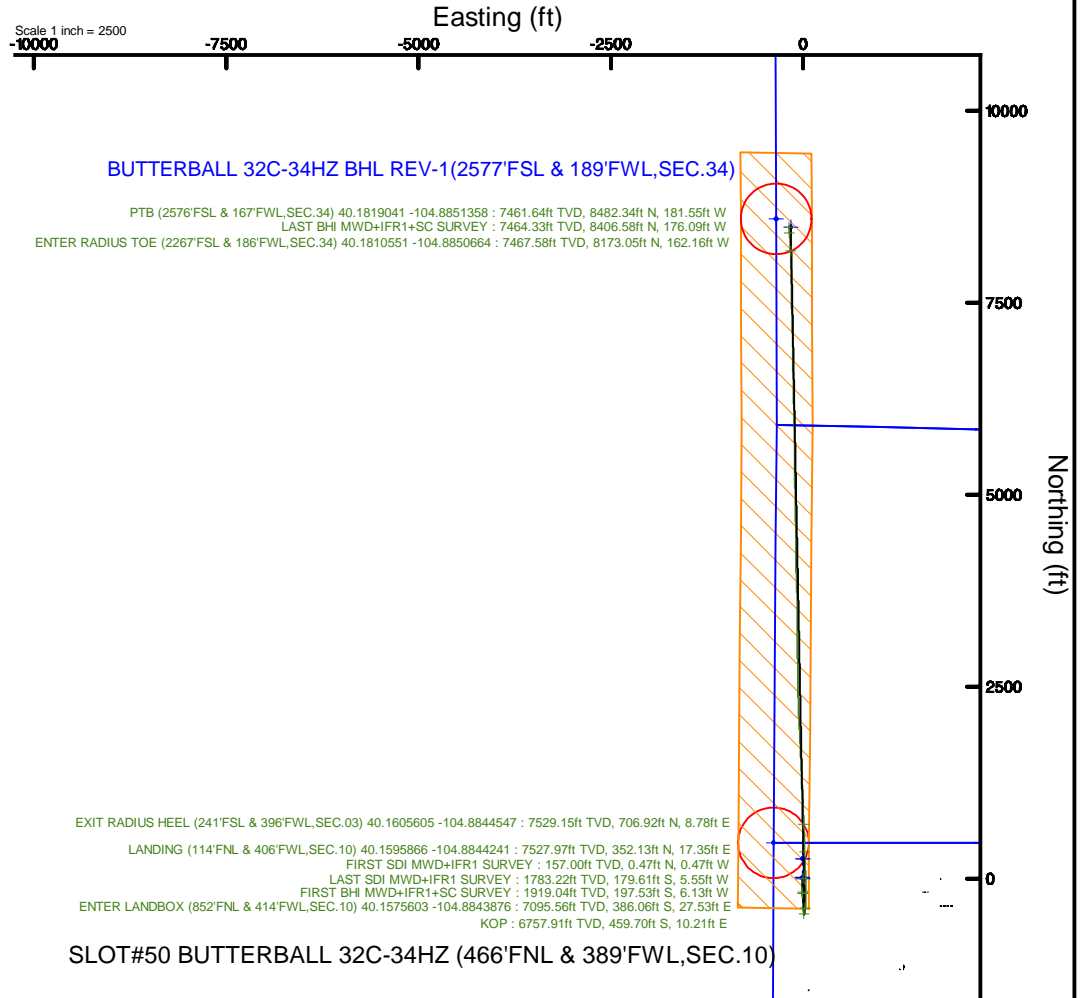
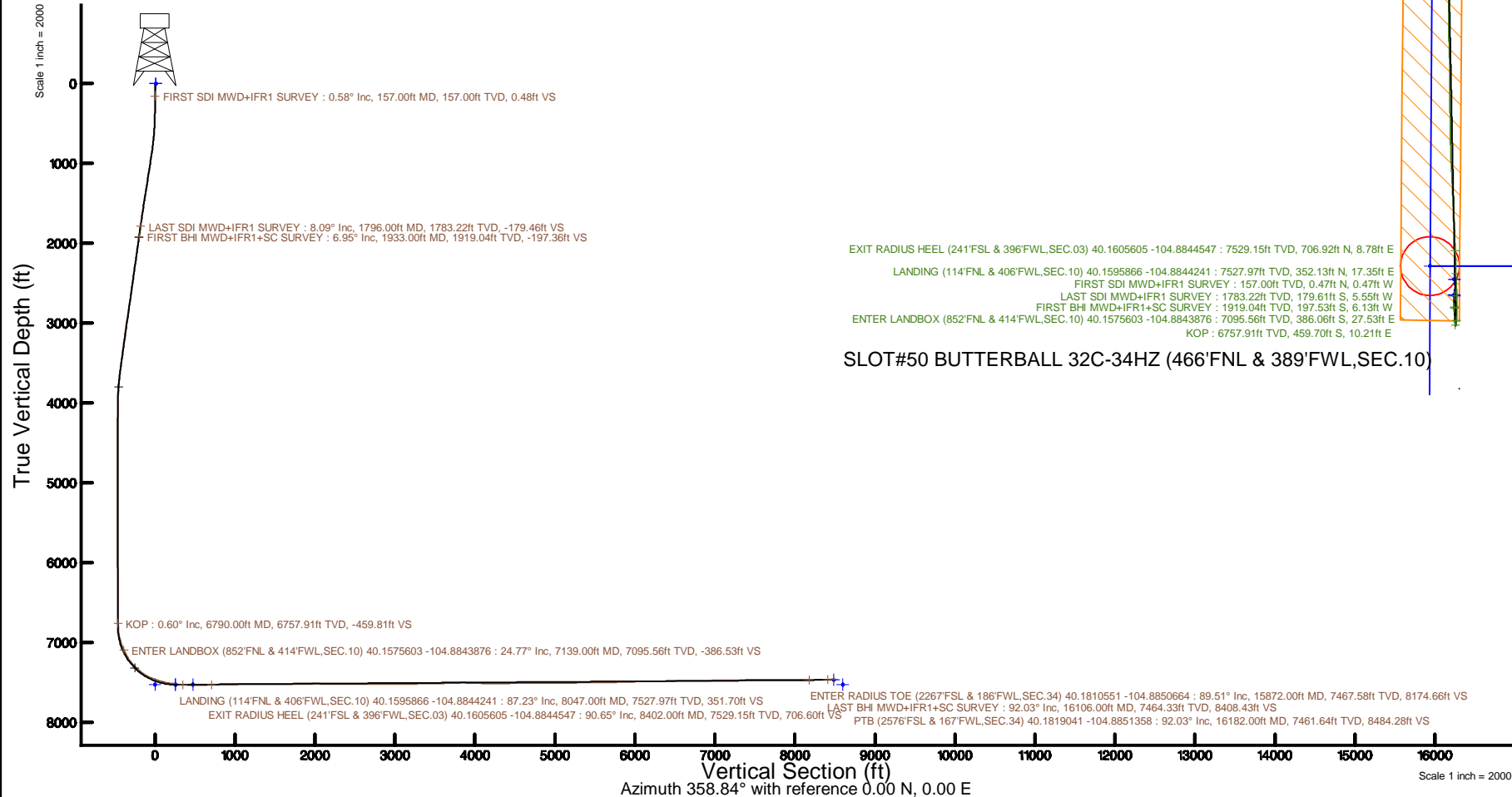


# KERR-MCGEE OIL & GAS ONSHORE LP (WA)

Location: COLORADO Slot: SLOT#50 BUTTERBALL 32C-34HZ (466'FNL & 389'FWL,SEC.10)  
Field: WELD COUNTY (UTM/TRUE NORTH) Well: BUTTERBALL 32C-34HZ  
Facility: SEC.10-T2N-R67W Wellbore: BUTTERBALL 32C-34HZ PWB

Plot reference wellpath is BUTTERBALL 32C-34HZ PWP Rev-A.0	Grid System: NAD83 / UTM Zone 13 North, US feet
True vertical depths are referenced to PD564 (26) (RT)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to PD564 (26) (RT)	North Reference: True north
PD564 (26) (RT) to Mean Sea Level: 4972 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#50 BUTTERBALL 32C-34HZ (466'FNL & 389'FWL,SEC.10)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: painsetr on 2017-06-16
	Database: WA_DEN_Anadarko_Defn



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#50 BUTTERBALL 32C-34HZ (466'FNL & 389'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 32C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 32C-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	6/16/2017 at 12:18 PM
Convergence at slot	0.08° East	Database/Source file	WA_DEN_Anadarko_Defn/BUTTERBALL_32C-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	176.13	-1555.11	1672691.47	14584515.20	40°09'31.032"N	104°53'04.150"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	PD564 (26') (RT) to Facility Vertical Datum	4972.00ft
Horizontal Reference Pt	Slot	PD564 (26') (RT) to Mean Sea Level	4972.00ft
Vertical Reference Pt	PD564 (26') (RT)	PD564 (26') (RT) to Mud Line at Slot (SLOT#50 BUTTERBALL 32C-34HZ (466'FNL & 389'FWL,SEC.10))	4972.00ft
MD Reference Pt	PD564 (26') (RT)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	358.84°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#50 BUTTERBALL 32C-34HZ (466°FNL & 389°FWL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 32C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 32C-34HZ AWP
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (183 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	315.200	0.00	0.00	0.00	0.00	1672691.47	14584515.20	40°09'31.032"N	104°53'04.150"W	0.00	
26.00	0.000	315.200	26.00	0.00	0.00	0.00	1672691.47	14584515.20	40°09'31.032"N	104°53'04.150"W	0.00	
157.00	0.580	315.200	157.00	0.48	0.47	-0.47	1672691.00	14584515.67	40°09'31.037"N	104°53'04.156"W	0.44	FIRST SDI MWD+IFR1 SURVEY
199.00	0.630	325.470	199.00	0.83	0.81	-0.75	1672690.72	14584516.01	40°09'31.040"N	104°53'04.160"W	0.28	
285.00	0.640	242.200	284.99	1.01	0.98	-1.44	1672690.03	14584516.18	40°09'31.042"N	104°53'04.169"W	0.98	
417.00	1.540	212.380	416.97	-0.80	-0.86	-3.04	1672688.43	14584514.33	40°09'31.023"N	104°53'04.189"W	0.78	
548.00	3.420	190.640	547.84	-6.10	-6.19	-4.71	1672686.77	14584509.01	40°09'30.971"N	104°53'04.211"W	1.58	
634.00	4.370	181.390	633.64	-11.88	-11.99	-5.26	1672686.22	14584503.21	40°09'30.914"N	104°53'04.218"W	1.32	
767.00	6.890	190.660	765.99	-24.75	-24.90	-6.86	1672684.64	14584490.31	40°09'30.786"N	104°53'04.238"W	2.01	
852.00	8.620	187.050	850.21	-36.05	-36.23	-8.58	1672682.93	14584478.97	40°09'30.674"N	104°53'04.261"W	2.11	
939.00	8.980	179.180	936.19	-49.29	-49.49	-9.29	1672682.25	14584465.72	40°09'30.543"N	104°53'04.270"W	1.44	
1027.00	8.180	177.450	1023.21	-62.42	-62.61	-8.91	1672682.64	14584452.60	40°09'30.413"N	104°53'04.265"W	0.96	
1116.00	9.000	178.230	1111.21	-75.71	-75.90	-8.41	1672683.16	14584439.33	40°09'30.282"N	104°53'04.258"W	0.93	
1205.00	9.100	181.870	1199.10	-89.70	-89.89	-8.43	1672683.16	14584425.34	40°09'30.144"N	104°53'04.259"W	0.65	
1294.00	8.960	178.350	1287.00	-103.66	-103.85	-8.46	1672683.15	14584411.38	40°09'30.006"N	104°53'04.259"W	0.64	
1382.00	9.280	177.760	1373.89	-117.60	-117.79	-7.98	1672683.64	14584397.45	40°09'29.868"N	104°53'04.253"W	0.38	
1471.00	9.060	175.970	1461.75	-131.78	-131.95	-7.21	1672684.43	14584383.29	40°09'29.728"N	104°53'04.243"W	0.40	
1558.00	8.150	177.240	1547.77	-144.78	-144.94	-6.43	1672685.23	14584370.31	40°09'29.600"N	104°53'04.233"W	1.07	
1646.00	8.360	175.490	1634.86	-157.41	-157.55	-5.63	1672686.05	14584357.71	40°09'29.475"N	104°53'04.223"W	0.37	
1735.00	8.680	181.550	1722.88	-170.57	-170.71	-5.30	1672686.39	14584344.55	40°09'29.345"N	104°53'04.218"W	1.07	
1796.00	8.090	181.610	1783.22	-179.46	-179.61	-5.55	1672686.16	14584335.66	40°09'29.257"N	104°53'04.221"W	0.97	LAST SDI MWD+IFR1 SURVEY
1933.00	6.950	182.130	1919.04	-197.36	-197.53	-6.13	1672685.60	14584317.75	40°09'29.080"N	104°53'04.229"W	0.83	FIRST BHI MWD+IFR1+SC SURVEY
2023.00	7.890	182.680	2008.29	-208.96	-209.14	-6.62	1672685.12	14584306.14	40°09'28.965"N	104°53'04.235"W	1.05	
2112.00	8.490	180.010	2096.38	-221.63	-221.81	-6.90	1672684.85	14584293.47	40°09'28.840"N	104°53'04.239"W	0.80	
2202.00	7.730	177.110	2185.48	-234.32	-234.50	-6.60	1672685.17	14584280.79	40°09'28.715"N	104°53'04.235"W	0.96	
2292.00	9.060	172.820	2274.51	-247.42	-247.58	-5.41	1672686.38	14584267.72	40°09'28.585"N	104°53'04.220"W	1.63	
2381.00	8.150	171.810	2362.51	-260.65	-260.77	-3.63	1672688.17	14584254.53	40°09'28.455"N	104°53'04.197"W	1.04	
2471.00	7.150	167.760	2451.71	-272.47	-272.56	-1.54	1672690.28	14584242.75	40°09'28.339"N	104°53'04.170"W	1.26	
2560.00	7.540	175.330	2539.98	-283.74	-283.79	0.11	1672691.95	14584231.52	40°09'28.228"N	104°53'04.149"W	1.17	
2650.00	8.830	179.480	2629.06	-296.54	-296.59	0.65	1672692.51	14584218.73	40°09'28.101"N	104°53'04.142"W	1.58	
2739.00	8.380	180.350	2717.06	-309.85	-309.90	0.68	1672692.55	14584205.42	40°09'27.970"N	104°53'04.141"W	0.53	
2829.00	9.300	180.030	2805.99	-323.68	-323.73	0.63	1672692.52	14584191.60	40°09'27.833"N	104°53'04.142"W	1.02	
2918.00	8.680	181.630	2893.90	-337.58	-337.64	0.44	1672692.34	14584177.70	40°09'27.695"N	104°53'04.144"W	0.75	
3008.00	8.530	185.890	2982.89	-350.99	-351.07	-0.44	1672691.48	14584164.28	40°09'27.563"N	104°53'04.156"W	0.73	
3097.00	8.300	177.930	3070.93	-363.96	-364.05	-0.88	1672691.06	14584151.29	40°09'27.434"N	104°53'04.161"W	1.33	
3187.00	8.100	173.690	3160.01	-376.77	-376.85	0.05	1672692.00	14584138.51	40°09'27.308"N	104°53'04.149"W	0.71	
3276.00	7.070	176.610	3248.23	-388.49	-388.55	1.06	1672693.03	14584126.81	40°09'27.192"N	104°53'04.136"W	1.24	
3366.00	7.580	178.640	3337.50	-399.96	-400.01	1.53	1672693.51	14584115.35	40°09'27.079"N	104°53'04.130"W	0.64	
3456.00	8.250	171.930	3426.64	-412.31	-412.34	2.58	1672694.58	14584103.03	40°09'26.957"N	104°53'04.117"W	1.27	
3545.00	6.570	172.950	3514.89	-423.71	-423.71	4.10	1672696.11	14584091.66	40°09'26.845"N	104°53'04.097"W	1.89	
3634.00	6.870	170.890	3603.28	-434.05	-434.02	5.56	1672697.59	14584081.36	40°09'26.743"N	104°53'04.078"W	0.43	
3724.00	5.490	173.350	3692.76	-443.66	-443.61	6.92	1672698.96	14584071.77	40°09'26.648"N	104°53'04.061"W	1.56	
3813.00	4.290	177.920	3781.43	-451.23	-451.17	7.53	1672699.58	14584064.22	40°09'26.574"N	104°53'04.053"W	1.42	
3903.00	3.540	174.690	3871.22	-457.37	-457.30	7.91	1672699.97	14584058.09	40°09'26.513"N	104°53'04.048"W	0.87	
3993.00	1.850	136.510	3961.13	-461.21	-461.12	9.17	1672701.23	14584054.28	40°09'26.475"N	104°53'04.032"W	2.64	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#50 BUTTERBALL 32C-34HZ (466°FNL & 389°FWL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 32C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 32C-34HZ AWP
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (183 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	1.610	142.540	4050.09	-463.28	-463.16	10.91	1672702.98	14584052.25	40°09'26.455"N	104°53'04.009"W	0.34	
4172.00	1.290	143.090	4140.06	-465.12	-464.97	12.29	1672704.36	14584050.43	40°09'26.437"N	104°53'03.992"W	0.36	
4261.00	0.830	153.400	4229.04	-466.52	-466.35	13.18	1672705.25	14584049.06	40°09'26.424"N	104°53'03.980"W	0.56	
4351.00	1.020	139.630	4319.03	-467.73	-467.54	13.99	1672706.06	14584047.87	40°09'26.412"N	104°53'03.970"W	0.32	
4440.00	0.610	126.460	4408.02	-468.63	-468.43	14.89	1672706.96	14584046.98	40°09'26.403"N	104°53'03.958"W	0.50	
4530.00	0.420	105.690	4498.02	-469.02	-468.80	15.59	1672707.66	14584046.61	40°09'26.399"N	104°53'03.949"W	0.29	
4620.00	0.480	98.450	4588.01	-469.18	-468.94	16.28	1672708.35	14584046.47	40°09'26.398"N	104°53'03.940"W	0.09	
4709.00	0.310	82.070	4677.01	-469.21	-468.97	16.89	1672708.96	14584046.45	40°09'26.398"N	104°53'03.932"W	0.23	
4799.00	0.220	86.540	4767.01	-469.18	-468.92	17.30	1672709.37	14584046.49	40°09'26.398"N	104°53'03.927"W	0.10	
4888.00	0.290	220.900	4856.01	-469.34	-469.08	17.32	1672709.40	14584046.33	40°09'26.397"N	104°53'03.927"W	0.53	
5001.00	0.460	236.510	4969.01	-469.79	-469.55	16.76	1672708.83	14584045.86	40°09'26.392"N	104°53'03.934"W	0.17	
5091.00	0.610	248.820	5059.00	-470.15	-469.92	16.01	1672708.08	14584045.49	40°09'26.388"N	104°53'03.944"W	0.21	
5181.00	0.670	250.530	5149.00	-470.48	-470.27	15.07	1672707.14	14584045.14	40°09'26.385"N	104°53'03.956"W	0.07	
5270.00	0.590	260.570	5237.99	-470.71	-470.52	14.13	1672706.20	14584044.89	40°09'26.382"N	104°53'03.968"W	0.15	
5360.00	0.710	264.160	5327.99	-470.82	-470.65	13.11	1672705.19	14584044.76	40°09'26.381"N	104°53'03.981"W	0.14	
5449.00	0.830	276.060	5416.98	-470.78	-470.64	11.92	1672704.00	14584044.77	40°09'26.381"N	104°53'03.996"W	0.22	
5539.00	0.430	79.240	5506.98	-470.65	-470.51	11.61	1672703.68	14584044.90	40°09'26.382"N	104°53'04.000"W	1.39	
5629.00	0.320	46.270	5596.98	-470.42	-470.27	12.12	1672704.20	14584045.14	40°09'26.385"N	104°53'03.994"W	0.26	
5718.00	0.280	21.110	5685.97	-470.05	-469.90	12.38	1672704.45	14584045.51	40°09'26.388"N	104°53'03.991"W	0.15	
5808.00	0.410	12.670	5775.97	-469.53	-469.38	12.53	1672704.60	14584046.03	40°09'26.394"N	104°53'03.989"W	0.15	
5897.00	0.460	0.230	5864.97	-468.87	-468.71	12.60	1672704.67	14584046.70	40°09'26.400"N	104°53'03.988"W	0.12	
5987.00	0.990	4.130	5954.96	-467.73	-467.57	12.66	1672704.73	14584047.83	40°09'26.411"N	104°53'03.987"W	0.59	
6077.00	0.960	353.360	6044.95	-466.21	-466.05	12.63	1672704.69	14584049.36	40°09'26.427"N	104°53'03.987"W	0.21	
6256.00	0.560	347.550	6223.93	-463.86	-463.70	12.26	1672704.33	14584051.70	40°09'26.450"N	104°53'03.992"W	0.23	
6345.00	0.620	337.570	6312.93	-462.98	-462.83	11.99	1672704.05	14584052.57	40°09'26.458"N	104°53'03.996"W	0.13	
6435.00	0.460	344.130	6402.92	-462.18	-462.04	11.70	1672703.77	14584053.37	40°09'26.466"N	104°53'03.999"W	0.19	
6525.00	0.400	334.130	6492.92	-461.54	-461.41	11.47	1672703.53	14584054.00	40°09'26.472"N	104°53'04.002"W	0.11	
6614.00	0.440	320.260	6581.92	-460.99	-460.86	11.11	1672703.17	14584054.54	40°09'26.478"N	104°53'04.007"W	0.12	
6704.00	0.550	302.260	6671.92	-460.49	-460.37	10.53	1672702.59	14584055.03	40°09'26.483"N	104°53'04.014"W	0.21	
6790.00†	0.598	4.468	6757.91	-459.81	-459.70	10.21	1672702.27	14584055.70	40°09'26.489"N	104°53'04.018"W	0.69	KOP
6793.00	0.610	6.060	6760.91	-459.78	-459.67	10.22	1672702.28	14584055.73	40°09'26.490"N	104°53'04.018"W	0.69	
6883.00	6.120	30.640	6850.72	-455.22	-455.06	12.71	1672704.77	14584060.34	40°09'26.535"N	104°53'03.986"W	6.19	
6973.00	13.770	11.770	6939.33	-440.68	-440.42	17.35	1672709.38	14584074.98	40°09'26.680"N	104°53'03.927"W	9.13	
7062.00	20.130	11.600	7024.42	-415.40	-415.02	22.60	1672714.59	14584100.37	40°09'26.931"N	104°53'03.859"W	7.15	
7139.00†	24.770	8.093	7095.56	-386.53	-386.06	27.53	1672719.49	14584129.33	40°09'27.217"N	104°53'03.795"W	6.27	ENTER LANDBOX (852°FNL & 414°FWL, SEC.10) 40.1575603 -104.8843876
7152.00	25.560	7.620	7107.33	-381.08	-380.58	28.29	1672720.24	14584134.81	40°09'27.271"N	104°53'03.786"W	6.27	
7241.00	30.560	2.090	7185.86	-339.48	-338.91	31.66	1672723.56	14584176.47	40°09'27.683"N	104°53'03.742"W	6.33	
7331.00	38.920	2.100	7259.75	-288.32	-287.70	33.54	1672725.36	14584227.66	40°09'28.189"N	104°53'03.718"W	9.29	
7421.00	47.220	0.170	7325.44	-226.96	-226.31	34.67	1672726.42	14584289.03	40°09'28.796"N	104°53'03.703"W	9.34	
7510.00	54.410	0.260	7381.64	-158.04	-157.37	34.93	1672726.59	14584357.94	40°09'29.477"N	104°53'03.700"W	8.08	
7600.00	63.550	358.380	7427.97	-81.00	-80.34	33.96	1672725.52	14584434.94	40°09'30.238"N	104°53'03.713"W	10.31	
7689.00	71.730	358.980	7461.80	1.23	1.88	32.08	1672723.53	14584517.12	40°09'31.051"N	104°53'03.737"W	9.21	
7779.00	74.160	357.690	7488.20	87.26	87.88	29.57	1672720.91	14584603.08	40°09'31.900"N	104°53'03.769"W	3.03	
7868.00	80.690	356.740	7507.56	174.04	174.59	25.34	1672716.57	14584689.76	40°09'32.757"N	104°53'03.824"W	7.41	
7958.00	82.960	356.790	7520.36	263.07	263.53	20.32	1672711.43	14584778.65	40°09'33.636"N	104°53'03.888"W	2.52	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#50 BUTTERBALL 32C-34HZ (466'FNL & 389'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 32C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 32C-34HZ AWP
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (183 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
8047.00	87.230	359.360	7527.97	351.70	352.13	17.35	1672708.35	14584867.21	40°09'34.512"N	104°53'03.927"W	5.59	LANDING (114'FNL & 406'FWL,SEC.10) 40.1595866 -104.8844241
8137.00	88.610	359.330	7531.24	441.64	442.06	16.32	1672707.20	14584957.10	40°09'35.400"N	104°53'03.940"W	1.53	
8227.00	90.550	358.190	7531.90	531.63	532.03	14.37	1672705.14	14585047.04	40°09'36.290"N	104°53'03.965"W	2.50	
8316.00	91.200	358.200	7530.54	620.61	620.97	11.57	1672702.22	14585135.94	40°09'37.168"N	104°53'04.001"W	0.73	
8402.00†	90.646	358.085	7529.15	706.60	706.92	8.78	1672699.33	14585221.85	40°09'38.018"N	104°53'04.037"W	0.66	EXIT RADIUS HEEL (241'FSL & 396'FWL,SEC.03) 40.1605605 -104.8844547
8406.00	90.620	358.080	7529.11	710.60	710.92	8.65	1672699.19	14585225.84	40°09'38.057"N	104°53'04.039"W	0.66	
8495.00	90.830	357.480	7527.98	799.57	799.84	5.20	1672695.62	14585314.73	40°09'38.936"N	104°53'04.083"W	0.71	
8585.00	91.110	357.420	7526.46	889.53	889.74	1.20	1672691.51	14585404.58	40°09'39.824"N	104°53'04.135"W	0.32	
8674.00	91.260	358.190	7524.62	978.50	978.65	-2.21	1672687.98	14585493.46	40°09'40.703"N	104°53'04.178"W	0.88	
8764.00	91.050	356.870	7522.80	1068.45	1068.55	-6.09	1672683.99	14585583.31	40°09'41.591"N	104°53'04.228"W	1.48	
8853.00	89.630	357.700	7522.27	1157.42	1157.45	-10.31	1672679.66	14585672.17	40°09'42.470"N	104°53'04.283"W	1.85	
8943.00	89.750	357.360	7522.76	1247.39	1247.36	-14.18	1672675.67	14585762.04	40°09'43.358"N	104°53'04.333"W	0.40	
9033.00	90.490	357.460	7522.57	1337.36	1337.27	-18.25	1672671.49	14585851.91	40°09'44.247"N	104°53'04.385"W	0.83	
9122.00	91.080	357.490	7521.35	1426.33	1426.17	-22.17	1672667.45	14585940.77	40°09'45.126"N	104°53'04.436"W	0.66	
9212.00	91.420	357.400	7519.39	1516.28	1516.06	-26.18	1672663.32	14586030.62	40°09'46.014"N	104°53'04.487"W	0.39	
9301.00	90.520	357.520	7517.88	1605.24	1604.96	-30.13	1672659.27	14586119.48	40°09'46.892"N	104°53'04.538"W	1.02	
9391.00	90.650	357.190	7516.96	1695.21	1694.86	-34.28	1672655.00	14586209.34	40°09'47.781"N	104°53'04.592"W	0.39	
9481.00	89.600	357.550	7516.77	1785.17	1784.76	-38.41	1672650.75	14586299.20	40°09'48.669"N	104°53'04.645"W	1.23	
9570.00	90.090	357.210	7517.01	1874.14	1873.67	-42.48	1672646.57	14586388.06	40°09'49.548"N	104°53'04.697"W	0.67	
9660.00	90.520	356.610	7516.53	1964.09	1963.54	-47.33	1672641.61	14586477.89	40°09'50.436"N	104°53'04.760"W	0.82	
9750.00	89.600	357.170	7516.44	2054.04	2053.40	-52.21	1672636.61	14586567.71	40°09'51.324"N	104°53'04.823"W	1.20	
9839.00	90.030	356.870	7516.72	2142.99	2142.28	-56.84	1672631.87	14586656.55	40°09'52.202"N	104°53'04.882"W	0.59	
9929.00	89.170	359.030	7517.35	2232.97	2232.22	-60.06	1672628.53	14586746.44	40°09'53.091"N	104°53'04.924"W	2.58	
10018.00	89.630	358.930	7518.28	2321.97	2321.20	-61.64	1672626.83	14586835.39	40°09'53.970"N	104°53'04.944"W	0.53	
10108.00	90.430	359.040	7518.24	2411.97	2411.18	-63.24	1672625.12	14586925.33	40°09'54.859"N	104°53'04.965"W	0.90	
10197.00	89.110	359.380	7518.59	2500.96	2500.17	-64.46	1672623.78	14587014.28	40°09'55.739"N	104°53'04.980"W	1.53	
10287.00	89.540	359.420	7519.65	2590.95	2590.16	-65.41	1672622.72	14587104.23	40°09'56.628"N	104°53'04.992"W	0.48	
10376.00	90.280	359.030	7519.79	2679.95	2679.15	-66.61	1672621.40	14587193.19	40°09'57.507"N	104°53'05.008"W	0.94	
10466.00	90.620	358.700	7519.09	2769.95	2769.13	-68.39	1672619.50	14587283.13	40°09'58.397"N	104°53'05.031"W	0.53	
10555.00	91.170	358.430	7517.70	2858.93	2858.09	-70.62	1672617.16	14587372.05	40°09'59.276"N	104°53'05.060"W	0.69	
10645.00	90.030	357.910	7516.75	2948.92	2948.04	-73.49	1672614.17	14587461.96	40°10'00.165"N	104°53'05.097"W	1.39	
10734.00	89.480	0.210	7517.13	3037.91	3037.02	-74.95	1672612.60	14587550.90	40°10'01.044"N	104°53'05.115"W	2.66	
10824.00	89.880	0.050	7517.64	3127.89	3127.02	-74.75	1672612.68	14587640.86	40°10'01.933"N	104°53'05.113"W	0.48	
10913.00	90.490	359.940	7517.35	3216.87	3216.02	-74.76	1672612.56	14587729.83	40°10'02.813"N	104°53'05.113"W	0.70	
11002.00	91.260	359.900	7515.99	3305.84	3305.00	-74.88	1672612.32	14587818.78	40°10'03.692"N	104°53'05.115"W	0.87	
11092.00	92.280	359.440	7513.21	3395.79	3394.96	-75.40	1672611.68	14587908.70	40°10'04.581"N	104°53'05.121"W	1.24	
11181.00	90.310	359.750	7511.20	3484.75	3483.93	-76.03	1672610.94	14587997.63	40°10'05.460"N	104°53'05.129"W	2.24	
11271.00	90.680	359.360	7510.42	3574.74	3573.92	-76.73	1672610.13	14588087.59	40°10'06.350"N	104°53'05.138"W	0.60	
11360.00	91.690	358.980	7508.58	3663.72	3662.89	-78.02	1672608.72	14588176.52	40°10'07.229"N	104°53'05.155"W	1.21	
11450.00	92.430	358.700	7505.35	3753.66	3752.82	-79.84	1672606.78	14588266.41	40°10'08.117"N	104°53'05.178"W	0.88	
11539.00	90.650	358.380	7502.95	3842.63	3841.75	-82.10	1672604.40	14588355.30	40°10'08.996"N	104°53'05.208"W	2.03	
11629.00	87.130	357.130	7504.70	3932.58	3931.65	-85.63	1672600.76	14588445.16	40°10'09.885"N	104°53'05.253"W	4.15	
11719.00	88.210	358.000	7508.36	4022.48	4021.49	-89.45	1672596.83	14588534.96	40°10'10.773"N	104°53'05.302"W	1.54	
11808.00	88.950	359.030	7510.56	4111.45	4110.43	-91.75	1672594.41	14588623.86	40°10'11.651"N	104°53'05.332"W	1.42	
11898.00	89.230	358.750	7511.99	4201.44	4200.40	-93.50	1672592.55	14588713.80	40°10'12.541"N	104°53'05.354"W	0.44	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#50 BUTTERBALL 32C-34HZ (466°FNL & 389°FWL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 32C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 32C-34HZ AWP
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (183 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
11987.00	90.400	0.320	7512.28	4290.42	4289.40	-94.22	1672591.71	14588802.75	40°10'13.420"N	104°53'05.364"W	2.20	
12077.00	91.200	0.600	7511.02	4380.38	4379.38	-93.50	1672592.32	14588892.70	40°10'14.309"N	104°53'05.354"W	0.94	
12166.00	91.200	359.780	7509.16	4469.33	4468.36	-93.20	1672592.50	14588981.65	40°10'15.189"N	104°53'05.351"W	0.92	
12256.00	90.860	358.660	7507.54	4559.32	4558.34	-94.43	1672591.15	14589071.59	40°10'16.078"N	104°53'05.366"W	1.30	
12345.00	91.600	359.390	7505.63	4648.29	4647.30	-95.94	1672589.52	14589160.51	40°10'16.957"N	104°53'05.386"W	1.17	
12435.00	90.710	358.440	7503.82	4738.27	4737.27	-97.65	1672587.70	14589250.44	40°10'17.846"N	104°53'05.408"W	1.45	
12525.00	89.450	359.220	7503.69	4828.27	4827.25	-99.48	1672585.75	14589340.38	40°10'18.735"N	104°53'05.432"W	1.65	
12614.00	89.970	359.190	7504.14	4917.27	4916.24	-100.72	1672584.40	14589429.33	40°10'19.614"N	104°53'05.447"W	0.59	
12704.00	89.510	358.510	7504.55	5007.27	5006.22	-102.52	1672582.48	14589519.27	40°10'20.504"N	104°53'05.471"W	0.91	
12793.00	90.520	359.030	7504.53	5096.26	5095.19	-104.43	1672580.45	14589608.21	40°10'21.383"N	104°53'05.495"W	1.28	
12883.00	89.750	358.320	7504.31	5186.26	5185.17	-106.52	1672578.26	14589698.15	40°10'22.272"N	104°53'05.522"W	1.16	
12972.00	91.880	0.040	7503.05	5275.24	5274.14	-107.79	1672576.87	14589787.08	40°10'23.151"N	104°53'05.539"W	3.08	
13061.00	90.490	359.630	7501.21	5364.21	5363.12	-108.05	1672576.49	14589876.03	40°10'24.031"N	104°53'05.542"W	1.63	
13151.00	90.150	358.880	7500.70	5454.20	5453.11	-109.22	1672575.21	14589965.98	40°10'24.920"N	104°53'05.557"W	0.91	
13240.00	90.430	0.210	7500.25	5543.19	5542.10	-109.92	1672574.39	14590054.94	40°10'25.799"N	104°53'05.566"W	1.53	
13330.00	90.550	359.610	7499.48	5633.17	5632.10	-110.06	1672574.13	14590144.90	40°10'26.689"N	104°53'05.568"W	0.68	
13421.00	91.230	0.050	7498.07	5724.15	5723.09	-110.33	1672573.74	14590235.85	40°10'27.588"N	104°53'05.571"W	0.89	
13510.00	91.720	358.920	7495.78	5813.11	5812.05	-111.13	1672572.82	14590324.78	40°10'28.467"N	104°53'05.582"W	1.38	
13600.00	92.160	358.650	7492.73	5903.06	5901.98	-113.04	1672570.80	14590414.67	40°10'29.356"N	104°53'05.606"W	0.57	
13689.00	91.510	358.420	7489.88	5992.01	5990.91	-115.32	1672568.41	14590503.55	40°10'30.234"N	104°53'05.636"W	0.77	
13779.00	90.650	358.830	7488.19	6082.00	6080.86	-117.47	1672566.14	14590593.47	40°10'31.123"N	104°53'05.663"W	1.06	
13868.00	91.080	357.490	7486.84	6170.98	6169.80	-120.33	1672563.17	14590682.37	40°10'32.002"N	104°53'05.700"W	1.58	
13958.00	90.340	359.020	7485.73	6260.96	6259.75	-123.07	1672560.31	14590772.28	40°10'32.891"N	104°53'05.735"W	1.89	
14047.00	91.200	358.890	7484.53	6349.95	6348.73	-124.69	1672558.57	14590861.22	40°10'33.770"N	104°53'05.756"W	0.98	
14137.00	89.970	358.980	7483.61	6439.95	6438.71	-126.37	1672556.78	14590951.16	40°10'34.660"N	104°53'05.778"W	1.37	
14227.00	90.800	358.840	7483.01	6529.94	6528.69	-128.08	1672554.95	14591041.10	40°10'35.549"N	104°53'05.800"W	0.94	
14316.00	90.740	359.660	7481.81	6618.93	6617.67	-129.24	1672553.67	14591130.05	40°10'36.428"N	104°53'05.815"W	0.92	
14406.00	91.350	358.890	7480.17	6708.91	6707.65	-130.38	1672552.42	14591219.99	40°10'37.317"N	104°53'05.830"W	1.09	
14496.00	90.490	359.490	7478.73	6798.90	6797.63	-131.65	1672551.03	14591309.93	40°10'38.206"N	104°53'05.846"W	1.17	
14585.00	90.800	358.990	7477.72	6887.89	6886.61	-132.84	1672549.74	14591398.88	40°10'39.086"N	104°53'05.861"W	0.66	
14675.00	91.540	358.660	7475.89	6977.87	6976.57	-134.68	1672547.77	14591488.80	40°10'39.975"N	104°53'05.885"W	0.90	
14854.00	90.090	358.880	7473.34	7156.85	7155.51	-138.52	1672543.70	14591667.66	40°10'41.743"N	104°53'05.935"W	0.82	
14943.00	90.800	358.650	7472.65	7245.84	7244.49	-140.44	1672541.67	14591756.60	40°10'42.622"N	104°53'05.959"W	0.84	
15033.00	91.510	358.120	7470.83	7335.82	7334.43	-142.98	1672539.02	14591846.50	40°10'43.511"N	104°53'05.992"W	0.98	
15122.00	91.290	357.740	7468.66	7424.78	7423.35	-146.19	1672535.69	14591935.38	40°10'44.390"N	104°53'06.033"W	0.49	
15212.00	89.600	359.260	7467.96	7514.77	7513.31	-148.55	1672533.22	14592025.30	40°10'45.279"N	104°53'06.064"W	2.53	
15301.00	90.650	359.470	7467.77	7603.77	7602.30	-149.53	1672532.12	14592114.25	40°10'46.158"N	104°53'06.076"W	1.20	
15391.00	91.760	358.880	7465.87	7693.75	7692.27	-150.83	1672530.70	14592204.18	40°10'47.047"N	104°53'06.093"W	1.40	
15480.00	89.450	359.890	7464.93	7782.73	7781.25	-151.78	1672529.63	14592293.13	40°10'47.927"N	104°53'06.105"W	2.83	
15570.00	89.880	359.040	7465.46	7872.72	7871.25	-152.62	1672528.68	14592383.09	40°10'48.816"N	104°53'06.116"W	1.06	
15659.00	90.950	358.430	7464.82	7961.72	7960.22	-154.59	1672526.60	14592472.02	40°10'49.695"N	104°53'06.142"W	1.38	
15749.00	88.460	358.070	7465.28	8051.70	8050.17	-157.34	1672523.73	14592561.93	40°10'50.584"N	104°53'06.177"W	2.80	
15838.00	89.110	357.610	7467.17	8140.67	8139.09	-160.69	1672520.26	14592650.81	40°10'51.463"N	104°53'06.220"W	0.89	
15872.00†	89.514	357.448	7467.58	8174.66	8173.05	-162.16	1672518.76	14592684.76	40°10'51.798"N	104°53'06.239"W	1.28	ENTER RADIUS TOE (2267°FSL & 186°FWL, SEC.34) 40.1810551 -104.8850664
15928.00	90.180	357.180	7467.72	8230.64	8228.99	-164.78	1672516.06	14592740.67	40°10'52.351"N	104°53'06.273"W	1.28	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#50 BUTTERBALL 32C-34HZ (466'FNL & 389'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 32C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 32C-34HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (183 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
16017.00	91.080	356.180	7466.75	8319.57	8317.83	-169.93	1672510.79	14592829.47	40°10'53.229"N	104°53'06.339"W	1.51	
16106.00	92.030	355.880	7464.33	8408.43	8406.58	-176.09	1672504.52	14592918.18	40°10'54.106"N	104°53'06.419"W	1.12	LAST BHI MWD+IFR1+SC SURVEY
16182.00	92.030	355.880	7461.64	8484.28	8482.34	-181.55	1672498.97	14592993.90	40°10'54.855"N	104°53'06.489"W	0.00	PTB (2576'FSL & 167'FWL,SEC.34) 40.1819041 -104.8851358

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.03-T2N-R67W	0.00	10.52	-10.33	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.10-T2N-R67W	0.00	10.52	-10.33	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
SEC.34-T3N-R67W	0.00	10.52	-10.33	1672681.13	14584525.71	40°09'31.136"N	104°53'04.283"W	polygon
BUTTERBALL 32C-34HZ BHL REV-1(2577'FSL & 189'FWL,SEC.34)	7468.00	8483.40	-160.64	1672519.87	14592994.98	40°10'54.865"N	104°53'06.220"W	point
BUTTERBALL 32C-34HZ HEEL REV-1(207'FNL & 378'FWL,SEC.10)	7527.00	259.38	-9.47	1672681.66	14584774.46	40°09'33.595"N	104°53'04.272"W	point
BUTTERBALL 32C-34HZ HEEL REV-2(207'FNL & 393'FWL,SEC.10)	7527.00	259.36	5.53	1672696.66	14584774.46	40°09'33.595"N	104°53'04.079"W	point
BUTTERBALL 32C-34HZ LANDBOX	7527.00	0.00	0.00	1672691.47	14584515.20	40°09'31.032"N	104°53'04.150"W	polygon
BUTTERBALL 32C-34HZ RADIUS 1	7527.00	466.99	-386.52	1672304.50	14584981.50	40°09'35.647"N	104°53'09.128"W	polygon
BUTTERBALL 32C-34HZ RADIUS 2	7527.00	8592.91	-350.24	1672330.20	14593104.20	40°10'55.947"N	104°53'08.662"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: BUTTERBALL 32C-34HZ AWB				Ref Wellpath: BUTTERBALL 32C-34HZ AWP		
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment		Wellbore	
26.00	1796.00	Custom APC ISCWSA REV 2 MWD+IFR1 (approximation)	SDI Custom APC ISCWSA Rev-2 MWD+IFR1 <157 - 1796>		BUTTERBALL 32C-34HZ AWB	
1796.00	16106.00	Custom APC ISCWSA REV 2 MWD+IFR1+SC (approximation)	BHI Custom APC ISCWSA Rev-2 MWD+IFR1+SC <1933 - 16106>		BUTTERBALL 32C-34HZ AWB	
16106.00	16182.00	Blind Drilling (std)	Projection to bit		BUTTERBALL 32C-34HZ AWB	



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP (WA)	Slot	SLOT#50 BUTTERBALL 32C-34HZ (466'FNL & 389'FWL,SEC.10)
Area	COLORADO	Well	BUTTERBALL 32C-34HZ
Field	WELD COUNTY (UTM/TRUE NORTH)	Wellbore	BUTTERBALL 32C-34HZ AWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
157.00	0.580	315.200	157.00	FIRST SDI MWD+IFR1 SURVEY
1796.00	8.090	181.610	1783.22	LAST SDI MWD+IFR1 SURVEY
1933.00	6.950	182.130	1919.04	FIRST BHI MWD+IFR1+SC SURVEY
6790.00	0.598	4.466	6757.91	KOP
7139.00	24.770	8.093	7095.56	ENTER LANDBOX (852'FNL & 414'FWL,SEC.10) 40.1575603 -104.8843876
8047.00	87.230	359.360	7527.97	LANDING (114'FNL & 406'FWL,SEC.10) 40.1595866 -104.8844241
8402.00	90.646	358.085	7529.15	EXIT RADIUS HEEL (241'FSL & 396'FWL,SEC.03) 40.1605605 -104.8844547
15872.00	89.514	357.448	7467.58	ENTER RADIUS TOE (2267'FSL & 186'FWL,SEC.34) 40.1810551 -104.8850664
16106.00	92.030	355.880	7464.33	LAST BHI MWD+IFR1+SC SURVEY
16182.00	92.030	355.880	7461.64	PTB (2576'FSL & 167'FWL,SEC.34) 40.1819041 -104.8851358