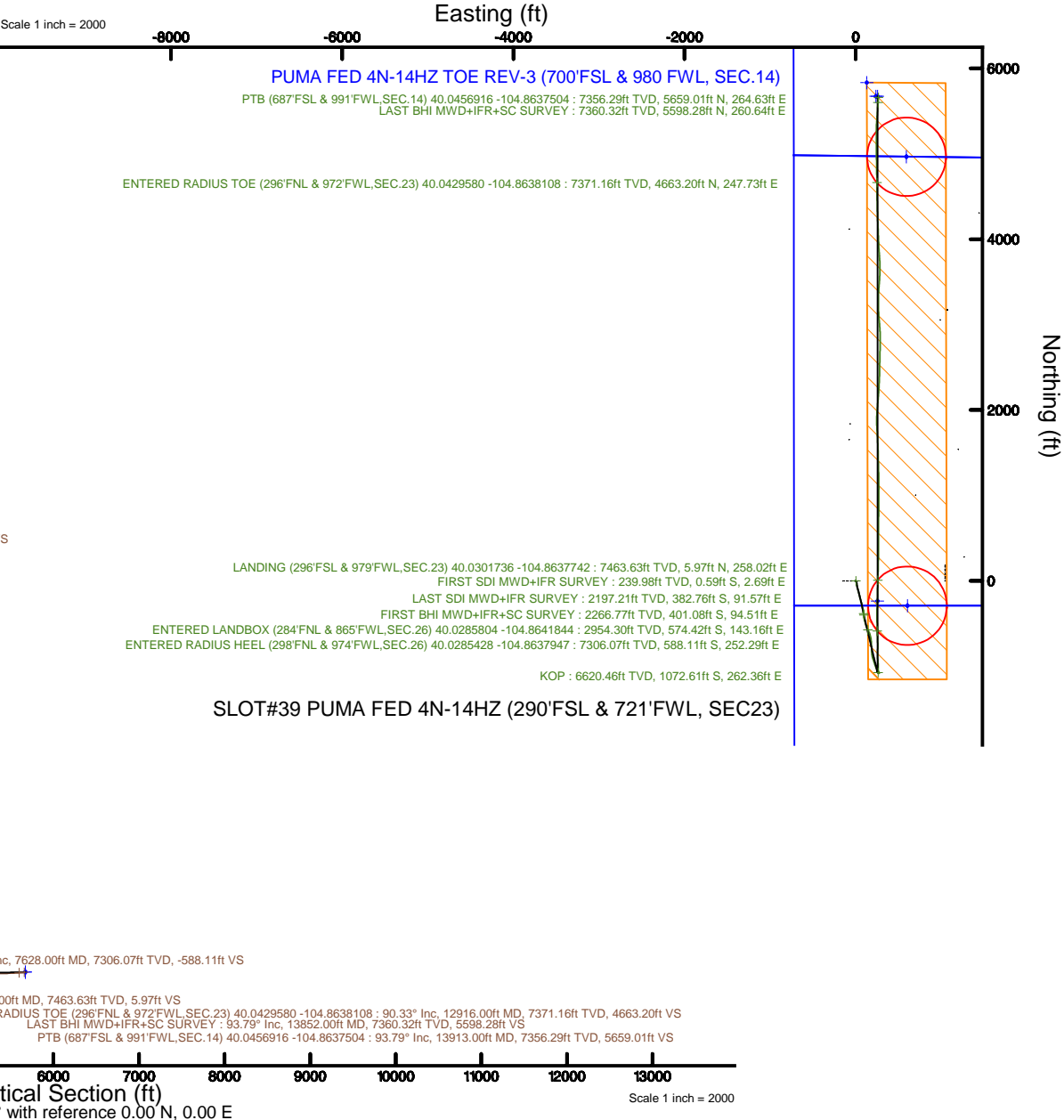


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#39 PUMA FED 4N-14HZ (290'FSL & 721'FWL, SEC23)
Field: WELD COUNTY (UTM/TRUE NORTH) Well: PUMA FED 4N-14HZ
Facility: SEC.23-T1N-R67W Wellbore: PUMA FED 4N-14HZ PWB

Plot reference wellpath is PUMA FED 4N-14HZ REV D.0 PWP	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to NABORS X22 (RKB 32') (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to NABORS X22 (RKB 32') (RKB)	North Reference: True north
NABORS X22 (RKB 32') (RKB) to Mean Sea Level: 5023 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#39 PUMA FED 4N-14HZ (290'FSL & 721'FWL, SEC23)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2017-04-11
	Database: WA_DEN_Anadarko_Defn



REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 PUMA FED 4N-14HZ (290'FSL & 721'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4N-14HZ AWB
Facility	SEC.23-T1N-R67W		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Painsetr
Scale	0.999602	Report Generated	4/11/2017 at 1:22 PM
Convergence at slot	0.09° East	Database/Source file	WA_DEN_Anadarko_Defn/PUMA_FED_4N-14HZ_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-1.81	-3823.26	1678292.14	14537743.73	40°01'48.566"N	104°51'52.904"W
Facility Reference Pt			1682113.86	14537751.93	40°01'48.587"N	104°51'03.755"W
Field Reference Pt			1698235.31	14552047.82	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM

Calculation method	Minimum curvature	NABORS X22 (RKB 32') (RKB) to Facility Vertical Datum	5023.00ft
Horizontal Reference Pt	Slot	NABORS X22 (RKB 32') (RKB) to Mean Sea Level	5023.00ft
Vertical Reference Pt	NABORS X22 (RKB 32') (RKB)	NABORS X22 (RKB 32') (RKB) to Mud Line at Slot (SLOT#39 PUMA FED 4N-14HZ (290'FSL & 721'FWL, SEC23))	5023.00ft
MD Reference Pt	NABORS X22 (RKB 32') (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.00°

REFERENCE WELLPATH IDENTIFICATION				
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)		Slot	SLOT#39 PUMA FED 4N-14HZ (290'FSL & 721'FWL, SEC23)
Area	COLORADO		Well	PUMA FED 4N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)		Wellbore	PUMA FED 4N-14HZ AWP
Facility	SEC.23-T1N-R67W			

WELLPATH DATA (153 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	102.440	0.00	0.00	0.00	0.00	1678292.14	14537743.73	40°01'48.566"N	104°51'52.904"W	0.00	
32.00	0.000	102.440	32.00	0.00	0.00	0.00	1678292.14	14537743.73	40°01'48.566"N	104°51'52.904"W	0.00	
240.00	1.520	102.440	239.98	-0.59	-0.59	2.69	1678294.83	14537743.14	40°01'48.560"N	104°51'52.869"W	0.73	FIRST SDI MWD+IFR SURVEY
328.00	2.220	147.170	327.93	-2.28	-2.28	4.76	1678296.90	14537741.46	40°01'48.543"N	104°51'52.843"W	1.78	
550.00	4.640	170.450	549.53	-14.75	-14.75	8.58	1678300.73	14537729.00	40°01'48.420"N	104°51'52.794"W	1.24	
637.00	5.680	168.110	636.17	-22.43	-22.43	10.05	1678302.22	14537721.32	40°01'48.344"N	104°51'52.775"W	1.22	
721.00	6.820	171.720	719.67	-31.44	-31.44	11.63	1678303.80	14537712.33	40°01'48.255"N	104°51'52.755"W	1.43	
854.00	9.210	174.210	851.37	-49.84	-49.84	13.84	1678306.04	14537693.93	40°01'48.073"N	104°51'52.726"W	1.82	
941.00	9.780	170.860	937.17	-64.06	-64.06	15.71	1678307.94	14537679.72	40°01'47.933"N	104°51'52.702"W	0.91	
1030.00	10.740	163.480	1024.75	-79.48	-79.48	19.27	1678311.52	14537664.31	40°01'47.781"N	104°51'52.656"W	1.83	
1117.00	11.020	162.900	1110.19	-95.20	-95.20	24.02	1678316.29	14537648.61	40°01'47.625"N	104°51'52.595"W	0.35	
1205.00	11.430	164.200	1196.51	-111.63	-111.63	28.87	1678321.16	14537632.19	40°01'47.463"N	104°51'52.533"W	0.55	
1294.00	13.160	165.960	1283.46	-129.94	-129.94	33.73	1678326.05	14537613.89	40°01'47.282"N	104°51'52.470"W	1.99	
1379.00	14.050	165.660	1366.08	-149.33	-149.33	38.63	1678330.98	14537594.52	40°01'47.090"N	104°51'52.407"W	1.05	
1465.00	15.150	166.990	1449.30	-170.39	-170.39	43.75	1678336.12	14537573.48	40°01'46.882"N	104°51'52.342"W	1.34	
1554.00	16.150	166.950	1535.00	-193.78	-193.78	49.16	1678341.57	14537550.10	40°01'46.651"N	104°51'52.272"W	1.12	
1643.00	16.700	165.280	1620.37	-218.21	-218.21	55.20	1678347.65	14537525.70	40°01'46.410"N	104°51'52.194"W	0.81	
1729.00	17.200	164.970	1702.63	-242.44	-242.44	61.64	1678354.12	14537501.48	40°01'46.170"N	104°51'52.112"W	0.59	
1818.00	16.700	166.630	1787.76	-267.59	-267.59	68.01	1678360.53	14537476.35	40°01'45.922"N	104°51'52.030"W	0.78	
1905.00	16.500	168.260	1871.14	-291.85	-291.85	73.42	1678365.97	14537452.11	40°01'45.682"N	104°51'51.960"W	0.58	
1992.00	16.280	169.530	1954.60	-315.93	-315.93	78.15	1678370.73	14537428.04	40°01'45.444"N	104°51'51.899"W	0.48	
2080.00	15.700	167.880	2039.20	-339.70	-339.70	82.89	1678375.51	14537404.29	40°01'45.209"N	104°51'51.838"W	0.84	
2169.00	15.660	168.510	2124.89	-363.25	-363.25	87.81	1678380.46	14537380.76	40°01'44.976"N	104°51'51.775"W	0.20	
2244.00	15.070	169.690	2197.21	-382.76	-382.76	91.57	1678384.25	14537361.26	40°01'44.783"N	104°51'51.727"W	0.89	LAST SDI MWD+IFR SURVEY
2316.00	14.810	172.120	2266.77	-401.08	-401.08	94.51	1678387.21	14537342.95	40°01'44.602"N	104°51'51.689"W	0.94	FIRST BHI MWD+IFR+SC SURVEY
2410.00	14.330	169.250	2357.75	-424.41	-424.41	98.32	1678391.06	14537319.64	40°01'44.372"N	104°51'51.640"W	0.92	
2504.00	15.270	170.650	2448.63	-448.06	-448.06	102.50	1678395.28	14537296.01	40°01'44.138"N	104°51'51.586"W	1.07	
2598.00	13.800	169.650	2539.62	-471.30	-471.30	106.53	1678399.34	14537272.78	40°01'43.908"N	104°51'51.535"W	1.59	
2692.00	16.430	164.000	2630.36	-495.11	-495.11	112.21	1678405.05	14537248.99	40°01'43.673"N	104°51'51.462"W	3.20	
2786.00	15.060	161.300	2720.84	-519.46	-519.46	119.79	1678412.67	14537224.66	40°01'43.433"N	104°51'51.364"W	1.65	
2879.00	13.540	157.270	2810.96	-540.95	-540.95	127.87	1678420.78	14537203.19	40°01'43.220"N	104°51'51.260"W	1.95	
2973.00	14.610	154.380	2902.13	-561.79	-561.79	137.25	1678430.18	14537182.38	40°01'43.014"N	104°51'51.140"W	1.36	
3027.00†	15.321	155.449	2954.30	-574.42	-574.42	143.16	1678436.11	14537169.76	40°01'42.889"N	104°51'51.064"W	1.41	ENTERED LANDBOX (284'FNL & 865'FWL, SEC.26) 40.0285804 - 104.8641844
3067.00	15.850	156.180	2992.83	-584.22	-584.22	147.56	1678440.52	14537159.97	40°01'42.793"N	104°51'51.007"W	1.41	
3161.00	14.660	155.110	3083.52	-606.76	-606.76	157.75	1678450.74	14537137.46	40°01'42.570"N	104°51'50.876"W	1.30	
3255.00	14.420	167.390	3174.53	-628.97	-628.97	165.31	1678458.34	14537115.26	40°01'42.350"N	104°51'50.779"W	3.28	
3349.00	12.580	162.980	3265.93	-650.19	-650.19	170.87	1678463.92	14537094.06	40°01'42.141"N	104°51'50.708"W	2.24	
3443.00	13.780	169.180	3357.46	-670.97	-670.97	175.96	1678469.05	14537073.29	40°01'41.935"N	104°51'50.642"W	1.97	
3537.00	14.810	174.320	3448.55	-693.93	-693.93	179.25	1678472.37	14537050.36	40°01'41.708"N	104°51'50.600"W	1.74	
3631.00	15.070	176.290	3539.37	-718.08	-718.08	181.23	1678474.39	14537026.22	40°01'41.470"N	104°51'50.574"W	0.61	
3724.00	15.300	177.180	3629.12	-742.40	-742.40	182.62	1678475.81	14537001.91	40°01'41.229"N	104°51'50.556"W	0.35	
3817.00	14.670	175.660	3718.96	-766.39	-766.39	184.12	1678477.34	14536977.93	40°01'40.992"N	104°51'50.537"W	0.80	
3912.00	15.370	180.690	3810.72	-790.98	-790.98	184.87	1678478.14	14536953.35	40°01'40.749"N	104°51'50.527"W	1.56	
4006.00	15.600	177.170	3901.31	-816.06	-816.06	185.35	1678478.65	14536928.28	40°01'40.501"N	104°51'50.521"W	1.03	
4100.00	16.660	173.440	3991.61	-842.07	-842.07	187.51	1678480.85	14536902.28	40°01'40.244"N	104°51'50.494"W	1.58	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 PUMA FED 4N-14HZ (290'FSL & 721'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4N-14HZ AWP
Facility	SEC.23-T1N-R67W		

WELLPATH DATA (153 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
4195.00	14.730	172.970	4083.06	-867.59	-867.59	190.55	1678483.92	14536876.78	40°01'39.992"N	104°51'50.455"W	2.04	
4289.00	15.430	164.840	4173.84	-891.52	-891.52	195.28	1678488.69	14536852.86	40°01'39.756"N	104°51'50.394"W	2.37	
4383.00	15.710	159.290	4264.39	-915.50	-915.50	203.05	1678496.49	14536828.91	40°01'39.519"N	104°51'50.294"W	1.61	
4476.00	14.600	162.490	4354.16	-938.45	-938.45	211.03	1678504.51	14536805.98	40°01'39.292"N	104°51'50.191"W	1.49	
4571.00	13.220	163.290	4446.37	-960.28	-960.28	217.76	1678511.26	14536784.17	40°01'39.076"N	104°51'50.105"W	1.47	
4665.00	13.510	160.200	4537.82	-980.90	-980.90	224.57	1678518.10	14536763.56	40°01'38.872"N	104°51'50.017"W	0.82	
4760.00	11.580	159.400	4630.55	-1000.27	-1000.27	231.68	1678525.24	14536744.21	40°01'38.681"N	104°51'49.926"W	2.04	
4783.00	10.650	157.870	4653.12	-1004.40	-1004.40	233.29	1678526.86	14536740.09	40°01'38.640"N	104°51'49.905"W	4.24	
4877.00	10.030	150.680	4745.60	-1019.58	-1019.58	240.57	1678534.16	14536724.92	40°01'38.490"N	104°51'49.811"W	1.52	
4971.00	9.170	149.300	4838.28	-1033.16	-1033.16	248.41	1678542.01	14536711.36	40°01'38.356"N	104°51'49.711"W	0.95	
5065.00	9.030	150.720	4931.10	-1046.04	-1046.04	255.84	1678549.46	14536698.50	40°01'38.229"N	104°51'49.615"W	0.28	
5159.00	8.040	148.890	5024.06	-1058.10	-1058.10	262.84	1678556.48	14536686.46	40°01'38.110"N	104°51'49.525"W	1.09	
5253.00	6.920	162.430	5117.26	-1069.13	-1069.13	267.95	1678561.60	14536675.44	40°01'38.001"N	104°51'49.460"W	2.21	
5347.00	4.180	168.870	5210.81	-1077.89	-1077.89	270.32	1678563.98	14536666.69	40°01'37.914"N	104°51'49.429"W	2.98	
5442.00	2.080	168.420	5305.67	-1082.98	-1082.98	271.34	1678565.01	14536661.60	40°01'37.864"N	104°51'49.416"W	2.21	
5535.00	0.490	30.780	5398.65	-1084.29	-1084.29	271.88	1678565.55	14536660.29	40°01'37.851"N	104°51'49.409"W	2.65	
5629.00	0.650	28.260	5492.64	-1083.47	-1083.47	272.34	1678566.01	14536661.11	40°01'37.859"N	104°51'49.403"W	0.17	
5723.00	0.940	40.550	5586.63	-1082.42	-1082.42	273.09	1678566.76	14536662.16	40°01'37.869"N	104°51'49.394"W	0.36	
5817.00	0.740	32.050	5680.62	-1081.32	-1081.32	273.91	1678567.58	14536663.26	40°01'37.880"N	104°51'49.383"W	0.25	
5911.00	0.620	12.000	5774.62	-1080.30	-1080.30	274.34	1678568.01	14536664.28	40°01'37.890"N	104°51'49.377"W	0.28	
6006.00	0.680	17.110	5869.61	-1079.26	-1079.26	274.61	1678568.28	14536665.32	40°01'37.900"N	104°51'49.374"W	0.09	
6100.00	0.780	323.890	5963.60	-1078.21	-1078.21	274.40	1678568.06	14536666.37	40°01'37.911"N	104°51'49.377"W	0.70	
6194.00	0.840	300.130	6057.60	-1077.35	-1077.35	273.43	1678567.09	14536667.23	40°01'37.919"N	104°51'49.389"W	0.36	
6289.00	1.030	293.250	6152.58	-1076.66	-1076.66	272.04	1678565.70	14536667.91	40°01'37.926"N	104°51'49.407"W	0.23	
6383.00	1.190	302.060	6246.56	-1075.81	-1075.81	270.44	1678564.10	14536668.76	40°01'37.935"N	104°51'49.428"W	0.25	
6477.00	1.330	291.230	6340.54	-1074.90	-1074.90	268.59	1678562.25	14536669.67	40°01'37.944"N	104°51'49.451"W	0.29	
6570.00	1.260	286.860	6433.52	-1074.21	-1074.21	266.61	1678560.27	14536670.36	40°01'37.950"N	104°51'49.477"W	0.13	
6664.00	1.330	277.580	6527.49	-1073.77	-1073.77	264.54	1678558.20	14536670.80	40°01'37.955"N	104°51'49.503"W	0.23	
6757.00†	1.852	312.388	6620.46	-1072.61	-1072.61	262.36	1678556.02	14536671.95	40°01'37.966"N	104°51'49.531"W	1.15	KOP
6758.00	1.860	312.640	6621.46	-1072.59	-1072.59	262.33	1678555.99	14536671.97	40°01'37.966"N	104°51'49.532"W	1.15	
6852.00	12.000	2.050	6714.69	-1061.76	-1061.76	261.56	1678555.20	14536682.80	40°01'38.073"N	104°51'49.542"W	11.58	
6947.00	23.880	0.510	6804.91	-1032.56	-1032.56	262.09	1678555.68	14536711.99	40°01'38.362"N	104°51'49.535"W	12.51	
7040.00	28.860	358.770	6888.21	-991.27	-991.27	261.77	1678555.31	14536753.26	40°01'38.770"N	104°51'49.539"W	5.42	
7134.00	33.440	355.500	6968.64	-942.74	-942.74	259.25	1678552.71	14536801.77	40°01'39.250"N	104°51'49.571"W	5.19	
7226.00	37.960	356.220	7043.33	-889.21	-889.21	255.39	1678548.78	14536855.27	40°01'39.779"N	104°51'49.621"W	4.93	
7318.00	42.630	3.440	7113.52	-829.81	-829.81	255.40	1678548.69	14536914.64	40°01'40.366"N	104°51'49.621"W	7.17	
7409.00	49.180	0.650	7176.81	-764.54	-764.54	257.64	1678550.83	14536979.89	40°01'41.011"N	104°51'49.592"W	7.53	
7502.00	53.400	356.650	7234.98	-692.03	-692.03	255.86	1678548.94	14537052.36	40°01'41.727"N	104°51'49.615"W	5.64	
7594.00	56.790	358.770	7287.62	-616.66	-616.66	252.87	1678545.84	14537127.70	40°01'42.472"N	104°51'49.653"W	4.14	
7628.00†	57.481	358.891	7306.07	-588.11	-588.11	252.29	1678545.22	14537156.24	40°01'42.754"N	104°51'49.661"W	2.05	ENTERED RADIUS HEEL (298'FNL & 974'FWL, SEC.26) 40.0285428 -104.8637947
7688.00	58.700	359.100	7337.78	-537.19	-537.19	251.40	1678544.25	14537207.14	40°01'43.257"N	104°51'49.672"W	2.05	
7782.00	66.780	358.360	7380.80	-453.72	-453.72	249.53	1678542.25	14537290.58	40°01'44.082"N	104°51'49.696"W	8.62	
7876.00	76.920	1.190	7410.05	-364.52	-364.52	249.24	1678541.83	14537379.73	40°01'44.964"N	104°51'49.700"W	11.16	
7970.00	77.620	1.730	7430.76	-272.86	-272.86	251.58	1678544.03	14537471.36	40°01'45.869"N	104°51'49.670"W	0.93	
8065.00	78.200	2.100	7450.66	-180.02	-180.02	254.68	1678546.99	14537564.17	40°01'46.787"N	104°51'49.630"W	0.72	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 PUMA FED 4N-14HZ (290'FSL & 721'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4N-14HZ AWB
Facility	SEC.23-T1N-R67W		

WELLPATH DATA (153 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
8159.00	86.450	0.650	7463.20	-86.97	-86.97	256.90	1678549.07	14537657.18	40°01'47.706"N	104°51'49.601"W	8.91	
8252.00	93.020	0.730	7463.63	5.97	5.97	258.02	1678550.05	14537750.09	40°01'48.625"N	104°51'49.587"W	7.07	LANDING (296'FSL & 979'FWL, SEC.23) 40.0301736 -104.8637742
8345.00	92.900	2.100	7458.83	98.81	98.81	260.32	1678552.20	14537842.90	40°01'49.542"N	104°51'49.558"W	1.48	
8440.00	89.660	1.080	7456.71	193.74	193.74	262.95	1678554.69	14537937.79	40°01'50.481"N	104°51'49.524"W	3.58	
8533.00	91.260	0.630	7455.96	286.72	286.72	264.34	1678555.93	14538030.74	40°01'51.399"N	104°51'49.506"W	1.79	
8627.00	90.520	0.870	7454.50	380.70	380.70	265.57	1678557.02	14538124.68	40°01'52.328"N	104°51'49.490"W	0.83	
8721.00	88.680	359.980	7455.16	474.69	474.69	266.27	1678557.57	14538218.64	40°01'53.257"N	104°51'49.481"W	2.17	
8815.00	89.480	0.180	7456.67	568.68	568.68	266.40	1678557.56	14538312.59	40°01'54.186"N	104°51'49.479"W	0.88	
8909.00	90.090	0.020	7457.02	662.68	662.68	266.56	1678557.58	14538406.55	40°01'55.115"N	104°51'49.477"W	0.67	
9003.00	91.230	0.570	7455.94	756.67	756.67	267.05	1678557.93	14538500.50	40°01'56.044"N	104°51'49.471"W	1.35	
9098.00	90.090	0.370	7454.84	851.66	851.66	267.82	1678558.56	14538595.45	40°01'56.982"N	104°51'49.461"W	1.22	
9192.00	90.220	0.550	7454.59	945.65	945.65	268.58	1678559.17	14538689.41	40°01'57.911"N	104°51'49.451"W	0.24	
9285.00	90.580	1.040	7453.94	1038.64	1038.64	269.87	1678560.32	14538782.37	40°01'58.830"N	104°51'49.435"W	0.65	
9380.00	89.910	359.170	7453.53	1133.64	1133.64	270.04	1678560.35	14538877.32	40°01'59.769"N	104°51'49.432"W	2.09	
9474.00	90.430	358.550	7453.25	1227.62	1227.62	268.17	1678558.34	14538971.26	40°02'00.698"N	104°51'49.456"W	0.86	
9568.00	91.050	358.410	7452.04	1321.57	1321.57	265.68	1678555.70	14539065.18	40°02'01.626"N	104°51'49.488"W	0.68	
9662.00	88.710	358.770	7452.24	1415.54	1415.54	263.37	1678553.25	14539159.10	40°02'02.555"N	104°51'49.518"W	2.52	
9756.00	89.260	358.520	7453.90	1509.50	1509.50	261.15	1678550.88	14539253.02	40°02'03.483"N	104°51'49.547"W	0.64	
9851.00	89.880	357.470	7454.62	1604.44	1604.44	257.82	1678547.42	14539347.91	40°02'04.421"N	104°51'49.589"W	1.28	
9945.00	90.830	356.750	7454.03	1698.31	1698.31	253.08	1678542.54	14539441.75	40°02'05.349"N	104°51'49.650"W	1.27	
10039.00	93.670	356.850	7450.34	1792.08	1792.08	247.84	1678537.16	14539535.47	40°02'06.276"N	104°51'49.718"W	3.02	
10134.00	95.330	0.500	7442.89	1886.75	1886.75	245.65	1678534.82	14539630.09	40°02'07.211"N	104°51'49.746"W	4.21	
10228.00	94.070	3.810	7435.18	1980.35	1980.35	249.17	1678538.20	14539723.66	40°02'08.136"N	104°51'49.701"W	3.76	
10323.00	91.570	5.190	7430.51	2074.93	2074.93	256.62	1678545.50	14539818.22	40°02'09.071"N	104°51'49.605"W	3.00	
10417.00	89.880	4.740	7429.32	2168.57	2168.57	264.75	1678553.49	14539911.83	40°02'09.996"N	104°51'49.500"W	1.86	
10511.00	88.090	3.190	7430.99	2262.32	2262.32	271.25	1678559.84	14540005.56	40°02'10.923"N	104°51'49.417"W	2.52	
10605.00	88.830	2.140	7433.51	2356.18	2356.18	275.62	1678564.07	14540099.39	40°02'11.850"N	104°51'49.361"W	1.37	
10698.00	91.110	1.220	7433.56	2449.14	2449.14	278.34	1678566.65	14540192.31	40°02'12.769"N	104°51'49.325"W	2.64	
10792.00	92.030	1.070	7430.98	2543.08	2543.08	280.22	1678568.38	14540286.22	40°02'13.697"N	104°51'49.301"W	0.99	
10886.00	92.740	1.600	7427.07	2636.97	2636.97	282.41	1678570.43	14540380.07	40°02'14.625"N	104°51'49.273"W	0.94	
10980.00	92.250	1.340	7422.98	2730.85	2730.85	284.82	1678572.69	14540473.92	40°02'15.553"N	104°51'49.242"W	0.59	
11073.00	90.090	359.960	7421.08	2823.82	2823.82	285.87	1678573.61	14540566.85	40°02'16.472"N	104°51'49.229"W	2.76	
11167.00	89.230	357.550	7421.64	2917.79	2917.79	283.83	1678571.42	14540660.78	40°02'17.400"N	104°51'49.255"W	2.72	
11261.00	92.190	354.460	7420.48	3011.53	3011.53	277.29	1678564.74	14540754.47	40°02'18.327"N	104°51'49.339"W	4.55	
11355.00	94.150	356.270	7415.28	3105.07	3105.07	269.70	1678557.01	14540847.97	40°02'19.251"N	104°51'49.436"W	2.84	
11449.00	95.110	358.600	7407.69	3198.66	3198.66	265.51	1678552.68	14540941.51	40°02'20.176"N	104°51'49.490"W	2.67	
11543.00	94.870	0.730	7399.51	3292.30	3292.30	264.96	1678551.99	14541035.11	40°02'21.101"N	104°51'49.497"W	2.27	
11637.00	93.090	3.230	7392.99	3386.01	3386.01	268.20	1678555.09	14541128.78	40°02'22.027"N	104°51'49.456"W	3.26	
11732.00	91.880	4.270	7388.87	3480.71	3480.71	274.41	1678561.15	14541223.46	40°02'22.963"N	104°51'49.376"W	1.68	
11826.00	89.350	3.630	7387.86	3574.47	3574.47	280.88	1678567.48	14541317.20	40°02'23.890"N	104°51'49.293"W	2.78	
11920.00	88.030	359.050	7390.01	3668.40	3668.40	283.08	1678569.53	14541411.08	40°02'24.818"N	104°51'49.264"W	5.07	
12014.00	89.100	356.150	7392.36	3762.27	3762.27	279.15	1678565.46	14541504.92	40°02'25.746"N	104°51'49.315"W	3.29	
12108.00	90.680	356.100	7392.54	3856.05	3856.05	272.79	1678558.97	14541598.65	40°02'26.673"N	104°51'49.397"W	1.68	
12202.00	92.890	357.390	7389.62	3949.85	3949.85	267.46	1678553.49	14541692.40	40°02'27.599"N	104°51'49.465"W	2.72	
12296.00	91.880	357.970	7385.70	4043.69	4043.69	263.66	1678549.55	14541786.20	40°02'28.527"N	104°51'49.514"W	1.24	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 PUMA FED 4N-14HZ (290'FSL & 721'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4N-14HZ AWP
Facility	SEC.23-T1N-R67W		

WELLPATH DATA (153 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]
12390.00	93.440	357.540	7381.34	4137.51	4137.51	259.98	1678545.73	14541879.98	40°02'29.454"N	104°51'49.561"W	1.72
12484.00	90.620	358.400	7378.01	4231.38	4231.38	256.65	1678542.26	14541973.81	40°02'30.382"N	104°51'49.604"W	3.14
12579.00	90.520	357.960	7377.07	4326.33	4326.33	253.64	1678539.10	14542068.71	40°02'31.320"N	104°51'49.643"W	0.47
12673.00	92.060	358.730	7374.95	4420.27	4420.27	250.92	1678536.25	14542162.60	40°02'32.248"N	104°51'49.678"W	1.83
12766.00	90.060	359.240	7373.23	4513.23	4513.23	249.27	1678534.46	14542255.53	40°02'33.167"N	104°51'49.699"W	2.22
12859.00	91.420	359.460	7372.03	4606.21	4606.21	248.22	1678533.26	14542348.47	40°02'34.086"N	104°51'49.712"W	1.48
12916.00†	90.335	359.551	7371.16	4663.20	4663.20	247.73	1678532.68	14542405.44	40°02'34.649"N	104°51'49.719"W	1.91
12953.00	89.630	359.610	7371.17	4700.20	4700.20	247.46	1678532.36	14542442.42	40°02'35.015"N	104°51'49.722"W	1.91
13047.00	91.140	359.270	7370.54	4794.19	4794.19	246.54	1678531.30	14542536.37	40°02'35.943"N	104°51'49.734"W	1.65
13141.00	90.490	358.340	7369.20	4888.16	4888.16	244.58	1678529.19	14542630.30	40°02'36.872"N	104°51'49.759"W	1.21
13234.00	90.060	359.370	7368.75	4981.14	4981.14	242.72	1678527.19	14542723.24	40°02'37.791"N	104°51'49.783"W	1.20
13329.00	88.340	0.170	7370.08	5076.13	5076.13	242.34	1678526.67	14542818.19	40°02'38.730"N	104°51'49.788"W	2.00
13423.00	89.320	359.980	7370.00	5170.11	5170.11	242.46	1678526.65	14542912.13	40°02'39.658"N	104°51'49.786"W	1.06
13516.00	90.920	359.550	7371.80	5263.10	5263.10	242.08	1678526.13	14543005.09	40°02'40.577"N	104°51'49.791"W	1.78
13611.00	91.170	3.510	7370.07	5358.03	5358.03	244.61	1678528.52	14543099.98	40°02'41.515"N	104°51'49.759"W	4.18
13705.00	91.870	3.970	7367.58	5451.80	5451.80	250.74	1678534.50	14543193.72	40°02'42.442"N	104°51'49.680"W	0.89
13852.00	93.790	3.760	7360.32	5598.28	5598.28	260.64	1678544.17	14543340.16	40°02'43.890"N	104°51'49.553"W	1.31
13913.00	93.790	3.760	7356.29	5659.01	5659.01	264.63	1678548.07	14543400.87	40°02'44.490"N	104°51'49.501"W	0.00

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
PUMA FED 4N-14HZ CIRCLE-1	4021.00	-291.06	603.76	1678896.10	14537453.70	40°01'45.690"N	104°51'45.143"W	circle
PUMA FED 4N-14HZ CIRCLE-2	4021.00	4964.86	593.14	1678877.50	14542707.50	40°02'37.630"N	104°51'45.277"W	circle
PUMA FED 4N-14HZ LANDBOX	4021.00	5832.71	129.77	1678413.00	14543574.30	40°02'46.206"N	104°51'51.235"W	polygon
SEC.14-T1N-R67W LINES	5023.00	7619.49	1894.90	1680174.71	14545363.04	40°03'03.863"N	104°51'28.537"W	polygon
SEC.23-T1N-R67W LINES	5023.00	2330.90	1914.85	1680202.68	14540076.60	40°02'11.600"N	104°51'28.286"W	polygon
SEC.26-T1N-R67W LINES	5023.00	-2922.60	1930.66	1680226.46	14534825.24	40°01'19.683"N	104°51'28.088"W	polygon
PUMA FED 4N-14HZ TOE REV-2 (700'FSL & 962 FWL, SEC.14)	7353.00	5671.58	236.19	1678519.62	14543413.39	40°02'44.614"N	104°51'49.867"W	point
PUMA FED 4N-14HZ TOE REV-3 (700'FSL & 980 FWL, SEC.14)	7353.00	5671.58	254.14	1678537.56	14543413.42	40°02'44.614"N	104°51'49.636"W	point
PUMA FED 4N-14HZ HEEL REV-2 (55'FSL & 975'FWL, SEC.23)	7487.00	-235.07	254.14	1678546.53	14537509.15	40°01'46.243"N	104°51'49.637"W	point

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 PUMA FED 4N-14HZ (290'FSL & 721'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4N-14HZ AWB
Facility	SEC.23-T1N-R67W		

WELLPATH COMPOSITION - Ref Wellbore: PUMA FED 4N-14HZ AWB Ref Wellpath: PUMA FED 4N-14HZ AWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
32.00	2244.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	SDI MWD+IFR SURVEYS <240 - 2244>	PUMA FED 4N-14HZ AWB
2244.00	13852.00	Custom APC ISCWSA REV 2 MWD+IFR1+SC (approximation)	BHI APC ISCWSA REV 2 MWD+IFR+SC <2316 - 13852>	PUMA FED 4N-14HZ AWB
13852.00	13913.00	Blind Drilling (std)	Projection to bit	PUMA FED 4N-14HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#39 PUMA FED 4N-14HZ (290'FSL & 721'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4N-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4N-14HZ AWB
Facility	SEC.23-T1N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
240.00	1.520	102.440	239.98	FIRST SDI MWD+IFR SURVEY
2244.00	15.070	169.690	2197.21	LAST SDI MWD+IFR SURVEY
2316.00	14.810	172.120	2266.77	FIRST BHI MWD+IFR+SC SURVEY
3027.00	15.321	155.449	2954.30	ENTERED LANDBOX (284'FNL & 865'FWL, SEC.26) 40.0285804 -104.8641844
6757.00	1.852	312.388	6620.46	KOP
7628.00	57.481	358.891	7306.07	ENTERED RADIUS HEEL (298'FNL & 974'FWL, SEC.26) 40.0285428 -104.8637947
8252.00	93.020	0.730	7463.63	LANDING (296'FSL & 979'FWL, SEC.23) 40.0301736 -104.8637742
12916.00	90.335	359.551	7371.16	ENTERED RADIUS TOE (296'FNL & 972'FWL, SEC.23) 40.0429580 -104.8638108
13852.00	93.790	3.760	7360.32	LAST BHI MWD+IFR+SC SURVEY
13913.00	93.790	3.760	7356.29	PTB (687'FSL & 991'FWL, SEC.14) 40.0456916 -104.8637504