03'04.808"N	104°41'08.344"W	0.59	
10384.00	90.180	183.130	7176.53	3070.74	-3070.93	290.13	1728382.69	14545493.21	40°03'03.928"N	104°41'08.371"W	4.03	
10474.00	90.000	182.070	7176.39	3160.65	-3160.83	286.05	1728378.93	14545403.32	40°03'03.040"N	104°41'08.424"W	1.19	
10564.00	89.660	179.590	7176.66	3250.63	-3250.82	284.74	1728377.94	14545313.37	40°03'02.151"N	104°41'08.440"W	2.78	
10653.00	90.000	179.670	7176.92	3339.63	-3339.81	285.32	1728378.83	14545224.41	40°03'01.271"N	104°41'08.433"W	0.39	
10743.00	89.450	178.740	7177.36	3429.62	-3429.80	286.57	1728380.39	14545134.46	40°03'00.382"N	104°41'08.417"W	1.20	
10832.00	89.690	178.680	7178.02	3518.59	-3518.78	288.57	1728382.71	14545045.53	40°02'59.503"N	104°41'08.391"W	0.28	
10922.00	89.600	178.940	7178.58	3608.57	-3608.76	290.44	1728384.89	14544955.59	40°02'58.613"N	104°41'08.367"W	0.31	
11011.00	89.630	179.410	7179.18	3697.56	-3697.75	291.72	1728386.49	14544866.64	40°02'57.734"N	104°41'08.351"W	0.53	
11101.00	89.630	180.720	7179.76	3787.55	-3787.74	291.62	1728386.70	14544776.68	40°02'56.845"N	104°41'08.352"W	1.46	
11190.00	89.600	180.890	7180.36	3876.54	-3876.73	290.37	1728385.76	14544687.73	40°02'55.965"N	104°41'08.368"W	0.19	
11280.00	89.690	180.500	7180.92	3966.53	-3966.72	289.28	1728384.99	14544597.77	40°02'55.076"N	104°41'08.382"W	0.44	
11369.00	89.720	179.430	7181.37	4055.53	-4055.72	289.33	1728385.36	14544508.80	40°02'54.196"N	104°41'08.382"W	1.20	
11459.00	89.600	180.760	7181.91	4145.53	-4145.72	289.18	1728385.52	14544418.84	40°02'53.307"N	104°41'08.383"W	1.48	
11549.00	90.090	181.860	7182.15	4235.50	-4235.69	287.12	1728383.78	14544328.90	40°02'52.418"N	104°41'08.410"W	1.34	
11638.00	90.090	181.890	7182.01	4324.46	-4324.64	284.21	1728381.19	14544239.97	40°02'51.539"N	104°41'08.447"W	0.03	
11728.00	89.820	183.530	7182.08	4414.36	-4414.54	279.96	1728377.25	14544150.10	40°02'50.650"N	104°41'08.502"W	1.85	
11817.00	90.430	184.050	7181.89	4503.17	-4503.34	274.07	1728371.68	14544061.31	40°02'49.773"N	104°41'08.578"W	0.90	
11907.00	89.970	182.440	7181.57	4593.02	-4593.19	268.98	1728366.91	14543971.47	40°02'48.885"N	104°41'08.643"W	1.86	
11997.00	90.090	182.370	7181.53	4682.94	-4683.12	265.20	1728363.45	14543881.57	40°02'47.996"N	104°41'08.692"W	0.15	
12086.00	90.120	180.920	7181.36	4771.91	-4772.08	262.65	1728361.21	14543792.64	40°02'47.117"N	104°41'08.725"W	1.63	
12176.00	90.310	179.580	7181.03	4861.90	-4862.07	262.26	1728361.13	14543702.68	40°02'46.228"N	104°41'08.730"W	1.50	
12265.00	90.150	176.040	7180.67	4950.82	-4950.99	265.66	1728364.84	14543613.81	40°02'45.349"N	104°41'08.686"W	3.98	
12355.00	90.220	176.230	7180.38	5040.61	-5040.79	271.72	1728371.22	14543524.07	40°02'44.462"N	104°41'08.608"W	0.22	
12444.00	89.850	177.930	7180.32	5129.49	-5129.67	276.26	1728376.07	14543435.24	40°02'43.583"N	104°41'08.550"W	1.95	
12534.00	90.060	182.040	7180.39	5219.47	-5219.65	276.28	1728376.41	14543345.29	40°02'42.694"N	104°41'08.550"W	4.57	
12623.00	90.030	181.950	7180.32	5308.42	-5308.60	273.18	1728373.62	14543256.37	40°02'41.815"N	104°41'08.589"W	0.11	
12712.00	90.220	180.900	7180.13	5397.39	-5397.57	270.97	1728371.72	14543167.43	40°02'40.936"N	104°41'08.618"W	1.20	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-13HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (268 stations)

MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12802.00	90.220	180.320	7179.78	5487.38	-5487.56	270.01	1728371.08	14543077.47	40°02'40.047"N	104°41'08.630"W	0.64	
12891.00	89.720	179.880	7179.83	5576.38	-5576.56	269.85	1728371.24	14542988.50	40°02'39.167"N	104°41'08.632"W	0.75	
12981.00	89.630	179.070	7180.34	5666.38	-5666.55	270.68	1728372.38	14542898.55	40°02'38.278"N	104°41'08.622"W	0.91	
13071.00	89.690	177.950	7180.88	5756.34	-5756.52	273.02	1728375.04	14542808.63	40°02'37.389"N	104°41'08.592"W	1.25	
13160.00	89.380	176.180	7181.60	5845.22	-5845.40	277.58	1728379.90	14542719.80	40°02'36.510"N	104°41'08.533"W	2.02	
13250.00	89.540	176.860	7182.45	5935.04	-5935.23	283.04	1728385.68	14542630.03	40°02'35.623"N	104°41'08.463"W	0.78	
13339.00	89.600	178.130	7183.11	6023.95	-6024.14	286.93	1728389.88	14542541.17	40°02'34.744"N	104°41'08.413"W	1.43	
13428.00	89.570	179.480	7183.76	6112.93	-6113.11	288.78	1728392.05	14542452.23	40°02'33.865"N	104°41'08.389"W	1.52	
13518.00	89.690	182.640	7184.34	6202.90	-6203.08	287.12	1728390.70	14542362.29	40°02'32.976"N	104°41'08.410"W	3.51	
13608.00	89.630	182.310	7184.87	6292.81	-6293.00	283.23	1728387.13	14542272.40	40°02'32.087"N	104°41'08.460"W	0.37	
13697.00	89.660	180.240	7185.43	6381.79	-6381.97	281.25	1728385.47	14542183.45	40°02'31.208"N	104°41'08.486"W	2.33	
13787.00	89.630	179.560	7185.98	6471.78	-6471.97	281.41	1728385.94	14542093.49	40°02'30.318"N	104°41'08.484"W	0.76	
13876.00	89.450	178.690	7186.70	6560.77	-6560.95	282.77	1728387.61	14542004.55	40°02'29.439"N	104°41'08.466"W	1.00	
13966.00	89.600	178.880	7187.44	6650.75	-6650.93	284.68	1728389.84	14541914.61	40°02'28.550"N	104°41'08.442"W	0.27	
14055.00	89.630	179.960	7188.04	6739.74	-6739.92	285.58	1728391.05	14541825.66	40°02'27.670"N	104°41'08.430"W	1.21	
14145.00	89.450	181.080	7188.77	6829.73	-6829.91	284.76	1728390.55	14541735.70	40°02'26.781"N	104°41'08.441"W	1.26	
14235.00	89.420	181.790	7189.65	6919.70	-6919.88	282.51	1728388.61	14541645.76	40°02'25.892"N	104°41'08.470"W	0.79	
14324.00	89.480	181.920	7190.51	7008.65	-7008.83	279.63	1728386.05	14541556.84	40°02'25.013"N	104°41'08.507"W	0.16	
14414.00	89.720	182.430	7191.14	7098.58	-7098.76	276.21	1728382.95	14541466.93	40°02'24.124"N	104°41'08.551"W	0.63	
14504.00	89.600	181.190	7191.67	7188.54	-7188.71	273.37	1728380.42	14541377.00	40°02'23.235"N	104°41'08.587"W	1.38	
14593.00	89.540	180.800	7192.34	7277.52	-7277.70	271.82	1728379.19	14541288.05	40°02'22.356"N	104°41'08.607"W	0.44	
14683.00	89.630	180.130	7192.99	7367.52	-7367.69	271.09	1728378.78	14541198.09	40°02'21.467"N	104°41'08.616"W	0.75	
14773.00	89.510	178.730	7193.66	7457.51	-7457.68	271.99	1728379.99	14541108.14	40°02'20.577"N	104°41'08.605"W	1.56	
14862.00	89.540	177.450	7194.40	7546.45	-7546.63	274.95	1728383.27	14541019.24	40°02'19.698"N	104°41'08.567"W	1.44	
14952.00	89.480	177.430	7195.17	7636.35	-7636.54	278.97	1728387.60	14540929.38	40°02'18.810"N	104°41'08.515"W	0.07	
15041.00	89.600	178.980	7195.89	7725.30	-7725.49	281.76	1728390.70	14540840.48	40°02'17.931"N	104°41'08.479"W	1.75	
15131.00	89.480	181.560	7196.61	7815.29	-7815.48	281.34	1728390.59	14540750.52	40°02'17.042"N	104°41'08.485"W	2.87	
15220.00	89.630	182.750	7197.30	7904.23	-7904.41	277.99	1728387.56	14540661.61	40°02'16.163"N	104°41'08.528"W	1.35	
15310.00	89.690	182.530	7197.83	7994.13	-7994.31	273.85	1728383.73	14540571.73	40°02'15.274"N	104°41'08.581"W	0.25	
15399.00	89.720	182.410	7198.29	8083.05	-8083.23	270.01	1728380.21	14540482.84	40°02'14.396"N	104°41'08.630"W	0.14	
15488.00	89.660	182.810	7198.77	8171.96	-8172.13	265.96	1728376.47	14540393.95	40°02'13.517"N	104°41'08.683"W	0.45	
15578.00	89.480	180.940	7199.45	8261.91	-8262.08	263.01	1728373.85	14540304.03	40°02'12.628"N	104°41'08.720"W	2.09	
15667.00	89.570	178.590	7200.19	8350.90	-8351.07	263.38	1728374.53	14540215.08	40°02'11.749"N	104°41'08.716"W	2.64	
15757.00	90.060	177.800	7200.48	8440.85	-8441.02	266.21	1728377.68	14540125.17	40°02'10.860"N	104°41'08.679"W	1.03	
15847.00	89.450	178.070	7200.86	8530.79	-8530.96	269.46	1728381.23	14540035.28	40°02'09.971"N	104°41'08.638"W	0.74	
15936.00	89.350	177.660	7201.80	8619.72	-8619.90	272.77	1728384.86	14539946.39	40°02'09.092"N	104°41'08.595"W	0.47	
16025.00	89.570	179.250	7202.63	8708.68	-8708.86	275.17	1728387.57	14539857.48	40°02'08.213"N	104°41'08.564"W	1.80	
16115.00	88.680	179.650	7204.01	8798.66	-8798.84	276.03	1728388.75	14539767.53	40°02'07.324"N	104°41'08.553"W	1.08	
16205.00	88.770	179.300	7206.01	8888.63	-8888.81	276.86	1728389.89	14539677.60	40°02'06.435"N	104°41'08.543"W	0.40	
16294.00	88.710	179.520	7207.97	8977.61	-8977.79	277.77	1728391.12	14539588.66	40°02'05.555"N	104°41'08.531"W	0.26	
16383.00	88.800	179.720	7209.90	9066.58	-9066.77	278.37	1728392.02	14539499.72	40°02'04.676"N	104°41'08.523"W	0.25	
16473.00	88.710	179.600	7211.86	9156.56	-9156.74	278.90	1728392.88	14539409.78	40°02'03.787"N	104°41'08.516"W	0.17	
16562.00	88.680	179.950	7213.88	9245.54	-9245.72	279.25	1728393.54	14539320.84	40°02'02.908"N	104°41'08.512"W	0.39	
16652.00	88.710	179.270	7215.93	9335.51	-9335.69	279.86	1728394.47	14539230.91	40°02'02.018"N	104°41'08.504"W	0.76	
16741.00	88.710	180.450	7217.94	9424.49	-9424.67	280.08	1728395.00	14539141.97	40°02'01.139"N	104°41'08.501"W	1.33	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-13HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (268 stations) † = interpolated/extrapolated station												
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	DLS "/100ft	Comments
16831.00	88.610	181.020	7220.04	9514.45	-9514.64	278.92	1728394.16	14539052.03	40°02'00.250"N	104°41'08.516"W	0.64	
16920.00	88.770	180.880	7222.08	9603.42	-9603.60	277.45	1728393.00	14538963.10	40°01'59.371"N	104°41'08.535"W	0.24	
17010.00	88.680	180.890	7224.08	9693.39	-9693.57	276.06	1728391.92	14538873.16	40°01'58.482"N	104°41'08.553"W	0.10	
17099.00	90.060	182.250	7225.06	9782.35	-9782.52	273.62	1728389.80	14538784.23	40°01'57.603"N	104°41'08.584"W	2.18	
17189.00	89.820	181.540	7225.15	9872.30	-9872.47	270.64	1728387.14	14538694.31	40°01'56.714"N	104°41'08.623"W	0.83	
17278.00	89.880	180.610	7225.39	9961.28	-9961.46	268.98	1728385.79	14538605.35	40°01'55.834"N	104°41'08.644"W	1.05	
17367.00	89.940	181.330	7225.53	10050.27	-10050.44	267.47	1728384.59	14538516.40	40°01'54.955"N	104°41'08.663"W	0.81	
17457.00	89.940	183.230	7225.62	10140.20	-10140.37	263.89	1728381.33	14538426.50	40°01'54.066"N	104°41'08.709"W	2.11	
17546.00	91.290	184.000	7224.66	10229.01	-10229.18	258.28	1728376.03	14538337.70	40°01'53.189"N	104°41'08.782"W	1.75	
17636.00	91.290	182.310	7222.64	10318.86	-10319.02	253.33	1728371.40	14538247.88	40°01'52.301"N	104°41'08.845"W	1.88	
17725.00	91.170	180.270	7220.73	10407.81	-10407.97	251.32	1728369.71	14538158.95	40°01'51.422"N	104°41'08.871"W	2.30	
17814.00	91.110	178.020	7218.96	10496.77	-10496.94	252.65	1728371.35	14538070.03	40°01'50.543"N	104°41'08.854"W	2.53	
17903.00	90.620	176.920	7217.61	10585.67	-10585.84	256.58	1728375.59	14537981.18	40°01'49.664"N	104°41'08.803"W	1.35	
17993.00	90.340	176.520	7216.86	10675.52	-10675.69	261.73	1728381.05	14537891.38	40°01'48.776"N	104°41'08.737"W	0.54	
18082.00	90.340	176.450	7216.33	10764.35	-10764.52	267.18	1728386.82	14537802.60	40°01'47.898"N	104°41'08.667"W	0.08	
18172.00	90.550	177.940	7215.63	10854.23	-10854.41	271.59	1728391.54	14537712.77	40°01'47.010"N	104°41'08.611"W	1.67	
18261.00	90.430	179.750	7214.87	10943.20	-10943.38	273.38	1728393.65	14537623.84	40°01'46.131"N	104°41'08.587"W	2.04	
18351.00	90.340	179.380	7214.27	11033.20	-11033.38	274.06	1728394.64	14537533.88	40°01'45.241"N	104°41'08.579"W	0.42	
18441.00	90.340	178.590	7213.73	11123.18	-11123.36	275.66	1728396.55	14537443.94	40°01'44.352"N	104°41'08.558"W	0.88	
18530.00	90.490	179.060	7213.09	11212.16	-11212.34	277.48	1728398.69	14537355.00	40°01'43.473"N	104°41'08.535"W	0.55	
18620.00	90.520	177.970	7212.29	11302.12	-11302.31	279.82	1728401.34	14537265.08	40°01'42.584"N	104°41'08.505"W	1.21	
18710.00	89.880	177.790	7211.98	11392.06	-11392.24	283.15	1728404.98	14537175.19	40°01'41.695"N	104°41'08.462"W	0.74	
18799.00	89.970	178.420	7212.10	11481.01	-11481.19	286.09	1728408.24	14537086.28	40°01'40.816"N	104°41'08.424"W	0.72	
18889.00	89.910	179.450	7212.19	11570.99	-11571.18	287.76	1728410.23	14536996.34	40°01'39.927"N	104°41'08.403"W	1.15	
18979.00	89.910	179.860	7212.33	11660.99	-11661.18	288.30	1728411.09	14536906.38	40°01'39.037"N	104°41'08.396"W	0.46	
19068.00	89.880	180.710	7212.50	11749.98	-11750.17	287.86	1728410.96	14536817.42	40°01'38.158"N	104°41'08.401"W	0.96	
19076.00†	89.880	180.815	7212.51	11757.98	-11758.17	287.75	1728410.88	14536809.42	40°01'38.079"N	104°41'08.403"W	1.31	CROSS SETBACK TOE (867'FNL & 2016'FEL, SEC.29) 40.0272441 -104.6856674
19157.00	89.880	181.880	7212.68	11838.96	-11839.15	285.85	1728409.26	14536728.47	40°01'37.279"N	104°41'08.427"W	1.31	
19247.00	89.780	182.370	7212.95	11928.90	-11929.09	282.51	1728406.24	14536638.56	40°01'36.390"N	104°41'08.470"W	0.56	
19336.00	89.750	181.460	7213.31	12017.85	-12018.03	279.54	1728403.58	14536549.64	40°01'35.511"N	104°41'08.508"W	1.02	
19426.00	89.970	182.120	7213.53	12107.81	-12107.99	276.73	1728401.09	14536459.71	40°01'34.622"N	104°41'08.545"W	0.77	
19516.00	89.940	182.090	7213.60	12197.75	-12197.93	273.42	1728398.10	14536369.79	40°01'33.733"N	104°41'08.587"W	0.05	
19605.00	89.850	181.840	7213.77	12286.70	-12286.88	270.37	1728395.36	14536280.87	40°01'32.854"N	104°41'08.626"W	0.30	
19695.00	90.030	181.060	7213.86	12376.67	-12376.85	268.09	1728393.40	14536190.93	40°01'31.965"N	104°41'08.656"W	0.89	
19785.00	90.000	181.040	7213.84	12466.66	-12466.83	266.44	1728392.07	14536100.97	40°01'31.076"N	104°41'08.677"W	0.04	
19874.00	89.940	181.010	7213.88	12555.64	-12555.82	264.85	1728390.79	14536012.02	40°01'30.196"N	104°41'08.697"W	0.08	
19964.00	89.820	181.250	7214.07	12645.63	-12645.80	263.08	1728389.33	14535922.06	40°01'29.307"N	104°41'08.720"W	0.30	
20054.00	89.880	181.110	7214.31	12735.61	-12735.78	261.22	1728387.80	14535832.11	40°01'28.418"N	104°41'08.744"W	0.17	
20143.00	89.970	180.580	7214.43	12824.60	-12824.77	259.91	1728386.80	14535743.15	40°01'27.538"N	104°41'08.761"W	0.60	
20233.00	89.970	180.650	7214.47	12914.60	-12914.77	258.94	1728386.15	14535653.19	40°01'26.649"N	104°41'08.773"W	0.08	
20323.00	89.940	180.570	7214.54	13004.59	-13004.76	257.99	1728385.51	14535563.23	40°01'25.760"N	104°41'08.786"W	0.09	
20365.00	89.970	180.400	7214.58	13046.59	-13046.76	257.63	1728385.30	14535521.25	40°01'25.345"N	104°41'08.790"W	0.41	LAST BHGE MWD+IFR1+MSA SURVEY
20390.00	89.970	180.400	7214.59	13071.59	-13071.76	257.46	1728385.21	14535496.26	40°01'25.098"N	104°41'08.792"W	0.00	PTB (2181'FNL & 2046'FEL, SEC.29) 40.0236382 -104.6857757

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-13HZ AWB
Facility	SEC.08-T1N-R65W		

HOLE & CASING SECTIONS - Ref Wellbore: ENGLISH FARMS 8-13HZ AWB Ref Wellpath: ENGLISH FARMS 8-13HZ 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]
9.625in Casing Surface	26.00	1889.00	1863.00	26.00	1842.03	0.00	0.00	234.18	265.00

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.17-T1N-R65W	-34.00	241.98	-2558.76	1725523.29	14548794.77	40°03'36.666"N	104°41'45.010"W	polygon
SEC.20-T1N-R65W	-34.00	241.98	-2558.76	1725523.29	14548794.77	40°03'36.666"N	104°41'45.010"W	polygon
ENGLISH FARMS 8-13HZ HEEL REV-1(50'FNL & 2010'FEL, SEC.17)	7169.00	-330.45	285.80	1728368.73	14548232.57	40°03'31.010"N	104°41'08.426"W	point
ENGLISH FARMS 8-13HZ INT. TARGET@2500"VS	7169.00	-2500.18	284.39	1728374.95	14546063.71	40°03'09.569"N	104°41'08.445"W	point
ENGLISH FARMS 8-13HZ BHL REV-1(2181'FNL & 2025'FEL, SEC.29)	7217.00	-13072.20	277.53	1728405.28	14535495.88	40°01'25.093"N	104°41'08.534"W	point
ENGLISH FARMS 8-13HZ INT. TARGET@10000"VS	7217.00	-10000.18	279.52	1728396.46	14538566.68	40°01'55.452"N	104°41'08.508"W	point
ENGLISH FARMS 8-13HZ LANDBOX	7217.00	0.00	0.00	1728081.88	14548561.89	40°03'34.276"N	104°41'12.102"W	polygon
ENGLISH FARMS 8-13HZ SETBACK 1	7217.00	0.00	0.00	1728081.88	14548561.89	40°03'34.276"N	104°41'12.102"W	polygon
ENGLISH FARMS 8-13HZ SETBACK 2	7217.00	0.00	0.00	1728081.88	14548561.89	40°03'34.276"N	104°41'12.102"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: ENGLISH FARMS 8-13HZ AWB Ref Wellpath: ENGLISH FARMS 8-13HZ AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	1851.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	Custom APC ISCWSA Rev-2 MWD+IFR1 <135 - 1851>	ENGLISH FARMS 8-13HZ AWB
1851.00	20365.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1968 - 20365>	ENGLISH FARMS 8-13HZ AWB
20365.00	20390.00	Blind Drilling (std)	Projection to bit	ENGLISH FARMS 8-13HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 ENGLISH FARMS 8-13HZ (280'FSL & 2297'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-13HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-13HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
135.00	0.090	15.700	135.00	FIRST SURFACE MWD+IFR1 SURVEY
1405.00	18.275	48.140	1380.16	ENTER LANDBOX (417'FSL & 2137'FEL,SEC.08) 40.0598972 -104.6861302
1851.00	15.470	48.300	1805.35	LAST SURFACE MWD+IFR1 SURVEY
1968.00	13.520	48.760	1918.62	FIRST BHGE MWD+IFR1+MSA SURVEY
6515.00	2.022	186.424	6450.49	KOP
7650.00	87.630	180.000	7171.09	LANDING (61'FNL & 2037'FEL,SEC.17) 40.0585845 -104.6857657
8052.00	89.501	174.817	7178.79	CROSS SETBACK HEEL (461'FNL & 1997'FEL,SEC.17) 40.0574883 -104.6856201
19076.00	89.880	180.815	7212.51	CROSS SETBACK TOE (867'FNL & 2016'FEL,SEC.29) 40.0272441 -104.6856674
20365.00	89.970	180.400	7214.58	LAST BHGE MWD+IFR1+MSA SURVEY
20390.00	89.970	180.400	7214.59	PTB (2181'FNL & 2046'FEL,SEC.29) 40.0236382 -104.6857757