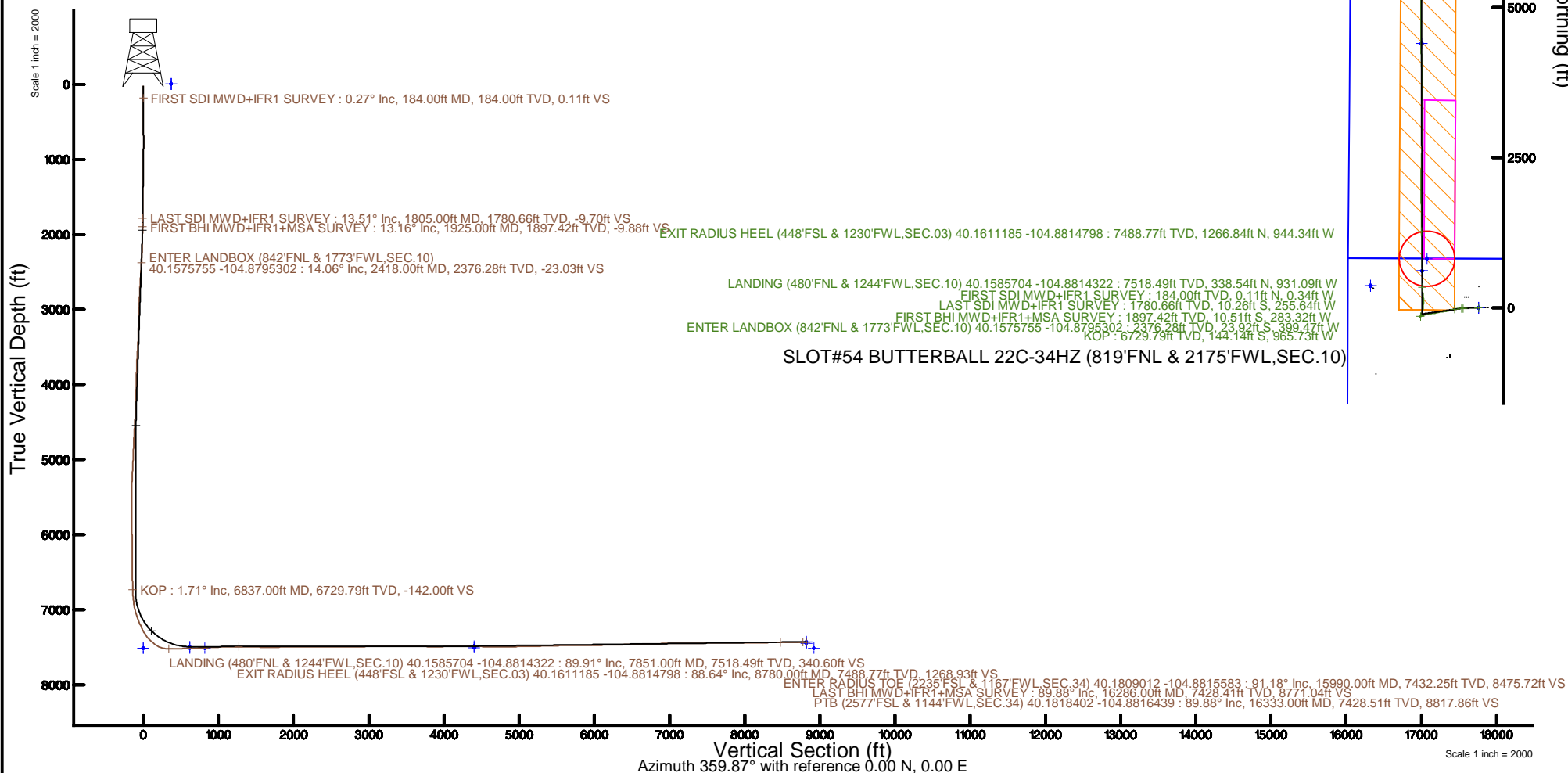


Location:	COLORADO	Slot:	SLOT#54 BUTTERBALL 22C-34HZ (819'FNL & 2175'FWL,SEC.10)
Field:	WELD COUNTY (UTM/TRUE NORTH)	Well:	BUTTERBALL 22C-34HZ
Facility:	SEC.10-T2N-R67W	Wellbore:	BUTTERBALL 22C-34HZ PWB

Plot reference wellpath is BUTTERBALL_22C-34H PWP Rev.B.2	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 geosidic 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#54 BUTTERBALL_22C-34H (819FNL & 2175FWL;SEC.10)) : 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painstor on 2017-07-11
	Database: WA_DEN Anadarko_Defn



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#54 BUTTERBALL 22C-34HZ (819'FNL & 2175'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 22C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 22C-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	7/11/2017 at 10:36 AM
Convergence at slot	0.08° East	Database/Source file	WA_DEN_Anadarko_Defn/BUTTERBALL_22C-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	-180.53	229.59	1674475.94	14584161.12	40°09'27.508"N	104°52'41.164"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#54 BUTTERBALL 22C-34HZ (819'FNL & 2175'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	359.87°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#54 BUTTERBALL 22C-34HZ (819'FNL & 2175'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 22C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 22C-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
0.00†	0.000	287.750	0.00	0.00	0.00	0.00	1674475.94	14584161.12	40°09'27.508"N	104°52'41.164"W	0.00	
32.00	0.000	287.750	32.00	0.00	0.00	0.00	1674475.94	14584161.12	40°09'27.508"N	104°52'41.164"W	0.00	
184.00	0.270	287.750	184.00	0.11	0.11	-0.34	1674475.60	14584161.23	40°09'27.509"N	104°52'41.168"W	0.18	FIRST SDI MWD+IFR1 SURVEY
257.00	1.180	274.720	256.99	0.23	0.22	-1.25	1674474.68	14584161.34	40°09'27.510"N	104°52'41.180"W	1.26	
346.00	2.390	284.260	345.95	0.76	0.76	-3.97	1674471.97	14584161.87	40°09'27.515"N	104°52'41.215"W	1.40	
434.00	4.260	281.690	433.80	1.89	1.87	-8.95	1674466.99	14584162.98	40°09'27.526"N	104°52'41.279"W	2.13	
521.00	5.860	271.330	520.46	2.66	2.63	-16.55	1674459.39	14584163.73	40°09'27.534"N	104°52'41.377"W	2.11	
608.00	7.290	269.250	606.88	2.72	2.66	-26.51	1674449.43	14584163.74	40°09'27.534"N	104°52'41.505"W	1.67	
696.00	7.260	274.410	694.17	3.10	3.01	-37.64	1674438.31	14584164.08	40°09'27.538"N	104°52'41.649"W	0.74	
785.00	7.650	268.400	782.42	3.39	3.28	-49.17	1674426.79	14584164.33	40°09'27.540"N	104°52'41.797"W	0.98	
874.00	8.190	266.590	870.57	2.87	2.74	-61.42	1674414.54	14584163.77	40°09'27.535"N	104°52'41.955"W	0.67	
960.00	9.400	261.450	955.56	1.49	1.33	-74.48	1674401.49	14584162.35	40°09'27.521"N	104°52'42.123"W	1.68	
1047.00	10.850	265.080	1041.21	-0.23	-0.43	-89.66	1674386.31	14584160.57	40°09'27.504"N	104°52'42.319"W	1.82	
1134.00	11.840	267.730	1126.51	-1.25	-1.49	-106.74	1674369.25	14584159.49	40°09'27.493"N	104°52'42.539"W	1.29	
1222.00	11.870	267.270	1212.63	-2.00	-2.27	-124.80	1674351.19	14584158.68	40°09'27.486"N	104°52'42.771"W	0.11	
1309.00	11.990	267.060	1297.75	-2.85	-3.16	-142.76	1674333.24	14584157.76	40°09'27.477"N	104°52'43.003"W	0.15	
1396.00	12.770	265.740	1382.73	-3.98	-4.34	-161.37	1674314.63	14584156.56	40°09'27.465"N	104°52'43.242"W	0.95	
1484.00	13.200	264.020	1468.48	-5.71	-6.11	-181.07	1674294.95	14584154.77	40°09'27.448"N	104°52'43.496"W	0.66	
1573.00	13.530	266.210	1555.07	-7.41	-7.86	-201.56	1674274.47	14584152.99	40°09'27.430"N	104°52'43.760"W	0.68	
1660.00	13.660	267.240	1639.63	-8.53	-9.02	-221.98	1674254.06	14584151.80	40°09'27.419"N	104°52'44.023"W	0.32	
1749.00	13.270	267.900	1726.18	-9.37	-9.90	-242.68	1674233.37	14584150.89	40°09'27.410"N	104°52'44.290"W	0.47	
1805.00	13.510	268.910	1780.66	-9.70	-10.26	-255.64	1674220.41	14584150.51	40°09'27.407"N	104°52'44.457"W	0.60	LAST SDI MWD+IFR1 SURVEY
1925.00	13.160	270.100	1897.42	-9.88	-10.51	-283.32	1674192.75	14584150.23	40°09'27.404"N	104°52'44.813"W	0.37	FIRST BHI MWD+IFR1+MSA SURVEY
2019.00	14.490	266.690	1988.70	-10.49	-11.17	-305.76	1674170.31	14584149.54	40°09'27.398"N	104°52'45.102"W	1.66	
2112.00	13.400	264.290	2078.96	-12.18	-12.91	-328.10	1674147.99	14584147.77	40°09'27.380"N	104°52'45.390"W	1.33	
2206.00	12.320	261.220	2170.60	-14.75	-15.53	-348.85	1674127.25	14584145.12	40°09'27.355"N	104°52'45.657"W	1.36	
2300.00	15.050	261.590	2261.92	-18.02	-18.84	-370.84	1674105.27	14584141.78	40°09'27.322"N	104°52'45.940"W	2.91	
2394.00	13.690	259.020	2352.98	-21.87	-22.75	-393.83	1674082.29	14584137.84	40°09'27.283"N	104°52'46.236"W	1.60	
2418.00†	14.061	257.571	2376.28	-23.03	-23.92	-399.47	1674076.66	14584136.67	40°09'27.272"N	104°52'46.309"W	2.12	ENTER LANDBOX (842'FNL & 1773'FWL,SEC.10) 40.1575755 -104.8795302
2487.00	15.170	253.800	2443.05	-27.32	-28.24	-416.32	1674059.82	14584132.32	40°09'27.229"N	104°52'46.526"W	2.12	
2581.00	13.810	252.680	2534.06	-34.04	-35.01	-438.85	1674037.32	14584125.52	40°09'27.162"N	104°52'46.816"W	1.48	
2674.00	15.310	257.870	2624.07	-39.87	-40.89	-461.45	1674014.73	14584119.61	40°09'27.104"N	104°52'47.107"W	2.14	
2768.00	14.340	257.810	2714.94	-44.89	-45.96	-484.96	1673991.24	14584114.51	40°09'27.054"N	104°52'47.410"W	1.03	
2862.00	13.410	258.280	2806.20	-49.51	-50.63	-507.01	1673969.20	14584109.81	40°09'27.008"N	104°52'47.694"W	1.00	
2956.00	12.250	257.140	2897.85	-53.90	-55.07	-527.41	1673948.82	14584105.35	40°09'26.964"N	104°52'47.957"W	1.26	
3049.00	13.310	262.900	2988.55	-57.37	-58.59	-547.65	1673928.59	14584101.81	40°09'26.929"N	104°52'48.217"W	1.78	
3144.00	14.150	263.810	3080.83	-59.93	-61.19	-570.05	1673906.20	14584099.18	40°09'26.903"N	104°52'48.506"W	0.91	
3237.00	12.690	263.680	3171.29	-62.23	-63.54	-591.50	1673884.76	14584096.80	40°09'26.880"N	104°52'48.782"W	1.57	
3331.00	13.090	264.910	3262.92	-64.26	-65.62	-612.37	1673863.91	14584094.69	40°09'26.859"N	104°52'49.051"W	0.52	
3425.00	13.980	261.520	3354.31	-66.83	-68.24	-634.20	1673842.09	14584092.04	40°09'26.834"N	104°52'49.332"W	1.27	
3519.00	15.210	258.140	3445.28	-70.99	-72.45	-657.50	1673818.80	14584087.80	40°09'26.792"N	104°52'49.632"W	1.59	
3613.00	12.970	256.030	3536.45	-76.02	-77.53	-679.81	1673796.51	14584082.69	40°09'26.742"N	104°52'49.919"W	2.44	
3706.00	13.810	253.170	3626.92	-81.71	-83.26	-700.56	1673775.77	14584076.93	40°09'26.685"N	104°52'50.187"W	1.15	
3800.00	13.830	261.280	3718.21	-86.61	-88.22	-722.41	1673753.94	14584071.95	40°09'26.636"N	104°52'50.468"W	2.06	
3893.00	15.000	264.570	3808.28	-89.39	-91.04	-745.37	1673730.99	14584069.10	40°09'26.608"N	104°52'50.764"W	1.54	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#54 BUTTERBALL 22C-34HZ (819'FNL & 2175'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 22C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 22C-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
4013.00	12.320	260.620	3924.88	-92.88	-94.60	-773.47	1673702.91	14584065.50	40°09'26.573"N	104°52'51.126"W	2.36	
4107.00	14.620	264.470	4016.29	-95.61	-97.37	-795.18	1673681.21	14584062.70	40°09'26.546"N	104°52'51.405"W	2.62	
4200.00	13.380	262.110	4106.52	-98.17	-99.98	-817.52	1673658.88	14584060.06	40°09'26.520"N	104°52'51.693"W	1.47	
4294.00	12.280	263.500	4198.17	-100.75	-102.61	-838.22	1673638.19	14584057.41	40°09'26.494"N	104°52'51.960"W	1.22	
4388.00	10.560	263.860	4290.31	-102.76	-104.66	-856.72	1673619.70	14584055.33	40°09'26.474"N	104°52'52.198"W	1.83	
4481.00	9.920	251.240	4381.84	-106.21	-108.15	-872.78	1673603.65	14584051.82	40°09'26.439"N	104°52'52.405"W	2.50	
4574.00	10.610	252.440	4473.35	-111.34	-113.31	-888.53	1673587.92	14584046.64	40°09'26.388"N	104°52'52.608"W	0.78	
4668.00	9.390	250.760	4565.92	-116.44	-118.45	-904.02	1673572.44	14584041.48	40°09'26.337"N	104°52'52.807"W	1.33	
4762.00	8.900	251.380	4658.73	-121.26	-123.30	-918.15	1673558.32	14584036.62	40°09'26.289"N	104°52'52.989"W	0.53	
4855.00	7.880	249.830	4750.73	-125.73	-127.79	-930.95	1673545.53	14584032.11	40°09'26.245"N	104°52'53.154"W	1.12	
4949.00	6.690	250.160	4843.97	-129.78	-131.87	-942.15	1673534.34	14584028.01	40°09'26.205"N	104°52'53.298"W	1.27	
5043.00	5.850	246.160	4937.41	-133.56	-135.67	-951.69	1673524.82	14584024.21	40°09'26.167"N	104°52'53.421"W	1.01	
5137.00	6.310	236.620	5030.88	-138.31	-140.44	-960.38	1673516.13	14584019.42	40°09'26.120"N	104°52'53.533"W	1.18	
5230.00	3.150	238.420	5123.55	-142.45	-144.59	-966.83	1673509.70	14584015.26	40°09'26.079"N	104°52'53.616"W	3.40	
5324.00	5.040	229.660	5217.31	-146.47	-148.62	-972.18	1673504.36	14584011.23	40°09'26.039"N	104°52'53.685"W	2.11	
5418.00	3.040	212.570	5311.07	-151.23	-153.39	-976.67	1673499.88	14584006.45	40°09'25.992"N	104°52'53.743"W	2.46	
5512.00	0.850	197.690	5405.01	-153.99	-156.16	-978.22	1673498.33	14584003.68	40°09'25.965"N	104°52'53.763"W	2.37	
5605.00	1.080	206.290	5498.00	-155.43	-157.60	-978.82	1673497.73	14584002.24	40°09'25.950"N	104°52'53.770"W	0.29	
5699.00	0.860	91.130	5591.99	-156.24	-158.41	-978.50	1673498.04	14584001.43	40°09'25.942"N	104°52'53.766"W	1.75	
5793.00	2.110	54.590	5685.96	-155.26	-157.42	-976.39	1673500.16	14584002.42	40°09'25.952"N	104°52'53.739"W	1.60	
5886.00	1.530	45.760	5778.91	-153.40	-155.56	-974.10	1673502.44	14584004.28	40°09'25.971"N	104°52'53.710"W	0.69	
5980.00	1.050	35.380	5872.89	-151.83	-153.99	-972.71	1673503.83	14584005.86	40°09'25.986"N	104°52'53.692"W	0.57	
6073.00	1.250	54.230	5965.87	-150.54	-152.70	-971.39	1673505.15	14584007.15	40°09'25.999"N	104°52'53.675"W	0.46	
6167.00	0.910	40.860	6059.85	-149.38	-151.53	-970.07	1673506.47	14584008.32	40°09'26.010"N	104°52'53.658"W	0.45	
6261.00	0.870	40.590	6153.84	-148.28	-150.43	-969.12	1673507.42	14584009.43	40°09'26.021"N	104°52'53.645"W	0.04	
6354.00	0.680	10.430	6246.83	-147.20	-149.35	-968.56	1673507.98	14584010.50	40°09'26.032"N	104°52'53.638"W	0.48	
6448.00	0.290	358.390	6340.83	-146.42	-148.56	-968.46	1673508.07	14584011.29	40°09'26.040"N	104°52'53.637"W	0.43	
6542.00	0.680	336.880	6434.83	-145.66	-147.81	-968.69	1673507.84	14584012.04	40°09'26.047"N	104°52'53.640"W	0.45	
6636.00	1.020	56.350	6528.82	-144.69	-146.84	-968.21	1673508.32	14584013.02	40°09'26.057"N	104°52'53.634"W	1.19	
6730.00	1.170	41.700	6622.80	-143.51	-145.66	-966.88	1673509.65	14584014.20	40°09'26.068"N	104°52'53.617"W	0.34	
6823.00	0.800	32.530	6715.79	-142.26	-144.40	-965.90	1673510.63	14584015.46	40°09'26.081"N	104°52'53.604"W	0.43	
6837.00†	1.712	31.312	6729.79	-142.00	-144.14	-965.73	1673510.79	14584015.72	40°09'26.083"N	104°52'53.602"W	6.52	KOP
6916.00	6.860	30.510	6808.54	-136.93	-139.06	-962.72	1673513.79	14584020.80	40°09'26.134"N	104°52'53.563"W	6.52	
7009.00	6.830	31.100	6900.88	-127.42	-129.54	-957.05	1673519.45	14584030.32	40°09'26.228"N	104°52'53.490"W	0.08	
7102.00	14.880	27.870	6992.14	-112.12	-114.22	-948.59	1673527.88	14584045.64	40°09'26.379"N	104°52'53.381"W	8.68	
7195.00	19.310	17.700	7081.03	-86.92	-89.00	-938.33	1673538.11	14584070.87	40°09'26.628"N	104°52'53.249"W	5.73	
7289.00	23.380	9.610	7168.58	-53.72	-55.79	-930.49	1673545.90	14584104.08	40°09'26.957"N	104°52'53.148"W	5.33	
7382.00	26.090	6.030	7253.04	-15.19	-17.25	-925.26	1673551.08	14584142.61	40°09'27.337"N	104°52'53.081"W	3.33	
7476.00	34.880	6.230	7333.97	32.16	30.12	-920.16	1673556.11	14584189.97	40°09'27.805"N	104°52'53.015"W	9.35	
7570.00	45.060	2.730	7405.92	92.27	90.24	-915.64	1673560.54	14584250.07	40°09'28.400"N	104°52'52.957"W	11.09	
7663.00	55.930	355.330	7465.04	163.81	161.78	-917.22	1673558.87	14584321.58	40°09'29.107"N	104°52'52.977"W	13.19	
7756.00	73.370	353.480	7504.71	247.14	245.09	-925.48	1673550.49	14584404.84	40°09'29.930"N	104°52'53.084"W	18.84	
7851.00	89.910	359.520	7518.49	340.60	338.54	-931.09	1673544.76	14584498.25	40°09'30.853"N	104°52'53.156"W	18.50	LANDING (480'FNL & 1244'FWL,SEC.10) 40.1585704 -104.8814322
7945.00	91.540	359.940	7517.30	434.59	432.53	-931.53	1673544.19	14584592.20	40°09'31.782"N	104°52'53.162"W	1.79	
8039.00	91.570	359.350	7514.75	528.55	526.49	-932.11	1673543.48	14584686.12	40°09'32.711"N	104°52'53.169"W	0.63	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#54 BUTTERBALL 22C-34HZ (819'FNL & 2175'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 22C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 22C-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
8132.00	91.820	358.940	7512.00	621.50	619.44	-933.50	1673541.96	14584779.03	40°09'33.629"N	104°52'53.187"W	0.52	
8226.00	92.280	359.020	7508.64	715.43	713.36	-935.17	1673540.16	14584872.91	40°09'34.557"N	104°52'53.209"W	0.50	
8320.00	92.800	358.850	7504.47	809.33	807.25	-936.92	1673538.29	14584966.77	40°09'35.485"N	104°52'53.231"W	0.58	
8414.00	93.230	358.380	7499.53	903.17	901.09	-939.19	1673535.89	14585060.57	40°09'36.412"N	104°52'53.261"W	0.68	
8508.00	91.690	0.310	7495.49	997.08	994.99	-940.26	1673534.69	14585154.43	40°09'37.340"N	104°52'53.274"W	2.63	
8601.00	91.820	359.200	7492.64	1090.03	1087.95	-940.66	1673534.17	14585247.34	40°09'38.259"N	104°52'53.280"W	1.20	
8694.00	92.190	358.820	7489.39	1182.96	1180.88	-942.26	1673532.43	14585340.23	40°09'39.177"N	104°52'53.300"W	0.57	
8780.00†	88.640	358.408	7488.77	1268.93	1266.84	-944.34	1673530.24	14585426.15	40°09'40.027"N	104°52'53.327"W	4.16	EXIT RADIUS HEEL (448'FSL & 1230'FWL,SEC.03) 40.1611185 -104.8814798
8788.00	88.310	358.370	7488.98	1276.92	1274.83	-944.57	1673530.00	14585434.14	40°09'40.106"N	104°52'53.330"W	4.16	
8882.00	88.520	357.780	7491.58	1370.84	1368.74	-947.72	1673526.72	14585528.01	40°09'41.034"N	104°52'53.371"W	0.67	
8975.00	88.980	359.780	7493.61	1463.79	1461.69	-949.70	1673524.61	14585620.93	40°09'41.952"N	104°52'53.396"W	2.21	
9068.00	89.380	359.800	7494.94	1556.78	1554.68	-950.04	1673524.14	14585713.88	40°09'42.871"N	104°52'53.401"W	0.43	
9162.00	89.880	359.860	7495.55	1650.78	1648.68	-950.32	1673523.74	14585807.84	40°09'43.800"N	104°52'53.404"W	0.54	
9253.00	90.120	359.100	7495.55	1741.78	1739.68	-951.15	1673522.79	14585898.79	40°09'44.699"N	104°52'53.415"W	0.88	
9346.00	91.050	359.180	7494.60	1834.77	1832.66	-952.55	1673521.26	14585991.74	40°09'45.618"N	104°52'53.433"W	1.00	
9438.00	91.450	358.670	7492.59	1926.73	1924.62	-954.27	1673519.41	14586083.66	40°09'46.527"N	104°52'53.455"W	0.70	
9529.00	90.060	0.480	7491.39	2017.72	2015.60	-954.95	1673518.61	14586174.61	40°09'47.426"N	104°52'53.464"W	2.51	
9621.00	90.340	0.550	7491.07	2109.71	2107.60	-954.12	1673519.31	14586266.57	40°09'48.335"N	104°52'53.453"W	0.31	
9713.00	91.080	0.680	7489.93	2201.69	2199.59	-953.13	1673520.17	14586358.52	40°09'49.244"N	104°52'53.441"W	0.82	
9805.00	89.480	1.640	7489.48	2293.67	2291.56	-951.27	1673521.91	14586450.46	40°09'50.153"N	104°52'53.417"W	2.03	
9896.00	89.970	1.530	7489.92	2384.62	2382.53	-948.75	1673524.30	14586541.39	40°09'51.052"N	104°52'53.384"W	0.55	
9987.00	90.960	1.620	7489.18	2475.58	2473.49	-946.25	1673526.68	14586632.32	40°09'51.951"N	104°52'53.352"W	1.09	
10079.00	89.050	2.710	7489.17	2567.50	2565.42	-942.78	1673530.02	14586724.22	40°09'52.859"N	104°52'53.308"W	2.39	
10172.00	89.690	2.530	7490.19	2660.39	2658.31	-938.52	1673534.15	14586817.08	40°09'53.777"N	104°52'53.253"W	0.71	
10266.00	90.890	3.260	7489.72	2754.25	2752.19	-933.78	1673538.76	14586910.93	40°09'54.705"N	104°52'53.192"W	1.49	
10360.00	89.940	1.050	7489.03	2848.17	2846.11	-930.24	1673542.17	14587004.82	40°09'55.633"N	104°52'53.146"W	2.56	
10454.00	90.980	1.760	7488.28	2942.13	2940.08	-927.94	1673544.34	14587098.75	40°09'56.562"N	104°52'53.117"W	1.34	
10547.00	90.220	0.010	7487.31	3035.11	3033.06	-926.50	1673545.65	14587191.69	40°09'57.481"N	104°52'53.098"W	2.05	
10640.00	90.800	359.420	7486.48	3128.10	3126.05	-926.96	1673545.06	14587284.65	40°09'58.400"N	104°52'53.104"W	0.89	
10733.00	90.400	358.600	7485.50	3221.08	3219.03	-928.57	1673543.33	14587377.59	40°09'59.318"N	104°52'53.125"W	0.98	
10827.00	89.080	358.100	7485.93	3315.05	3312.99	-931.28	1673540.49	14587471.51	40°10'00.247"N	104°52'53.160"W	1.50	
11014.00	91.050	358.160	7485.72	3501.95	3499.88	-937.38	1673534.14	14587658.31	40°10'02.094"N	104°52'53.238"W	1.05	
11107.00	90.220	359.090	7484.69	3594.92	3592.85	-939.61	1673531.78	14587751.24	40°10'03.013"N	104°52'53.267"W	1.34	
11200.00	88.150	359.940	7486.01	3687.91	3685.83	-940.40	1673530.86	14587844.18	40°10'03.931"N	104°52'53.277"W	2.41	
11293.00	89.010	359.610	7488.32	3780.88	3778.80	-940.76	1673530.37	14587937.11	40°10'04.850"N	104°52'53.282"W	0.99	
11386.00	90.150	0.000	7489.00	3873.87	3871.80	-941.08	1673529.93	14588030.07	40°10'05.769"N	104°52'53.286"W	1.30	
11480.00	90.550	359.200	7488.42	3967.87	3965.79	-941.74	1673529.14	14588124.03	40°10'06.698"N	104°52'53.295"W	0.95	
11574.00	90.990	358.130	7487.16	4061.84	4059.75	-943.93	1673526.82	14588217.95	40°10'07.626"N	104°52'53.323"W	1.23	
11668.00	91.910	357.510	7484.78	4155.75	4153.66	-947.50	1673523.12	14588311.81	40°10'08.554"N	104°52'53.369"W	1.18	
11762.00	89.750	357.550	7483.42	4249.65	4247.55	-951.55	1673518.94	14588405.66	40°10'09.482"N	104°52'53.421"W	2.30	
11855.00	89.140	357.730	7484.32	4342.58	4340.47	-955.38	1673514.99	14588498.54	40°10'10.401"N	104°52'53.471"W	0.68	
11948.00	88.400	358.980	7486.32	4435.52	4433.41	-958.05	1673512.19	14588591.43	40°10'11.319"N	104°52'53.505"W	1.56	
12042.00	88.490	0.490	7488.87	4529.48	4527.37	-958.48	1673511.63	14588685.36	40°10'12.247"N	104°52'53.511"W	1.61	
12136.00	89.200	359.970	7490.76	4623.46	4621.35	-958.11	1673511.88	14588779.30	40°10'13.176"N	104°52'53.506"W	0.94	
12230.00	89.970	0.050	7491.44	4717.46	4715.34	-958.09	1673511.77	14588873.26	40°10'14.105"N	104°52'53.506"W	0.82	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#54 BUTTERBALL 22C-34HZ (819'FNL & 2175'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 22C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 22C-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
12324.00	90.430	359.760	7491.12	4811.46	4809.34	-958.25	1673511.48	14588967.22	40°10'15.034"N	104°52'53.508"W	0.58	
12418.00	90.950	359.790	7489.98	4905.45	4903.34	-958.61	1673510.98	14589061.17	40°10'15.963"N	104°52'53.513"W	0.55	
12512.00	92.000	0.750	7487.56	4999.41	4997.30	-958.17	1673511.30	14589155.10	40°10'16.891"N	104°52'53.507"W	1.51	
12606.00	90.770	0.880	7485.29	5093.37	5091.26	-956.84	1673512.50	14589249.03	40°10'17.820"N	104°52'53.490"W	1.32	
12699.00	91.110	0.120	7483.77	5186.35	5184.24	-956.02	1673513.19	14589341.97	40°10'18.739"N	104°52'53.479"W	0.90	
12793.00	91.510	359.600	7481.62	5280.33	5278.22	-956.25	1673512.83	14589435.91	40°10'19.667"N	104°52'53.482"W	0.70	
12887.00	91.050	358.840	7479.52	5374.30	5372.19	-957.53	1673511.42	14589529.84	40°10'20.596"N	104°52'53.499"W	0.94	
12980.00	92.280	358.610	7476.81	5467.24	5465.12	-959.60	1673509.23	14589622.73	40°10'21.514"N	104°52'53.526"W	1.35	
13073.00	90.740	359.930	7474.36	5560.19	5558.08	-960.79	1673507.92	14589715.65	40°10'22.433"N	104°52'53.541"W	2.18	
13166.00	90.990	0.990	7472.96	5653.18	5651.06	-960.04	1673508.53	14589808.60	40°10'23.352"N	104°52'53.531"W	1.17	
13260.00	92.130	1.790	7470.40	5747.11	5745.00	-957.76	1673510.68	14589902.50	40°10'24.280"N	104°52'53.502"W	1.48	
13353.00	89.720	1.560	7468.90	5840.04	5837.94	-955.04	1673513.27	14589995.41	40°10'25.199"N	104°52'53.467"W	2.60	
13446.00	90.090	1.660	7469.05	5933.00	5930.90	-952.43	1673515.76	14590088.34	40°10'26.117"N	104°52'53.434"W	0.41	
13540.00	90.180	0.720	7468.83	6026.97	6024.88	-950.48	1673517.58	14590182.28	40°10'27.046"N	104°52'53.408"W	1.00	
13634.00	90.920	0.500	7467.93	6120.96	6118.87	-949.48	1673518.45	14590276.23	40°10'27.975"N	104°52'53.396"W	0.82	
13728.00	92.220	0.610	7465.35	6214.92	6212.83	-948.57	1673519.23	14590370.15	40°10'28.903"N	104°52'53.384"W	1.39	
13821.00	90.890	0.860	7462.83	6307.87	6305.78	-947.37	1673520.30	14590463.07	40°10'29.822"N	104°52'53.369"W	1.46	
13915.00	91.050	0.870	7461.24	6401.84	6399.76	-945.95	1673521.59	14590557.01	40°10'30.750"N	104°52'53.350"W	0.17	
14009.00	91.510	0.450	7459.14	6495.81	6493.73	-944.87	1673522.54	14590650.95	40°10'31.679"N	104°52'53.336"W	0.66	
14102.00	92.250	0.530	7456.09	6588.75	6586.68	-944.08	1673523.21	14590743.86	40°10'32.598"N	104°52'53.326"W	0.80	
14196.00	90.620	1.740	7453.74	6682.69	6680.62	-942.22	1673524.94	14590837.77	40°10'33.526"N	104°52'53.302"W	2.16	
14289.00	91.510	1.180	7452.01	6775.64	6773.58	-939.85	1673527.18	14590930.69	40°10'34.445"N	104°52'53.272"W	1.13	
14383.00	92.490	1.280	7448.73	6869.56	6867.50	-937.83	1673529.07	14591024.57	40°10'35.373"N	104°52'53.246"W	1.05	
14477.00	90.740	1.000	7446.08	6963.49	6961.44	-935.96	1673530.81	14591118.48	40°10'36.301"N	104°52'53.222"W	1.89	
14571.00	88.830	0.540	7446.43	7057.48	7055.42	-934.70	1673531.94	14591212.43	40°10'37.230"N	104°52'53.206"W	2.09	
14665.00	89.660	359.930	7447.67	7151.47	7149.41	-934.31	1673532.20	14591306.38	40°10'38.159"N	104°52'53.201"W	1.10	
14759.00	90.950	0.330	7447.17	7245.46	7243.41	-934.10	1673532.28	14591400.34	40°10'39.087"N	104°52'53.198"W	1.44	
14853.00	91.760	359.960	7444.95	7339.43	7337.38	-933.86	1673532.39	14591494.27	40°10'40.016"N	104°52'53.195"W	0.95	
14947.00	91.230	0.380	7442.49	7433.40	7431.35	-933.58	1673532.54	14591588.20	40°10'40.945"N	104°52'53.191"W	0.72	
15041.00	91.940	0.060	7439.89	7527.36	7525.31	-933.22	1673532.77	14591682.13	40°10'41.873"N	104°52'53.187"W	0.83	
15135.00	89.630	358.680	7438.60	7621.34	7619.29	-934.25	1673531.61	14591776.07	40°10'42.802"N	104°52'53.200"W	2.86	
15230.00	90.150	358.310	7438.79	7716.31	7714.25	-936.75	1673528.98	14591870.99	40°10'43.740"N	104°52'53.232"W	0.67	
15324.00	90.920	358.200	7437.91	7810.27	7808.21	-939.61	1673525.99	14591964.90	40°10'44.669"N	104°52'53.269"W	0.83	
15418.00	91.690	357.990	7435.77	7904.20	7902.13	-942.74	1673522.74	14592058.78	40°10'45.597"N	104°52'53.310"W	0.85	
15512.00	88.980	357.970	7435.22	7998.14	7996.06	-946.05	1673519.30	14592152.67	40°10'46.525"N	104°52'53.352"W	2.88	
15606.00	89.660	357.640	7436.33	8092.07	8089.98	-949.65	1673515.58	14592246.55	40°10'47.453"N	104°52'53.399"W	0.80	
15701.00	90.460	357.160	7436.24	8186.98	8184.88	-953.96	1673511.14	14592341.41	40°10'48.391"N	104°52'53.454"W	0.98	
15795.00	90.680	357.870	7435.30	8280.89	8278.79	-958.03	1673506.93	14592435.27	40°10'49.319"N	104°52'53.507"W	0.79	
15888.00	90.860	357.770	7434.05	8373.83	8371.71	-961.57	1673503.27	14592528.16	40°10'50.237"N	104°52'53.553"W	0.22	
15982.00	91.140	357.280	7432.41	8467.73	8465.61	-965.63	1673499.09	14592622.01	40°10'51.165"N	104°52'53.605"W	0.60	
15990.00†	91.184	357.258	7432.25	8475.72	8473.60	-966.01	1673498.69	14592630.00	40°10'51.244"N	104°52'53.610"W	0.62	ENTER RADIUS TOE (2235'FSL & 1167'FWL,SEC.34) 40.1809012 -104.8815583
16076.00	91.660	357.020	7430.11	8561.60	8559.47	-970.30	1673494.29	14592715.82	40°10'52.093"N	104°52'53.665"W	0.62	
16170.00	90.250	355.750	7428.55	8655.41	8653.26	-976.23	1673488.23	14592809.57	40°10'53.020"N	104°52'53.741"W	2.02	
16286.00	89.880	354.870	7428.41	8771.04	8768.87	-985.71	1673478.59	14592925.12	40°10'54.162"N	104°52'53.864"W	0.82	LAST BHI MWD+IFR1+MSA SURVEY
16333.00	89.880	354.870	7428.51	8871.86	8815.68	-989.92	1673474.33	14592971.91	40°10'54.625"N	104°52'53.918"W	0.00	PTB (2577'FSL & 1144'FWL,SEC.34) 40.1818402 -104.8816439

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#54 BUTTERBALL 22C-34HZ (819'FNL & 2175'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 22C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 22C-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	367.20	-1795.02	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.10-T2N-R67W	-6.00	367.20	-1795.02	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.34-T3N-R67W	-6.00	367.20	-1795.02	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
BUTTERBALL 22C-34HZ BHL REV-2(2578'FSL & 1178'FWL,SEC.34)	7424.00	8817.43	-956.14	1673508.09	14592973.70	40°10'54.642"N	104°52'53.483"W	point
BUTTERBALL 22C-34HZ BHL REV-1(2578'FSL & 1178'FWL,SEC.34)	7444.00	8817.44	-956.14	1673508.09	14592973.70	40°10'54.642"N	104°52'53.483"W	point
BUTTERBALL 22C-34HZ INT. TARGET Rev-2	7482.00	4397.91	-946.37	1673523.92	14588555.97	40°10'10.968"N	104°52'53.355"W	point
BUTTERBALL 22C-34HZ HEEL REV-2(207'FNL & 1234'FWL,SEC.10)	7489.00	614.18	-938.01	1673537.46	14584773.77	40°09'33.577"N	104°52'53.245"W	point
BUTTERBALL 22C-34HZ INT. TARGET	7502.00	4397.91	-946.37	1673523.92	14588555.97	40°10'10.968"N	104°52'53.355"W	point
BUTTERBALL 22C-34HZ FORMATION HARDLINE	7509.00	0.00	0.00	1674475.94	14584161.12	40°09'27.508"N	104°52'41.164"W	polygon
BUTTERBALL 22C-34HZ HEEL REV-1(207'FNL & 1234'FWL,SEC.10)	7509.00	614.18	-938.01	1673537.46	14584773.77	40°09'33.577"N	104°52'53.245"W	point
BUTTERBALL 22C-34HZ LANDBOX	7509.00	0.00	0.00	1674475.94	14584161.12	40°09'27.508"N	104°52'41.164"W	polygon
BUTTERBALL 22C-34HZ RADIUS 1	7509.00	815.98	-858.26	1673616.90	14584975.60	40°09'35.571"N	104°52'52.218"W	polygon
BUTTERBALL 22C-34HZ RADIUS 2	7509.00	8917.51	-841.75	1673622.30	14593073.90	40°10'55.631"N	104°52'52.009"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: BUTTERBALL 22C-34HZ AWB				Ref Wellpath: BUTTERBALL 22C-34HZ AWP	
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore
32.00	1805.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	SDI Custom APC ISCWSA Rev-2 MWD+IFR1 <184 - 1805>		BUTTERBALL 22C-34HZ AWB
1805.00	16286.00	Custom APC ISCWSA REV 2 MWD+IFR1+MSA (approximation)	BHI Custom APC ISCWSA Rev-2 MWD+IFR1+MSA <1925 - 16286>		BUTTERBALL 22C-34HZ AWB
16286.00	16333.00	Blind Drilling (std)	Projection to bit		BUTTERBALL 22C-34HZ AWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#54 BUTTERBALL 22C-34HZ (819'FNL & 2175'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 22C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 22C-34HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
184.00	0.270	287.750	184.00	FIRST SDI MWD+IFR1 SURVEY
1805.00	13.510	268.910	1780.66	LAST SDI MWD+IFR1 SURVEY
1925.00	13.160	270.100	1897.42	FIRST BHI MWD+IFR1+MSA SURVEY
2418.00	14.061	257.571	2376.28	ENTER LANDBOX (842'FNL & 1773'FWL,SEC.10) 40.1575755 -104.8795302
6837.00	1.712	31.312	6729.79	KOP
7851.00	89.910	359.520	7518.49	LANDING (480'FNL & 1244'FWL,SEC.10) 40.1585704 -104.8814322
8780.00	88.640	358.408	7488.77	EXIT RADIUS HEEL (448'FSL & 1230'FWL,SEC.03) 40.1611185 -104.8814798
15990.00	91.184	357.258	7432.25	ENTER RADIUS TOE (2235'FSL & 1167'FWL,SEC.34) 40.1809012 -104.8815583
16286.00	89.880	354.870	7428.41	LAST BHI MWD+IFR1+MSA SURVEY
16333.00	89.880	354.870	7428.51	PTB (2577'FSL & 1144'FWL,SEC.34) 40.1818402 -104.8816439