

Location:	COLORADO	Slot:	SLOT#23 BUTTERBALL 37N-10HZ (627'FNL & 1489'FEL, SEC.10)
Field:	WELD COUNTY (KERR MCGEE)	Well:	BUTTERBALL 37N-10HZ
Facility:	SEC.10-T2N-R67W	Wellbore:	BUTTERBALL 37N-10HZ PWB

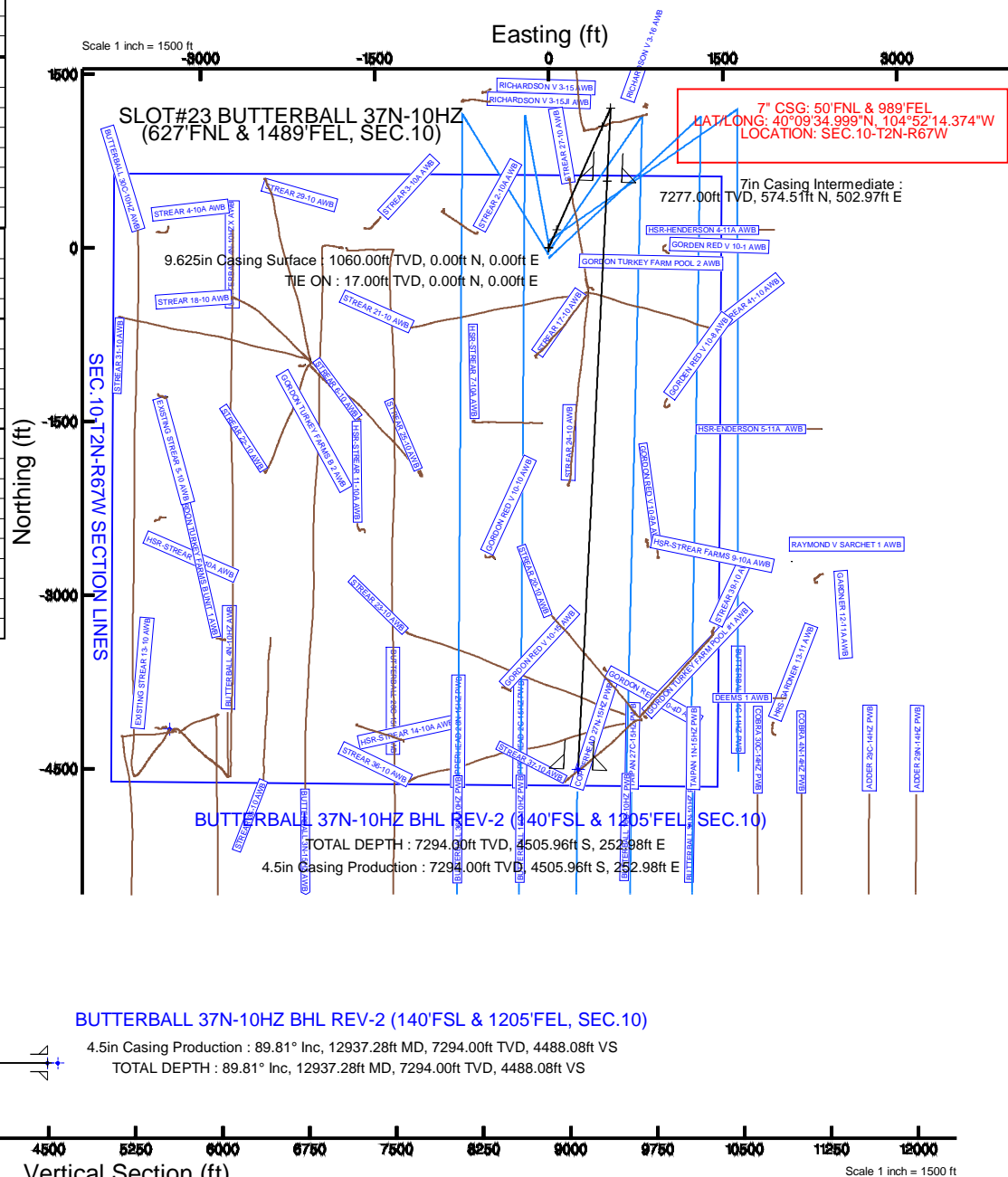
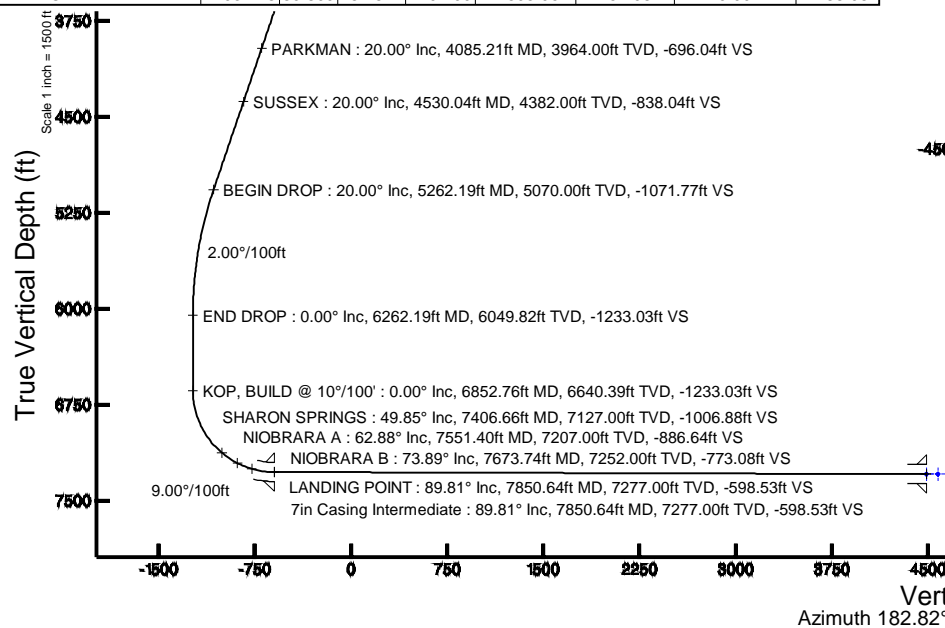
Plot reference wellpath is BUTTERBALL 37N-10HZ (PERMIT REV-1) PWP	
True vertical depths are referenced to PERMIT (17KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to PERMIT (17KB) (RKB)	North Reference: True north
PERMIT (17KB) (RKB) to Mean Sea Level: 4937 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#23 BUTTERBALL 37N-10HZ (62°FNL & 1489FEL, SEC.10)): 0 feet	Depths are in feet
Coordinates are in feet referenced to Skot	
Created by: robie01 on 9/29/2014	

Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude		
SEC. 10-T2N-R67W	3173592.204	1301060.322	40°09'29.292"N	104°52'44.121"W		
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SLOT#23 BUTTERBALL 37N-10HZ (627FNL & 1489FEL, SEC. 10)	3.10	1806.68	3173598.742	1301076.077	40°09'29.322"N	104°52'20.852"W
PERMIT (17KB) (RKB) to Mud line (At Slot: SLOT#23 BUTTERBALL 37N-10HZ (627FNL & 1489FEL, SEC. 10))					4937ft	
Mean Sea Level to Mud line (At Slot: SLOT#23 BUTTERBALL 37N-10HZ (627FNL & 1489FEL, SEC. 10))					0ft	
PERMIT (17KB) (RKB) to Mean Sea Level					4937ft	

Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
17.00	7850.64	NaviTrak	NaviTrak (MAGCORR,IFR)		BUTTERBALL 37N-10HZ PWB
7850.64	12937.28	NaviTrak	NaviTrak (MAGCORR,IFR)		BUTTERBALL 37N-10HZ PWB

Name	MD (ft)	TVD (ft)	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
SEC 10-T2N-R67W SECTION LINES		0.00	-4157.52	-3268.09	3172160.30	1296895.72	40°08'48.235"N	104°53'02.306"W
BUTTERBALL 37N-10W-BHL ON PLAT REV-1 (50FSL & 1205FSL SEC.10)		7294.00	-4595.96	252.98	3175684.23	1296482.22	40°08'43.704"N	104°52'17.594"W
BUTTERBALL 37N-10W-BHL REV-2 (140FSL & 1205FSL SEC.10)	12937.28	7294.00	-4505.96	252.98	3175683.59	1296572.22	40°08'44.944"N	104°52'17.594"W

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE ON	17.00	0.000	23.850	17.00	0.00	0.00	0.00	0.00
BEGIN NUDGE	1410.00	0.000	23.850	1410.00	0.00	0.00	0.00	0.00
END NUDGE	2410.00	20.000	23.850	2389.82	158.01	69.86	2.00	-161.26
BEGIN DROP	5262.19	20.000	23.850	5070.00	1050.22	464.30	0.00	-1071.77
END DROP	6262.19	0.000	182.817	6049.82	1208.24	534.16	2.00	-1233.03
KOP, BUILD @ 10°/100'	6852.76	0.000	182.817	6640.39	1208.24	534.16	0.00	-1233.03
LANDING POINT	7850.64	89.809	182.817	7277.00	574.51	502.97	9.00	-598.53
TOTAL DEPTH	12937.28	89.809	182.817	7294.00	-4505.96	252.98	0.00	4488.08



REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#23 BUTTERBALL 37N-10HZ (627'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 37N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 37N-10HZ PWB
Facility	SEC.10-T2N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.0.0
North Reference	True	User	Robiale01
Scale	0.999958	Report Generated	9/29/2014 at 12:58:29 PM
Convergence at slot	n/a	Database/Source file	WellArchitectDB/BUTTERBALL_37N-10HZ_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	3.10	1806.68	3175398.74	1301076.08	40°09'29.322"N	104°52'20.852"W
Facility Reference Pt			3173592.20	1301060.32	40°09'29.292"N	104°52'44.121"W
Field Reference Pt			3197771.84	1268891.29	40°04'09.600"N	104°47'36.000"W

WELLPATH DATUM			
Calculation method	Minimum curvature	PERMIT (17'KB) (RKB) to Facility Vertical Datum	4937.00ft
Horizontal Reference Pt	Slot	PERMIT (17'KB) (RKB) to Mean Sea Level	4937.00ft
Vertical Reference Pt	PERMIT (17'KB) (RKB)	PERMIT (17'KB) (RKB) to Mud Line at Slot (SLOT#23 BUTTERBALL 37N-10HZ (627'FNL & 1489'FEL, SEC.10))	4937.00ft
MD Reference Pt	PERMIT (17'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	182.82°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#23 BUTTERBALL 37N-10HZ (627'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 37N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 37N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (145 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
0.00†	0.000	23.850	0.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
17.00	0.000	23.850	17.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	TIE ON
117.00†	0.000	23.850	117.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
217.00†	0.000	23.850	217.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
317.00†	0.000	23.850	317.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
417.00†	0.000	23.850	417.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
517.00†	0.000	23.850	517.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
613.00†	0.000	23.850	613.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	BASE FOX HILLS
617.00†	0.000	23.850	617.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
717.00†	0.000	23.850	717.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
817.00†	0.000	23.850	817.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
917.00†	0.000	23.850	917.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
1017.00†	0.000	23.850	1017.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
1060.00†	0.000	23.850	1060.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	SURFACE CSG SETTING DEPTH
1117.00†	0.000	23.850	1117.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
1217.00†	0.000	23.850	1217.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
1317.00†	0.000	23.850	1317.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	
1410.00	0.000	23.850	1410.00	0.00	0.00	0.00	40°09'29.322"N	104°52'20.852"W	0.00	BEGIN NUDGE
1417.00†	0.140	23.850	1417.00	-0.01	0.01	0.00	40°09'29.322"N	104°52'20.852"W	2.00	
1517.00†	2.140	23.850	1516.98	-1.86	1.83	0.81	40°09'29.340"N	104°52'20.842"W	2.00	
1617.00†	4.140	23.850	1616.82	-6.98	6.84	3.02	40°09'29.390"N	104°52'20.813"W	2.00	
1717.00†	6.140	23.850	1716.41	-15.34	15.03	6.64	40°09'29.471"N	104°52'20.766"W	2.00	
1817.00†	8.140	23.850	1815.63	-26.94	26.40	11.67	40°09'29.583"N	104°52'20.702"W	2.00	
1917.00†	10.140	23.850	1914.36	-41.77	40.93	18.09	40°09'29.726"N	104°52'20.619"W	2.00	
2017.00†	12.140	23.850	2012.47	-59.80	58.60	25.90	40°09'29.901"N	104°52'20.518"W	2.00	
2117.00†	14.140	23.850	2109.85	-81.02	79.39	35.10	40°09'30.106"N	104°52'20.400"W	2.00	
2217.00†	16.140	23.850	2206.37	-105.39	103.27	45.66	40°09'30.343"N	104°52'20.264"W	2.00	
2317.00†	18.140	23.850	2301.92	-132.90	130.23	57.57	40°09'30.609"N	104°52'20.111"W	2.00	
2410.00	20.000	23.850	2389.82	-161.26	158.01	69.86	40°09'30.884"N	104°52'19.952"W	2.00	END NUDGE
2417.00†	20.000	23.850	2396.39	-163.49	160.20	70.83	40°09'30.905"N	104°52'19.940"W	0.00	
2517.00†	20.000	23.850	2490.36	-195.41	191.49	84.66	40°09'31.214"N	104°52'19.762"W	0.00	
2617.00†	20.000	23.850	2584.33	-227.34	222.77	98.48	40°09'31.523"N	104°52'19.584"W	0.00	
2717.00†	20.000	23.850	2678.30	-259.26	254.05	112.31	40°09'31.833"N	104°52'19.405"W	0.00	
2817.00†	20.000	23.850	2772.27	-291.18	285.33	126.14	40°09'32.142"N	104°52'19.227"W	0.00	
2917.00†	20.000	23.850	2866.24	-323.11	316.61	139.97	40°09'32.451"N	104°52'19.049"W	0.00	
3017.00†	20.000	23.850	2960.21	-355.03	347.89	153.80	40°09'32.760"N	104°52'18.871"W	0.00	
3117.00†	20.000	23.850	3054.18	-386.95	379.17	167.63	40°09'33.069"N	104°52'18.693"W	0.00	
3217.00†	20.000	23.850	3148.15	-418.88	410.46	181.46	40°09'33.378"N	104°52'18.515"W	0.00	
3317.00†	20.000	23.850	3242.12	-450.80	441.74	195.29	40°09'33.687"N	104°52'18.337"W	0.00	
3417.00†	20.000	23.850	3336.09	-482.72	473.02	209.12	40°09'33.996"N	104°52'18.159"W	0.00	
3517.00†	20.000	23.850	3430.06	-514.65	504.30	222.95	40°09'34.306"N	104°52'17.980"W	0.00	
3617.00†	20.000	23.850	3524.02	-546.57	535.58	236.78	40°09'34.615"N	104°52'17.802"W	0.00	
3717.00†	20.000	23.850	3617.99	-578.49	566.86	250.61	40°09'34.924"N	104°52'17.624"W	0.00	
3817.00†	20.000	23.850	3711.96	-610.42	598.14	264.44	40°09'35.233"N	104°52'17.446"W	0.00	
3917.00†	20.000	23.850	3805.93	-642.34	629.43	278.27	40°09'35.542"N	104°52'17.268"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#23 BUTTERBALL 37N-10HZ (627'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 37N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 37N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (145 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4017.00†	20.000	23.850	3899.90	-674.26	660.71	292.10	40°09'35.851"N	104°52'17.090"W	0.00	
4085.21†	20.000	23.850	3964.00	-696.04	682.04	301.53	40°09'36.062"N	104°52'16.968"W	0.00	PARKMAN
4117.00†	20.000	23.850	3993.87	-706.19	691.99	305.92	40°09'36.160"N	104°52'16.912"W	0.00	
4217.00†	20.000	23.850	4087.84	-738.11	723.27	319.75	40°09'36.469"N	104°52'16.734"W	0.00	
4317.00†	20.000	23.850	4181.81	-770.03	754.55	333.58	40°09'36.778"N	104°52'16.556"W	0.00	
4417.00†	20.000	23.850	4275.78	-801.96	785.83	347.41	40°09'37.088"N	104°52'16.377"W	0.00	
4517.00†	20.000	23.850	4369.75	-833.88	817.11	361.24	40°09'37.397"N	104°52'16.199"W	0.00	
4530.04†	20.000	23.850	4382.00	-838.04	821.19	363.05	40°09'37.437"N	104°52'16.176"W	0.00	SUSSEX
4617.00†	20.000	23.850	4463.72	-865.80	848.40	375.07	40°09'37.706"N	104°52'16.021"W	0.00	
4717.00†	20.000	23.850	4557.69	-897.73	879.68	388.90	40°09'38.015"N	104°52'15.843"W	0.00	
4817.00†	20.000	23.850	4651.66	-929.65	910.96	402.73	40°09'38.324"N	104°52'15.665"W	0.00	
4917.00†	20.000	23.850	4745.62	-961.57	942.24	416.56	40°09'38.633"N	104°52'15.487"W	0.00	
5017.00†	20.000	23.850	4839.59	-993.50	973.52	430.39	40°09'38.942"N	104°52'15.309"W	0.00	
5117.00†	20.000	23.850	4933.56	-1025.42	1004.80	444.22	40°09'39.251"N	104°52'15.131"W	0.00	
5217.00†	20.000	23.850	5027.53	-1057.34	1036.08	458.05	40°09'39.561"N	104°52'14.952"W	0.00	
5262.19	20.000	23.850	5070.00	-1071.77	1050.22	464.30	40°09'39.700"N	104°52'14.872"W	0.00	BEGIN DROP
5317.00†	18.904	23.850	5121.68	-1088.81	1066.91	471.68	40°09'39.865"N	104°52'14.777"W	2.00	
5417.00†	16.904	23.850	5216.83	-1117.50	1095.03	484.11	40°09'40.143"N	104°52'14.617"W	2.00	
5517.00†	14.904	23.850	5313.00	-1143.07	1120.09	495.19	40°09'40.391"N	104°52'14.474"W	2.00	
5617.00†	12.904	23.850	5410.06	-1165.50	1142.07	504.90	40°09'40.608"N	104°52'14.349"W	2.00	
5717.00†	10.904	23.850	5507.91	-1184.75	1160.93	513.24	40°09'40.794"N	104°52'14.241"W	2.00	
5817.00†	8.904	23.850	5606.41	-1200.81	1176.66	520.20	40°09'40.950"N	104°52'14.152"W	2.00	
5917.00†	6.904	23.850	5705.46	-1213.64	1189.24	525.76	40°09'41.074"N	104°52'14.080"W	2.00	
6017.00†	4.904	23.850	5804.92	-1223.24	1198.64	529.92	40°09'41.167"N	104°52'14.027"W	2.00	
6117.00†	2.904	23.850	5904.68	-1229.59	1204.87	532.67	40°09'41.229"N	104°52'13.991"W	2.00	
6217.00†	0.904	23.850	6004.62	-1232.69	1207.91	534.01	40°09'41.259"N	104°52'13.974"W	2.00	
6262.19	0.000	182.817	6049.82	-1233.03	1208.24	534.16	40°09'41.262"N	104°52'13.972"W	2.00	END DROP
6317.00†	0.000	182.817	6104.62	-1233.03	1208.24	534.16	40°09'41.262"N	104°52'13.972"W	0.00	
6417.00†	0.000	182.817	6204.62	-1233.03	1208.24	534.16	40°09'41.262"N	104°52'13.972"W	0.00	
6517.00†	0.000	182.817	6304.62	-1233.03	1208.24	534.16	40°09'41.262"N	104°52'13.972"W	0.00	
6617.00†	0.000	182.817	6404.62	-1233.03	1208.24	534.16	40°09'41.262"N	104°52'13.972"W	0.00	
6717.00†	0.000	182.817	6504.62	-1233.03	1208.24	534.16	40°09'41.262"N	104°52'13.972"W	0.00	
6817.00†	0.000	182.817	6604.62	-1233.03	1208.24	534.16	40°09'41.262"N	104°52'13.972"W	0.00	
6852.76	0.000	182.817	6640.39	-1233.03	1208.24	534.16	40°09'41.262"N	104°52'13.972"W	0.00	KOP, BUILD @ 10°/100'
6917.00†	5.781	182.817	6704.51	-1229.79	1205.00	534.00	40°09'41.230"N	104°52'13.974"W	9.00	
7017.00†	14.781	182.817	6802.81	-1211.96	1187.19	533.12	40°09'41.054"N	104°52'13.985"W	9.00	
7117.00†	23.781	182.817	6897.10	-1178.97	1154.25	531.50	40°09'40.728"N	104°52'14.006"W	9.00	
7217.00†	32.781	182.817	6985.07	-1131.64	1106.97	529.17	40°09'40.261"N	104°52'14.036"W	9.00	
7317.00†	41.781	182.817	7064.56	-1071.13	1046.53	526.20	40°09'39.664"N	104°52'14.075"W	9.00	
7406.66†	49.851	182.817	7127.00	-1006.88	982.37	523.04	40°09'39.030"N	104°52'14.115"W	9.00	SHARON SPRINGS
7417.00†	50.781	182.817	7133.60	-998.93	974.42	522.65	40°09'38.951"N	104°52'14.120"W	9.00	
7517.00†	59.781	182.817	7190.50	-916.82	892.41	518.61	40°09'38.141"N	104°52'14.172"W	9.00	
7551.40†	62.878	182.817	7207.00	-886.64	862.26	517.13	40°09'37.843"N	104°52'14.191"W	9.00	NIOBRARA A
7617.00†	68.781	182.817	7233.85	-826.82	802.52	514.19	40°09'37.252"N	104°52'14.229"W	9.00	
7673.74†	73.888	182.817	7252.00	-773.08	748.84	511.55	40°09'36.722"N	104°52'14.263"W	9.00	NIOBRARA B

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#23 BUTTERBALL 37N-10HZ (627'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 37N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 37N-10HZ PWB
Facility	SEC.10-T2N-R67W		

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MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7717.00†	77.781	182.817	7262.58	-731.14	706.96	509.49	40°09'36.308"N	104°52'14.290"W	9.00	
7817.00†	86.781	182.817	7276.00	-632.15	608.09	504.62	40°09'35.331"N	104°52'14.353"W	9.00	
7850.64	89.809	182.817	7277.00	-598.53	574.51	502.97	40°09'34.999"N	104°52'14.374"W	9.00	LANDING POINT
7917.00†	89.809	182.817	7277.22	-532.17	508.23	499.71	40°09'34.344"N	104°52'14.416"W	0.00	
8017.00†	89.809	182.817	7277.56	-432.17	408.35	494.80	40°09'33.357"N	104°52'14.479"W	0.00	
8117.00†	89.809	182.817	7277.89	-332.17	308.47	489.88	40°09'32.370"N	104°52'14.543"W	0.00	
8217.00†	89.809	182.817	7278.23	-232.17	208.59	484.97	40°09'31.383"N	104°52'14.606"W	0.00	
8317.00†	89.809	182.817	7278.56	-132.17	108.71	480.05	40°09'30.396"N	104°52'14.669"W	0.00	
8417.00†	89.809	182.817	7278.89	-32.17	8.83	475.14	40°09'29.409"N	104°52'14.733"W	0.00	
8517.00†	89.809	182.817	7279.23	67.83	-91.05	470.22	40°09'28.422"N	104°52'14.796"W	0.00	
8617.00†	89.809	182.817	7279.56	167.83	-190.92	465.31	40°09'27.435"N	104°52'14.859"W	0.00	
8717.00†	89.809	182.817	7279.90	267.83	-290.80	460.39	40°09'26.448"N	104°52'14.922"W	0.00	
8817.00†	89.809	182.817	7280.23	367.82	-390.68	455.48	40°09'25.461"N	104°52'14.986"W	0.00	
8917.00†	89.809	182.817	7280.57	467.82	-490.56	450.56	40°09'24.474"N	104°52'15.049"W	0.00	
9017.00†	89.809	182.817	7280.90	567.82	-590.44	445.65	40°09'23.487"N	104°52'15.112"W	0.00	
9117.00†	89.809	182.817	7281.23	667.82	-690.32	440.73	40°09'22.500"N	104°52'15.176"W	0.00	
9217.00†	89.809	182.817	7281.57	767.82	-790.20	435.82	40°09'21.513"N	104°52'15.239"W	0.00	
9317.00†	89.809	182.817	7281.90	867.82	-890.07	430.90	40°09'20.526"N	104°52'15.302"W	0.00	
9417.00†	89.809	182.817	7282.24	967.82	-989.95	425.99	40°09'19.539"N	104°52'15.366"W	0.00	
9517.00†	89.809	182.817	7282.57	1067.82	-1089.83	421.08	40°09'18.552"N	104°52'15.429"W	0.00	
9617.00†	89.809	182.817	7282.90	1167.82	-1189.71	416.16	40°09'17.565"N	104°52'15.492"W	0.00	
9717.00†	89.809	182.817	7283.24	1267.82	-1289.59	411.25	40°09'16.578"N	104°52'15.556"W	0.00	
9817.00†	89.809	182.817	7283.57	1367.82	-1389.47	406.33	40°09'15.591"N	104°52'15.619"W	0.00	
9917.00†	89.809	182.817	7283.91	1467.82	-1489.35	401.42	40°09'14.604"N	104°52'15.682"W	0.00	
10017.00†	89.809	182.817	7284.24	1567.82	-1589.22	396.50	40°09'13.617"N	104°52'15.746"W	0.00	
10117.00†	89.809	182.817	7284.58	1667.82	-1689.10	391.59	40°09'12.630"N	104°52'15.809"W	0.00	
10217.00†	89.809	182.817	7284.91	1767.82	-1788.98	386.67	40°09'11.643"N	104°52'15.872"W	0.00	
10317.00†	89.809	182.817	7285.24	1867.82	-1888.86	381.76	40°09'10.656"N	104°52'15.936"W	0.00	
10417.00†	89.809	182.817	7285.58	1967.82	-1988.74	376.84	40°09'09.669"N	104°52'15.999"W	0.00	
10517.00†	89.809	182.817	7285.91	2067.81	-2088.62	371.93	40°09'08.682"N	104°52'16.062"W	0.00	
10617.00†	89.809	182.817	7286.25	2167.81	-2188.50	367.01	40°09'07.695"N	104°52'16.125"W	0.00	
10717.00†	89.809	182.817	7286.58	2267.81	-2288.37	362.10	40°09'06.708"N	104°52'16.189"W	0.00	
10817.00†	89.809	182.817	7286.91	2367.81	-2388.25	357.18	40°09'05.721"N	104°52'16.252"W	0.00	
10917.00†	89.809	182.817	7287.25	2467.81	-2488.13	352.27	40°09'04.734"N	104°52'16.315"W	0.00	
11017.00†	89.809	182.817	7287.58	2567.81	-2588.01	347.36	40°09'03.747"N	104°52'16.379"W	0.00	
11117.00†	89.809	182.817	7287.92	2667.81	-2687.89	342.44	40°09'02.760"N	104°52'16.442"W	0.00	
11217.00†	89.809	182.817	7288.25	2767.81	-2787.77	337.53	40°09'01.773"N	104°52'16.505"W	0.00	
11317.00†	89.809	182.817	7288.59	2867.81	-2887.65	332.61	40°09'00.786"N	104°52'16.569"W	0.00	
11417.00†	89.809	182.817	7288.92	2967.81	-2987.53	327.70	40°08'59.799"N	104°52'16.632"W	0.00	
11517.00†	89.809	182.817	7289.25	3067.81	-3087.40	322.78	40°08'58.812"N	104°52'16.695"W	0.00	
11617.00†	89.809	182.817	7289.59	3167.81	-3187.28	317.87	40°08'57.825"N	104°52'16.759"W	0.00	
11717.00†	89.809	182.817	7289.92	3267.81	-3287.16	312.95	40°08'56.838"N	104°52'16.822"W	0.00	
11817.00†	89.809	182.817	7290.26	3367.81	-3387.04	308.04	40°08'55.851"N	104°52'16.885"W	0.00	
11917.00†	89.809	182.817	7290.59	3467.81	-3486.92	303.12	40°08'54.864"N	104°52'16.949"W	0.00	
12017.00†	89.809	182.817	7290.92	3567.81	-3586.80	298.21	40°08'53.877"N	104°52'17.012"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#23 BUTTERBALL 37N-10HZ (627'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 37N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 37N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (145 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
12117.00†	89.809	182.817	7291.26	3667.81	-3686.68	293.29	40°08'52.890"N	104°52'17.075"W	0.00	
12217.00†	89.809	182.817	7291.59	3767.81	-3786.55	288.38	40°08'51.903"N	104°52'17.138"W	0.00	
12317.00†	89.809	182.817	7291.93	3867.80	-3886.43	283.46	40°08'50.916"N	104°52'17.202"W	0.00	
12417.00†	89.809	182.817	7292.26	3967.80	-3986.31	278.55	40°08'49.929"N	104°52'17.265"W	0.00	
12517.00†	89.809	182.817	7292.60	4067.80	-4086.19	273.64	40°08'48.942"N	104°52'17.328"W	0.00	
12617.00†	89.809	182.817	7292.93	4167.80	-4186.07	268.72	40°08'47.955"N	104°52'17.392"W	0.00	
12717.00†	89.809	182.817	7293.26	4267.80	-4285.95	263.81	40°08'46.968"N	104°52'17.455"W	0.00	
12817.00†	89.809	182.817	7293.60	4367.80	-4385.83	258.89	40°08'45.981"N	104°52'17.518"W	0.00	
12917.00†	89.809	182.817	7293.93	4467.80	-4485.70	253.98	40°08'44.994"N	104°52'17.582"W	0.00	
12937.28	89.809	182.817	7294.00 ¹	4488.08	-4505.96	252.98	40°08'44.794"N	104°52'17.594"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS -									
Ref Wellbore: BUTTERBALL 37N-10HZ PWB					Ref Wellpath: BUTTERBALL 37N-10HZ (PERMIT REV-1) PWP				
String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
13.5in Open Hole	17.00	1060.00	1043.00	17.00	1060.00	0.00	0.00	0.00	0.00
9.625in Casing Surface	17.00	1060.00	1043.00	17.00	1060.00	0.00	0.00	0.00	0.00
8.75in Open Hole	1060.00	7850.64	6790.64	1060.00	7277.00	0.00	0.00	574.51	502.97
7in Casing Intermediate	17.00	7850.64	7833.64	17.00	7277.00	0.00	0.00	574.51	502.97
6.125in Open Hole	7850.64	12937.28	5086.64	7277.00	7294.00	574.51	502.97	-4505.96	252.98
4.5in Casing Production	17.00	12937.28	12920.28	17.00	7294.00	0.00	0.00	-4505.96	252.98

TARGETS									
Name	MD [ft]	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
SEC.10-T2N-R67W SECTION LINES		0.00	-4157.52	-3268.09	3172160.30	1296895.72	40°08'48.235"N	104°53'02.936"W	polygon
BUTTERBALL 37N-10HZ BHL ON PLAT REV-1 (50'FSL & 1205'FEL, SEC.10)		7294.00	-4595.96	252.98	3175684.23	1296482.22	40°08'43.904"N	104°52'17.594"W	point
1) BUTTERBALL 37N-10HZ BHL REV-2 (140'FSL & 1205'FEL, SEC.10)	12937.28	7294.00	-4505.96	252.98	3175683.59	1296572.22	40°08'44.794"N	104°52'17.594"W	point

SURVEY PROGRAM - Ref Wellbore: BUTTERBALL 37N-10HZ PWB					Ref Wellpath: BUTTERBALL 37N-10HZ (PERMIT REV-1) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model			Log Name/Comment		Wellbore		
17.00	7850.64	NaviTrak (MAGCORR,IFR)					BUTTERBALL 37N-10HZ PWB		
7850.64	12937.28	NaviTrak (MAGCORR,IFR)					BUTTERBALL 37N-10HZ PWB		

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#23 BUTTERBALL 37N-10HZ (627'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 37N-10HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 37N-10HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
613.00	0.000	23.850	613.00	BASE FOX HILLS
1060.00	0.000	23.850	1060.00	SURFACE CSG SETTING DEPTH
4085.21	20.000	23.850	3964.00	PARKMAN
4530.04	20.000	23.850	4382.00	SUSSEX
7406.66	49.851	182.817	7127.00	SHARON SPRINGS
7551.40	62.878	182.817	7207.00	NIOBRARA A
7673.74	73.888	182.817	7252.00	NIOBRARA B

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
17.00	0.000	23.850	17.00	TIE ON
1410.00	0.000	23.850	1410.00	BEGIN NUDGE
2410.00	20.000	23.850	2389.82	END NUDGE
5262.19	20.000	23.850	5070.00	BEGIN DROP
6262.19	0.000	182.817	6049.82	END DROP
6852.76	0.000	182.817	6640.39	KOP, BUILD @ 10°/100'
7850.64	89.809	182.817	7277.00	LANDING POINT
12937.28	89.809	182.817	7294.00	TOTAL DEPTH