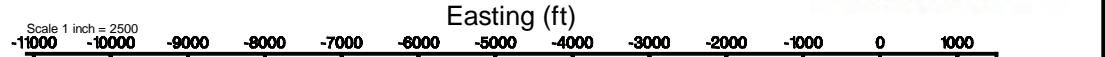


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

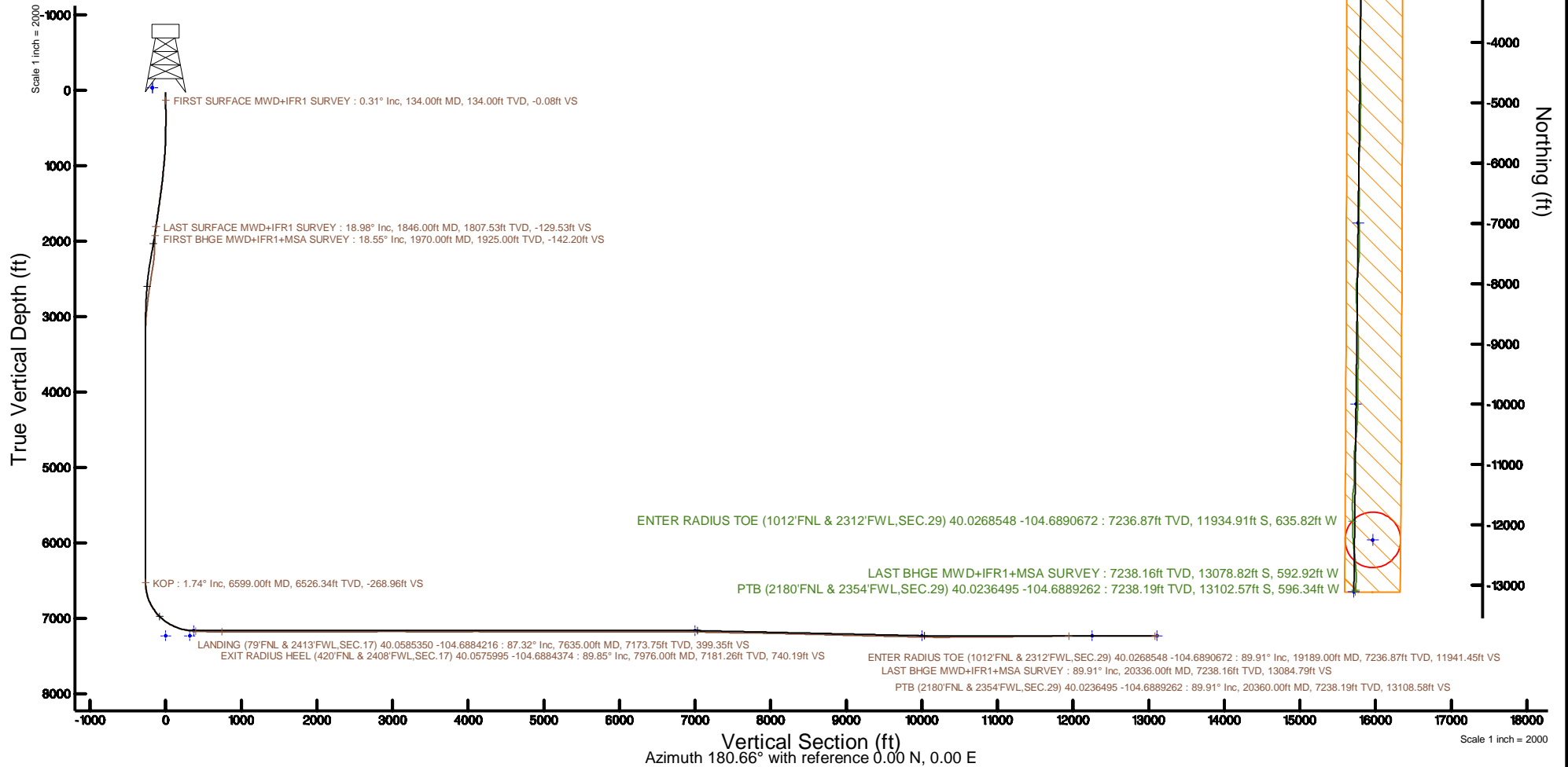
Location: COLORADO Slot: SLOT#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'FEL, SEC.08)
 Field: WELD COUNTY (UTM/TRUE NORTH) Well: ENGLISH FARMS 8-10HZ
 Facility: SEC.08-T1N-R65W Wellbore: ENGLISH FARMS 8-10HZ PWB

Plot reference wellpath is ENGLISH FARMS 8-10HZ PWB RevA.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#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'FEL, SEC.08)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painettr on 2018-07-13
	Database: WA_DEN_Anadarko_Defn



SLOT#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'FEL, SEC.08)

KOP : 6526.34ft TVD, 274.29ft N, 459.91ft W
 FIRST BHGE MWD+IFR1+MSA SURVEY : 1925.00ft TVD, 145.60ft N, 293.92ft W
 LAST SURFACE MWD+IFR1 SURVEY : 1807.53ft TVD, 132.50ft N, 256.53ft W
 FIRST SURFACE MWD+IFR1 SURVEY : 134.00ft TVD, 0.07ft N, 0.28ft E
 LANDING (79'FNL & 2413'FWL, SEC.17) 40.0585350 -104.6884216 : 7173.75ft TVD, 394.13ft S, 454.78ft W
 EXIT RADIUS HEEL (420'FNL & 2408'FWL, SEC.17) 40.0575995 -104.6884374 : 7181.26ft TVD, 734.94ft S, 459.21ft W



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-10HZ 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	7/13/2018 at 11:18 AM
Convergence at slot	0.21° East	Database/Source file	WA_DEN_Anadarko_Defn/ENGLISH_FARMS_8-10HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-4237.76	-1684.26	1728053.23	14548596.68	40°03'34.621"N	104°41'12.469"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#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'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	180.66°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-10HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (266 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
0.00†	0.000	75.200	0.00	0.00	0.00	0.00	1728053.23	14548596.68	40°03'34.621"N	104°41'12.469"W	0.00	
26.00	0.000	75.200	26.00	0.00	0.00	0.00	1728053.23	14548596.68	40°03'34.621"N	104°41'12.469"W	0.00	
134.00	0.310	75.200	134.00	-0.08	0.07	0.28	1728053.51	14548596.76	40°03'34.622"N	104°41'12.465"W	0.29	FIRST SURFACE MWD+IFR1 SURVEY
166.00	0.220	78.980	166.00	-0.11	0.11	0.43	1728053.65	14548596.79	40°03'34.622"N	104°41'12.464"W	0.29	
198.00	0.130	141.820	198.00	-0.10	0.09	0.51	1728053.74	14548596.78	40°03'34.622"N	104°41'12.462"W	0.62	
229.00	0.180	205.010	229.00	-0.03	0.02	0.51	1728053.74	14548596.71	40°03'34.621"N	104°41'12.462"W	0.54	
261.00	0.260	203.260	261.00	0.09	-0.09	0.46	1728053.69	14548596.59	40°03'34.620"N	104°41'12.463"W	0.25	
293.00	0.090	228.390	293.00	0.17	-0.18	0.41	1728053.64	14548596.51	40°03'34.619"N	104°41'12.464"W	0.57	
324.00	0.260	254.140	324.00	0.21	-0.21	0.33	1728053.56	14548596.47	40°03'34.619"N	104°41'12.465"W	0.59	
356.00	0.220	260.740	356.00	0.24	-0.24	0.20	1728053.42	14548596.44	40°03'34.619"N	104°41'12.466"W	0.15	
388.00	0.180	256.250	388.00	0.26	-0.26	0.09	1728053.32	14548596.42	40°03'34.618"N	104°41'12.468"W	0.13	
420.00	0.180	278.050	420.00	0.27	-0.27	-0.01	1728053.22	14548596.42	40°03'34.618"N	104°41'12.469"W	0.21	
451.00	0.310	292.990	451.00	0.23	-0.23	-0.14	1728053.09	14548596.46	40°03'34.619"N	104°41'12.471"W	0.46	
483.00	1.050	304.150	482.99	0.03	-0.03	-0.46	1728052.77	14548596.65	40°03'34.621"N	104°41'12.475"W	2.34	
514.00	1.270	311.360	513.99	-0.35	0.36	-0.95	1728052.27	14548597.04	40°03'34.625"N	104°41'12.481"W	0.85	
546.00	1.580	314.260	545.98	-0.88	0.90	-1.53	1728051.69	14548597.58	40°03'34.630"N	104°41'12.489"W	0.99	
577.00	2.020	306.090	576.96	-1.49	1.52	-2.28	1728050.94	14548598.19	40°03'34.636"N	104°41'12.498"W	1.64	
609.00	2.680	303.010	608.94	-2.22	2.26	-3.36	1728049.86	14548598.93	40°03'34.643"N	104°41'12.512"W	2.10	
641.00	3.300	301.170	640.89	-3.09	3.14	-4.78	1728048.44	14548599.81	40°03'34.652"N	104°41'12.530"W	1.96	
673.00	3.780	299.850	672.83	-4.07	4.14	-6.48	1728046.73	14548600.80	40°03'34.662"N	104°41'12.552"W	1.52	
705.00	4.530	298.350	704.75	-5.17	5.27	-8.51	1728044.70	14548601.92	40°03'34.673"N	104°41'12.578"W	2.37	
736.00	5.190	299.850	735.64	-6.42	6.55	-10.80	1728042.40	14548603.19	40°03'34.686"N	104°41'12.608"W	2.17	
768.00	5.710	303.100	767.49	-7.98	8.14	-13.39	1728039.81	14548604.77	40°03'34.701"N	104°41'12.641"W	1.89	
800.00	6.240	303.190	799.32	-9.77	9.96	-16.18	1728037.02	14548606.58	40°03'34.719"N	104°41'12.677"W	1.66	
831.00	7.080	303.540	830.11	-11.72	11.94	-19.18	1728034.01	14548608.55	40°03'34.739"N	104°41'12.716"W	2.71	
863.00	7.820	302.920	861.84	-13.95	14.21	-22.66	1728030.53	14548610.81	40°03'34.761"N	104°41'12.760"W	2.33	
895.00	8.610	301.690	893.51	-16.35	16.65	-26.52	1728026.66	14548613.24	40°03'34.786"N	104°41'12.810"W	2.53	
927.00	9.400	302.130	925.11	-18.94	19.30	-30.77	1728022.40	14548615.87	40°03'34.812"N	104°41'12.865"W	2.48	
958.00	10.240	301.780	955.66	-21.69	22.10	-35.26	1728017.91	14548618.65	40°03'34.839"N	104°41'12.922"W	2.72	
989.00	10.940	301.690	986.13	-24.63	25.09	-40.10	1728013.05	14548621.63	40°03'34.869"N	104°41'12.985"W	2.26	
1021.00	11.730	299.320	1017.51	-27.76	28.28	-45.52	1728007.62	14548624.79	40°03'34.900"N	104°41'13.054"W	2.87	
1053.00	12.300	297.560	1048.81	-30.86	31.45	-51.38	1728001.76	14548627.94	40°03'34.932"N	104°41'13.130"W	2.12	
1085.00	12.570	296.070	1080.06	-33.89	34.56	-57.53	1727995.60	14548631.03	40°03'34.963"N	104°41'13.209"W	1.31	
1116.00	13.050	295.190	1110.28	-36.79	37.53	-63.73	1727989.39	14548633.98	40°03'34.992"N	104°41'13.289"W	1.67	
1148.00	13.540	294.750	1141.43	-39.82	40.64	-70.40	1727982.71	14548637.06	40°03'35.023"N	104°41'13.374"W	1.56	
1180.00	14.060	295.360	1172.50	-42.98	43.87	-77.31	1727975.79	14548640.27	40°03'35.055"N	104°41'13.463"W	1.69	
1212.00	14.370	296.070	1203.52	-46.30	47.28	-84.39	1727968.70	14548643.65	40°03'35.088"N	104°41'13.554"W	1.11	
1243.00	14.720	296.420	1233.53	-49.67	50.72	-91.38	1727961.71	14548647.07	40°03'35.122"N	104°41'13.644"W	1.16	
1275.00	15.470	297.470	1264.42	-53.36	54.50	-98.80	1727954.27	14548650.82	40°03'35.160"N	104°41'13.740"W	2.49	
1306.00	15.600	297.300	1294.29	-57.09	58.32	-106.18	1727946.89	14548654.61	40°03'35.197"N	104°41'13.835"W	0.44	
1338.00	16.170	297.030	1325.07	-61.00	62.32	-113.97	1727939.09	14548658.58	40°03'35.237"N	104°41'13.935"W	1.80	
1370.00	16.660	296.950	1355.77	-65.01	66.42	-122.03	1727931.02	14548662.65	40°03'35.277"N	104°41'14.038"W	1.53	
1401.00	17.360	295.630	1385.41	-68.93	70.44	-130.16	1727922.87	14548666.64	40°03'35.317"N	104°41'14.143"W	2.58	
1432.00	17.930	295.280	1414.95	-72.87	74.48	-138.64	1727914.38	14548670.64	40°03'35.357"N	104°41'14.252"W	1.87	
1464.00	18.280	295.360	1445.37	-77.02	78.73	-147.63	1727905.38	14548674.86	40°03'35.399"N	104°41'14.368"W	1.10	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-10HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (266 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
1496.00	18.020	295.280	1475.77	-81.18	82.99	-156.64	1727896.36	14548679.09	40°03'35.441"N	104°41'14.484"W	0.82	
1527.00	18.370	295.720	1505.22	-85.25	87.16	-165.38	1727887.61	14548683.23	40°03'35.482"N	104°41'14.596"W	1.21	
1559.00	18.590	295.720	1535.57	-89.54	91.56	-174.52	1727878.46	14548687.59	40°03'35.526"N	104°41'14.713"W	0.69	
1591.00	18.900	295.800	1565.88	-93.90	96.03	-183.78	1727869.19	14548692.03	40°03'35.570"N	104°41'14.833"W	0.97	
1622.00	19.120	295.980	1595.19	-98.21	100.44	-192.86	1727860.09	14548696.41	40°03'35.614"N	104°41'14.949"W	0.73	
1654.00	18.280	297.120	1625.50	-102.69	105.02	-202.04	1727850.90	14548700.95	40°03'35.659"N	104°41'15.067"W	2.86	
1749.00	18.150	296.330	1715.74	-115.73	118.38	-228.56	1727824.34	14548714.21	40°03'35.791"N	104°41'15.409"W	0.29	
1781.00	18.940	297.120	1746.07	-120.21	122.96	-237.65	1727815.24	14548718.75	40°03'35.836"N	104°41'15.525"W	2.59	
1813.00	19.030	296.950	1776.33	-124.83	127.69	-246.92	1727805.95	14548723.45	40°03'35.883"N	104°41'15.645"W	0.33	
1846.00	18.980	296.240	1807.53	-129.53	132.50	-256.53	1727796.33	14548728.23	40°03'35.930"N	104°41'15.768"W	0.72	LAST SURFACE MWD+IFR1 SURVEY
1970.00	18.550	282.230	1925.00	-142.20	145.60	-293.92	1727758.92	14548741.19	40°03'36.060"N	104°41'16.249"W	3.64	FIRST BHGE MWD+IFR1+MSA SURVEY
2059.00	16.700	274.380	2009.83	-145.87	149.58	-320.51	1727732.32	14548745.07	40°03'36.099"N	104°41'16.591"W	3.38	
2149.00	16.800	277.210	2096.02	-148.19	152.20	-346.31	1727706.52	14548747.60	40°03'36.125"N	104°41'16.923"W	0.91	
2238.00	16.750	285.130	2181.24	-152.86	157.16	-371.45	1727681.37	14548752.47	40°03'36.174"N	104°41'17.246"W	2.57	
2328.00	16.870	294.400	2267.41	-161.36	165.94	-395.87	1727656.94	14548761.16	40°03'36.261"N	104°41'17.560"W	2.98	
2418.00	14.700	306.120	2354.03	-173.25	178.07	-416.99	1727635.78	14548773.22	40°03'36.381"N	104°41'17.832"W	4.27	
2507.00	12.720	317.050	2440.51	-186.90	191.90	-432.79	1727619.93	14548786.99	40°03'36.517"N	104°41'18.035"W	3.65	
2597.00	10.640	330.700	2528.66	-201.27	206.41	-443.61	1727609.07	14548801.45	40°03'36.661"N	104°41'18.174"W	3.83	
2686.00	8.530	342.850	2616.42	-214.68	219.88	-449.58	1727603.05	14548814.89	40°03'36.794"N	104°41'18.251"W	3.27	
2776.00	7.740	349.300	2705.51	-226.98	232.21	-452.68	1727599.92	14548827.21	40°03'36.916"N	104°41'18.291"W	1.34	
2865.00	7.650	353.580	2793.71	-238.73	243.99	-454.45	1727598.10	14548838.98	40°03'37.032"N	104°41'18.314"W	0.65	
2955.00	5.680	353.580	2883.10	-249.10	254.37	-455.62	1727596.90	14548849.35	40°03'37.135"N	104°41'18.329"W	2.19	
3045.00	4.320	355.240	2972.76	-256.89	262.17	-456.40	1727596.09	14548857.15	40°03'37.212"N	104°41'18.339"W	1.52	
3134.00	3.680	353.710	3061.54	-263.06	268.35	-456.99	1727595.48	14548863.32	40°03'37.273"N	104°41'18.346"W	0.73	
3224.00	2.630	337.710	3151.40	-267.83	273.13	-458.09	1727594.36	14548868.10	40°03'37.320"N	104°41'18.360"W	1.51	
3314.00	0.810	324.800	3241.36	-270.25	275.57	-459.24	1727593.20	14548870.52	40°03'37.344"N	104°41'18.375"W	2.05	
3403.00	0.090	144.840	3330.36	-270.70	276.02	-459.56	1727592.88	14548870.98	40°03'37.349"N	104°41'18.379"W	1.01	
3493.00	0.070	210.350	3420.36	-270.60	275.92	-459.55	1727592.89	14548870.87	40°03'37.348"N	104°41'18.379"W	0.10	
3582.00	0.040	182.110	3509.36	-270.52	275.84	-459.58	1727592.86	14548870.80	40°03'37.347"N	104°41'18.380"W	0.04	
3672.00	0.040	233.750	3599.36	-270.47	275.79	-459.60	1727592.84	14548870.75	40°03'37.346"N	104°41'18.380"W	0.04	
3761.00	0.160	237.400	3688.36	-270.38	275.70	-459.73	1727592.71	14548870.66	40°03'37.346"N	104°41'18.382"W	0.13	
3851.00	0.070	268.420	3778.36	-270.31	275.63	-459.89	1727592.55	14548870.59	40°03'37.345"N	104°41'18.384"W	0.12	
3940.00	0.100	238.110	3867.36	-270.27	275.59	-460.01	1727592.43	14548870.55	40°03'37.344"N	104°41'18.385"W	0.06	
4030.00	0.200	223.620	3957.36	-270.11	275.44	-460.19	1727592.25	14548870.39	40°03'37.343"N	104°41'18.387"W	0.12	
4119.00	0.180	220.120	4046.35	-269.89	275.22	-460.39	1727592.06	14548870.17	40°03'37.341"N	104°41'18.390"W	0.03	
4209.00	0.250	89.970	4136.35	-269.78	275.11	-460.28	1727592.16	14548870.06	40°03'37.340"N	104°41'18.389"W	0.43	
4298.00	0.130	277.700	4225.35	-269.80	275.12	-460.19	1727592.26	14548870.08	40°03'37.340"N	104°41'18.387"W	0.43	
4388.00	0.130	254.440	4315.35	-269.78	275.11	-460.39	1727592.06	14548870.06	40°03'37.340"N	104°41'18.390"W	0.06	
4477.00	0.220	232.500	4404.35	-269.65	274.98	-460.62	1727591.82	14548869.93	40°03'37.338"N	104°41'18.393"W	0.12	
4567.00	0.090	220.540	4494.35	-269.49	274.82	-460.80	1727591.64	14548869.77	40°03'37.337"N	104°41'18.395"W	0.15	
4656.00	0.100	48.400	4583.35	-269.48	274.82	-460.79	1727591.65	14548869.77	40°03'37.337"N	104°41'18.395"W	0.21	
4746.00	0.060	36.410	4673.35	-269.57	274.91	-460.70	1727591.74	14548869.86	40°03'37.338"N	104°41'18.394"W	0.05	
4835.00	0.030	104.540	4762.35	-269.61	274.94	-460.65	1727591.79	14548869.89	40°03'37.338"N	104°41'18.393"W	0.06	
4925.00	0.100	64.540	4852.35	-269.64	274.97	-460.56	1727591.89	14548869.92	40°03'37.338"N	104°41'18.392"W	0.09	
5014.00	0.030	239.330	4941.35	-269.66	274.99	-460.51	1727591.93	14548869.94	40°03'37.338"N	104°41'18.392"W	0.15	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-10HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (266 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
5104.00	0.030	312.580	5031.35	-269.66	274.99	-460.55	1727591.90	14548869.95	40°03'37.338"N	104°41'18.392"W	0.04	
5194.00	0.180	28.710	5121.35	-269.80	275.13	-460.50	1727591.95	14548870.09	40°03'37.340"N	104°41'18.391"W	0.19	
5283.00	0.410	24.690	5210.35	-270.22	275.54	-460.30	1727592.15	14548870.50	40°03'37.344"N	104°41'18.389"W	0.26	
5373.00	0.070	30.550	5300.35	-270.56	275.88	-460.13	1727592.31	14548870.84	40°03'37.347"N	104°41'18.387"W	0.38	
5463.00	0.040	107.830	5390.35	-270.60	275.92	-460.08	1727592.36	14548870.88	40°03'37.348"N	104°41'18.386"W	0.08	
5552.00	0.000	7.820	5479.35	-270.59	275.91	-460.05	1727592.39	14548870.87	40°03'37.348"N	104°41'18.386"W	0.04	
5642.00	0.070	188.690	5569.35	-270.53	275.86	-460.05	1727592.39	14548870.81	40°03'37.347"N	104°41'18.386"W	0.08	
5731.00	0.030	113.950	5658.35	-270.47	275.80	-460.04	1727592.40	14548870.75	40°03'37.346"N	104°41'18.386"W	0.08	
5820.00	0.040	64.240	5747.35	-270.47	275.80	-459.99	1727592.45	14548870.76	40°03'37.346"N	104°41'18.385"W	0.03	
5909.00	0.180	200.780	5836.35	-270.36	275.68	-460.01	1727592.43	14548870.64	40°03'37.345"N	104°41'18.385"W	0.24	
5999.00	0.060	228.410	5926.35	-270.19	275.52	-460.10	1727592.34	14548870.47	40°03'37.344"N	104°41'18.386"W	0.14	
6089.00	0.160	165.210	6016.35	-270.04	275.37	-460.10	1727592.34	14548870.32	40°03'37.342"N	104°41'18.386"W	0.16	
6178.00	0.030	80.560	6105.35	-269.92	275.25	-460.05	1727592.40	14548870.21	40°03'37.341"N	104°41'18.386"W	0.18	
6268.00	0.070	88.400	6195.35	-269.93	275.25	-459.97	1727592.47	14548870.21	40°03'37.341"N	104°41'18.385"W	0.04	
6357.00	0.000	7.810	6284.35	-269.93	275.26	-459.92	1727592.53	14548870.21	40°03'37.341"N	104°41'18.384"W	0.08	
6447.00	0.030	244.730	6374.35	-269.92	275.25	-459.94	1727592.51	14548870.20	40°03'37.341"N	104°41'18.384"W	0.03	
6536.00	0.040	266.540	6463.35	-269.91	275.23	-459.99	1727592.45	14548870.19	40°03'37.341"N	104°41'18.385"W	0.02	
6599.00†	1.735	173.668	6526.34	-268.96	274.29	-459.91	1727592.54	14548869.24	40°03'37.332"N	104°41'18.384"W	2.76	KOP
6626.00	2.480	173.270	6553.32	-267.98	273.30	-459.79	1727592.66	14548868.26	40°03'37.322"N	104°41'18.382"W	2.76	
6715.00	10.640	171.390	6641.66	-257.94	263.25	-458.33	1727594.15	14548858.21	40°03'37.222"N	104°41'18.364"W	9.17	
6805.00	18.000	176.460	6728.81	-235.84	241.12	-456.23	1727596.33	14548836.10	40°03'37.004"N	104°41'18.337"W	8.29	
6895.00	25.820	183.180	6812.26	-202.33	207.61	-456.46	1727596.22	14548802.61	40°03'36.673"N	104°41'18.339"W	9.11	
6984.00	33.660	188.210	6889.49	-158.45	163.78	-461.06	1727591.77	14548758.77	40°03'36.239"N	104°41'18.399"W	9.24	
7074.00	42.890	188.060	6960.07	-103.23	108.65	-468.94	1727584.10	14548703.64	40°03'35.695"N	104°41'18.500"W	10.26	
7163.00	51.620	181.730	7020.45	-38.15	43.63	-474.25	1727579.02	14548638.63	40°03'35.052"N	104°41'18.568"W	11.10	
7253.00	60.210	176.350	7070.86	36.23	-30.78	-472.82	1727580.70	14548564.25	40°03'34.317"N	104°41'18.550"W	10.75	
7342.00	67.650	176.090	7109.95	115.88	-110.50	-467.55	1727586.25	14548484.59	40°03'33.529"N	104°41'18.482"W	8.36	
7432.00	71.300	176.700	7141.50	199.92	-194.60	-462.26	1727591.84	14548400.53	40°03'32.698"N	104°41'18.414"W	4.10	
7521.00	80.730	177.760	7162.98	286.03	-280.77	-458.11	1727596.29	14548314.42	40°03'31.846"N	104°41'18.361"W	10.66	
7611.00	87.040	178.610	7172.57	375.39	-370.16	-455.28	1727599.43	14548225.07	40°03'30.963"N	104°41'18.324"W	7.07	
7635.00†	87.323	179.012	7173.75	399.35	-394.13	-454.78	1727600.02	14548201.11	40°03'30.726"N	104°41'18.318"W	2.05	LANDING (79°FNL & 2413°FNL, SEC.17) 40.0585350 -104.6884216
7700.00	88.090	180.100	7176.35	464.28	-459.07	-454.28	1727600.75	14548136.20	40°03'30.084"N	104°41'18.311"W	2.05	
7790.00	87.810	180.690	7179.57	554.22	-549.01	-454.90	1727600.44	14548046.29	40°03'29.195"N	104°41'18.319"W	0.73	
7879.00	90.090	181.360	7181.20	643.20	-637.98	-456.49	1727599.17	14547957.36	40°03'28.316"N	104°41'18.340"W	2.67	
7969.00	89.850	181.820	7181.25	733.19	-727.94	-458.98	1727596.99	14547867.42	40°03'27.427"N	104°41'18.372"W	0.58	
7976.00†	89.855	181.857	7181.26	740.19	-734.94	-459.21	1727596.79	14547860.42	40°03'27.358"N	104°41'18.375"W	0.53	EXIT RADIUS HEEL (420°FNL & 2408°FNL, SEC.17) 40.0575995 -104.6884374
8058.00	89.910	182.290	7181.43	822.16	-816.88	-462.18	1727594.11	14547778.50	40°03'26.548"N	104°41'18.413"W	0.53	
8148.00	90.060	182.570	7181.46	912.12	-906.80	-465.99	1727590.61	14547688.60	40°03'25.660"N	104°41'18.462"W	0.35	
8237.00	89.970	182.240	7181.43	1001.08	-995.72	-469.73	1727587.19	14547599.70	40°03'24.781"N	104°41'18.510"W	0.38	
8327.00	89.880	182.690	7181.55	1091.03	-1085.64	-473.60	1727583.64	14547509.81	40°03'23.892"N	104°41'18.560"W	0.51	
8416.00	89.910	183.510	7181.71	1179.95	-1174.51	-478.41	1727579.14	14547420.96	40°03'23.014"N	104°41'18.621"W	0.92	
8506.00	90.090	181.810	7181.71	1269.89	-1264.41	-482.59	1727575.28	14547331.08	40°03'22.126"N	104°41'18.675"W	1.90	
8595.00	90.180	179.130	7181.50	1358.88	-1353.40	-483.32	1727574.86	14547242.13	40°03'21.246"N	104°41'18.685"W	3.01	
8685.00	90.250	178.320	7181.17	1448.83	-1443.37	-481.31	1727577.18	14547152.19	40°03'20.357"N	104°41'18.659"W	0.90	
8774.00	89.910	178.070	7181.04	1537.75	-1532.33	-478.51	1727580.30	14547063.28	40°03'19.478"N	104°41'18.623"W	0.47	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 ENGLISH FARMS 8-10HZ (315°FSL & 2326°FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-10HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (266 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
8864.00	90.060	177.100	7181.07	1627.62	-1622.25	-474.72	1727584.40	14546973.41	40°03'18.590"N	104°41'18.574"W	1.09	
8954.00	90.060	178.390	7180.97	1717.50	-1712.18	-471.18	1727588.26	14546883.53	40°03'17.701"N	104°41'18.528"W	1.43	
9043.00	89.970	178.810	7180.95	1806.44	-1801.15	-469.00	1727590.75	14546794.60	40°03'16.822"N	104°41'18.500"W	0.48	
9133.00	89.540	177.580	7181.33	1896.36	-1891.10	-466.17	1727593.90	14546704.70	40°03'15.933"N	104°41'18.464"W	1.45	
9222.00	90.000	177.590	7181.69	1985.23	-1980.02	-462.42	1727597.96	14546615.83	40°03'15.054"N	104°41'18.416"W	0.52	
9312.00	90.000	183.890	7181.69	2075.18	-2069.97	-463.58	1727597.11	14546525.91	40°03'14.165"N	104°41'18.431"W	7.00	
9401.00	90.250	186.140	7181.50	2163.92	-2158.62	-471.36	1727589.65	14546437.26	40°03'13.289"N	104°41'18.531"W	2.54	
9491.00	90.030	186.090	7181.28	2253.51	-2248.11	-480.95	1727580.38	14546347.78	40°03'12.405"N	104°41'18.654"W	0.25	
9580.00	90.220	183.300	7181.08	2342.28	-2336.80	-488.23	1727573.41	14546259.10	40°03'11.528"N	104°41'18.747"W	3.14	
9669.00	90.180	181.670	7180.77	2431.23	-2425.72	-492.09	1727569.86	14546170.21	40°03'10.649"N	104°41'18.797"W	1.83	
9759.00	90.250	181.790	7180.43	2521.22	-2515.67	-494.81	1727567.47	14546080.27	40°03'09.760"N	104°41'18.832"W	0.15	
9848.00	90.520	182.580	7179.84	2610.18	-2604.61	-498.20	1727564.39	14545991.36	40°03'08.882"N	104°41'18.876"W	0.94	
9938.00	90.180	183.540	7179.29	2700.10	-2694.48	-503.00	1727559.90	14545901.51	40°03'07.994"N	104°41'18.937"W	1.13	
10027.00	90.090	181.450	7179.08	2789.05	-2783.39	-506.88	1727556.34	14545812.63	40°03'07.115"N	104°41'18.987"W	2.35	
10117.00	90.370	180.200	7178.71	2879.05	-2873.37	-508.17	1727555.36	14545722.67	40°03'06.226"N	104°41'19.004"W	1.42	
10207.00	90.250	178.900	7178.23	2969.03	-2963.37	-507.47	1727556.38	14545632.71	40°03'05.336"N	104°41'18.995"W	1.45	
10296.00	89.660	178.350	7178.30	3057.97	-3052.34	-505.33	1727558.83	14545543.78	40°03'04.457"N	104°41'18.967"W	0.91	
10386.00	89.630	179.500	7178.85	3147.92	-3142.32	-503.64	1727560.84	14545453.84	40°03'03.568"N	104°41'18.945"W	1.28	
10475.00	89.690	179.950	7179.38	3236.91	-3231.32	-503.22	1727561.58	14545364.88	40°03'02.688"N	104°41'18.940"W	0.51	
10565.00	89.820	179.260	7179.77	3326.89	-3321.32	-502.60	1727562.51	14545274.93	40°03'01.799"N	104°41'18.932"W	0.78	
10655.00	89.820	178.660	7180.05	3416.85	-3411.30	-500.96	1727564.46	14545184.98	40°03'00.910"N	104°41'18.911"W	0.67	
10744.00	90.090	179.890	7180.12	3505.83	-3500.29	-499.84	1727565.90	14545096.03	40°03'00.030"N	104°41'18.896"W	1.41	
10834.00	90.000	180.730	7180.05	3595.82	-3590.29	-500.32	1727565.73	14545006.07	40°02'59.141"N	104°41'18.903"W	0.94	
10923.00	89.910	181.970	7180.12	3684.81	-3679.26	-502.42	1727563.95	14544917.12	40°02'58.262"N	104°41'18.930"W	1.40	
11013.00	89.970	181.740	7180.21	3774.79	-3769.22	-505.33	1727561.35	14544827.20	40°02'57.373"N	104°41'18.967"W	0.26	
11102.00	90.650	182.280	7179.73	3863.77	-3858.16	-508.45	1727558.54	14544738.28	40°02'56.494"N	104°41'19.007"W	0.98	
11192.00	89.910	181.720	7179.29	3953.74	-3948.10	-511.60	1727555.72	14544648.36	40°02'55.605"N	104°41'19.047"W	1.03	
11281.00	90.340	181.670	7179.10	4042.73	-4037.06	-514.23	1727553.40	14544559.42	40°02'54.726"N	104°41'19.081"W	0.49	
11371.00	89.750	180.920	7179.03	4132.72	-4127.04	-516.26	1727551.69	14544469.48	40°02'53.837"N	104°41'19.107"W	1.06	
11460.00	90.060	181.190	7179.18	4221.72	-4216.02	-517.90	1727550.36	14544380.52	40°02'52.957"N	104°41'19.128"W	0.46	
11550.00	90.000	180.540	7179.13	4311.72	-4306.01	-519.26	1727549.32	14544290.56	40°02'52.068"N	104°41'19.146"W	0.73	
11640.00	89.940	179.740	7179.18	4401.71	-4396.01	-519.48	1727549.42	14544200.60	40°02'51.179"N	104°41'19.149"W	0.89	
11729.00	89.880	179.160	7179.32	4490.69	-4485.01	-518.62	1727550.58	14544111.64	40°02'50.299"N	104°41'19.138"W	0.66	
11819.00	89.750	176.350	7179.61	4580.57	-4574.93	-515.10	1727554.42	14544021.77	40°02'49.410"N	104°41'19.092"W	3.13	
11909.00	90.000	174.840	7179.80	4670.21	-4664.66	-508.19	1727561.65	14543932.10	40°02'48.524"N	104°41'19.003"W	1.70	
11998.00	89.970	177.980	7179.83	4758.96	-4753.47	-502.62	1727567.53	14543843.34	40°02'47.646"N	104°41'18.932"W	3.53	
12088.00	89.880	180.920	7179.94	4848.93	-4843.46	-501.75	1727568.71	14543753.39	40°02'46.757"N	104°41'18.921"W	3.27	
12177.00	90.090	180.980	7179.97	4937.92	-4932.45	-503.23	1727567.55	14543664.44	40°02'45.877"N	104°41'18.940"W	0.25	
12267.00	89.850	181.200	7180.01	5027.92	-5022.43	-504.94	1727566.15	14543574.48	40°02'44.988"N	104°41'18.962"W	0.36	
12356.00	90.060	180.930	7180.08	5116.92	-5111.42	-506.59	1727564.81	14543485.53	40°02'44.109"N	104°41'18.983"W	0.38	
12446.00	90.090	180.170	7179.97	5206.92	-5201.41	-507.46	1727564.27	14543395.57	40°02'43.219"N	104°41'18.994"W	0.85	
12535.00	90.000	180.490	7179.90	5295.92	-5290.41	-507.97	1727564.07	14543306.60	40°02'42.340"N	104°41'19.000"W	0.37	
12625.00	89.970	180.510	7179.92	5385.92	-5380.41	-508.76	1727563.60	14543216.64	40°02'41.451"N	104°41'19.011"W	0.04	
12714.00	90.120	181.040	7179.85	5474.92	-5469.40	-509.96	1727562.71	14543127.68	40°02'40.571"N	104°41'19.026"W	0.62	
12803.00	89.940	181.560	7179.80	5563.91	-5558.37	-511.98	1727561.00	14543038.73	40°02'39.692"N	104°41'19.052"W	0.62	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-10HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (266 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
12893.00	90.060	182.040	7179.80	5653.89	-5648.33	-514.81	1727558.49	14542948.80	40°02'38.803"N	104°41'19.088"W	0.55	
12982.00	89.910	183.200	7179.83	5742.84	-5737.23	-518.87	1727554.74	14542859.92	40°02'37.924"N	104°41'19.141"W	1.31	
13072.00	89.940	183.430	7179.94	5832.74	-5827.08	-524.08	1727549.85	14542770.08	40°02'37.036"N	104°41'19.207"W	0.26	
13162.00	90.000	182.640	7179.99	5922.66	-5916.96	-528.84	1727545.40	14542680.23	40°02'36.148"N	104°41'19.269"W	0.88	
13251.00	90.000	182.180	7179.99	6011.62	-6005.88	-532.59	1727541.98	14542591.33	40°02'35.269"N	104°41'19.317"W	0.52	
13341.00	90.000	180.930	7179.99	6101.61	-6095.84	-535.03	1727539.85	14542501.39	40°02'34.380"N	104°41'19.348"W	1.39	
13430.00	89.940	180.040	7180.04	6190.61	-6184.84	-535.78	1727539.41	14542412.43	40°02'33.501"N	104°41'19.358"W	1.00	
13515.00	90.030	178.780	7180.06	6275.59	-6269.83	-534.91	1727540.59	14542327.47	40°02'32.661"N	104°41'19.347"W	1.49	
13609.00	90.060	178.640	7179.99	6369.53	-6363.81	-532.79	1727543.03	14542233.54	40°02'31.732"N	104°41'19.319"W	0.15	
13699.00	89.910	178.570	7180.01	6459.47	-6453.78	-530.60	1727545.54	14542143.61	40°02'30.843"N	104°41'19.291"W	0.18	
13788.00	89.970	179.030	7180.10	6548.43	-6542.76	-528.73	1727547.71	14542054.67	40°02'29.964"N	104°41'19.267"W	0.52	
13878.00	89.940	180.820	7180.17	6638.42	-6632.76	-528.62	1727548.15	14541964.72	40°02'29.074"N	104°41'19.266"W	1.99	
13967.00	89.910	182.280	7180.29	6727.40	-6721.72	-531.02	1727546.05	14541875.78	40°02'28.195"N	104°41'19.297"W	1.64	
14057.00	90.060	181.420	7180.31	6817.38	-6811.68	-533.93	1727543.47	14541785.85	40°02'27.306"N	104°41'19.334"W	0.97	
14146.00	88.920	179.530	7181.11	6906.37	-6900.66	-534.67	1727543.04	14541696.90	40°02'26.427"N	104°41'19.343"W	2.48	
14236.00	88.680	175.880	7182.99	6996.22	-6990.56	-531.06	1727546.96	14541607.05	40°02'25.539"N	104°41'19.297"W	4.06	
14326.00	88.950	177.900	7184.85	7086.00	-7080.40	-526.18	1727552.15	14541517.26	40°02'24.651"N	104°41'19.234"W	2.26	
14415.00	89.050	180.340	7186.41	7174.95	-7169.37	-524.82	1727553.83	14541428.33	40°02'23.772"N	104°41'19.217"W	2.74	
14505.00	88.710	181.650	7188.17	7264.93	-7259.34	-526.38	1727552.59	14541338.40	40°02'22.882"N	104°41'19.237"W	1.50	
14595.00	88.890	182.360	7190.05	7354.88	-7349.26	-529.53	1727549.76	14541248.50	40°02'21.994"N	104°41'19.277"W	0.81	
14684.00	88.680	179.240	7191.94	7443.85	-7438.22	-530.77	1727548.83	14541159.57	40°02'21.115"N	104°41'19.293"W	3.51	
14774.00	89.660	179.980	7193.24	7533.82	-7528.21	-530.16	1727549.76	14541069.62	40°02'20.225"N	104°41'19.285"W	1.36	
14864.00	89.600	187.680	7193.82	7623.62	-7617.94	-536.16	1727544.07	14540979.90	40°02'19.339"N	104°41'19.362"W	8.56	
14953.00	88.800	187.180	7195.07	7711.99	-7706.18	-547.67	1727532.87	14540891.65	40°02'18.467"N	104°41'19.510"W	1.06	
15043.00	88.580	182.870	7197.13	7801.68	-7795.79	-555.55	1727525.31	14540802.05	40°02'17.581"N	104°41'19.612"W	4.79	
15132.00	88.980	185.530	7199.02	7890.48	-7884.52	-562.07	1727519.11	14540713.33	40°02'16.704"N	104°41'19.695"W	3.02	
15222.00	88.650	185.400	7200.88	7980.15	-7974.09	-570.64	1727510.86	14540623.77	40°02'15.819"N	104°41'19.805"W	0.39	
15311.00	88.890	182.780	7202.79	8068.96	-8062.84	-576.98	1727504.83	14540535.04	40°02'14.942"N	104°41'19.887"W	2.96	
15401.00	88.550	179.760	7204.80	8158.92	-8152.78	-578.98	1727503.15	14540445.12	40°02'14.053"N	104°41'19.913"W	3.38	
15490.00	88.610	177.390	7207.01	8247.83	-8241.72	-576.76	1727505.68	14540356.22	40°02'13.174"N	104°41'19.884"W	2.66	
15579.00	88.460	177.250	7209.28	8336.65	-8330.60	-572.60	1727510.15	14540267.40	40°02'12.296"N	104°41'19.831"W	0.23	
15669.00	88.340	176.400	7211.80	8426.41	-8420.42	-567.62	1727515.44	14540177.63	40°02'11.408"N	104°41'19.767"W	0.95	
15758.00	88.550	177.070	7214.21	8515.17	-8509.24	-562.55	1727520.82	14540088.86	40°02'10.531"N	104°41'19.701"W	0.79	
15848.00	88.550	176.630	7216.49	8604.94	-8599.08	-557.61	1727526.08	14539999.08	40°02'09.643"N	104°41'19.638"W	0.49	
15938.00	88.520	177.300	7218.79	8694.72	-8688.92	-552.85	1727531.16	14539909.29	40°02'08.755"N	104°41'19.576"W	0.74	
16027.00	88.430	178.400	7221.16	8783.58	-8777.83	-549.51	1727534.81	14539820.43	40°02'07.876"N	104°41'19.534"W	1.24	
16116.00	88.400	178.910	7223.62	8872.49	-8866.77	-547.42	1727537.21	14539731.53	40°02'06.997"N	104°41'19.507"W	0.57	
16206.00	88.520	179.140	7226.04	8962.43	-8956.72	-545.89	1727539.05	14539641.62	40°02'06.108"N	104°41'19.487"W	0.29	
16296.00	88.490	178.840	7228.39	9052.36	-9046.68	-544.30	1727540.96	14539551.70	40°02'05.219"N	104°41'19.467"W	0.33	
16385.00	88.650	179.410	7230.61	9141.30	-9135.64	-542.95	1727542.63	14539462.78	40°02'04.340"N	104°41'19.449"W	0.67	
16474.00	88.650	180.300	7232.71	9230.26	-9224.61	-542.72	1727543.16	14539373.84	40°02'03.461"N	104°41'19.446"W	1.00	
16564.00	88.710	181.390	7234.78	9320.24	-9314.58	-544.05	1727542.15	14539283.91	40°02'02.572"N	104°41'19.463"W	1.21	
16653.00	88.460	182.900	7236.98	9409.18	-9403.49	-547.38	1727539.14	14539195.03	40°02'01.693"N	104°41'19.506"W	1.72	
16743.00	88.890	180.760	7239.06	9499.13	-9493.41	-550.25	1727536.58	14539105.13	40°02'00.805"N	104°41'19.543"W	2.42	
16832.00	88.860	180.570	7240.81	9588.11	-9582.39	-551.28	1727535.86	14539016.18	40°01'59.925"N	104°41'19.556"W	0.22	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-10HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (266 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
16922.00	88.770	181.210	7242.67	9678.09	-9672.36	-552.68	1727534.78	14538926.24	40°01'59.036"N	104°41'19.574"W	0.72	
17011.00	88.680	179.020	7244.65	9767.06	-9761.33	-552.86	1727534.92	14538837.31	40°01'58.157"N	104°41'19.576"W	2.46	
17101.00	88.920	179.780	7246.53	9857.02	-9851.31	-551.92	1727536.18	14538747.37	40°01'57.268"N	104°41'19.564"W	0.89	
17190.00	88.770	181.180	7248.33	9946.00	-9940.28	-552.66	1727535.74	14538658.43	40°01'56.389"N	104°41'19.574"W	1.58	
17280.00	88.950	180.750	7250.12	10035.98	-10030.25	-554.18	1727534.54	14538568.49	40°01'55.500"N	104°41'19.593"W	0.52	
17369.00	88.860	183.120	7251.82	10124.93	-10119.18	-557.18	1727531.85	14538479.59	40°01'54.621"N	104°41'19.632"W	2.66	
17458.00	89.480	182.090	7253.11	10213.87	-10208.07	-561.23	1727528.12	14538390.71	40°01'53.742"N	104°41'19.684"W	1.35	
17548.00	90.620	180.370	7253.03	10303.86	-10298.05	-563.16	1727526.51	14538300.77	40°01'52.853"N	104°41'19.709"W	2.29	
17637.00	90.550	183.690	7252.12	10392.82	-10386.98	-566.31	1727523.67	14538211.86	40°01'51.974"N	104°41'19.749"W	3.73	
17727.00	90.430	186.020	7251.35	10482.57	-10476.64	-573.93	1727516.37	14538122.21	40°01'51.088"N	104°41'19.847"W	2.59	
17816.00	90.680	186.450	7250.49	10571.14	-10565.11	-583.59	1727507.02	14538033.74	40°01'50.214"N	104°41'19.971"W	0.56	
17905.00	90.650	186.050	7249.46	10659.71	-10653.58	-593.28	1727497.65	14537945.27	40°01'49.340"N	104°41'20.096"W	0.45	
17994.00	90.680	186.890	7248.42	10748.25	-10742.00	-603.31	1727487.94	14537856.85	40°01'48.466"N	104°41'20.225"W	0.94	
18084.00	90.580	182.660	7247.43	10837.99	-10831.67	-610.80	1727480.76	14537767.20	40°01'47.580"N	104°41'20.321"W	4.70	
18173.00	90.180	180.030	7246.84	10926.98	-10920.63	-612.89	1727478.99	14537678.26	40°01'46.701"N	104°41'20.348"W	2.99	
18263.00	90.090	179.100	7246.63	11016.96	-11010.63	-612.20	1727479.99	14537588.30	40°01'45.811"N	104°41'20.339"W	1.04	
18351.00	90.340	178.740	7246.30	11104.92	-11098.61	-610.55	1727481.96	14537500.36	40°01'44.942"N	104°41'20.317"W	0.50	
18442.00	90.250	178.540	7245.83	11195.86	-11189.58	-608.39	1727484.44	14537409.43	40°01'44.043"N	104°41'20.290"W	0.24	
18532.00	90.310	183.040	7245.39	11285.83	-11279.55	-609.63	1727483.51	14537319.49	40°01'43.154"N	104°41'20.306"W	5.00	
18621.00	91.080	187.360	7244.31	11374.53	-11368.16	-617.69	1727475.76	14537230.89	40°01'42.278"N	104°41'20.409"W	4.93	
18711.00	90.770	187.400	7242.86	11463.90	-11457.40	-629.25	1727464.52	14537141.65	40°01'41.396"N	104°41'20.558"W	0.35	
18801.00	90.740	182.590	7241.67	11553.61	-11547.02	-637.08	1727457.01	14537052.03	40°01'40.510"N	104°41'20.658"W	5.34	
18890.00	90.830	180.550	7240.45	11642.58	-11635.98	-639.52	1727454.88	14536963.10	40°01'39.631"N	104°41'20.690"W	2.29	
18980.00	90.920	179.700	7239.08	11732.57	-11725.97	-639.72	1727455.00	14536873.15	40°01'38.742"N	104°41'20.692"W	0.95	
19070.00	91.110	178.400	7237.48	11822.51	-11815.94	-638.22	1727456.81	14536783.22	40°01'37.853"N	104°41'20.673"W	1.46	
19159.00	89.780	179.030	7236.79	11911.46	-11904.91	-636.23	1727459.12	14536694.29	40°01'36.974"N	104°41'20.647"W	1.65	
19189.00†	89.915	179.408	7236.87	11941.45	-11934.91	-635.82	1727459.63	14536664.31	40°01'36.677"N	104°41'20.642"W	1.34	ENTER RADIUS TOE (1012'FNL & 2312'FWL, SEC.29) 40.0268548 -104.6890672
19248.00	90.180	180.150	7236.82	12000.44	-11993.91	-635.59	1727460.07	14536605.33	40°01'36.094"N	104°41'20.639"W	1.34	
19338.00	90.030	179.770	7236.66	12090.43	-12083.91	-635.53	1727460.45	14536515.37	40°01'35.205"N	104°41'20.638"W	0.45	
19427.00	89.820	177.640	7236.78	12179.38	-12172.88	-633.52	1727462.77	14536426.44	40°01'34.326"N	104°41'20.612"W	2.40	
19517.00	89.970	174.790	7236.94	12269.10	-12262.67	-627.58	1727469.03	14536336.70	40°01'33.438"N	104°41'20.536"W	3.17	
19607.00	89.850	173.760	7237.08	12358.54	-12352.22	-618.60	1727478.31	14536247.22	40°01'32.553"N	104°41'20.421"W	1.15	
19696.00	90.030	174.010	7237.17	12446.91	-12440.72	-609.12	1727488.10	14536158.80	40°01'31.679"N	104°41'20.299"W	0.35	
19786.00	89.600	174.650	7237.47	12536.36	-12530.27	-600.23	1727497.31	14536069.30	40°01'30.794"N	104°41'20.184"W	0.86	
19876.00	89.630	175.480	7238.07	12625.93	-12619.94	-592.49	1727505.36	14535979.70	40°01'29.908"N	104°41'20.085"W	0.92	
19966.00	90.030	175.680	7238.34	12715.58	-12709.67	-585.55	1727512.61	14535890.03	40°01'29.021"N	104°41'19.996"W	0.50	
20055.00	90.280	177.440	7238.10	12804.35	-12798.50	-580.21	1727518.26	14535801.25	40°01'28.143"N	104°41'19.927"W	2.00	
20145.00	90.000	180.700	7237.88	12894.30	-12888.48	-578.75	1727520.04	14535711.32	40°01'27.254"N	104°41'19.908"W	3.64	
20234.00	89.880	183.810	7237.97	12983.25	-12977.40	-582.25	1727516.85	14535622.42	40°01'26.375"N	104°41'19.953"W	3.50	
20336.00	89.910	188.200	7238.16	13084.79	-13078.82	-592.92	1727506.54	14535521.01	40°01'25.373"N	104°41'20.090"W	4.30	LAST BHGE MWD+IFR1+MSA SURVEY
20360.00	89.910	188.200	7238.19	13108.58	-13102.57	-596.34	1727503.20	14535497.25	40°01'25.138"N	104°41'20.134"W	0.00	PTB (2180'FNL & 2354'FWL, SEC.29) 40.0236495 -104.6889262

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-10HZ AWB
Facility	SEC.08-T1N-R65W		

HOLE & CASING SECTIONS - Ref Wellbore: ENGLISH FARMS 8-10HZ AWB Ref Wellpath: ENGLISH FARMS 8-10HZ 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	1886.00	1860.00	26.00	1845.39	0.00	0.00	137.76	-268.33

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	207.07	-2530.22	1725523.29	14548794.77	40°03'36.666"N	104°41'45.010"W	polygon
SEC.20-T1N-R65W	-34.00	207.07	-2530.22	1725523.29	14548794.77	40°03'36.666"N	104°41'45.010"W	polygon
ENGLISH FARMS 8-10HZ HEEL REV-1(50'FNL & 2399'FWL,SEC.17)	7165.00	-364.27	-469.17	1727585.53	14548230.91	40°03'31.021"N	104°41'18.503"W	point
ENGLISH FARMS 8-10HZ INT. TARGET@7000"VS	7165.00	-6994.17	-545.66	1727532.38	14541603.39	40°02'25.503"N	104°41'19.485"W	point
ENGLISH FARMS 8-10HZ BHL REV-1(2183'FNL & 2334'FWL,SEC.29)	7233.00	-13105.65	-616.18	1727483.38	14535494.10	40°01'25.108"N	104°41'20.389"W	point
ENGLISH FARMS 8-10HZ INT. TARGET@10000"VS	7233.00	-9993.97	-580.27	1727508.34	14538604.66	40°01'55.858"N	104°41'19.929"W	point
ENGLISH FARMS 8-10HZ LANDBOX	7233.00	0.00	0.00	1728053.23	14548596.68	40°03'34.621"N	104°41'12.469"W	polygon
ENGLISH FARMS 8-10HZ RADIUS 1	7233.00	-314.35	-271.84	1727782.60	14548281.50	40°03'31.514"N	104°41'15.965"W	polygon
ENGLISH FARMS 8-10HZ RADIUS 2	7233.00	-12249.41	-303.73	1727792.70	14536351.10	40°01'33.569"N	104°41'16.373"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: ENGLISH FARMS 8-10HZ AWB Ref Wellpath: ENGLISH FARMS 8-10HZ AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
26.00	1846.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	Custom APC ISCWSA Rev-2 MWD+IFR1 <134 - 1846>	ENGLISH FARMS 8-10HZ AWB
1846.00	20336.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1970 - 20336>	ENGLISH FARMS 8-10HZ AWB
20336.00	20360.00	Blind Drilling (std)	Projection to bit	ENGLISH FARMS 8-10HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 ENGLISH FARMS 8-10HZ (315'FSL & 2326'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-10HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-10HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
134.00	0.310	75.200	134.00	FIRST SURFACE MWD+IFR1 SURVEY
1846.00	18.980	296.240	1807.53	LAST SURFACE MWD+IFR1 SURVEY
1970.00	18.550	282.230	1925.00	FIRST BHGE MWD+IFR1+MSA SURVEY
6599.00	1.735	173.666	6526.34	KOP
7635.00	87.323	179.012	7173.75	LANDING (79'FNL & 2413'FWL,SEC.17) 40.0585350 -104.6884216
7976.00	89.855	181.857	7181.26	EXIT RADIUS HEEL (420'FNL & 2408'FWL,SEC.17) 40.0575995 -104.6884374
19189.00	89.915	179.408	7236.87	ENTER RADIUS TOE (1012'FNL & 2312'FWL,SEC.29) 40.0268548 -104.6890672
20336.00	89.910	188.200	7238.16	LAST BHGE MWD+IFR1+MSA SURVEY
20360.00	89.910	188.200	7238.19	PTB (2180'FNL & 2354'FWL,SEC.29) 40.0236495 -104.6889262