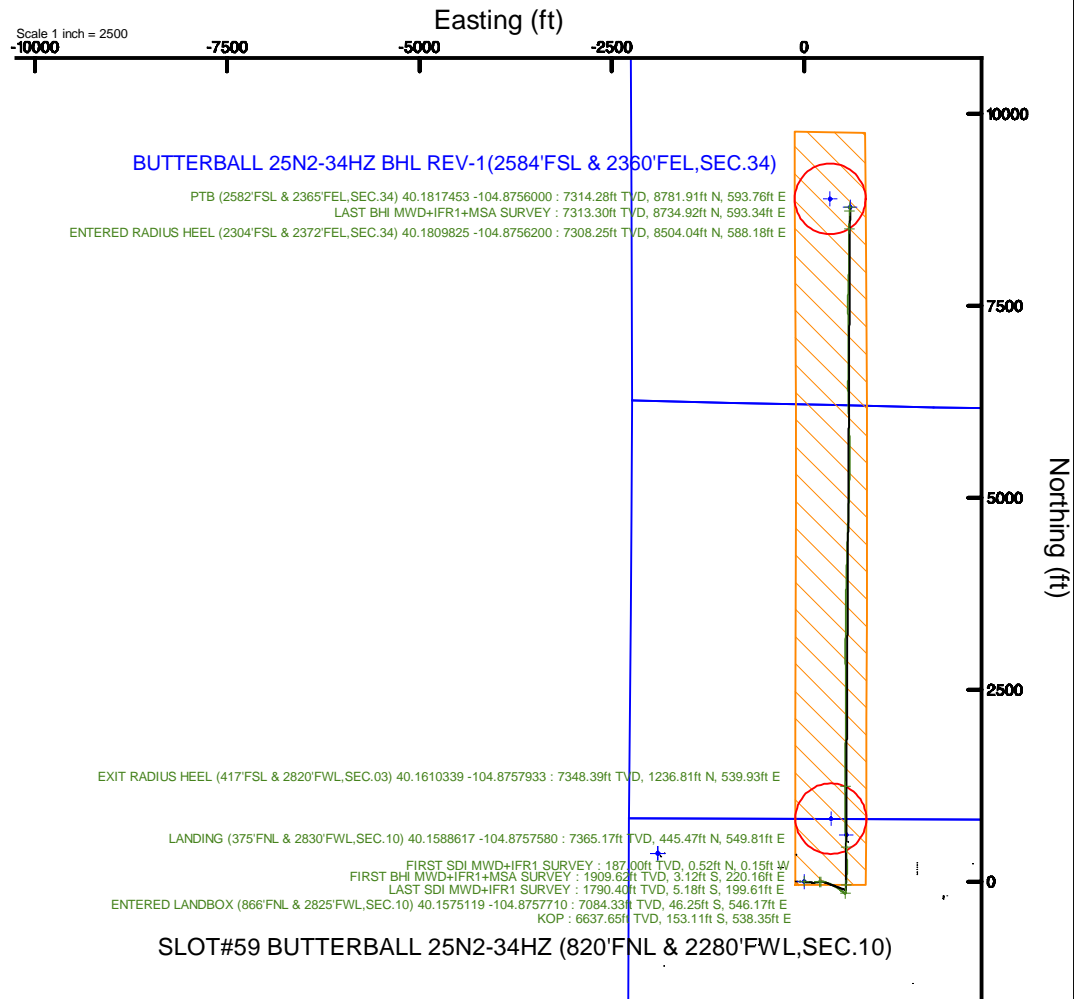
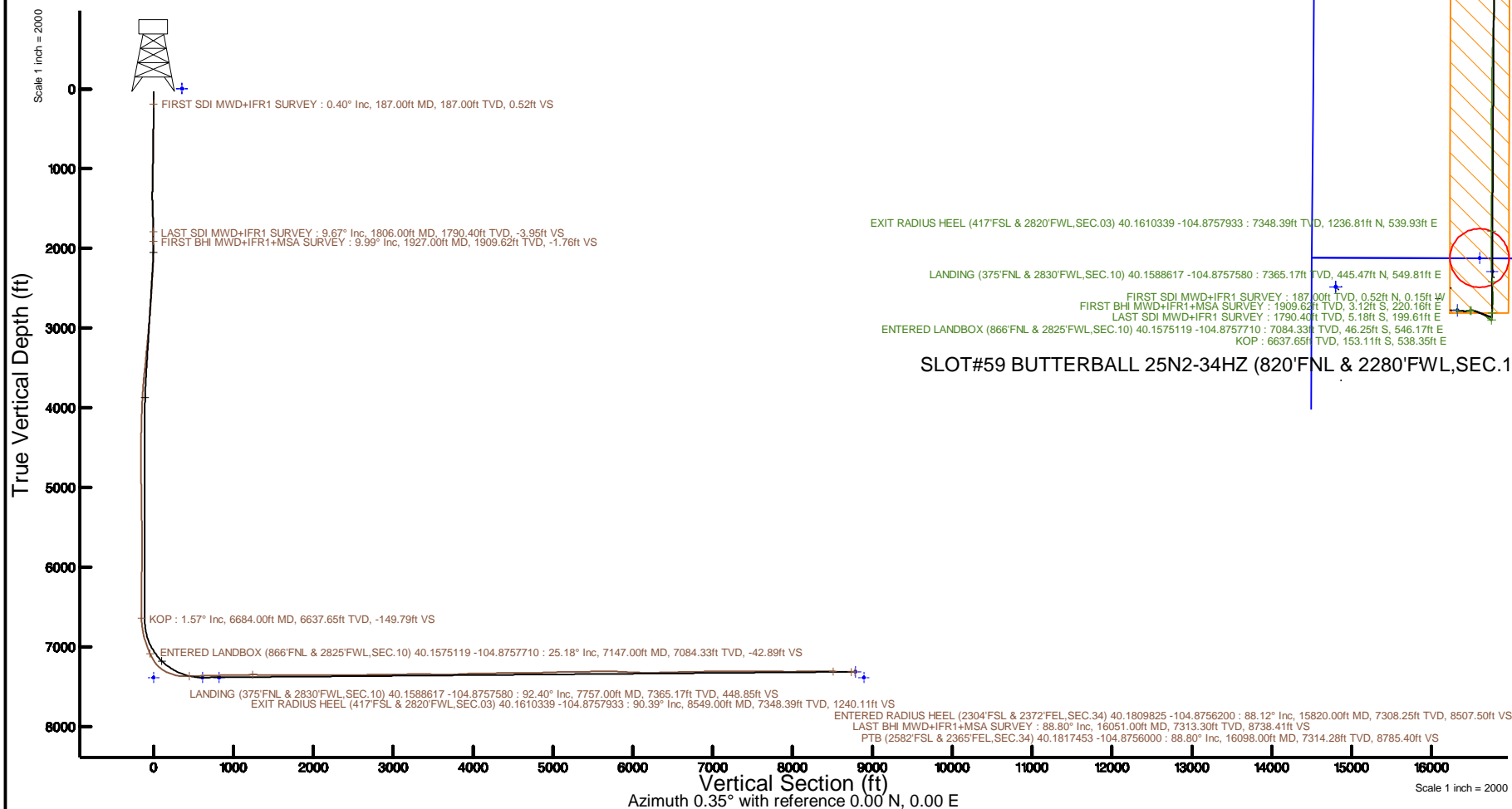


KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#59 BUTTERBALL 25N2-34HZ (820'FNL & 2280'FWL,SEC.10)
 Field: WELD COUNTY (UTM/TRUE NORTH) Well: BUTTERBALL 25N2-34HZ
 Facility: SEC.10-T2N-R67W Wellbore: BUTTERBALL 25N2-34HZ PWB

Plot reference wellpath is BUTTERBALL 25N2-34HZ PWP Rev-A.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to NABORS X22 (32') (RT)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to NABORS X22 (32') (RT)	North Reference: True north
NABORS X22 (32') (RT) to Mean Sea Level: 4966 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#59 BUTTERBALL 25N2-34HZ (820'FNL & 2280'FWL,SEC.10)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painseir on 2017-06-09
	Database: WA_DEN_Anadarko_Defn



Scale 1 inch = 2000

REFERENCE WELLPATH IDENTIFICATION

Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#59 BUTTERBALL 25N2-34HZ (820'FNL & 2280'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 25N2-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 25N2-34HZ AWB
Facility	SEC.10-T2N-R67W		

REPORT SETUP INFORMATION

Projection System	NAD83 / UTM Zone 13 North, US feet	Software System	WellArchitect® 5.0
North Reference	True	User	Painsetr
Scale	0.999601	Report Generated	6/9/2017 at 10:44 AM
Convergence at slot	0.08° East	Database/Source file	WA_DEN_Anadarko_Defn/BUTTERBALL_25N2-34HZ_AWP.xml

WELLPATH LOCATION

	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-181.34	334.72	1674581.03	14584160.46	40°09'27.500"N	104°52'39.810"W
Facility Reference Pt			1674246.19	14584341.27	40°09'29.292"N	104°52'44.121"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 (32') (RT) to Facility Vertical Datum	4966.00ft
Horizontal Reference Pt	Slot	NABORS X22 (32') (RT) to Mean Sea Level	4966.00ft
Vertical Reference Pt	NABORS X22 (32') (RT)	NABORS X22 (32') (RT) to Mud Line at Slot (SLOT#59 BUTTERBALL 25N2-34HZ (820'FNL & 2280'FWL,SEC.10))	4966.00ft
MD Reference Pt	NABORS X22 (32') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	0.35°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#59 BUTTERBALL 25N2-34HZ (820'FNL & 2280'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 25N2-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 25N2-34HZ AWP
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (180 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	343.830	0.00	0.00	0.00	0.00	1674581.03	14584160.46	40°09'27.500"N	104°52'39.810"W	0.00	
32.00	0.000	343.830	32.00	0.00	0.00	0.00	1674581.03	14584160.46	40°09'27.500"N	104°52'39.810"W	0.00	
187.00	0.400	343.830	187.00	0.52	0.52	-0.15	1674580.88	14584160.98	40°09'27.505"N	104°52'39.812"W	0.26	FIRST SDI MWD+IFR1 SURVEY
256.00	0.080	73.550	256.00	0.76	0.76	-0.17	1674580.85	14584161.22	40°09'27.508"N	104°52'39.812"W	0.59	
345.00	0.670	109.520	345.00	0.61	0.61	0.38	1674581.40	14584161.07	40°09'27.506"N	104°52'39.805"W	0.68	
433.00	1.960	113.560	432.97	-0.15	-0.17	2.24	1674583.27	14584160.30	40°09'27.498"N	104°52'39.781"W	1.47	
523.00	3.660	103.790	522.86	-1.43	-1.47	6.44	1674587.47	14584159.00	40°09'27.486"N	104°52'39.727"W	1.96	
613.00	5.640	105.400	612.56	-3.24	-3.32	13.50	1674594.52	14584157.15	40°09'27.467"N	104°52'39.636"W	2.20	
695.00	6.950	102.090	694.06	-5.30	-5.43	22.23	1674603.26	14584155.06	40°09'27.446"N	104°52'39.524"W	1.66	
784.00	7.090	92.440	782.40	-6.59	-6.80	32.99	1674614.01	14584153.71	40°09'27.433"N	104°52'39.385"W	1.33	
873.00	8.460	93.470	870.58	-7.15	-7.43	45.01	1674626.03	14584153.10	40°09'27.427"N	104°52'39.230"W	1.55	
959.00	9.530	96.760	955.52	-8.29	-8.65	58.40	1674639.41	14584151.89	40°09'27.415"N	104°52'39.058"W	1.38	
1046.00	8.900	98.740	1041.40	-10.07	-10.52	72.20	1674653.21	14584150.04	40°09'27.396"N	104°52'38.880"W	0.81	
1133.00	9.120	99.200	1127.32	-12.11	-12.64	85.66	1674666.67	14584147.94	40°09'27.375"N	104°52'38.707"W	0.27	
1222.00	9.580	94.220	1215.14	-13.70	-14.31	100.01	1674681.01	14584146.29	40°09'27.359"N	104°52'38.522"W	1.05	
1308.00	10.370	94.300	1299.84	-14.71	-15.42	114.86	1674695.86	14584145.20	40°09'27.348"N	104°52'38.331"W	0.92	
1395.00	10.460	86.690	1385.41	-14.75	-15.55	130.55	1674711.55	14584145.09	40°09'27.346"N	104°52'38.129"W	1.58	
1484.00	10.680	81.210	1472.90	-12.92	-13.83	146.77	1674727.76	14584146.84	40°09'27.363"N	104°52'37.920"W	1.16	
1572.00	9.660	75.070	1559.52	-9.68	-10.68	161.96	1674742.94	14584150.01	40°09'27.394"N	104°52'37.724"W	1.69	
1659.00	9.130	81.490	1645.36	-6.69	-7.78	175.84	1674756.81	14584152.93	40°09'27.423"N	104°52'37.545"W	1.35	
1748.00	9.380	84.720	1733.20	-4.89	-6.06	190.05	1674771.01	14584154.66	40°09'27.440"N	104°52'37.362"W	0.65	
1806.00	9.670	84.780	1790.40	-3.95	-5.18	199.61	1674780.56	14584155.55	40°09'27.449"N	104°52'37.239"W	0.50	LAST SDI MWD+IFR1 SURVEY
1927.00	9.990	83.750	1909.62	-1.76	-3.12	220.16	1674801.10	14584157.64	40°09'27.469"N	104°52'36.975"W	0.30	FIRST BHI MWD+IFR1+MSA SURVEY
2021.00	8.880	89.850	2002.35	-0.76	-2.21	235.52	1674816.46	14584158.57	40°09'27.478"N	104°52'36.777"W	1.59	
2114.00	8.800	98.520	2094.25	-1.71	-3.25	249.73	1674830.67	14584157.56	40°09'27.468"N	104°52'36.594"W	1.43	
2208.00	9.170	108.050	2187.10	-5.01	-6.63	263.97	1674844.90	14584154.19	40°09'27.434"N	104°52'36.410"W	1.63	
2302.00	10.430	110.370	2279.73	-10.20	-11.92	279.07	1674860.00	14584148.93	40°09'27.382"N	104°52'36.216"W	1.40	
2396.00	9.960	110.500	2372.25	-15.91	-17.72	294.66	1674875.59	14584143.15	40°09'27.325"N	104°52'36.015"W	0.50	
2489.00	10.790	104.110	2463.73	-20.75	-22.66	310.63	1674891.57	14584138.23	40°09'27.276"N	104°52'35.809"W	1.52	
2583.00	11.270	110.730	2556.00	-26.04	-28.06	327.76	1674908.69	14584132.86	40°09'27.223"N	104°52'35.589"W	1.44	
2676.00	10.290	113.520	2647.35	-32.47	-34.59	343.87	1674924.81	14584126.35	40°09'27.158"N	104°52'35.381"W	1.19	
2770.00	9.770	114.130	2739.92	-38.99	-41.20	358.85	1674939.79	14584119.77	40°09'27.093"N	104°52'35.188"W	0.56	
2864.00	10.730	118.370	2832.42	-46.32	-48.62	373.83	1674954.77	14584112.37	40°09'27.019"N	104°52'34.995"W	1.30	
2958.00	9.980	118.590	2924.89	-54.28	-56.68	388.68	1674969.63	14584104.34	40°09'26.940"N	104°52'34.804"W	0.80	
3051.00	10.990	119.230	3016.33	-62.37	-64.86	403.49	1674984.45	14584096.18	40°09'26.859"N	104°52'34.613"W	1.09	
3145.00	9.850	118.430	3108.78	-70.49	-73.07	418.39	1674999.34	14584088.00	40°09'26.778"N	104°52'34.422"W	1.22	
3239.00	10.510	123.700	3201.30	-78.98	-81.65	432.59	1675013.55	14584079.43	40°09'26.693"N	104°52'34.239"W	1.21	
3333.00	9.210	123.210	3293.91	-87.78	-90.53	446.02	1675026.99	14584070.58	40°09'26.605"N	104°52'34.066"W	1.39	
3427.00	8.630	126.500	3386.77	-96.02	-98.84	457.98	1675038.96	14584062.28	40°09'26.523"N	104°52'33.912"W	0.82	
3520.00	9.340	135.410	3478.64	-105.48	-108.37	468.89	1675049.87	14584052.78	40°09'26.429"N	104°52'33.771"W	1.68	
3614.00	9.890	126.110	3571.32	-115.59	-118.56	480.76	1675061.76	14584042.61	40°09'26.328"N	104°52'33.618"W	1.75	
3708.00	8.590	125.770	3664.10	-124.38	-127.42	492.98	1675073.99	14584033.77	40°09'26.241"N	104°52'33.461"W	1.38	
3801.00	7.060	126.090	3756.23	-131.74	-134.85	503.24	1675084.25	14584026.36	40°09'26.167"N	104°52'33.329"W	1.65	
3895.00	5.530	126.840	3849.66	-137.81	-140.97	511.53	1675092.55	14584020.25	40°09'26.107"N	104°52'33.222"W	1.63	
3989.00	4.120	126.140	3943.33	-142.48	-145.67	517.88	1675098.90	14584015.56	40°09'26.060"N	104°52'33.140"W	1.50	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#59 BUTTERBALL 25N2-34HZ (820'FNL & 2280'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 25N2-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 25N2-34HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (180 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
4082.00	3.430	127.480	4036.12	-146.11	-149.34	522.79	1675103.81	14584011.90	40°09'26.024"N	104°52'33.077"W	0.75	
4176.00	3.010	133.960	4129.98	-149.51	-152.76	526.80	1675107.82	14584008.48	40°09'25.990"N	104°52'33.025"W	0.59	
4269.00	2.440	129.890	4222.87	-152.46	-155.72	530.07	1675111.10	14584005.52	40°09'25.961"N	104°52'32.983"W	0.65	
4362.00	1.590	126.760	4315.81	-154.48	-157.77	532.62	1675113.65	14584003.49	40°09'25.941"N	104°52'32.950"W	0.92	
4456.00	1.050	121.400	4409.79	-155.70	-159.00	534.40	1675115.44	14584002.26	40°09'25.929"N	104°52'32.927"W	0.59	
4482.00	0.990	122.290	4435.78	-155.94	-159.24	534.80	1675115.83	14584002.02	40°09'25.926"N	104°52'32.922"W	0.24	
4575.00	0.590	92.770	4528.77	-156.39	-159.69	535.96	1675116.99	14584001.57	40°09'25.922"N	104°52'32.907"W	0.60	
4669.00	0.460	96.430	4622.77	-156.45	-159.76	536.81	1675117.84	14584001.50	40°09'25.921"N	104°52'32.896"W	0.14	
4763.00	0.370	118.720	4716.77	-156.63	-159.95	537.45	1675118.49	14584001.32	40°09'25.919"N	104°52'32.888"W	0.19	
4856.00	0.660	31.980	4809.77	-156.32	-159.64	538.00	1675119.03	14584001.63	40°09'25.922"N	104°52'32.881"W	0.79	
4950.00	0.910	15.750	4903.76	-155.14	-158.46	538.49	1675119.52	14584002.80	40°09'25.934"N	104°52'32.875"W	0.35	
5044.00	1.090	16.430	4997.74	-153.56	-156.88	538.95	1675119.97	14584004.38	40°09'25.950"N	104°52'32.869"W	0.19	
5138.00	0.890	15.240	5091.73	-151.99	-155.32	539.39	1675120.42	14584005.94	40°09'25.965"N	104°52'32.863"W	0.21	
5231.00	0.840	6.210	5184.72	-150.62	-153.95	539.66	1675120.68	14584007.32	40°09'25.979"N	104°52'32.860"W	0.16	
5325.00	0.810	17.550	5278.71	-149.30	-152.63	539.93	1675120.95	14584008.63	40°09'25.992"N	104°52'32.856"W	0.18	
5419.00	0.690	16.660	5372.70	-148.12	-151.45	540.29	1675121.31	14584009.81	40°09'26.003"N	104°52'32.851"W	0.13	
5513.00	0.560	352.770	5466.69	-147.12	-150.45	540.40	1675121.41	14584010.81	40°09'26.013"N	104°52'32.850"W	0.31	
5606.00	0.600	341.760	5559.69	-146.21	-149.54	540.19	1675121.20	14584011.72	40°09'26.022"N	104°52'32.853"W	0.13	
5700.00	0.430	309.430	5653.69	-145.52	-148.85	539.76	1675120.78	14584012.41	40°09'26.029"N	104°52'32.858"W	0.35	
5794.00	0.360	75.880	5747.68	-145.22	-148.55	539.77	1675120.79	14584012.71	40°09'26.032"N	104°52'32.858"W	0.75	
5888.00	0.310	157.690	5841.68	-145.39	-148.72	540.16	1675121.17	14584012.54	40°09'26.030"N	104°52'32.853"W	0.47	
5981.00	0.610	172.960	5934.68	-146.11	-149.44	540.31	1675121.33	14584011.82	40°09'26.023"N	104°52'32.851"W	0.35	
6075.00	0.870	177.100	6028.67	-147.32	-150.65	540.41	1675121.43	14584010.61	40°09'26.011"N	104°52'32.850"W	0.28	
6169.00	0.520	196.700	6122.67	-148.44	-151.77	540.32	1675121.34	14584009.49	40°09'26.000"N	104°52'32.851"W	0.44	
6262.00	0.360	210.540	6215.66	-149.10	-152.43	540.06	1675121.08	14584008.84	40°09'25.994"N	104°52'32.855"W	0.21	
6355.00	0.180	186.810	6308.66	-149.49	-152.82	539.89	1675120.91	14584008.44	40°09'25.990"N	104°52'32.857"W	0.22	
6449.00	0.330	204.900	6402.66	-149.89	-153.22	539.76	1675120.78	14584008.05	40°09'25.986"N	104°52'32.858"W	0.18	
6543.00	0.440	260.020	6496.66	-150.20	-153.52	539.29	1675120.31	14584007.74	40°09'25.983"N	104°52'32.864"W	0.39	
6637.00	0.450	252.710	6590.66	-150.37	-153.70	538.58	1675119.60	14584007.56	40°09'25.981"N	104°52'32.874"W	0.06	
6684.00†	1.566	355.242	6637.65	-149.79	-153.11	538.35	1675119.37	14584008.15	40°09'25.987"N	104°52'32.876"W	3.66	KOP
6731.00	3.260	2.990	6684.61	-147.82	-151.14	538.37	1675119.39	14584010.12	40°09'26.006"N	104°52'32.876"W	3.66	
6824.00	8.580	10.510	6777.08	-138.34	-141.67	539.77	1675120.78	14584019.59	40°09'26.100"N	104°52'32.858"W	5.77	
6918.00	13.820	6.580	6869.26	-120.26	-123.61	542.34	1675123.32	14584037.65	40°09'26.278"N	104°52'32.825"W	5.63	
7011.00	18.750	2.450	6958.50	-94.27	-97.62	544.25	1675125.19	14584063.62	40°09'26.535"N	104°52'32.800"W	5.44	
7104.00	23.660	1.840	7045.18	-60.65	-64.02	545.49	1675126.39	14584097.22	40°09'26.867"N	104°52'32.784"W	5.28	
7147.00†	25.184	2.535	7084.33	-42.89	-46.25	546.17	1675127.04	14584114.98	40°09'27.043"N	104°52'32.776"W	3.61	ENTERED LANDBOX (866'FNL & 2825'FWL,SEC.10) 40.1575119 -104.8757710
7197.00	26.960	3.250	7129.24	-20.93	-24.31	547.29	1675128.13	14584136.91	40°09'27.260"N	104°52'32.761"W	3.61	
7290.00	38.100	7.160	7207.54	28.77	25.37	552.07	1675132.84	14584186.58	40°09'27.751"N	104°52'32.700"W	12.18	
7383.00	53.120	1.300	7272.43	94.86	91.43	556.52	1675137.20	14584252.62	40°09'28.403"N	104°52'32.642"W	16.75	
7477.00	65.780	0.780	7320.12	175.64	172.21	557.96	1675138.53	14584333.36	40°09'29.202"N	104°52'32.624"W	13.48	
7571.00	75.760	358.360	7351.04	264.27	260.84	557.24	1675137.68	14584421.96	40°09'30.078"N	104°52'32.633"W	10.89	
7664.00	87.170	357.480	7364.82	356.00	352.60	553.90	1675134.22	14584513.67	40°09'30.984"N	104°52'32.676"W	12.30	
7757.00	92.400	357.480	7365.17	448.85	445.47	549.81	1675130.00	14584606.51	40°09'31.902"N	104°52'32.729"W	5.62	LANDING (375'FNL & 2830'FWL,SEC.10) 40.1588617 -104.8757580
7852.00	90.740	357.370	7362.57	543.69	540.34	545.54	1675125.61	14584701.33	40°09'32.840"N	104°52'32.784"W	1.75	
7946.00	90.340	356.190	7361.68	637.50	634.18	540.26	1675120.20	14584795.13	40°09'33.767"N	104°52'32.852"W	1.33	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#59 BUTTERBALL 25N2-34HZ (820'FNL & 2280'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 25N2-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 25N2-34HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (180 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
8040.00	92.960	359.120	7358.98	731.34	728.05	536.42	1675116.23	14584888.95	40°09'34.695"N	104°52'32.901"W	4.18	
8133.00	91.450	359.670	7355.40	824.25	820.97	535.44	1675115.12	14584981.83	40°09'35.613"N	104°52'32.914"W	1.73	
8227.00	92.030	358.990	7352.54	918.19	914.92	534.34	1675113.89	14585075.74	40°09'36.541"N	104°52'32.928"W	0.95	
8321.00	89.780	1.390	7351.06	1012.17	1008.89	534.65	1675114.08	14585169.68	40°09'37.470"N	104°52'32.924"W	3.50	
8415.00	90.620	1.600	7350.73	1106.15	1102.86	537.10	1675116.40	14585263.61	40°09'38.398"N	104°52'32.892"W	0.92	
8509.00	91.450	1.220	7349.03	1200.12	1196.82	539.42	1675118.58	14585357.53	40°09'39.327"N	104°52'32.862"W	0.97	
8549.00†	90.388	0.244	7348.39	1240.11	1236.81	539.93	1675119.04	14585397.51	40°09'39.722"N	104°52'32.856"W	3.61	EXIT RADIUS HEEL (417'FSL & 2820'FWL, SEC.03) 40.1610339 -104.8757933
8602.00	88.980	358.950	7348.68	1293.10	1289.80	539.55	1675118.59	14585450.48	40°09'40.246"N	104°52'32.861"W	3.61	
8695.00	89.010	358.380	7350.31	1386.05	1382.76	537.39	1675116.30	14585543.40	40°09'41.164"N	104°52'32.888"W	0.61	
8789.00	89.480	358.980	7351.55	1480.00	1476.73	535.22	1675114.00	14585637.33	40°09'42.093"N	104°52'32.916"W	0.81	
8883.00	89.450	0.980	7352.43	1573.99	1570.72	535.19	1675113.84	14585731.28	40°09'43.022"N	104°52'32.917"W	2.13	
8976.00	90.180	1.010	7352.73	1666.98	1663.70	536.80	1675115.33	14585824.23	40°09'43.941"N	104°52'32.896"W	0.79	
9069.00	91.020	1.380	7351.76	1759.96	1756.68	538.74	1675117.14	14585917.17	40°09'44.860"N	104°52'32.871"W	0.99	
9163.00	88.950	1.270	7351.78	1853.94	1850.65	540.92	1675119.18	14586011.11	40°09'45.788"N	104°52'32.843"W	2.21	
9255.00	89.140	0.880	7353.31	1945.92	1942.62	542.64	1675120.78	14586103.04	40°09'46.697"N	104°52'32.821"W	0.47	
9347.00	89.690	0.960	7354.25	2037.91	2034.60	544.12	1675122.13	14586194.99	40°09'47.606"N	104°52'32.802"W	0.60	
9439.00	91.170	0.730	7353.56	2129.91	2126.59	545.48	1675123.36	14586286.94	40°09'48.515"N	104°52'32.784"W	1.63	
9530.00	92.030	0.320	7351.02	2220.87	2217.55	546.31	1675124.07	14586377.86	40°09'49.414"N	104°52'32.773"W	1.05	
9622.00	89.970	0.790	7349.42	2312.85	2309.52	547.20	1675124.83	14586469.80	40°09'50.323"N	104°52'32.762"W	2.30	
9714.00	89.260	359.680	7350.04	2404.85	2401.52	547.58	1675125.08	14586561.76	40°09'51.232"N	104°52'32.757"W	1.43	
9806.00	89.850	359.350	7350.75	2496.83	2493.51	546.80	1675124.18	14586653.72	40°09'52.141"N	104°52'32.767"W	0.73	
9897.00	90.770	359.560	7350.26	2587.82	2584.50	545.93	1675123.19	14586744.67	40°09'53.040"N	104°52'32.778"W	1.04	
9988.00	91.320	358.540	7348.60	2678.78	2675.47	544.43	1675121.55	14586835.61	40°09'53.939"N	104°52'32.797"W	1.27	
10080.00	92.340	358.600	7345.66	2770.69	2767.40	542.13	1675119.13	14586927.49	40°09'54.847"N	104°52'32.827"W	1.11	
10173.00	91.170	357.700	7342.81	2863.57	2860.30	539.13	1675116.01	14587020.35	40°09'55.766"N	104°52'32.866"W	1.59	
10267.00	89.450	359.930	7342.30	2957.53	2954.27	537.19	1675113.93	14587114.28	40°09'56.694"N	104°52'32.891"W	3.00	
10361.00	90.000	1.040	7342.75	3051.52	3048.27	537.98	1675114.60	14587208.24	40°09'57.623"N	104°52'32.880"W	1.32	
10455.00	90.550	0.950	7342.30	3145.52	3142.25	539.61	1675116.10	14587302.19	40°09'58.552"N	104°52'32.859"W	0.59	
10548.00	90.920	0.360	7341.11	3238.51	3235.24	540.68	1675117.04	14587395.14	40°09'59.471"N	104°52'32.846"W	0.75	
10641.00	89.570	1.280	7340.71	3331.50	3328.22	542.01	1675118.24	14587488.09	40°10'00.390"N	104°52'32.828"W	1.76	
10734.00	89.290	0.660	7341.64	3424.49	3421.20	543.58	1675119.69	14587581.04	40°10'01.308"N	104°52'32.808"W	0.73	
10828.00	89.720	359.980	7342.45	3518.48	3515.20	544.11	1675120.08	14587674.99	40°10'02.237"N	104°52'32.801"W	0.86	
10922.00	89.540	359.710	7343.06	3612.48	3609.20	543.85	1675119.70	14587768.95	40°10'03.166"N	104°52'32.805"W	0.35	
11015.00	89.480	1.290	7343.85	3705.47	3702.19	544.67	1675120.38	14587861.91	40°10'04.085"N	104°52'32.794"W	1.70	
11108.00	92.490	2.140	7342.25	3798.42	3795.12	547.45	1675123.03	14587954.81	40°10'05.003"N	104°52'32.758"W	3.36	
11202.00	93.360	1.360	7337.46	3892.27	3888.95	550.31	1675125.77	14588048.60	40°10'05.931"N	104°52'32.721"W	1.24	
11295.00	91.140	1.690	7333.81	3985.17	3981.84	552.79	1675128.11	14588141.46	40°10'06.849"N	104°52'32.689"W	2.41	
11388.00	91.880	1.410	7331.36	4078.12	4074.77	555.30	1675130.50	14588234.36	40°10'07.767"N	104°52'32.657"W	0.85	
11482.00	90.250	1.840	7329.61	4172.07	4168.72	557.97	1675133.04	14588328.27	40°10'08.695"N	104°52'32.623"W	1.79	
11576.00	90.550	1.670	7328.95	4266.04	4262.67	560.85	1675135.78	14588422.19	40°10'09.624"N	104°52'32.585"W	0.37	
11670.00	90.860	1.110	7327.80	4360.02	4356.63	563.13	1675137.93	14588516.12	40°10'10.552"N	104°52'32.556"W	0.68	
11763.00	89.420	1.820	7327.57	4453.00	4449.60	565.50	1675140.18	14588609.05	40°10'11.471"N	104°52'32.525"W	1.73	
11857.00	90.030	2.170	7328.02	4546.96	4543.54	568.78	1675143.32	14588702.96	40°10'12.399"N	104°52'32.483"W	0.75	
11950.00	91.200	2.010	7327.02	4639.91	4636.47	572.17	1675146.59	14588795.86	40°10'13.318"N	104°52'32.439"W	1.27	
12044.00	91.540	1.210	7324.77	4733.86	4730.41	574.81	1675149.10	14588889.76	40°10'14.246"N	104°52'32.405"W	0.92	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#59 BUTTERBALL 25N2-34HZ (820'FNL & 2280'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 25N2-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 25N2-34HZ AWP
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (180 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
12138.00	90.770	2.240	7322.88	4827.81	4824.34	577.64	1675151.80	14588983.66	40°10'15.174"N	104°52'32.369"W	1.37	
12232.00	92.060	1.810	7320.56	4921.74	4918.26	580.96	1675154.99	14589077.54	40°10'16.102"N	104°52'32.326"W	1.45	
12325.00	92.530	1.350	7316.83	5014.64	5011.14	583.52	1675157.42	14589170.39	40°10'17.020"N	104°52'32.293"W	0.71	
12420.00	92.680	2.090	7312.52	5109.52	5106.00	586.37	1675160.14	14589265.22	40°10'17.958"N	104°52'32.256"W	0.79	
12514.00	89.230	1.320	7310.95	5203.46	5199.93	589.16	1675162.80	14589359.11	40°10'18.886"N	104°52'32.220"W	3.76	
12608.00	89.380	0.690	7312.09	5297.45	5293.91	590.81	1675164.32	14589453.06	40°10'19.815"N	104°52'32.199"W	0.69	
12701.00	91.630	0.350	7311.27	5390.44	5386.90	591.66	1675165.04	14589546.01	40°10'20.733"N	104°52'32.188"W	2.45	
12795.00	92.310	0.270	7308.04	5484.38	5480.84	592.17	1675165.41	14589639.91	40°10'21.662"N	104°52'32.182"W	0.73	
12889.00	90.860	1.390	7305.44	5578.34	5574.79	593.53	1675166.65	14589733.83	40°10'22.590"N	104°52'32.164"W	1.95	
12982.00	90.460	359.400	7304.37	5671.33	5667.78	594.17	1675167.16	14589826.78	40°10'23.509"N	104°52'32.156"W	2.18	
13075.00	87.320	357.450	7306.17	5764.24	5760.71	591.61	1675164.48	14589919.67	40°10'24.427"N	104°52'32.189"W	3.97	
13168.00	86.460	357.350	7311.21	5856.98	5853.48	587.40	1675160.14	14590012.39	40°10'25.344"N	104°52'32.243"W	0.93	
13261.00	86.330	359.230	7317.06	5949.73	5946.25	584.63	1675157.24	14590105.12	40°10'26.261"N	104°52'32.279"W	2.02	
13355.00	88.650	358.590	7321.18	6043.61	6040.13	582.84	1675155.33	14590198.97	40°10'27.189"N	104°52'32.302"W	2.56	
13448.00	89.820	358.600	7322.42	6136.55	6133.09	580.56	1675152.92	14590291.89	40°10'28.107"N	104°52'32.331"W	1.26	
13542.00	89.880	357.400	7322.67	6230.47	6227.03	577.28	1675149.51	14590385.79	40°10'29.036"N	104°52'32.373"W	1.28	
13635.00	90.770	359.200	7322.14	6323.41	6319.99	574.52	1675146.63	14590478.70	40°10'29.954"N	104°52'32.409"W	2.16	
13730.00	92.130	358.700	7319.74	6418.35	6414.94	572.78	1675144.76	14590573.61	40°10'30.893"N	104°52'32.431"W	1.53	
13823.00	91.450	1.300	7316.83	6511.29	6507.88	572.78	1675144.63	14590666.52	40°10'31.811"N	104°52'32.431"W	2.89	
13917.00	92.090	0.960	7313.93	6605.24	6601.82	574.64	1675146.35	14590760.42	40°10'32.739"N	104°52'32.407"W	0.77	
14010.00	89.780	1.180	7312.41	6698.21	6694.79	576.37	1675147.96	14590853.35	40°10'33.658"N	104°52'32.385"W	2.50	
14104.00	91.170	0.920	7311.63	6792.20	6788.76	578.10	1675149.55	14590947.29	40°10'34.587"N	104°52'32.362"W	1.50	
14198.00	92.280	0.320	7308.80	6886.15	6882.71	579.11	1675150.44	14591041.20	40°10'35.515"N	104°52'32.349"W	1.34	
14291.00	90.150	359.560	7306.83	6979.12	6975.69	579.02	1675150.21	14591134.14	40°10'36.434"N	104°52'32.351"W	2.43	
14385.00	91.630	359.410	7305.37	7073.10	7069.67	578.17	1675149.24	14591228.08	40°10'37.363"N	104°52'32.361"W	1.58	
14479.00	89.970	359.680	7304.06	7167.08	7163.65	577.42	1675148.36	14591322.03	40°10'38.291"N	104°52'32.371"W	1.79	
14573.00	90.740	359.120	7303.47	7261.06	7257.65	576.44	1675147.25	14591415.98	40°10'39.220"N	104°52'32.384"W	1.01	
14667.00	90.180	358.090	7302.72	7355.01	7351.61	574.15	1675144.83	14591509.91	40°10'40.149"N	104°52'32.413"W	1.25	
14761.00	89.880	358.780	7302.67	7448.96	7445.58	571.59	1675142.14	14591603.83	40°10'41.077"N	104°52'32.446"W	0.80	
14855.00	89.910	1.160	7302.84	7542.95	7539.57	571.54	1675141.96	14591697.79	40°10'42.006"N	104°52'32.447"W	2.53	
14949.00	90.220	0.670	7302.73	7636.94	7633.56	573.04	1675143.33	14591791.74	40°10'42.935"N	104°52'32.427"W	0.62	
15043.00	88.090	2.230	7304.12	7730.91	7727.51	575.41	1675145.58	14591885.66	40°10'43.863"N	104°52'32.397"W	2.81	
15137.00	88.270	2.160	7307.11	7824.81	7821.39	579.01	1675149.05	14591979.51	40°10'44.791"N	104°52'32.350"W	0.21	
15231.00	89.230	1.410	7309.16	7918.76	7915.32	581.94	1675151.84	14592073.40	40°10'45.719"N	104°52'32.313"W	1.30	
15325.00	90.620	1.040	7309.28	8012.75	8009.30	583.95	1675153.72	14592167.34	40°10'46.648"N	104°52'32.287"W	1.53	
15420.00	90.920	359.800	7308.00	8107.73	8104.29	584.65	1675154.29	14592262.29	40°10'47.587"N	104°52'32.278"W	1.34	
15514.00	91.660	358.620	7305.89	8201.69	8198.25	583.35	1675152.86	14592356.22	40°10'48.515"N	104°52'32.294"W	1.48	
15608.00	91.510	0.750	7303.29	8295.64	8292.21	582.83	1675152.22	14592450.14	40°10'49.444"N	104°52'32.301"W	2.27	
15702.00	87.780	2.000	7303.87	8389.61	8386.16	585.09	1675154.34	14592544.06	40°10'50.372"N	104°52'32.272"W	4.18	
15797.00	87.900	1.140	7307.45	8484.52	8481.06	587.69	1675156.81	14592638.92	40°10'51.310"N	104°52'32.238"W	0.91	
15820.00†	88.115	1.281	7308.25	8507.50	8504.04	588.18	1675157.27	14592661.89	40°10'51.537"N	104°52'32.232"W	1.12	ENTERED RADIUS HEEL (2304'FSL & 2372'FEL,SEC.34) 40.1809825 -104.8756200
15890.00	88.770	1.710	7310.15	8577.46	8573.99	590.00	1675159.00	14592731.81	40°10'52.228"N	104°52'32.209"W	1.12	
15984.00	88.980	1.160	7312.00	8671.43	8667.94	592.36	1675161.22	14592825.73	40°10'53.157"N	104°52'32.178"W	0.63	
16051.00	88.800	0.520	7313.30	8738.41	8734.92	593.34	1675162.11	14592892.69	40°10'53.819"N	104°52'32.166"W	0.99	LAST BHI MWD+IFR1+MSA SURVEY
16098.00	88.800	0.520	7314.28	8785.40	8781.91	593.76	1675162.47	14592939.65	40°10'54.283"N	104°52'32.160"W	0.00	PTB (2582'FSL & 2365'FEL,SEC.34) 40.1817453 -104.8756000

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#59 BUTTERBALL 25N2-34HZ (820'FNL & 2280'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 25N2-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 25N2-34HZ AWB
Facility	SEC.10-T2N-R67W		

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.03-T2N-R67W	-6.00	368.01	-1900.15	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.10-T2N-R67W	-6.00	368.01	-1900.15	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.34-T3N-R67W	-6.00	368.01	-1900.15	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
BUTTERBALL 25N2-34HZ BHL REV-1(2584'FSL & 2360'FEL,SEC.34)	7311.00	8783.63	599.35	1675168.05	14592941.38	40°10'54.300"N	104°52'32.088"W	point
BUTTERBALL 25N2-34HZ HEEL REV-1(208'FNL & 2414'FEL,SEC.10)	7383.00	609.52	548.96	1675128.93	14584770.48	40°09'33.523"N	104°52'32.740"W	point
BUTTERBALL 25N2-34HZ LANDBOX	7383.00	0.00	0.00	1674581.03	14584160.46	40°09'27.500"N	104°52'39.810"W	polygon
BUTTERBALL 25N2-34HZ RADIUS 1	7383.00	818.89	348.84	1674928.60	14584979.50	40°09'35.592"N	104°52'35.317"W	polygon
BUTTERBALL 25N2-34HZ RADIUS 2	7383.00	8890.85	339.94	1674908.60	14593048.20	40°10'55.360"N	104°52'35.430"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: BUTTERBALL 25N2-34HZ AWB					Ref Wellpath: BUTTERBALL 25N2-34HZ AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model		Log Name/Comment		Wellbore
32.00	1806.00	Custom APC_ISCWSA REV 2 MWD+IFR1 (approximation)		SDI Custom APC ISCWSA Rev-2 MWD+IFR1 <187 - 1806>		BUTTERBALL 25N2-34HZ AWB
1806.00	16051.00	Custom APC_ISCWSA REV 2 MWD+IFR1+MSA (approximation)		BHI Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1927 - 16051>		BUTTERBALL 25N2-34HZ AWB
16051.00	16098.00	Blind Drilling (std)		Projection to bit		BUTTERBALL 25N2-34HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#59 BUTTERBALL 25N2-34HZ (820'FNL & 2280'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 25N2-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 25N2-34HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
187.00	0.400	343.830	187.00	FIRST SDI MWD+IFR1 SURVEY
1806.00	9.670	84.780	1790.40	LAST SDI MWD+IFR1 SURVEY
1927.00	9.990	83.750	1909.62	FIRST BHI MWD+IFR1+MSA SURVEY
6684.00	1.566	355.242	6637.65	KOP
7147.00	25.184	2.535	7084.33	ENTERED LANDBOX (866'FNL & 2825'FWL,SEC.10) 40.1575119 -104.8757710
7757.00	92.400	357.480	7365.17	LANDING (375'FNL & 2830'FWL,SEC.10) 40.1588617 -104.8757580
8549.00	90.388	0.244	7348.39	EXIT RADIUS HEEL (417'FSL & 2820'FWL,SEC.03) 40.1610339 -104.8757933
15820.00	88.115	1.281	7308.25	ENTERED RADIUS HEEL (2304'FSL & 2372'FEL,SEC.34) 40.1809825 -104.8756200
16051.00	88.800	0.520	7313.30	LAST BHI MWD+IFR1+MSA SURVEY
16098.00	88.800	0.520	7314.28	PTB (2582'FSL & 2365'FEL,SEC.34) 40.1817453 -104.8756000