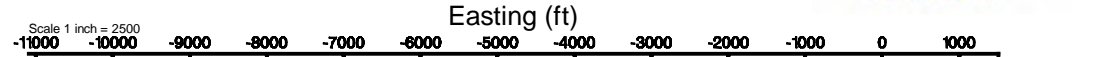


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#38 ENGLISH FARMS 8-12HZ (292'FSL & 2306'FEL, SEC.08)
Field: WELD COUNTY (UTM/TRUE NORTH) Well: ENGLISH FARMS 8-12HZ
Facility: SEC.08-T1N-R65W Wellbore: ENGLISH FARMS 8-12HZ PWB

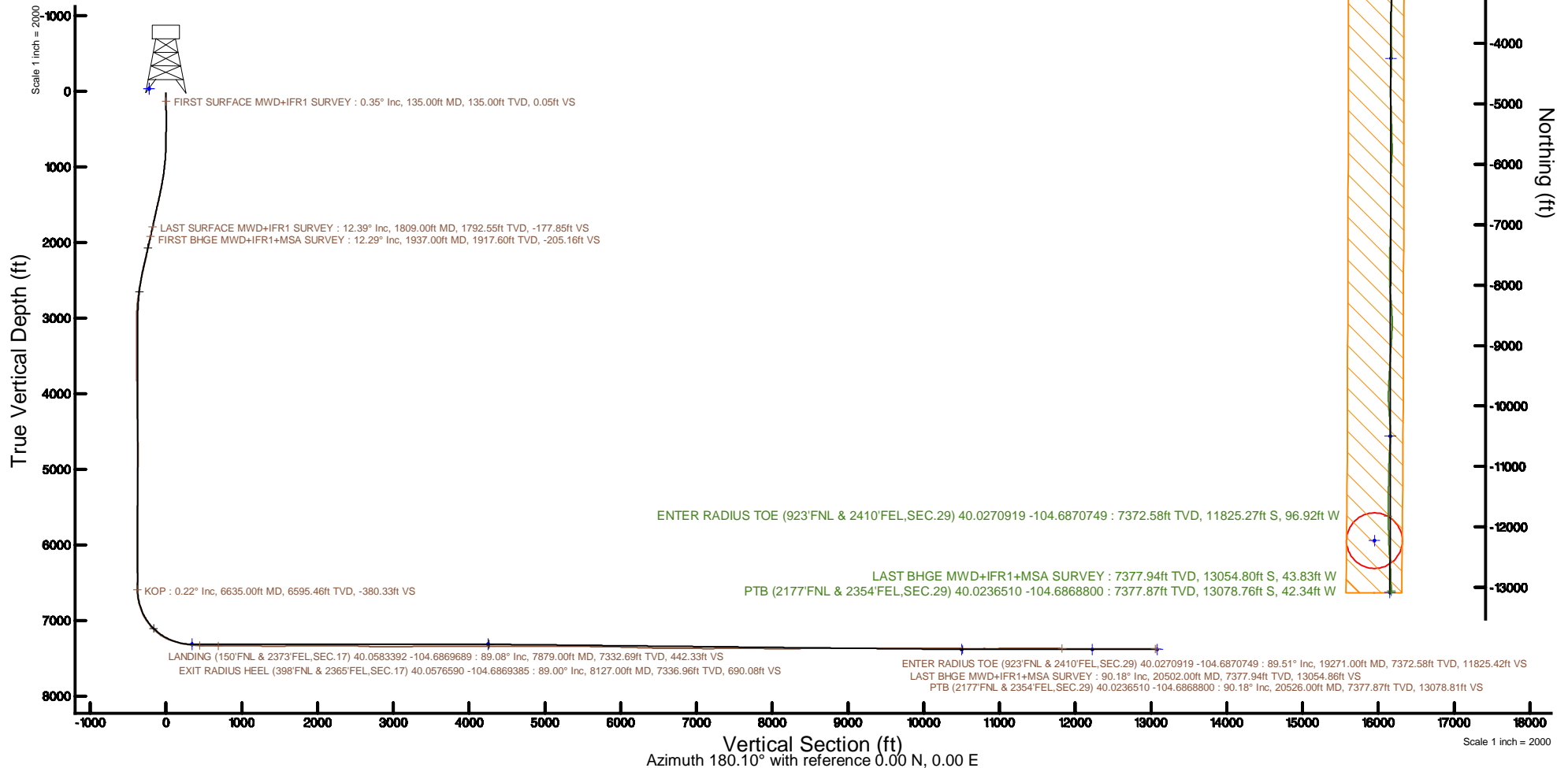
Plot reference wellpath is ENGLISH FARMS 8-12HZ PWP Rev A.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to PD 564 (26) (RT)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to PD 564 (26) (RT)	North Reference: True north
PD 564 (26) (RT) to Mean Sea Level: 4971 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#38 ENGLISH FARMS 8-12HZ (292'FSL & 2306'FEL, SEC.08)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painet on 2018-06-27
	Database: WA_DEN_Anadarko_Defn



SLOT#38 ENGLISH FARMS 8-12HZ (292'FSL & 2306'FEL, SEC.08)

KOP : 6595.46ft TVD, 380.37ft N, 23.48ft W
FIRST BHGE MWD+IFR1+MSA SURVEY : 1917.60ft TVD, 205.15ft N, 4.68ft E
LAST SURFACE MWD+IFR1 SURVEY : 1792.55ft TVD, 177.85ft N, 2.98ft E
FIRST SURFACE MWD+IFR1 SURVEY : 135.00ft TVD, 0.05ft S, 0.33ft E

LANDING (150'FNL & 2373'FEL,SEC.17) 40.0583392 -104.6869689 : 7332.69ft TVD, 442.21ft S, 67.18ft W
EXIT RADIUS HEEL (398'FNL & 2365'FEL,SEC.17) 40.0576590 -104.6869385 : 7336.96ft TVD, 689.97ft S, 58.67ft W



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#38 ENGLISH FARMS 8-12HZ (292'FSL & 2306'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-12HZ AWB
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	6/27/2018 at 12:11 PM
Convergence at slot	0.21° East	Database/Source file	WA_DEN_Anadarko_Defn/ENGLISH_FARMS_8-12HZ_AWP.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-4261.03	-1665.21	1728072.35	14548573.49	40°03'34.391"N	104°41'12.224"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#38 ENGLISH FARMS 8-12HZ (292'FSL & 2306'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	180.10°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#38 ENGLISH FARMS 8-12HZ (292'FSL & 2306'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-12HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (267 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	98.050	0.00	0.00	0.00	0.00	1728072.35	14548573.49	40°03'34.391"N	104°41'12.224"W	0.00	
26.00	0.000	98.050	26.00	0.00	0.00	0.00	1728072.35	14548573.49	40°03'34.391"N	104°41'12.224"W	0.00	
135.00	0.350	98.050	135.00	0.05	-0.05	0.33	1728072.68	14548573.44	40°03'34.391"N	104°41'12.220"W	0.32	FIRST SURFACE MWD+IFR1 SURVEY
167.00	0.310	80.910	167.00	0.05	-0.05	0.51	1728072.86	14548573.44	40°03'34.391"N	104°41'12.217"W	0.33	
199.00	0.220	98.050	199.00	0.04	-0.04	0.66	1728073.01	14548573.45	40°03'34.391"N	104°41'12.216"W	0.37	
231.00	0.440	84.780	231.00	0.04	-0.04	0.84	1728073.19	14548573.45	40°03'34.391"N	104°41'12.213"W	0.72	
262.00	0.530	115.540	262.00	0.09	-0.09	1.09	1728073.44	14548573.40	40°03'34.390"N	104°41'12.210"W	0.88	
294.00	0.530	101.390	294.00	0.18	-0.18	1.37	1728073.72	14548573.31	40°03'34.389"N	104°41'12.206"W	0.41	
325.00	0.660	131.100	324.99	0.33	-0.33	1.64	1728074.00	14548573.16	40°03'34.388"N	104°41'12.203"W	1.06	
357.00	0.440	118.530	356.99	0.51	-0.51	1.89	1728074.24	14548572.98	40°03'34.386"N	104°41'12.200"W	0.78	
389.00	0.750	138.740	388.99	0.72	-0.72	2.14	1728074.49	14548572.77	40°03'34.384"N	104°41'12.197"W	1.16	
421.00	0.260	144.900	420.99	0.94	-0.94	2.32	1728074.67	14548572.55	40°03'34.382"N	104°41'12.194"W	1.54	
452.00	0.400	356.620	451.99	0.89	-0.89	2.35	1728074.70	14548572.60	40°03'34.382"N	104°41'12.194"W	2.05	
484.00	0.790	337.200	483.99	0.57	-0.58	2.26	1728074.61	14548572.92	40°03'34.385"N	104°41'12.195"W	1.36	
515.00	0.700	337.900	514.98	0.20	-0.20	2.10	1728074.46	14548573.29	40°03'34.389"N	104°41'12.197"W	0.29	
547.00	0.750	348.630	546.98	-0.19	0.18	1.99	1728074.34	14548573.68	40°03'34.393"N	104°41'12.198"W	0.45	
579.00	1.050	340.190	578.98	-0.67	0.66	1.85	1728074.20	14548574.16	40°03'34.398"N	104°41'12.200"W	1.02	
610.00	1.140	344.500	609.97	-1.23	1.23	1.67	1728074.02	14548574.72	40°03'34.403"N	104°41'12.203"W	0.39	
642.00	1.140	332.720	641.97	-1.82	1.82	1.44	1728073.78	14548575.31	40°03'34.409"N	104°41'12.205"W	0.73	
674.00	1.270	343.440	673.96	-2.44	2.44	1.19	1728073.53	14548575.93	40°03'34.415"N	104°41'12.209"W	0.81	
706.00	1.670	341.860	705.95	-3.23	3.22	0.95	1728073.29	14548576.71	40°03'34.423"N	104°41'12.212"W	1.26	
737.00	1.850	341.240	736.93	-4.13	4.13	0.64	1728072.98	14548577.61	40°03'34.432"N	104°41'12.216"W	0.58	
769.00	1.930	337.200	768.92	-5.11	5.11	0.27	1728072.60	14548578.60	40°03'34.442"N	104°41'12.221"W	0.49	
801.00	2.640	343.700	800.89	-6.32	6.32	-0.15	1728072.18	14548579.80	40°03'34.453"N	104°41'12.226"W	2.36	
833.00	3.380	343.260	832.85	-7.93	7.93	-0.63	1728071.70	14548581.41	40°03'34.469"N	104°41'12.232"W	2.31	
864.00	3.960	345.900	863.78	-9.84	9.84	-1.15	1728071.17	14548583.32	40°03'34.488"N	104°41'12.239"W	1.95	
896.00	4.570	350.540	895.69	-12.17	12.17	-1.63	1728070.68	14548585.65	40°03'34.511"N	104°41'12.245"W	2.19	
928.00	5.230	356.450	927.58	-14.88	14.88	-1.93	1728070.37	14548588.36	40°03'34.538"N	104°41'12.249"W	2.59	
959.00	5.540	0.930	958.44	-17.79	17.79	-1.99	1728070.30	14548591.26	40°03'34.567"N	104°41'12.250"W	1.68	
990.00	6.020	0.580	989.28	-20.91	20.91	-1.95	1728070.33	14548594.38	40°03'34.598"N	104°41'12.249"W	1.55	
1022.00	7.210	1.550	1021.07	-24.59	24.60	-1.88	1728070.39	14548598.07	40°03'34.634"N	104°41'12.248"W	3.73	
1054.00	7.690	1.550	1052.80	-28.74	28.74	-1.77	1728070.48	14548602.21	40°03'34.675"N	104°41'12.247"W	1.50	
1086.00	7.690	2.160	1084.51	-33.02	33.02	-1.63	1728070.61	14548606.49	40°03'34.717"N	104°41'12.245"W	0.26	
1118.00	8.220	0.580	1116.20	-37.45	37.45	-1.52	1728070.70	14548610.92	40°03'34.761"N	104°41'12.244"W	1.79	
1149.00	9.180	0.930	1146.85	-42.14	42.14	-1.46	1728070.74	14548615.60	40°03'34.807"N	104°41'12.243"W	3.10	
1181.00	9.620	2.600	1178.42	-47.36	47.36	-1.30	1728070.89	14548620.83	40°03'34.859"N	104°41'12.241"W	1.62	
1213.00	9.760	3.130	1209.96	-52.74	52.74	-1.03	1728071.14	14548626.20	40°03'34.912"N	104°41'12.237"W	0.52	
1244.00	10.500	1.990	1240.48	-58.19	58.19	-0.79	1728071.36	14548631.65	40°03'34.966"N	104°41'12.234"W	2.47	
1276.00	11.560	2.510	1271.89	-64.31	64.31	-0.55	1728071.58	14548637.76	40°03'35.026"N	104°41'12.231"W	3.33	
1308.00	11.470	357.240	1303.24	-70.69	70.69	-0.56	1728071.54	14548644.14	40°03'35.090"N	104°41'12.231"W	3.30	
1339.00	11.030	353.110	1333.65	-76.71	76.71	-1.06	1728071.02	14548650.16	40°03'35.149"N	104°41'12.238"W	2.96	
1371.00	11.470	354.080	1365.03	-82.91	82.91	-1.76	1728070.30	14548656.36	40°03'35.210"N	104°41'12.247"W	1.50	
1402.00	12.130	358.730	1395.38	-89.23	89.24	-2.15	1728069.89	14548662.68	40°03'35.273"N	104°41'12.252"W	3.73	
1434.00	12.440	359.610	1426.64	-96.04	96.04	-2.25	1728069.77	14548669.48	40°03'35.340"N	104°41'12.253"W	1.13	
1465.00	12.610	359.350	1456.91	-102.76	102.77	-2.31	1728069.68	14548676.20	40°03'35.407"N	104°41'12.254"W	0.58	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#38 ENGLISH FARMS 8-12HZ (292'FSL & 2306'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-12HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (267 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
1497.00	12.920	359.350	1488.12	-109.83	109.84	-2.39	1728069.58	14548683.27	40°03'35.476"N	104°41'12.255"W	0.97	
1529.00	13.010	0.580	1519.30	-117.01	117.02	-2.39	1728069.55	14548690.45	40°03'35.547"N	104°41'12.255"W	0.91	
1560.00	12.700	4.620	1549.52	-123.90	123.90	-2.08	1728069.83	14548697.33	40°03'35.615"N	104°41'12.251"W	3.07	
1592.00	12.480	6.470	1580.75	-130.84	130.84	-1.41	1728070.48	14548704.27	40°03'35.684"N	104°41'12.242"W	1.44	
1624.00	12.790	6.910	1611.98	-137.79	137.80	-0.59	1728071.27	14548711.22	40°03'35.753"N	104°41'12.232"W	1.01	
1656.00	12.960	5.940	1643.17	-144.88	144.88	0.20	1728072.05	14548718.31	40°03'35.823"N	104°41'12.221"W	0.86	
1687.00	12.260	4.890	1673.43	-151.62	151.62	0.84	1728072.66	14548725.05	40°03'35.889"N	104°41'12.213"W	2.38	
1719.00	12.440	4.890	1704.69	-158.44	158.44	1.43	1728073.22	14548731.87	40°03'35.957"N	104°41'12.206"W	0.56	
1750.00	12.700	5.060	1734.94	-165.16	165.16	2.01	1728073.78	14548738.59	40°03'36.023"N	104°41'12.198"W	0.85	
1782.00	12.350	4.090	1766.18	-172.08	172.08	2.57	1728074.31	14548745.50	40°03'36.091"N	104°41'12.191"W	1.28	
1809.00	12.390	4.010	1792.55	-177.85	177.85	2.98	1728074.70	14548751.27	40°03'36.149"N	104°41'12.186"W	0.16	LAST SURFACE MWD+IFR1 SURVEY
1937.00	12.290	3.140	1917.60	-205.16	205.15	4.68	1728076.31	14548778.57	40°03'36.418"N	104°41'12.164"W	0.16	FIRST BHGE MWD+IFR1+MSA SURVEY
2026.00	11.910	2.570	2004.62	-223.79	223.78	5.61	1728077.18	14548797.20	40°03'36.602"N	104°41'12.152"W	0.45	
2116.00	12.290	356.970	2092.62	-242.63	242.62	5.52	1728077.02	14548816.03	40°03'36.789"N	104°41'12.153"W	1.37	
2205.00	11.940	356.160	2179.64	-261.28	261.27	4.41	1728075.84	14548834.66	40°03'36.973"N	104°41'12.167"W	0.44	
2295.00	13.390	350.650	2267.45	-280.84	280.84	2.09	1728073.45	14548854.22	40°03'37.166"N	104°41'12.197"W	2.10	
2385.00	13.530	342.850	2354.99	-301.18	301.19	-2.71	1728068.58	14548874.54	40°03'37.367"N	104°41'12.259"W	2.02	
2474.00	12.900	340.080	2441.63	-320.46	320.47	-9.16	1728062.06	14548893.80	40°03'37.558"N	104°41'12.342"W	1.00	
2564.00	12.400	338.740	2529.45	-338.89	338.92	-16.09	1728055.08	14548912.22	40°03'37.740"N	104°41'12.431"W	0.64	
2654.00	10.620	330.960	2617.64	-355.14	355.18	-23.62	1728047.49	14548928.44	40°03'37.901"N	104°41'12.528"W	2.62	
2743.00	8.650	332.110	2705.38	-368.21	368.27	-30.73	1728040.33	14548941.50	40°03'38.030"N	104°41'12.619"W	2.22	
2833.00	6.260	328.820	2794.61	-378.38	378.45	-36.44	1728034.59	14548951.66	40°03'38.131"N	104°41'12.693"W	2.70	
2922.00	3.950	328.460	2883.25	-385.14	385.22	-40.56	1728030.46	14548958.41	40°03'38.198"N	104°41'12.746"W	2.60	
3012.00	1.930	326.950	2973.13	-389.05	389.13	-43.01	1728027.99	14548962.31	40°03'38.236"N	104°41'12.777"W	2.25	
3101.00	0.400	30.420	3062.11	-390.57	390.65	-43.67	1728027.33	14548963.83	40°03'38.252"N	104°41'12.786"W	2.01	
3191.00	0.330	31.050	3152.11	-391.07	391.15	-43.37	1728027.62	14548964.32	40°03'38.256"N	104°41'12.782"W	0.08	
3281.00	0.220	311.890	3242.11	-391.40	391.48	-43.37	1728027.62	14548964.66	40°03'38.260"N	104°41'12.782"W	0.40	
3370.00	0.220	311.920	3331.11	-391.63	391.71	-43.62	1728027.37	14548964.89	40°03'38.262"N	104°41'12.785"W	0.00	
3460.00	0.460	316.950	3421.11	-392.01	392.09	-44.00	1728026.99	14548965.27	40°03'38.266"N	104°41'12.790"W	0.27	
3549.00	1.420	151.550	3510.10	-391.30	391.38	-43.72	1728027.28	14548964.56	40°03'38.259"N	104°41'12.786"W	2.10	
3639.00	1.340	138.800	3600.07	-389.53	389.61	-42.49	1728028.51	14548962.79	40°03'38.241"N	104°41'12.770"W	0.35	
3728.00	1.410	121.930	3689.05	-388.17	388.25	-40.88	1728030.13	14548961.43	40°03'38.228"N	104°41'12.750"W	0.46	
3818.00	1.550	124.130	3779.02	-386.91	386.98	-38.93	1728032.08	14548960.17	40°03'38.215"N	104°41'12.725"W	0.17	
3907.00	1.300	184.520	3867.99	-385.23	385.30	-38.01	1728033.00	14548958.50	40°03'38.199"N	104°41'12.713"W	1.63	
3997.00	1.250	175.270	3957.97	-383.23	383.30	-38.01	1728033.01	14548956.50	40°03'38.179"N	104°41'12.713"W	0.24	
4086.00	0.510	235.150	4046.96	-382.04	382.11	-38.26	1728032.77	14548955.31	40°03'38.167"N	104°41'12.716"W	1.22	
4176.00	0.660	231.450	4136.96	-381.48	381.56	-38.99	1728032.03	14548954.75	40°03'38.162"N	104°41'12.725"W	0.17	
4265.00	0.840	231.070	4225.95	-380.75	380.83	-39.90	1728031.13	14548954.02	40°03'38.154"N	104°41'12.737"W	0.20	
4355.00	1.260	221.130	4315.93	-379.59	379.67	-41.06	1728029.97	14548952.86	40°03'38.143"N	104°41'12.752"W	0.51	
4444.00	1.570	216.070	4404.91	-377.87	377.94	-42.42	1728028.61	14548951.13	40°03'38.126"N	104°41'12.770"W	0.38	
4534.00	1.730	212.120	4494.87	-375.72	375.80	-43.87	1728027.17	14548948.98	40°03'38.105"N	104°41'12.788"W	0.22	
4623.00	1.260	215.030	4583.84	-373.77	373.86	-45.15	1728025.91	14548947.04	40°03'38.086"N	104°41'12.805"W	0.53	
4713.00	1.550	208.180	4673.81	-371.89	371.97	-46.29	1728024.77	14548945.15	40°03'38.067"N	104°41'12.819"W	0.37	
4802.00	0.340	355.310	4762.80	-371.09	371.18	-46.88	1728024.18	14548944.35	40°03'38.059"N	104°41'12.827"W	2.07	
4892.00	0.330	4.800	4852.80	-371.61	371.70	-46.88	1728024.18	14548944.87	40°03'38.064"N	104°41'12.827"W	0.06	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#38 ENGLISH FARMS 8-12HZ (292'FSL & 2306'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-12HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (267 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
4982.00	0.560	5.660	4942.80	-372.31	372.40	-46.82	1728024.24	14548945.57	40°03'38.071"N	104°41'12.826"W	0.26	
5071.00	0.740	38.440	5031.79	-373.19	373.28	-46.42	1728024.64	14548946.45	40°03'38.080"N	104°41'12.821"W	0.46	
5161.00	0.900	44.700	5121.78	-374.15	374.24	-45.56	1728025.50	14548947.41	40°03'38.089"N	104°41'12.810"W	0.20	
5250.00	1.140	45.450	5210.77	-375.27	375.36	-44.44	1728026.61	14548948.53	40°03'38.100"N	104°41'12.795"W	0.27	
5340.00	1.160	30.620	5300.75	-376.69	376.77	-43.33	1728027.71	14548949.95	40°03'38.114"N	104°41'12.781"W	0.33	
5430.00	0.920	36.590	5390.74	-378.05	378.13	-42.44	1728028.60	14548951.32	40°03'38.128"N	104°41'12.770"W	0.29	
5519.00	0.890	22.410	5479.73	-379.27	379.34	-41.75	1728029.28	14548952.53	40°03'38.140"N	104°41'12.761"W	0.25	
5609.00	0.680	40.550	5569.72	-380.32	380.40	-41.14	1728029.89	14548953.59	40°03'38.150"N	104°41'12.753"W	0.36	
5698.00	0.460	20.280	5658.71	-381.06	381.13	-40.67	1728030.36	14548954.32	40°03'38.157"N	104°41'12.747"W	0.33	
5787.00	0.430	38.810	5747.71	-381.65	381.73	-40.34	1728030.69	14548954.92	40°03'38.163"N	104°41'12.743"W	0.16	
5876.00	0.630	85.910	5836.71	-381.95	382.02	-39.64	1728031.39	14548955.22	40°03'38.166"N	104°41'12.734"W	0.52	
5966.00	0.910	76.620	5926.70	-382.15	382.22	-38.45	1728032.57	14548955.42	40°03'38.168"N	104°41'12.719"W	0.34	
6056.00	1.280	82.620	6016.68	-382.45	382.52	-36.76	1728034.26	14548955.72	40°03'38.171"N	104°41'12.697"W	0.43	
6145.00	1.320	90.150	6105.66	-382.58	382.64	-34.75	1728036.27	14548955.85	40°03'38.172"N	104°41'12.671"W	0.20	
6235.00	1.760	115.650	6195.63	-381.98	382.04	-32.46	1728038.56	14548955.26	40°03'38.166"N	104°41'12.642"W	0.89	
6324.00	2.580	115.420	6284.56	-380.54	380.59	-29.42	1728041.60	14548953.82	40°03'38.152"N	104°41'12.602"W	0.92	
6414.00	2.000	103.250	6374.49	-379.31	379.36	-26.06	1728044.96	14548952.60	40°03'38.140"N	104°41'12.559"W	0.84	
6503.00	0.780	70.870	6463.47	-379.16	379.20	-23.98	1728047.05	14548952.45	40°03'38.138"N	104°41'12.532"W	1.58	
6626.00	0.810	343.150	6586.46	-380.27	380.31	-23.44	1728047.58	14548953.56	40°03'38.149"N	104°41'12.525"W	0.90	
6635.00†	0.221	269.516	6595.46	-380.33	380.37	-23.48	1728047.55	14548953.62	40°03'38.150"N	104°41'12.526"W	8.64	KOP
6715.00	6.910	180.810	6675.26	-375.51	375.55	-23.70	1728047.34	14548948.80	40°03'38.102"N	104°41'12.529"W	8.64	
6805.00	12.930	189.900	6763.88	-360.16	360.20	-25.51	1728045.59	14548933.46	40°03'37.951"N	104°41'12.552"W	6.89	
6894.00	19.680	201.780	6849.28	-336.38	336.45	-32.79	1728038.39	14548909.68	40°03'37.716"N	104°41'12.646"W	8.42	
6984.00	28.170	200.880	6931.47	-302.38	302.46	-46.01	1728025.30	14548875.66	40°03'37.380"N	104°41'12.816"W	9.44	
7073.00	34.870	189.670	7007.36	-257.56	257.66	-57.80	1728013.67	14548830.84	40°03'36.937"N	104°41'12.967"W	9.97	
7163.00	40.750	174.710	7078.58	-202.78	202.89	-59.41	1728012.25	14548776.08	40°03'36.396"N	104°41'12.988"W	12.07	
7252.00	48.500	173.610	7141.88	-140.65	140.75	-53.02	1728018.86	14548713.99	40°03'35.782"N	104°41'12.906"W	8.75	
7342.00	55.360	179.350	7197.37	-70.02	70.11	-48.84	1728023.29	14548643.40	40°03'35.084"N	104°41'12.852"W	9.12	
7431.00	64.370	181.570	7242.01	6.86	-6.77	-49.52	1728022.87	14548566.54	40°03'34.324"N	104°41'12.861"W	10.35	
7521.00	73.490	183.130	7274.33	90.69	-90.59	-53.00	1728019.69	14548482.75	40°03'33.496"N	104°41'12.906"W	10.26	
7610.00	76.040	183.040	7297.72	176.43	-176.33	-57.62	1728015.38	14548397.02	40°03'32.648"N	104°41'12.965"W	2.87	
7700.00	79.880	182.640	7316.49	264.34	-264.23	-61.98	1728011.33	14548309.15	40°03'31.780"N	104°41'13.021"W	4.29	
7789.00	85.100	181.960	7328.12	352.48	-352.36	-65.51	1728008.10	14548221.04	40°03'30.909"N	104°41'13.067"W	5.91	
7879.00	89.080	180.170	7332.69	442.33	-442.21	-67.18	1728006.75	14548131.22	40°03'30.021"N	104°41'13.088"W	4.85	LANDING (150'FNL & 2373'FEL, SEC.17) 40.0583392 -104.6869689
7968.00	88.950	178.580	7334.22	531.31	-531.19	-66.21	1728008.04	14548042.28	40°03'29.142"N	104°41'13.076"W	1.79	
8058.00	89.050	176.930	7335.79	621.21	-621.10	-62.69	1728011.88	14547952.41	40°03'28.253"N	104°41'13.030"W	1.84	
8127.00†	88.996	176.403	7336.96	690.08	-689.97	-58.67	1728016.13	14547883.58	40°03'27.573"N	104°41'12.979"W	0.77	EXIT RADIUS HEEL (398'FNL & 2365'FEL, SEC.17) 40.0576590 -104.6869385
8147.00	88.980	176.250	7337.32	710.03	-709.93	-57.39	1728017.48	14547863.64	40°03'27.375"N	104°41'12.962"W	0.77	
8237.00	90.220	176.820	7337.94	799.85	-799.76	-51.95	1728023.23	14547773.86	40°03'26.488"N	104°41'12.892"W	1.52	
8326.00	90.150	177.070	7337.66	888.72	-888.63	-47.21	1728028.29	14547685.04	40°03'25.609"N	104°41'12.831"W	0.29	
8416.00	90.250	177.400	7337.34	978.60	-978.53	-42.87	1728032.94	14547595.20	40°03'24.721"N	104°41'12.775"W	0.38	
8506.00	89.600	177.550	7337.46	1068.51	-1068.44	-38.90	1728037.22	14547505.34	40°03'23.832"N	104°41'12.724"W	0.74	
8595.00	89.510	178.240	7338.15	1157.44	-1157.38	-35.64	1728040.80	14547416.45	40°03'22.954"N	104°41'12.682"W	0.78	
8685.00	89.420	178.770	7338.99	1247.40	-1247.34	-33.29	1728043.47	14547326.53	40°03'22.065"N	104°41'12.652"W	0.60	
8774.00	89.880	180.150	7339.54	1336.39	-1336.33	-32.45	1728044.62	14547237.57	40°03'21.185"N	104°41'12.641"W	1.63	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#38 ENGLISH FARMS 8-12HZ (292°FSL & 2306°FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-12HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (267 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	89.880	181.140	7339.72	1426.38	-1426.33	-33.46	1728043.92	14547147.61	40°03'20.296"N	104°41'12.654"W	1.10	
8953.00	90.460	182.830	7339.46	1515.33	-1515.27	-36.54	1728041.15	14547058.69	40°03'19.417"N	104°41'12.694"W	2.01	
9043.00	90.000	182.160	7339.10	1605.25	-1605.18	-40.46	1728037.55	14546968.80	40°03'18.528"N	104°41'12.744"W	0.90	
9132.00	90.060	181.330	7339.05	1694.22	-1694.14	-43.17	1728035.16	14546879.87	40°03'17.649"N	104°41'12.779"W	0.94	
9222.00	89.970	179.250	7339.03	1784.21	-1784.13	-43.63	1728035.02	14546789.91	40°03'16.760"N	104°41'12.785"W	2.31	
9311.00	90.120	177.810	7338.96	1873.17	-1873.10	-41.34	1728037.61	14546700.99	40°03'15.881"N	104°41'12.756"W	1.63	
9401.00	90.090	177.480	7338.79	1963.09	-1963.03	-37.65	1728041.63	14546611.11	40°03'14.992"N	104°41'12.708"W	0.37	
9490.00	89.970	178.250	7338.75	2052.02	-2051.96	-34.33	1728045.25	14546522.22	40°03'14.113"N	104°41'12.665"W	0.88	
9580.00	90.090	178.730	7338.70	2141.99	-2141.93	-31.96	1728047.94	14546432.30	40°03'13.224"N	104°41'12.635"W	0.55	
9669.00	89.970	178.890	7338.65	2230.96	-2230.91	-30.11	1728050.10	14546343.36	40°03'12.345"N	104°41'12.611"W	0.22	
9758.00	89.940	180.020	7338.72	2319.96	-2319.91	-29.26	1728051.26	14546254.40	40°03'11.465"N	104°41'12.600"W	1.27	
9848.00	90.060	181.250	7338.72	2409.95	-2409.90	-30.26	1728050.58	14546164.44	40°03'10.576"N	104°41'12.613"W	1.37	
9937.00	90.150	181.980	7338.56	2498.92	-2498.86	-32.77	1728048.38	14546075.51	40°03'09.697"N	104°41'12.645"W	0.83	
10027.00	86.120	180.250	7341.49	2588.84	-2588.78	-34.52	1728046.95	14545985.62	40°03'08.808"N	104°41'12.668"W	4.87	
10116.00	88.370	180.220	7345.77	2677.73	-2677.67	-34.89	1728046.90	14545896.77	40°03'07.930"N	104°41'12.673"W	2.53	
10206.00	87.350	180.550	7349.13	2767.66	-2767.60	-35.49	1728046.61	14545806.87	40°03'07.041"N	104°41'12.680"W	1.19	
10296.00	89.200	178.780	7351.84	2857.61	-2857.55	-34.96	1728047.45	14545716.95	40°03'06.152"N	104°41'12.674"W	2.84	
10385.00	91.080	178.870	7351.62	2946.58	-2946.53	-33.14	1728049.59	14545628.02	40°03'05.273"N	104°41'12.650"W	2.11	
10475.00	91.230	180.100	7349.81	3036.56	-3036.50	-32.33	1728050.72	14545538.08	40°03'04.384"N	104°41'12.640"W	1.38	
10565.00	90.950	180.790	7348.09	3126.54	-3126.48	-33.03	1728050.33	14545448.13	40°03'03.494"N	104°41'12.649"W	0.83	
10657.00	90.990	181.090	7346.54	3218.52	-3218.46	-34.54	1728049.15	14545356.19	40°03'02.585"N	104°41'12.668"W	0.33	
10746.00	90.950	182.450	7345.03	3307.46	-3307.40	-37.29	1728046.71	14545267.27	40°03'01.707"N	104°41'12.703"W	1.53	
10836.00	91.110	181.680	7343.41	3397.40	-3397.33	-40.53	1728043.79	14545177.37	40°03'00.818"N	104°41'12.745"W	0.87	
10925.00	91.200	180.290	7341.62	3486.37	-3486.29	-42.06	1728042.57	14545088.44	40°02'59.939"N	104°41'12.765"W	1.56	
11015.00	89.880	180.020	7340.77	3576.36	-3576.29	-42.30	1728042.65	14544998.48	40°02'59.049"N	104°41'12.768"W	1.50	
11104.00	90.030	180.260	7340.84	3665.36	-3665.29	-42.52	1728042.74	14544909.51	40°02'58.170"N	104°41'12.771"W	0.32	
11194.00	90.090	180.360	7340.74	3755.36	-3755.29	-43.01	1728042.57	14544819.55	40°02'57.280"N	104°41'12.777"W	0.13	
11283.00	90.250	179.870	7340.48	3844.36	-3844.29	-43.19	1728042.71	14544730.58	40°02'56.401"N	104°41'12.779"W	0.58	
11373.00	89.910	179.190	7340.35	3934.35	-3934.28	-42.45	1728043.76	14544640.63	40°02'55.512"N	104°41'12.770"W	0.84	
11462.00	89.880	179.250	7340.52	4023.34	-4023.27	-41.24	1728045.28	14544551.67	40°02'54.632"N	104°41'12.754"W	0.08	
11552.00	90.120	179.470	7340.52	4113.33	-4113.27	-40.23	1728046.61	14544461.72	40°02'53.743"N	104°41'12.741"W	0.36	
11642.00	90.030	180.080	7340.40	4203.33	-4203.27	-39.88	1728047.28	14544371.76	40°02'52.853"N	104°41'12.737"W	0.69	
11731.00	90.120	180.990	7340.28	4292.33	-4292.26	-40.71	1728046.76	14544282.80	40°02'51.974"N	104°41'12.747"W	1.03	
11821.00	90.060	181.100	7340.14	4382.32	-4382.25	-42.35	1728045.43	14544192.84	40°02'51.085"N	104°41'12.769"W	0.14	
11911.00	90.000	180.940	7340.09	4472.31	-4472.23	-43.95	1728044.15	14544102.89	40°02'50.195"N	104°41'12.789"W	0.19	
12000.00	90.250	184.460	7339.90	4561.20	-4561.12	-48.14	1728040.27	14544014.02	40°02'49.317"N	104°41'12.843"W	3.97	
12090.00	90.060	183.470	7339.66	4650.99	-4650.90	-54.37	1728034.37	14543924.25	40°02'48.430"N	104°41'12.923"W	1.12	
12180.00	90.220	181.870	7339.44	4740.90	-4740.80	-58.56	1728030.49	14543834.37	40°02'47.541"N	104°41'12.977"W	1.79	
12269.00	89.880	178.800	7339.36	4829.89	-4829.79	-59.08	1728030.29	14543745.42	40°02'46.662"N	104°41'12.984"W	3.47	
12358.00	89.970	176.340	7339.48	4918.80	-4918.70	-55.31	1728034.37	14543656.55	40°02'45.783"N	104°41'12.935"W	2.77	
12448.00	90.060	176.570	7339.45	5008.61	-5008.53	-49.74	1728040.25	14543566.78	40°02'44.896"N	104°41'12.864"W	0.27	
12537.00	90.030	178.170	7339.38	5097.51	-5097.43	-45.66	1728044.64	14543477.93	40°02'44.017"N	104°41'12.811"W	1.80	
12627.00	90.060	179.200	7339.31	5187.48	-5187.41	-43.59	1728047.02	14543388.00	40°02'43.128"N	104°41'12.784"W	1.14	
12716.00	89.050	178.830	7340.00	5276.46	-5276.39	-42.06	1728048.87	14543299.05	40°02'42.248"N	104°41'12.765"W	1.21	
12805.00	88.950	177.890	7341.56	5365.40	-5365.34	-39.51	1728051.73	14543210.15	40°02'41.369"N	104°41'12.732"W	1.06	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#38 ENGLISH FARMS 8-12HZ (292°FSL & 2306°FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-12HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (267 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
12895.00	89.050	178.790	7343.13	5455.35	-5455.29	-36.91	1728054.65	14543120.25	40°02'40.481"N	104°41'12.699"W	1.01	
12984.00	88.920	178.720	7344.70	5544.31	-5544.25	-34.97	1728056.89	14543031.32	40°02'39.601"N	104°41'12.674"W	0.17	
13074.00	89.110	178.190	7346.25	5634.26	-5634.21	-32.55	1728059.63	14542941.42	40°02'38.712"N	104°41'12.642"W	0.63	
13164.00	89.080	179.490	7347.67	5724.22	-5724.17	-30.73	1728061.77	14542851.49	40°02'37.823"N	104°41'12.619"W	1.44	
13253.00	88.920	181.500	7349.23	5813.20	-5813.15	-31.50	1728061.32	14542762.54	40°02'36.944"N	104°41'12.629"W	2.27	
13343.00	89.200	183.770	7350.70	5903.10	-5903.04	-35.63	1728057.50	14542672.68	40°02'36.056"N	104°41'12.682"W	2.54	
13432.00	88.890	183.320	7352.19	5991.92	-5991.86	-41.13	1728052.31	14542583.88	40°02'35.178"N	104°41'12.753"W	0.61	
13521.00	87.970	182.590	7354.62	6080.78	-6080.70	-45.72	1728048.04	14542495.05	40°02'34.300"N	104°41'12.812"W	1.32	
13611.00	88.030	181.730	7357.77	6170.66	-6170.58	-49.11	1728044.97	14542405.19	40°02'33.412"N	104°41'12.855"W	0.96	
13701.00	88.060	180.370	7360.84	6260.60	-6260.51	-50.76	1728043.63	14542315.29	40°02'32.523"N	104°41'12.877"W	1.51	
13790.00	87.940	179.420	7363.94	6349.54	-6349.46	-50.60	1728044.11	14542226.38	40°02'31.644"N	104°41'12.874"W	1.08	
13923.00	89.290	179.670	7367.16	6482.49	-6482.41	-49.54	1728045.63	14542093.49	40°02'30.330"N	104°41'12.861"W	1.03	
14013.00	89.630	180.320	7368.00	6572.49	-6572.41	-49.53	1728045.96	14542003.53	40°02'29.441"N	104°41'12.861"W	0.82	
14102.00	89.480	179.870	7368.70	6661.48	-6661.41	-49.68	1728046.12	14541914.57	40°02'28.561"N	104°41'12.863"W	0.53	
14192.00	89.380	180.600	7369.59	6751.48	-6751.40	-50.05	1728046.07	14541824.61	40°02'27.672"N	104°41'12.867"W	0.82	
14281.00	89.480	180.910	7370.48	6840.47	-6840.39	-51.22	1728045.21	14541735.65	40°02'26.793"N	104°41'12.883"W	0.37	
14371.00	89.630	181.700	7371.18	6930.45	-6930.36	-53.27	1728043.48	14541645.71	40°02'25.904"N	104°41'12.909"W	0.89	
14461.00	89.380	181.410	7371.95	7020.41	-7020.32	-55.71	1728041.35	14541555.77	40°02'25.014"N	104°41'12.940"W	0.43	
14550.00	89.570	180.840	7372.77	7109.40	-7109.30	-57.46	1728039.92	14541466.82	40°02'24.135"N	104°41'12.963"W	0.68	
14640.00	90.460	181.320	7372.75	7199.38	-7199.29	-59.16	1728038.54	14541376.87	40°02'23.246"N	104°41'12.985"W	1.12	
14730.00	90.520	182.220	7371.98	7289.34	-7289.24	-61.94	1728036.08	14541286.94	40°02'22.357"N	104°41'13.020"W	1.00	
14819.00	90.030	182.800	7371.55	7378.26	-7378.15	-65.83	1728032.50	14541198.05	40°02'21.478"N	104°41'13.070"W	0.85	
14909.00	90.180	182.120	7371.38	7468.18	-7468.07	-69.70	1728028.95	14541108.16	40°02'20.590"N	104°41'13.120"W	0.77	
14998.00	90.090	180.930	7371.17	7557.15	-7557.03	-72.07	1728026.90	14541019.22	40°02'19.711"N	104°41'13.150"W	1.34	
15088.00	90.090	179.340	7371.03	7647.15	-7647.03	-72.28	1728027.00	14540929.26	40°02'18.821"N	104°41'13.153"W	1.77	
15178.00	89.480	179.720	7371.37	7737.14	-7737.03	-71.54	1728028.06	14540839.30	40°02'17.932"N	104°41'13.144"W	0.80	
15267.00	89.630	178.740	7372.06	7826.13	-7826.01	-70.34	1728029.56	14540750.35	40°02'17.052"N	104°41'13.128"W	1.11	
15357.00	89.600	179.180	7372.67	7916.11	-7916.00	-68.71	1728031.51	14540660.41	40°02'16.163"N	104°41'13.107"W	0.49	
15446.00	89.880	177.650	7373.07	8005.07	-8004.96	-66.25	1728034.29	14540571.49	40°02'15.284"N	104°41'13.076"W	1.75	
15535.00	90.280	175.790	7372.95	8093.91	-8093.81	-61.16	1728039.69	14540482.69	40°02'14.406"N	104°41'13.010"W	2.14	
15625.00	90.060	175.530	7372.68	8183.64	-8183.55	-54.35	1728046.81	14540393.01	40°02'13.519"N	104°41'12.923"W	0.38	
15714.00	90.000	175.550	7372.63	8272.35	-8272.28	-47.43	1728054.04	14540304.34	40°02'12.642"N	104°41'12.834"W	0.07	
15804.00	90.150	176.260	7372.51	8362.11	-8362.05	-41.00	1728060.78	14540214.63	40°02'11.755"N	104°41'12.751"W	0.81	
15893.00	90.120	176.520	7372.30	8450.92	-8450.87	-35.39	1728066.70	14540125.86	40°02'10.877"N	104°41'12.679"W	0.29	
15983.00	90.000	177.960	7372.21	8540.81	-8540.77	-31.06	1728071.35	14540036.02	40°02'09.989"N	104°41'12.623"W	1.61	
16072.00	90.090	179.760	7372.14	8629.79	-8629.75	-29.29	1728073.43	14539947.08	40°02'09.110"N	104°41'12.600"W	2.02	
16162.00	90.060	181.870	7372.02	8719.77	-8719.73	-30.57	1728072.47	14539857.13	40°02'08.221"N	104°41'12.617"W	2.34	
16251.00	90.150	183.820	7371.86	8808.67	-8808.62	-34.99	1728068.36	14539768.26	40°02'07.342"N	104°41'12.674"W	2.19	
16341.00	90.060	184.060	7371.69	8898.47	-8898.40	-41.17	1728062.50	14539678.49	40°02'06.455"N	104°41'12.753"W	0.28	
16430.00	90.120	183.990	7371.55	8987.26	-8987.19	-47.42	1728056.56	14539589.72	40°02'05.577"N	104°41'12.834"W	0.10	
16520.00	90.280	183.620	7371.24	9077.07	-9076.99	-53.39	1728050.91	14539499.94	40°02'04.690"N	104°41'12.910"W	0.45	
16609.00	90.090	183.620	7370.95	9165.90	-9165.81	-59.01	1728045.61	14539411.13	40°02'03.812"N	104°41'12.983"W	0.21	
16699.00	89.970	183.440	7370.91	9255.74	-9255.64	-64.55	1728040.38	14539321.32	40°02'02.925"N	104°41'13.054"W	0.24	
16788.00	90.030	182.530	7370.91	9344.63	-9344.52	-69.19	1728036.06	14539232.46	40°02'02.046"N	104°41'13.113"W	1.02	
16877.00	90.120	183.070	7370.79	9433.53	-9433.41	-73.53	1728032.03	14539143.59	40°02'01.168"N	104°41'13.169"W	0.62	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#38 ENGLISH FARMS 8-12HZ (292'FSL & 2306'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-12HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH DATA (267 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
16967.00	90.340	183.690	7370.43	9523.38	-9523.25	-78.84	1728027.04	14539053.76	40°02'00.280"N	104°41'13.237"W	0.73	
17056.00	90.280	182.810	7369.95	9612.24	-9612.11	-83.89	1728022.31	14538964.92	40°01'59.402"N	104°41'13.302"W	0.99	
17146.00	90.220	182.420	7369.55	9702.16	-9702.01	-87.99	1728018.52	14538875.04	40°01'58.513"N	104°41'13.355"W	0.44	
17235.00	89.660	182.120	7369.65	9791.09	-9790.94	-91.52	1728015.31	14538786.13	40°01'57.635"N	104°41'13.400"W	0.71	
17325.00	89.630	178.260	7370.21	9881.07	-9880.92	-91.82	1728015.33	14538696.19	40°01'56.745"N	104°41'13.404"W	4.29	
17414.00	89.660	176.570	7370.76	9969.97	-9969.83	-87.80	1728019.65	14538607.33	40°01'55.867"N	104°41'13.353"W	1.90	
17504.00	89.880	176.000	7371.12	10059.77	-10059.64	-81.97	1728025.80	14538517.58	40°01'54.979"N	104°41'13.278"W	0.68	
17593.00	89.880	175.860	7371.30	10148.53	-10148.41	-75.65	1728032.43	14538428.86	40°01'54.102"N	104°41'13.196"W	0.16	
17683.00	89.750	176.330	7371.59	10238.31	-10238.20	-69.52	1728038.87	14538339.13	40°01'53.215"N	104°41'13.118"W	0.54	
17772.00	89.760	177.720	7371.98	10327.18	-10327.08	-64.91	1728043.80	14538250.30	40°01'52.336"N	104°41'13.058"W	1.56	
17861.00	89.940	178.330	7372.21	10416.12	-10416.02	-61.84	1728047.18	14538161.40	40°01'51.457"N	104°41'13.019"W	0.71	
17950.00	89.720	180.250	7372.47	10505.11	-10505.01	-60.74	1728048.59	14538072.45	40°01'50.578"N	104°41'13.005"W	2.17	
18040.00	89.970	183.380	7372.72	10595.06	-10594.96	-63.59	1728046.06	14537982.54	40°01'49.689"N	104°41'13.041"W	3.49	
18129.00	90.150	182.980	7372.62	10683.93	-10683.82	-68.52	1728041.44	14537893.69	40°01'48.811"N	104°41'13.105"W	0.49	
18218.00	90.030	183.700	7372.48	10772.78	-10772.67	-73.71	1728036.57	14537804.86	40°01'47.933"N	104°41'13.171"W	0.82	
18308.00	89.940	182.490	7372.51	10862.66	-10862.53	-78.57	1728032.02	14537715.01	40°01'47.045"N	104°41'13.234"W	1.35	
18398.00	90.060	182.260	7372.51	10952.59	-10952.46	-82.30	1728028.61	14537625.11	40°01'46.156"N	104°41'13.282"W	0.29	
18487.00	90.030	181.780	7372.44	11041.54	-11041.40	-85.43	1728025.79	14537536.19	40°01'45.277"N	104°41'13.322"W	0.54	
18577.00	89.970	180.930	7372.44	11131.52	-11131.38	-87.56	1728023.98	14537446.25	40°01'44.388"N	104°41'13.349"W	0.95	
18667.00	90.150	180.670	7372.34	11221.51	-11221.37	-88.82	1728023.04	14537356.29	40°01'43.499"N	104°41'13.366"W	0.35	
18756.00	90.000	180.830	7372.23	11310.50	-11310.36	-89.98	1728022.19	14537267.33	40°01'42.619"N	104°41'13.381"W	0.25	
18846.00	90.120	180.440	7372.13	11400.50	-11400.35	-90.98	1728021.51	14537177.37	40°01'41.730"N	104°41'13.393"W	0.45	
18936.00	89.970	179.940	7372.06	11490.50	-11490.35	-91.28	1728021.53	14537087.40	40°01'40.840"N	104°41'13.397"W	0.58	
19025.00	89.940	179.940	7372.13	11579.50	-11579.35	-91.19	1728021.93	14536998.44	40°01'39.961"N	104°41'13.396"W	0.03	
19204.00	89.970	182.330	7372.27	11758.46	-11758.30	-94.73	1728019.02	14536819.54	40°01'38.193"N	104°41'13.442"W	1.34	
19271.00†	89.508	181.414	7372.58	11825.42	-11825.27	-96.92	1728017.07	14536752.60	40°01'37.531"N	104°41'13.470"W	1.53	ENTER RADIUS TOE (923'FNL & 2410'FEL, SEC.29) 40.0270919 -104.6870749
19294.00	89.350	181.100	7372.81	11848.42	-11848.26	-97.43	1728016.64	14536729.62	40°01'37.304"N	104°41'13.476"W	1.53	
19383.00	89.230	177.910	7373.91	11937.40	-11937.24	-96.66	1728017.72	14536640.68	40°01'36.424"N	104°41'13.466"W	3.59	
19473.00	89.260	176.080	7375.09	12027.25	-12027.10	-91.94	1728022.75	14536550.86	40°01'35.536"N	104°41'13.406"W	2.03	
19562.00	89.170	179.070	7376.31	12116.15	-12116.00	-88.17	1728026.83	14536462.01	40°01'34.658"N	104°41'13.357"W	3.36	
19652.00	89.780	178.160	7377.14	12206.11	-12205.97	-86.00	1728029.32	14536372.09	40°01'33.769"N	104°41'13.329"W	1.22	
19742.00	89.690	177.440	7377.56	12296.04	-12295.91	-82.54	1728033.09	14536282.20	40°01'32.880"N	104°41'13.285"W	0.81	
19831.00	89.780	176.930	7377.97	12384.92	-12384.80	-78.17	1728037.77	14536193.36	40°01'32.001"N	104°41'13.229"W	0.58	
19921.00	89.780	176.260	7378.31	12474.75	-12474.64	-72.83	1728043.43	14536103.58	40°01'31.114"N	104°41'13.160"W	0.74	
20011.00	89.910	175.500	7378.56	12564.50	-12564.40	-66.36	1728050.21	14536013.87	40°01'30.226"N	104°41'13.077"W	0.86	
20100.00	90.250	175.960	7378.43	12653.24	-12653.16	-59.74	1728057.15	14535925.17	40°01'29.349"N	104°41'12.992"W	0.64	
20190.00	90.180	177.590	7378.09	12743.09	-12743.01	-54.67	1728062.53	14535835.37	40°01'28.461"N	104°41'12.927"W	1.81	
20280.00	90.090	178.940	7377.88	12833.04	-12832.97	-51.95	1728065.57	14535745.46	40°01'27.572"N	104°41'12.892"W	1.50	
20369.00	89.940	178.190	7377.86	12922.01	-12921.94	-49.72	1728068.11	14535656.53	40°01'26.693"N	104°41'12.863"W	0.86	
20459.00	89.910	177.290	7377.98	13011.93	-13011.87	-46.17	1728071.97	14535566.65	40°01'25.804"N	104°41'12.817"W	1.00	
20502.00	90.180	176.460	7377.94	13054.86	-13054.80	-43.83	1728074.46	14535523.74	40°01'25.380"N	104°41'12.787"W	2.03	LAST BHGE MWD+IFR1+MSA SURVEY
20526.00	90.180	176.460	7377.87	13078.81	-13078.76	-42.34	1728076.03	14535499.80	40°01'25.143"N	104°41'12.768"W	0.00	PTB (2177'FNL & 2354'FEL, SEC.29) 40.0236510 -104.6868800

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#38 ENGLISH FARMS 8-12HZ (292'FSL & 2306'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-12HZ AWB
Facility	SEC.08-T1N-R65W		

HOLE & CASING SECTIONS - Ref Wellbore: ENGLISH FARMS 8-12HZ AWB Ref Wellpath: ENGLISH FARMS 8-12HZ 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	1849.00	1823.00	26.00	1831.63	0.00	0.00	186.40	3.55

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	230.34	-2549.27	1725523.29	14548794.77	40°03'36.666"N	104°41'45.010"W	polygon
SEC.20-T1N-R65W	-34.00	230.34	-2549.27	1725523.29	14548794.77	40°03'36.666"N	104°41'45.010"W	polygon
ENGLISH FARMS 8-12HZ HEEL REV-1(50'FNL & 2348'FEL,SEC.17)	7316.00	-341.36	-42.86	1728030.71	14548232.11	40°03'31.018"N	104°41'12.775"W	point
ENGLISH FARMS 8-12HZ INT. TARGET@4250'VS	7316.00	-4249.92	-50.00	1728037.32	14544325.09	40°02'52.392"N	104°41'12.867"W	point
ENGLISH FARMS 8-12HZ BHL REV-1(2179'FNL & 2378'FEL,SEC.29)	7385.00	-13080.56	-66.14	1728052.24	14535497.92	40°01'25.126"N	104°41'13.074"W	point
ENGLISH FARMS 8-12HZ INT. TARGET@10500'VS	7385.00	-10499.91	-61.43	1728047.88	14538077.55	40°01'50.628"N	104°41'13.014"W	point
ENGLISH FARMS 8-12HZ LANDBOX	7385.00	0.00	0.00	1728072.35	14548573.49	40°03'34.391"N	104°41'12.224"W	polygon
ENGLISH FARMS 8-12HZ RADIUS 1	7385.00	-291.08	-290.89	1727782.60	14548281.50	40°03'31.514"N	104°41'15.965"W	polygon
ENGLISH FARMS 8-12HZ RADIUS 2	7385.00	-12226.13	-322.79	1727792.70	14536351.10	40°01'33.569"N	104°41'16.373"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: ENGLISH FARMS 8-12HZ AWB Ref Wellpath: ENGLISH FARMS 8-12HZ AWP			
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment
26.00	1809.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	Custom APC ISCWSA Rev-2 MWD+IFR1 <135 - 1809>
1809.00	20502.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHGE Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1937 - 20502>
20502.00	20526.00	Blind Drilling (std)	Projection to bit

ENGLISH FARMS 8-12HZ AWB

ENGLISH FARMS 8-12HZ AWB

ENGLISH FARMS 8-12HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#38 ENGLISH FARMS 8-12HZ (292'FSL & 2306'FEL, SEC.08)
Area	COLORADO	Well	ENGLISH FARMS 8-12HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	ENGLISH FARMS 8-12HZ AWB
Facility	SEC.08-T1N-R65W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
135.00	0.350	98.050	135.00	FIRST SURFACE MWD+IFR1 SURVEY
1809.00	12.390	4.010	1792.55	LAST SURFACE MWD+IFR1 SURVEY
1937.00	12.290	3.140	1917.60	FIRST BHGE MWD+IFR1+MSA SURVEY
6635.00	0.221	269.516	6595.46	KOP
7879.00	89.080	180.170	7332.69	LANDING (150'FNL & 2373'FEL, SEC.17) 40.0583392 -104.6869689
8127.00	88.996	176.403	7336.96	EXIT RADIUS HEEL (398'FNL & 2365'FEL, SEC.17) 40.0576590 -104.6869385
19271.00	89.508	181.414	7372.58	ENTER RADIUS TOE (923'FNL & 2410'FEL, SEC.29) 40.0270919 -104.6870749
20502.00	90.180	176.460	7377.94	LAST BHGE MWD+IFR1+MSA SURVEY
20526.00	90.180	176.460	7377.87	PTB (2177'FNL & 2354'FEL, SEC.29) 40.0236510 -104.6868800