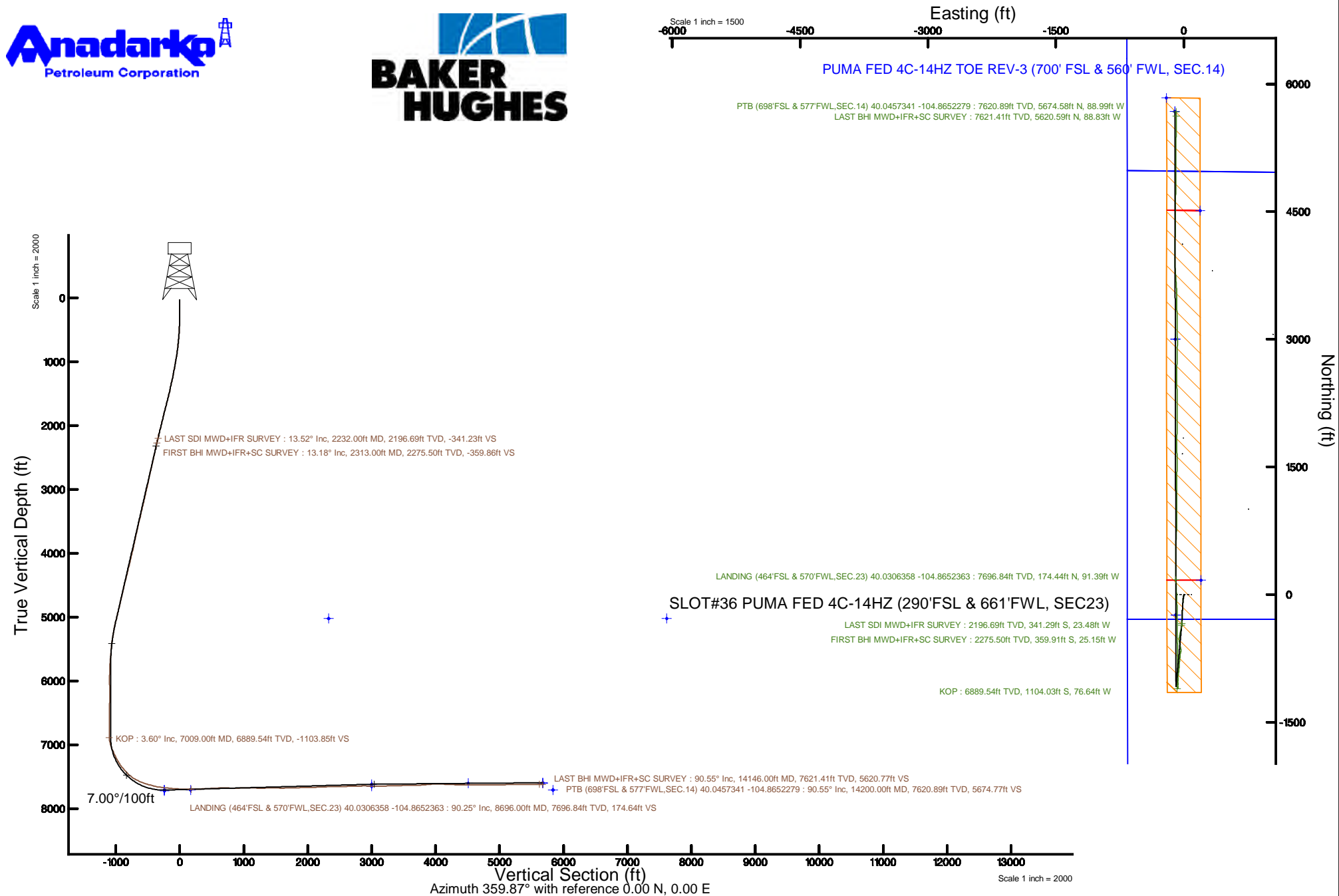


# KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#36 PUMA FED 4C-14HZ (290'FSL & 661'FWL, SEC23)  
Field: WELD COUNTY (UTM/TRUE NORTH) Well: PUMA FED 4C-14HZ  
Facility: SEC.23-T1N-R67W Wellbore: PUMA FED 4C-14HZ PWB

Plot reference wellpath is PUMA FED 4C-14HZ REV C.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#36 PUMA FED 4C-14HZ (290'FSL & 661'FWL, SEC23)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2017-03-15
	Database: WA_DEN_Anadarko_Defn



## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 PUMA FED 4C-14HZ (290'FSL & 661'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4C-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4C-14HZ AWP
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	3/15/2017 at 3:56 PM
Convergence at slot	0.09° East	Database/Source file	WA_DEN_Anadarko_Defn/PUMA_FED_4C-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	-1.90	-3883.31	1678232.11	14537743.54	40°01'48.565"N	104°51'53.676"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#36 PUMA FED 4C-14HZ (290'FSL & 661'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	359.10°

# Actual Wellpath Report

PUMA FED 4C-14HZ AWP

Page 2 of 8

## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 PUMA FED 4C-14HZ (290'FSL & 661'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4C-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4C-14HZ AWB
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	144.070	0.00	0.00	0.00	0.00	1678232.11	14537743.54	40°01'48.565"N	104°51'53.676"W	0.00	
32.00	0.000	144.070	32.00	0.00	0.00	0.00	1678232.11	14537743.54	40°01'48.565"N	104°51'53.676"W	0.00	
154.00	0.670	144.070	154.00	-0.58	-0.58	0.42	1678232.53	14537742.96	40°01'48.559"N	104°51'53.671"W	0.55	
239.00	0.780	184.170	238.99	-1.57	-1.56	0.67	1678232.78	14537741.98	40°01'48.550"N	104°51'53.667"W	0.60	
372.00	1.450	178.690	371.97	-4.15	-4.14	0.64	1678232.75	14537739.40	40°01'48.524"N	104°51'53.668"W	0.51	
461.00	2.970	186.850	460.90	-7.56	-7.56	0.39	1678232.51	14537735.99	40°01'48.490"N	104°51'53.671"W	1.74	
550.00	3.920	192.500	549.73	-12.81	-12.82	-0.54	1678231.58	14537730.73	40°01'48.438"N	104°51'53.683"W	1.13	
637.00	4.630	192.210	636.49	-19.12	-19.15	-1.93	1678230.21	14537724.39	40°01'48.376"N	104°51'53.701"W	0.82	
721.00	5.940	191.050	720.13	-26.67	-26.73	-3.48	1678228.67	14537716.81	40°01'48.301"N	104°51'53.721"W	1.56	
813.00	7.730	187.980	811.48	-37.45	-37.53	-5.25	1678226.92	14537706.01	40°01'48.194"N	104°51'53.743"W	1.99	
897.00	9.220	186.610	894.56	-49.70	-49.81	-6.81	1678225.38	14537693.74	40°01'48.073"N	104°51'53.764"W	1.79	
986.00	9.920	184.380	982.32	-64.40	-64.54	-8.22	1678223.99	14537679.01	40°01'47.927"N	104°51'53.782"W	0.89	
1072.00	9.940	187.100	1067.03	-79.13	-79.29	-9.70	1678222.53	14537664.27	40°01'47.781"N	104°51'53.801"W	0.55	
1161.00	10.570	182.220	1154.61	-94.89	-95.07	-10.96	1678221.29	14537648.49	40°01'47.625"N	104°51'53.817"W	1.21	
1292.00	12.410	184.770	1282.98	-120.89	-121.11	-12.60	1678219.70	14537622.46	40°01'47.368"N	104°51'53.838"W	1.46	
1379.00	12.170	183.420	1367.99	-139.34	-139.58	-13.92	1678218.40	14537604.00	40°01'47.186"N	104°51'53.855"W	0.43	
1465.00	12.590	183.260	1451.99	-157.73	-157.98	-15.00	1678217.35	14537585.60	40°01'47.004"N	104°51'53.869"W	0.49	
1554.00	13.910	181.960	1538.61	-178.09	-178.36	-15.92	1678216.47	14537565.23	40°01'46.802"N	104°51'53.881"W	1.52	
1643.00	14.200	183.470	1624.95	-199.66	-199.95	-16.94	1678215.47	14537543.65	40°01'46.589"N	104°51'53.894"W	0.53	
1729.00	14.400	183.850	1708.29	-220.83	-221.15	-18.30	1678214.15	14537522.45	40°01'46.380"N	104°51'53.911"W	0.26	
1818.00	13.980	182.640	1794.57	-242.59	-242.93	-19.54	1678212.95	14537500.68	40°01'46.164"N	104°51'53.927"W	0.58	
1905.00	13.760	180.320	1879.03	-263.42	-263.77	-20.08	1678212.44	14537479.84	40°01'45.958"N	104°51'53.934"W	0.69	
1991.00	14.230	181.880	1962.48	-284.21	-284.56	-20.48	1678212.06	14537459.06	40°01'45.753"N	104°51'53.939"W	0.70	
2080.00	13.610	182.640	2048.87	-305.58	-305.96	-21.32	1678211.26	14537437.67	40°01'45.541"N	104°51'53.950"W	0.73	
2169.00	13.360	183.620	2135.41	-326.29	-326.68	-22.46	1678210.16	14537416.96	40°01'45.337"N	104°51'53.965"W	0.38	
2232.00	13.520	184.400	2196.69	-340.88	-341.29	-23.48	1678209.15	14537402.35	40°01'45.192"N	104°51'53.978"W	0.38	LAST SDI MWD+IFR SURVEY
2313.00	13.180	185.840	2275.50	-359.47	-359.91	-25.15	1678207.52	14537383.73	40°01'45.008"N	104°51'53.999"W	0.59	FIRST BHI MWD+IFR+SC SURVEY
2406.00	12.530	184.690	2366.17	-380.04	-380.52	-27.05	1678205.65	14537363.14	40°01'44.805"N	104°51'54.024"W	0.75	
2500.00	12.680	196.850	2457.92	-400.02	-400.56	-30.87	1678201.85	14537343.10	40°01'44.607"N	104°51'54.073"W	2.82	
2594.00	12.810	189.510	2549.61	-420.10	-420.71	-35.59	1678197.17	14537322.95	40°01'44.407"N	104°51'54.133"W	1.73	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 PUMA FED 4C-14HZ (290'FSL & 661'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4C-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4C-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
2688.00	14.100	191.950	2641.03	-441.51	-442.19	-39.68	1678193.11	14537301.47	40°01'44.195"N	104°51'54.186"W	1.50	
2782.00	13.000	191.370	2732.41	-463.01	-463.76	-44.14	1678188.69	14537279.90	40°01'43.982"N	104°51'54.243"W	1.18	
2876.00	11.460	190.930	2824.27	-482.48	-483.29	-47.99	1678184.87	14537260.37	40°01'43.789"N	104°51'54.293"W	1.64	
2969.00	11.900	185.650	2915.35	-501.05	-501.90	-50.69	1678182.20	14537241.76	40°01'43.605"N	104°51'54.328"W	1.24	
3064.00	13.690	180.790	3007.99	-522.02	-522.89	-51.81	1678181.11	14537220.78	40°01'43.398"N	104°51'54.342"W	2.20	
3157.00	12.650	179.580	3098.54	-543.20	-544.08	-51.88	1678181.07	14537199.60	40°01'43.188"N	104°51'54.343"W	1.16	
3251.00	12.680	168.220	3190.27	-563.63	-564.48	-49.70	1678183.28	14537179.21	40°01'42.987"N	104°51'54.315"W	2.65	
3346.00	14.300	170.240	3282.65	-585.46	-586.25	-45.58	1678187.43	14537157.46	40°01'42.772"N	104°51'54.262"W	1.78	
3439.00	12.370	168.440	3373.14	-606.60	-607.33	-41.64	1678191.41	14537136.39	40°01'42.563"N	104°51'54.211"W	2.12	
3534.00	14.470	170.640	3465.54	-628.34	-629.01	-37.67	1678195.41	14537114.72	40°01'42.349"N	104°51'54.160"W	2.27	
3627.00	12.730	178.090	3555.93	-650.09	-650.72	-35.44	1678197.67	14537093.03	40°01'42.134"N	104°51'54.132"W	2.65	
3721.00	13.100	186.070	3647.56	-671.02	-671.67	-36.22	1678196.92	14537072.09	40°01'41.927"N	104°51'54.142"W	1.94	
3814.00	11.960	197.180	3738.36	-690.64	-691.36	-40.18	1678192.99	14537052.40	40°01'41.733"N	104°51'54.193"W	2.86	
3908.00	11.570	183.300	3830.40	-709.31	-710.08	-43.60	1678189.60	14537033.68	40°01'41.548"N	104°51'54.236"W	3.03	
4002.00	12.950	184.280	3922.26	-729.20	-729.99	-44.93	1678188.30	14537013.77	40°01'41.351"N	104°51'54.254"W	1.48	
4097.00	14.330	186.170	4014.58	-751.47	-752.30	-46.99	1678186.28	14536991.47	40°01'41.131"N	104°51'54.280"W	1.53	
4191.00	12.410	183.840	4106.03	-773.08	-773.94	-48.91	1678184.39	14536969.83	40°01'40.917"N	104°51'54.305"W	2.12	
4285.00	14.100	193.690	4197.53	-794.23	-795.15	-52.30	1678181.03	14536948.63	40°01'40.707"N	104°51'54.348"W	2.99	
4379.00	13.870	180.350	4288.77	-816.58	-817.55	-55.08	1678178.29	14536926.24	40°01'40.486"N	104°51'54.384"W	3.43	
4473.00	13.840	179.630	4380.03	-839.09	-840.06	-55.08	1678178.33	14536903.74	40°01'40.263"N	104°51'54.384"W	0.19	
4567.00	13.880	186.640	4471.30	-861.51	-862.50	-56.31	1678177.13	14536881.30	40°01'40.042"N	104°51'54.400"W	1.79	
4662.00	12.580	186.190	4563.78	-883.07	-884.10	-58.74	1678174.73	14536859.70	40°01'39.828"N	104°51'54.431"W	1.37	
4756.00	13.490	184.550	4655.36	-904.15	-905.21	-60.72	1678172.79	14536838.60	40°01'39.619"N	104°51'54.456"W	1.04	
4780.00	13.100	183.680	4678.71	-909.64	-910.71	-61.11	1678172.40	14536833.10	40°01'39.565"N	104°51'54.462"W	1.83	
4873.00	12.930	190.010	4769.33	-930.37	-931.48	-63.60	1678169.95	14536812.34	40°01'39.360"N	104°51'54.494"W	1.54	
4967.00	13.910	185.190	4860.76	-951.93	-953.09	-66.45	1678167.13	14536790.73	40°01'39.146"N	104°51'54.530"W	1.58	
5061.00	13.350	182.020	4952.12	-974.00	-975.19	-67.85	1678165.76	14536768.64	40°01'38.928"N	104°51'54.548"W	0.99	
5156.00	14.060	185.430	5044.41	-996.43	-997.64	-69.33	1678164.32	14536746.20	40°01'38.706"N	104°51'54.567"W	1.13	
5250.00	12.140	185.240	5135.96	-1017.61	-1018.85	-71.31	1678162.37	14536724.99	40°01'38.496"N	104°51'54.593"W	2.04	
5344.00	10.010	183.750	5228.21	-1035.58	-1036.85	-72.75	1678160.96	14536707.00	40°01'38.319"N	104°51'54.611"W	2.29	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 PUMA FED 4C-14HZ (290'FSL & 661'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4C-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4C-14HZ AWB
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
5438.00	8.370	181.040	5321.00	-1050.56	-1051.84	-73.41	1678160.32	14536692.01	40°01'38.170"N	104°51'54.620"W	1.80	
5532.00	6.920	175.150	5414.16	-1063.05	-1064.32	-73.06	1678160.69	14536679.53	40°01'38.047"N	104°51'54.615"W	1.75	
5625.00	5.290	170.430	5506.63	-1072.88	-1074.13	-71.87	1678161.90	14536669.73	40°01'37.950"N	104°51'54.600"W	1.83	
5719.00	3.990	163.010	5600.32	-1080.30	-1081.54	-70.19	1678163.58	14536662.33	40°01'37.877"N	104°51'54.578"W	1.52	
5813.00	5.490	185.350	5694.01	-1087.91	-1089.14	-69.66	1678164.13	14536654.73	40°01'37.802"N	104°51'54.571"W	2.50	
5908.00	2.940	154.610	5788.75	-1094.65	-1095.87	-69.03	1678164.76	14536648.01	40°01'37.735"N	104°51'54.563"W	3.50	
6002.00	0.830	233.230	5882.70	-1097.24	-1098.45	-68.55	1678165.25	14536645.42	40°01'37.710"N	104°51'54.557"W	3.08	
6191.00	0.620	323.200	6071.69	-1097.22	-1098.46	-70.26	1678163.54	14536645.42	40°01'37.710"N	104°51'54.579"W	0.55	
6285.00	0.770	329.600	6165.69	-1096.26	-1097.50	-70.88	1678162.92	14536646.37	40°01'37.719"N	104°51'54.587"W	0.18	
6379.00	1.640	112.960	6259.68	-1096.25	-1097.48	-69.96	1678163.84	14536646.39	40°01'37.719"N	104°51'54.575"W	2.45	
6473.00	1.670	227.030	6353.66	-1097.71	-1098.94	-69.72	1678164.08	14536644.93	40°01'37.705"N	104°51'54.572"W	2.95	
6661.00	1.380	237.420	6541.59	-1100.74	-1102.03	-73.64	1678160.17	14536641.84	40°01'37.674"N	104°51'54.623"W	0.21	
6793.00	0.760	218.500	6673.57	-1102.25	-1103.57	-75.52	1678158.29	14536640.30	40°01'37.659"N	104°51'54.647"W	0.53	
6981.00	0.310	232.940	6861.56	-1103.51	-1104.85	-76.70	1678157.11	14536639.02	40°01'37.647"N	104°51'54.662"W	0.25	
7009.00†	3.604	8.330	6889.54	-1102.69	-1104.03	-76.64	1678157.18	14536639.84	40°01'37.655"N	104°51'54.661"W	13.68	KOP
7075.00	12.630	10.670	6954.81	-1093.55	-1094.86	-75.00	1678158.80	14536649.00	40°01'37.745"N	104°51'54.640"W	13.68	
7169.00	20.610	6.240	7044.81	-1067.02	-1068.27	-71.29	1678162.47	14536675.59	40°01'38.008"N	104°51'54.592"W	8.59	
7261.00	24.440	355.020	7129.82	-1031.95	-1033.19	-71.18	1678162.52	14536710.66	40°01'38.355"N	104°51'54.591"W	6.24	
7353.00	27.150	354.350	7212.65	-992.04	-993.33	-74.90	1678158.74	14536750.49	40°01'38.749"N	104°51'54.639"W	2.96	
7444.00	32.190	359.280	7291.70	-947.07	-948.40	-77.25	1678156.33	14536795.41	40°01'39.193"N	104°51'54.669"W	6.15	
7536.00	41.450	5.150	7365.29	-892.15	-893.43	-74.82	1678158.67	14536850.36	40°01'39.736"N	104°51'54.638"W	10.76	
7629.00	41.910	358.050	7434.79	-830.45	-831.69	-73.11	1678160.29	14536912.07	40°01'40.346"N	104°51'54.616"W	5.10	
7723.00	52.530	1.170	7498.55	-761.57	-762.82	-73.42	1678159.87	14536980.92	40°01'41.027"N	104°51'54.620"W	11.55	
7817.00	62.200	359.260	7549.19	-682.53	-683.76	-73.19	1678159.98	14537059.94	40°01'41.808"N	104°51'54.617"W	10.43	
7911.00	69.790	358.090	7587.40	-596.72	-597.98	-75.20	1678157.84	14537145.69	40°01'42.656"N	104°51'54.643"W	8.15	
8005.00	72.290	357.290	7617.94	-507.86	-509.16	-78.79	1678154.12	14537234.47	40°01'43.533"N	104°51'54.689"W	2.78	
8099.00	75.450	1.500	7644.06	-417.59	-418.90	-79.72	1678153.06	14537324.69	40°01'44.425"N	104°51'54.701"W	5.46	
8193.00	82.150	359.920	7662.31	-325.48	-326.75	-78.59	1678154.04	14537416.80	40°01'45.336"N	104°51'54.686"W	7.32	
8286.00	83.450	359.480	7673.97	-233.22	-234.49	-79.08	1678153.42	14537509.03	40°01'46.248"N	104°51'54.693"W	1.47	
8380.00	85.010	358.700	7683.42	-139.70	-140.98	-80.56	1678151.79	14537602.50	40°01'47.172"N	104°51'54.712"W	1.85	

## REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 PUMA FED 4C-14HZ (290'FSL & 661'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4C-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4C-14HZ AWB
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
8474.00	86.670	357.720	7690.24	-45.96	-47.28	-83.49	1678148.72	14537696.16	40°01'48.098"N	104°51'54.749"W	2.05	
8568.00	87.910	357.160	7694.68	47.89	46.52	-87.68	1678144.39	14537789.91	40°01'49.025"N	104°51'54.803"W	1.45	
8642.00	89.170	358.670	7696.57	121.85	120.45	-90.38	1678141.59	14537863.80	40°01'49.755"N	104°51'54.838"W	2.66	
8696.00†	90.250	359.181	7696.84	175.85	174.44	-91.39	1678140.49	14537917.77	40°01'50.289"N	104°51'54.851"W	2.21	LANDING (464'FSL & 570'FWL, SEC.23) 40.0306358 -104.8652363
8736.00	91.050	359.560	7696.38	215.84	214.43	-91.83	1678139.99	14537957.74	40°01'50.684"N	104°51'54.856"W	2.21	
8830.00	92.490	359.280	7693.48	309.79	308.38	-92.78	1678138.90	14538051.65	40°01'51.612"N	104°51'54.869"W	1.56	
8924.00	92.280	359.850	7689.57	403.71	402.29	-93.49	1678138.04	14538145.53	40°01'52.541"N	104°51'54.878"W	0.65	
9019.00	93.790	359.200	7684.54	498.57	497.15	-94.28	1678137.11	14538240.35	40°01'53.478"N	104°51'54.888"W	1.73	
9112.00	92.800	1.960	7679.19	591.38	589.98	-93.34	1678137.91	14538333.15	40°01'54.395"N	104°51'54.876"W	3.15	
9205.00	89.510	3.510	7677.32	684.15	682.84	-88.90	1678142.21	14538425.97	40°01'55.313"N	104°51'54.819"W	3.91	
9299.00	88.400	1.060	7679.03	777.99	776.75	-85.15	1678145.81	14538519.84	40°01'56.241"N	104°51'54.771"W	2.86	
9393.00	90.220	0.420	7680.17	871.94	870.73	-83.94	1678146.88	14538613.79	40°01'57.170"N	104°51'54.755"W	2.05	
9487.00	92.220	0.100	7678.16	965.89	964.70	-83.51	1678147.17	14538707.72	40°01'58.098"N	104°51'54.750"W	2.15	
9581.00	90.000	1.100	7676.34	1059.83	1058.67	-82.53	1678148.01	14538801.66	40°01'59.027"N	104°51'54.737"W	2.59	
9675.00	88.150	0.180	7677.86	1153.78	1152.65	-81.48	1678148.91	14538895.60	40°01'59.956"N	104°51'54.723"W	2.20	
9769.00	89.570	359.720	7679.73	1247.75	1246.62	-81.56	1678148.69	14538989.54	40°02'00.884"N	104°51'54.725"W	1.59	
9863.00	91.480	0.020	7678.87	1341.73	1340.62	-81.77	1678148.33	14539083.49	40°02'01.813"N	104°51'54.727"W	2.06	
9957.00	90.370	0.760	7677.35	1435.70	1434.60	-81.13	1678148.83	14539177.44	40°02'02.742"N	104°51'54.719"W	1.42	
10052.00	88.550	359.910	7678.25	1530.66	1529.59	-80.58	1678149.24	14539272.39	40°02'03.681"N	104°51'54.712"W	2.11	
10145.00	90.340	359.840	7679.15	1623.65	1622.58	-80.78	1678148.90	14539365.35	40°02'04.600"N	104°51'54.715"W	1.93	
10239.00	92.400	358.710	7676.90	1717.61	1716.54	-81.97	1678147.57	14539459.27	40°02'05.528"N	104°51'54.730"W	2.50	
10333.00	90.830	0.980	7674.25	1811.56	1810.49	-82.22	1678147.17	14539553.18	40°02'06.457"N	104°51'54.733"W	2.94	
10428.00	92.650	0.970	7671.37	1906.46	1905.43	-80.61	1678148.64	14539648.08	40°02'07.395"N	104°51'54.712"W	1.92	
10522.00	90.430	0.970	7668.84	2000.37	1999.38	-79.02	1678150.09	14539741.99	40°02'08.323"N	104°51'54.692"W	2.36	
10616.00	91.910	0.850	7666.92	2094.30	2093.34	-77.52	1678151.44	14539835.92	40°02'09.252"N	104°51'54.673"W	1.58	
10710.00	91.600	359.760	7664.04	2188.24	2187.30	-77.02	1678151.80	14539929.84	40°02'10.180"N	104°51'54.666"W	1.21	
10805.00	93.670	358.830	7659.68	2283.13	2282.18	-78.19	1678150.49	14540024.69	40°02'11.118"N	104°51'54.681"W	2.39	
10899.00	91.200	358.810	7655.68	2377.04	2376.07	-80.12	1678148.41	14540118.53	40°02'12.046"N	104°51'54.706"W	2.63	
10993.00	89.880	359.340	7654.80	2471.03	2470.05	-81.64	1678146.75	14540212.48	40°02'12.975"N	104°51'54.726"W	1.51	
11088.00	91.750	0.060	7653.44	2566.01	2565.04	-82.14	1678146.11	14540307.42	40°02'13.913"N	104°51'54.732"W	2.11	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 PUMA FED 4C-14HZ (290'FSL & 661'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4C-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4C-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
11182.00	90.770	0.670	7651.38	2659.96	2659.01	-81.54	1678146.57	14540401.36	40°02'14.842"N	104°51'54.724"W	1.23	
11276.00	92.490	1.080	7648.70	2753.88	2752.96	-80.11	1678147.86	14540495.27	40°02'15.770"N	104°51'54.706"W	1.88	
11371.00	91.260	1.870	7645.60	2848.74	2847.87	-77.66	1678150.16	14540590.15	40°02'16.708"N	104°51'54.674"W	1.54	
11464.00	87.970	0.280	7646.22	2941.67	2940.84	-75.92	1678151.76	14540683.08	40°02'17.627"N	104°51'54.652"W	3.93	
11558.00	89.010	359.440	7648.70	3035.62	3034.80	-76.15	1678151.39	14540777.01	40°02'18.556"N	104°51'54.655"W	1.42	
11652.00	90.650	359.140	7648.98	3129.62	3128.79	-77.31	1678150.08	14540870.96	40°02'19.485"N	104°51'54.670"W	1.77	
11746.00	92.370	358.770	7646.50	3223.58	3222.74	-79.03	1678148.23	14540964.87	40°02'20.413"N	104°51'54.692"W	1.87	
11840.00	90.770	359.210	7643.92	3317.54	3316.69	-80.68	1678146.43	14541058.77	40°02'21.341"N	104°51'54.713"W	1.77	
11934.00	92.470	359.670	7641.27	3411.50	3410.64	-81.60	1678145.37	14541152.69	40°02'22.270"N	104°51'54.725"W	1.87	
12027.00	91.320	359.650	7638.19	3504.44	3503.59	-82.15	1678144.68	14541245.60	40°02'23.188"N	104°51'54.732"W	1.24	
12121.00	89.970	356.410	7637.13	3598.41	3597.51	-85.38	1678141.31	14541339.48	40°02'24.117"N	104°51'54.774"W	3.73	
12215.00	91.170	356.020	7636.20	3692.28	3691.30	-91.59	1678134.96	14541433.22	40°02'25.043"N	104°51'54.854"W	1.34	
12309.00	93.980	356.080	7631.98	3786.04	3784.97	-98.06	1678128.35	14541526.84	40°02'25.969"N	104°51'54.937"W	2.99	
12403.00	95.150	358.180	7624.49	3879.68	3878.55	-102.75	1678123.52	14541620.38	40°02'26.894"N	104°51'54.997"W	2.55	
12497.00	93.910	0.370	7617.07	3973.38	3972.24	-103.93	1678122.20	14541714.03	40°02'27.820"N	104°51'55.012"W	2.67	
12591.00	88.180	1.130	7615.35	4067.29	4066.18	-102.70	1678123.28	14541807.93	40°02'28.748"N	104°51'54.996"W	6.15	
12685.00	86.520	0.590	7619.70	4161.14	4160.06	-101.29	1678124.55	14541901.78	40°02'29.676"N	104°51'54.978"W	1.86	
12780.00	87.810	0.320	7624.40	4255.99	4254.94	-100.54	1678125.16	14541996.62	40°02'30.613"N	104°51'54.969"W	1.39	
12874.00	89.410	359.500	7626.68	4349.95	4348.91	-100.69	1678124.87	14542090.55	40°02'31.542"N	104°51'54.971"W	1.91	
12968.00	88.460	0.510	7628.43	4443.92	4442.89	-100.68	1678124.73	14542184.49	40°02'32.471"N	104°51'54.970"W	1.47	
13062.00	90.430	1.430	7629.34	4537.86	4536.87	-99.09	1678126.18	14542278.43	40°02'33.400"N	104°51'54.950"W	2.31	
13156.00	90.490	1.200	7628.58	4631.79	4630.84	-96.93	1678128.20	14542372.37	40°02'34.328"N	104°51'54.922"W	0.25	
13250.00	88.800	0.180	7629.16	4725.75	4724.83	-95.80	1678129.19	14542466.32	40°02'35.257"N	104°51'54.908"W	2.10	
13344.00	90.520	0.340	7629.72	4819.72	4818.82	-95.37	1678129.47	14542560.28	40°02'36.186"N	104°51'54.902"W	1.84	
13438.00	89.510	0.120	7629.70	4913.70	4912.82	-94.99	1678129.70	14542654.24	40°02'37.115"N	104°51'54.897"W	1.10	
13533.00	91.230	359.940	7629.08	5008.69	5007.81	-94.94	1678129.61	14542749.20	40°02'38.053"N	104°51'54.897"W	1.82	
13626.00	93.180	359.750	7625.51	5101.60	5100.74	-95.20	1678129.22	14542842.09	40°02'38.972"N	104°51'54.900"W	2.11	
13720.00	91.480	1.030	7621.68	5195.50	5194.65	-94.56	1678129.71	14542935.96	40°02'39.900"N	104°51'54.892"W	2.26	
13813.00	88.800	1.300	7621.46	5288.43	5287.63	-92.67	1678131.46	14543028.90	40°02'40.819"N	104°51'54.867"W	2.90	
13907.00	90.090	0.800	7622.37	5382.37	5381.60	-90.94	1678133.04	14543122.84	40°02'41.747"N	104°51'54.845"W	1.47	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 PUMA FED 4C-14HZ (290'FSL & 661'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4C-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4C-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
14001.00	90.090	0.810	7622.22	5476.33	5475.59	-89.62	1678134.22	14543216.80	40°02'42.676"N	104°51'54.828"W	0.01	
14146.00	90.550	359.820	7621.41	5621.29	5620.59	-88.83	1678134.80	14543361.73	40°02'44.109"N	104°51'54.818"W	0.75	LAST BHI MWD+IFR+SC SURVEY
14200.00	90.550	359.820	7620.89	5675.28	5674.58	-88.99	1678134.55	14543415.71	40°02'44.643"N	104°51'54.820"W	0.00	PTB (698'FSL & 577'FWL, SEC.14) 40.0457341 -104.8652279

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.14-T1N-R67W LINES	5023.00	7619.60	1954.94	1680174.71	14545363.04	40°03'03.863"N	104°51'28.537"W	polygon
SEC.23-T1N-R67W LINES	5023.00	2331.00	1974.90	1680202.68	14540076.60	40°02'11.600"N	104°51'28.286"W	polygon
SEC.26-T1N-R67W LINES	5023.00	-2922.49	1990.72	1680226.46	14534825.24	40°01'19.683"N	104°51'28.088"W	polygon
SEC.35-T1N-R67W LINES	5023.00	-8209.36	2007.52	1680251.27	14529540.52	40°00'27.437"N	104°51'27.877"W	polygon
PUMA FED 4C-14HZ TOE REV-3 (700' FSL & 560' FWL, SEC.14)	7595.00	5676.74	-105.85	1678117.70	14543417.84	40°02'44.664"N	104°51'55.037"W	point
PUMA FED 4C-14HZ TOE REV-2 (700' FSL & 560' FWL, SEC.14)	7599.00	5676.74	-105.85	1678117.70	14543417.84	40°02'44.664"N	104°51'55.037"W	point
PUMA FED 4C-14HZ 460 SETBACK-1	7604.00	4510.48	193.11	1678418.30	14542252.50	40°02'33.139"N	104°51'51.193"W	polygon
PUMA FED 4C-14HZ TOE REV-1 (700' FSL & 560' FWL, SEC.14)	7604.00	5676.74	-105.83	1678117.71	14543417.84	40°02'44.664"N	104°51'55.037"W	point
PUMA FED 4C-14HZ INTERMEDIATE TARGET @3000'VS REV-2	7619.00	2999.79	-99.91	1678127.69	14540741.97	40°02'18.210"N	104°51'54.961"W	point
PUMA FED 4C-14HZ INTERMEDIATE TARGET @3000'VS REV-1	7652.00	2999.79	-99.91	1678127.69	14540741.97	40°02'18.210"N	104°51'54.961"W	point
PUMA FED 4C-14HZ 460 SETBACK-2	7709.00	168.62	202.33	1678434.10	14537912.40	40°01'50.231"N	104°51'51.075"W	polygon
PUMA FED 4C-14HZ HEEL REV-1 (50' FSL & 568' FWL, SEC.23)	7709.00	-240.05	-92.69	1678139.81	14537503.45	40°01'46.193"N	104°51'54.868"W	point

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
PUMA FED 4C-14HZ LANDBOX	7709.00	5835.62	-205.24	1678018.10	14543576.50	40°02'46.234"N	104°51'56.315"W	polygon
PUMA FED 4C-14HZ HEEL REV-3 (50' FSL & 568' FWL, SEC.23)	7710.00	-240.03	-92.73	1678139.78	14537503.47	40°01'46.193"N	104°51'54.868"W	point
PUMA FED 4C-14HZ HEEL REV-2 (50' FSL & 568' FWL, SEC.23)	7722.00	-240.03	-92.73	1678139.78	14537503.47	40°01'46.193"N	104°51'54.868"W	point

WELLPATH COMPOSITION - Ref Wellbore: PUMA FED 4C-14HZ AWB					Ref Wellpath: PUMA FED 4C-14HZ AWP		
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment		Wellbore
32.00	2232.00	Custom APC_ISCWSA REV 2 MWD+IFR1 (approximation)			SDI MWD+IFR SURVEYS <154 - 2232>		PUMA FED 4C-14HZ AWB
2232.00	14146.00	Custom APC_ISCWSA REV 2 MWD+IFR1+SC (approximation)			BHI APC_ISCWSA REV 2 MWD+IFR1+SC <2313 - 14146>		PUMA FED 4C-14HZ AWB
14146.00	14200.00	Blind Drilling (std)			Projection to bit		PUMA FED 4C-14HZ AWB



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#36 PUMA FED 4C-14HZ (290'FSL & 661'FWL, SEC23)
Area	COLORADO	Well	PUMA FED 4C-14HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	PUMA FED 4C-14HZ AWB
Facility	SEC.23-T1N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
2232.00	13.520	184.400	2196.69	LAST SDI MWD+IFR SURVEY
2313.00	13.180	185.840	2275.50	FIRST BHI MWD+IFR+SC SURVEY
7009.00	3.604	8.330	6889.54	KOP
8696.00	90.250	359.181	7696.84	LANDING (464'FSL & 570'FWL,SEC.23) 40.0306358 -104.8652363
14146.00	90.550	359.820	7621.41	LAST BHI MWD+IFR+SC SURVEY
14200.00	90.550	359.820	7620.89	PTB (698'FSL & 577'FWL,SEC.14) 40.0457341 -104.8652279