

KERR-MCGEE OIL & GAS ONSHORE LP

Location: COLORADO Slot: SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Field: WELD COUNTY (KERR MCGEE) Well: BUTTERBALL 34C-11HZ
Facility: SEC.10-T2N-R67W Wellbore: BUTTERBALL 34C-11HZ PWB

Plot reference wellpath is BUTTERBALL 34C-11HZ (PERMIT REV-2) PWP

True vertical depths are referenced to XTREME 24 (16'KB) (RKB)	Grid System: NAD83 / Lambert Colorado SP, Northern Zone (501), US feet
Measured depths are referenced to XTREME 24 (16'KB) (RKB)	North Reference: True north
XTREME 24 (16'KB) (RKB) to Mean Sea Level: 4936 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10); 0 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: robale01 on 3/2/2015

Location Information

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)
SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)	63.21	1806.91	3173598.550	1301136.184
XTREME 24 (16'KB) (RKB) to Mud line (At Slot: SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10))				4936ft
Mean Sea Level to Mud line (At Slot: SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10))				0ft
XTREME 24 (16'KB) (RKB) to Mean Sea Level				4936ft

Survey Program

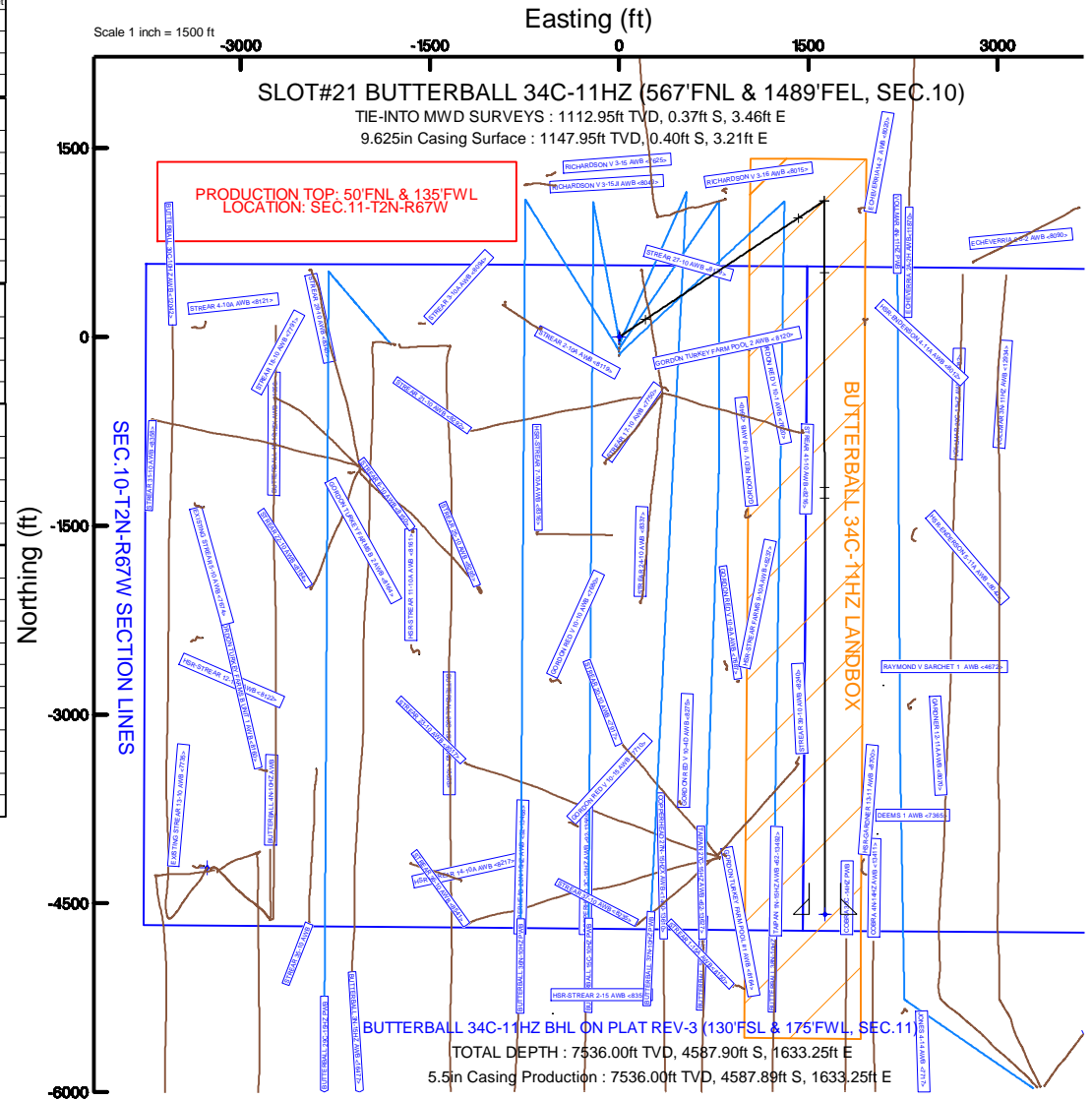
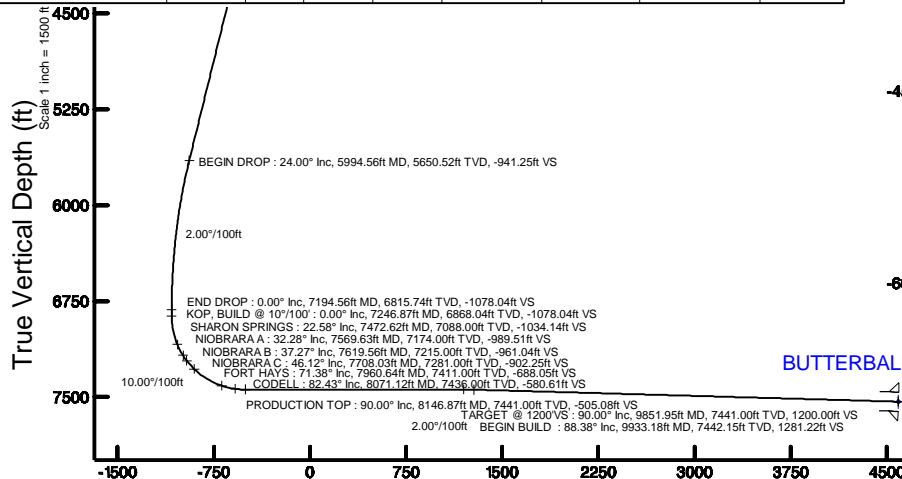
Start MD (ft)	End MD (ft)	Tool	Model	Log Name/Comment	Wellbore
16.00	1113.00	ISCVSAMWD, Rev 2	ISCVSAMWD, Rev 2 (Standard)		BUTTERBALL 34C-11HZ AWB <1113>
1113.00	8146.87	ISCVSAMWD, Rev 2, axial magnetic correction	ISCVSAMWD, Rev 2, axial magnetic correction (Standard) (Mag/VR IFR Wattenberg)		BUTTERBALL 34C-11HZ PWB
8146.87	13243.26	ISCVSAMWD, Rev 2, axial magnetic correction	ISCVSAMWD, Rev 2, axial magnetic correction (Standard) (Mag/VR IFR Wattenberg)		BUTTERBALL 34C-11HZ PWB

Targets

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		-77.00	-4217.63	-3268.33	3172160.30	1296895.72	40°08'48.235"N	104°53'02.936"W
SEC.11-T2N-R67W SECTION LINES		-13.00	-9436.68	-4509.45	3179974.47	1291732.06	40°07'56.656"N	104°51'22.792"W
BUTTERBALL 34C-11HZ BHL ON PLAT REV-3 (130'FSL & 175'FWL, SEC.11)	13243.26	7536.00	-4587.90	1633.25	3177064.15	1296560.16	40°08'44.576"N	104°51'59.818"W
BUTTERBALL 34C-11HZ LANDBOX		7536.00	0.00	0.00	3175398.55	1301136.18	40°09'29.916"N	104°52'20.849"W

Well Profile Data

Design Comment	MD (ft)	Inc (°)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
TIE-INTO MWD SURVEYS	1113.00	0.400	261.800	1112.95	-0.37	3.46	0.72	0.37
BEGIN NUDGE	1200.05	0.400	261.800	1200.00	-0.45	2.85	0.00	0.46
END NUDGE	2418.15	24.000	56.402	2383.31	138.11	208.09	2.00	-137.85
BEGIN DROP	5994.56	24.000	56.402	5650.52	943.06	1419.73	0.00	-941.25
END DROP	7194.56	0.000	179.927	6815.74	1080.11	1626.03	2.00	-1078.04
KOP, BUILD @ 10°/100'	7246.87	0.000	179.927	6868.04	1080.11	1626.03	0.00	-1078.04
LANDING POINT	8146.87	90.000	179.927	7441.00	507.15	1626.76	10.00	-505.08
TARGET @ 1200'VS	9851.95	90.000	179.927	7441.00	-1197.92	1628.93	0.00	1200.00
BEGIN BUILD	9933.18	88.375	179.927	7442.15	-1279.15	1629.04	2.00	1281.22
TOTAL DEPTH	13243.26	88.375	179.927	7536.00	-4587.90	1633.25	0.00	4589.97



BUTTERBALL 34C-11HZ BHL ON PLAT REV-3 (130'FSL & 175'FWL, SEC.11)

TOTAL DEPTH : 88.38° Inc, 13243.26ft MD, 7536.00ft TVD, 4589.97ft VS

5.5in Casing Production : 88.38° Inc, 13243.26ft MD, 7536.00ft TVD, 4589.97ft VS

Vertical Section (ft)

Azimuth 179.93° with reference 0.00 N, 0.00 E

Scale 1 inch = 1500 ft

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

REPORT SETUP INFORMATION			
Projection System	NAD83 / Lambert Colorado SP, Northern Zone (501), US feet	Software System	WellArchitect® 4.1.1
North Reference	True	User	Robiale01
Scale	0.999958	Report Generated	3/2/2015 at 1:25:08 PM
Convergence at slot	0.41° East	Database/Source file	WellArchitectDB3/BUTTERBALL_34C-11HZ_PWB.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	63.21	1806.91	3175398.55	1301136.18	40°09'29.916"N	104°52'20.849"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	XTREME 24 (16'KB) (RKB) to Facility Vertical Datum	4936.00ft
Horizontal Reference Pt	Slot	XTREME 24 (16'KB) (RKB) to Mean Sea Level	4936.00ft
Vertical Reference Pt	XTREME 24 (16'KB) (RKB)	XTREME 24 (16'KB) (RKB) to Mud Line at Slot (SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10))	4936.00ft
MD Reference Pt	XTREME 24 (16'KB) (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	179.93°

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (154 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	253.400	0.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
16.00	0.000	253.400	16.00	0.00	0.00	0.00	40°09'29.916"N	104°52'20.849"W	0.00	
125.00	0.500	253.400	125.00	0.14	-0.14	-0.46	40°09'29.915"N	104°52'20.855"W	0.46	
215.00	0.300	225.900	215.00	0.41	-0.41	-1.00	40°09'29.912"N	104°52'20.862"W	0.30	
301.00	0.800	248.400	300.99	0.79	-0.79	-1.72	40°09'29.908"N	104°52'20.871"W	0.62	
388.00	0.500	221.600	387.99	1.29	-1.30	-2.54	40°09'29.903"N	104°52'20.882"W	0.48	
478.00	0.700	104.100	477.98	1.72	-1.72	-2.27	40°09'29.899"N	104°52'20.878"W	1.15	
572.00	0.600	82.900	571.98	1.80	-1.80	-1.22	40°09'29.898"N	104°52'20.865"W	0.28	
612.02†	0.555	78.127	612.00	1.74	-1.74	-0.82	40°09'29.899"N	104°52'20.860"W	0.16	BASE FOX HILLS
668.00	0.500	70.100	667.97	1.60	-1.60	-0.33	40°09'29.900"N	104°52'20.853"W	0.16	
763.00	0.700	77.300	762.97	1.33	-1.33	0.63	40°09'29.903"N	104°52'20.841"W	0.22	
859.00	0.800	81.200	858.96	1.10	-1.10	1.86	40°09'29.905"N	104°52'20.825"W	0.12	
952.00	0.800	54.600	951.95	0.63	-0.62	3.03	40°09'29.910"N	104°52'20.810"W	0.40	
1048.00	0.100	134.100	1047.95	0.30	-0.29	3.64	40°09'29.913"N	104°52'20.802"W	0.82	
1113.00	0.400	261.800	1112.95	0.37	-0.37	3.46	40°09'29.912"N	104°52'20.804"W	0.72	TIE-INTO MWD SURVEYS
1200.05	0.400	261.800	1200.00	0.46	-0.45	2.85	40°09'29.912"N	104°52'20.812"W	0.00	BEGIN NUDGE
1213.00†	0.198	295.309	1212.95	0.45	-0.45	2.79	40°09'29.912"N	104°52'20.813"W	2.00	
1313.00†	1.904	51.687	1312.93	-0.65	0.65	3.94	40°09'29.922"N	104°52'20.798"W	2.00	
1413.00†	3.900	54.300	1412.79	-3.66	3.67	8.00	40°09'29.952"N	104°52'20.746"W	2.00	
1513.00†	5.899	55.145	1512.42	-8.57	8.59	14.98	40°09'30.001"N	104°52'20.656"W	2.00	
1613.00†	7.898	55.563	1611.70	-15.38	15.41	24.87	40°09'30.068"N	104°52'20.529"W	2.00	
1713.00†	9.898	55.813	1710.49	-24.08	24.13	37.64	40°09'30.154"N	104°52'20.364"W	2.00	
1813.00†	11.898	55.979	1808.68	-34.66	34.73	53.30	40°09'30.259"N	104°52'20.163"W	2.00	
1913.00†	13.897	56.099	1906.15	-47.10	47.19	71.81	40°09'30.382"N	104°52'19.924"W	2.00	
2013.00†	15.897	56.188	2002.78	-61.40	61.52	93.16	40°09'30.524"N	104°52'19.649"W	2.00	
2113.00†	17.897	56.258	2098.46	-77.52	77.67	117.32	40°09'30.684"N	104°52'19.338"W	2.00	
2213.00†	19.897	56.315	2193.07	-95.46	95.65	144.26	40°09'30.861"N	104°52'18.991"W	2.00	
2313.00†	21.897	56.361	2286.49	-115.20	115.42	173.95	40°09'31.057"N	104°52'18.609"W	2.00	
2413.00†	23.897	56.401	2378.60	-136.69	136.96	206.34	40°09'31.269"N	104°52'18.191"W	2.00	
2418.15	24.000	56.402	2383.31	-137.85	138.11	208.09	40°09'31.281"N	104°52'18.169"W	2.00	END NUDGE
2513.00†	24.000	56.402	2469.96	-159.16	159.46	240.22	40°09'31.492"N	104°52'17.755"W	0.00	
2613.00†	24.000	56.402	2561.31	-181.62	181.97	274.10	40°09'31.714"N	104°52'17.319"W	0.00	
2713.00†	24.000	56.402	2652.67	-204.08	204.48	307.98	40°09'31.937"N	104°52'16.882"W	0.00	
2813.00†	24.000	56.402	2744.02	-226.55	226.98	341.86	40°09'32.159"N	104°52'16.446"W	0.00	
2913.00†	24.000	56.402	2835.38	-249.01	249.49	375.74	40°09'32.381"N	104°52'16.010"W	0.00	
3013.00†	24.000	56.402	2926.73	-271.48	272.00	409.61	40°09'32.604"N	104°52'15.573"W	0.00	
3113.00†	24.000	56.402	3018.08	-293.94	294.50	443.49	40°09'32.826"N	104°52'15.137"W	0.00	
3213.00†	24.000	56.402	3109.44	-316.40	317.01	477.37	40°09'33.049"N	104°52'14.701"W	0.00	
3313.00†	24.000	56.402	3200.79	-338.87	339.52	511.25	40°09'33.271"N	104°52'14.264"W	0.00	
3413.00†	24.000	56.402	3292.15	-361.33	362.03	545.13	40°09'33.493"N	104°52'13.828"W	0.00	
3513.00†	24.000	56.402	3383.50	-383.79	384.53	579.01	40°09'33.716"N	104°52'13.392"W	0.00	
3613.00†	24.000	56.402	3474.86	-406.26	407.04	612.89	40°09'33.938"N	104°52'12.955"W	0.00	
3713.00†	24.000	56.402	3566.21	-428.72	429.55	646.77	40°09'34.161"N	104°52'12.519"W	0.00	
3813.00†	24.000	56.402	3657.57	-451.19	452.05	680.65	40°09'34.383"N	104°52'12.083"W	0.00	
3913.00†	24.000	56.402	3748.92	-473.65	474.56	714.52	40°09'34.606"N	104°52'11.646"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (154 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
4013.00†	24.000	56.402	3840.28	-496.11	497.07	748.40	40°09'34.828"N	104°52'11.210"W	0.00	
4113.00†	24.000	56.402	3931.63	-518.58	519.58	782.28	40°09'35.050"N	104°52'10.773"W	0.00	
4147.34†	24.000	56.402	3963.00	-526.29	527.30	793.92	40°09'35.127"N	104°52'10.624"W	0.00	PARKMAN
4213.00†	24.000	56.402	4022.98	-541.04	542.08	816.16	40°09'35.273"N	104°52'10.337"W	0.00	
4313.00†	24.000	56.402	4114.34	-563.51	564.59	850.04	40°09'35.495"N	104°52'09.901"W	0.00	
4413.00†	24.000	56.402	4205.69	-585.97	587.10	883.92	40°09'35.718"N	104°52'09.464"W	0.00	
4513.00†	24.000	56.402	4297.05	-608.43	609.60	917.80	40°09'35.940"N	104°52'09.028"W	0.00	
4604.90†	24.000	56.402	4381.00	-629.08	630.29	948.93	40°09'36.144"N	104°52'08.627"W	0.00	SUSSEX
4613.00†	24.000	56.402	4388.40	-630.90	632.11	951.68	40°09'36.162"N	104°52'08.592"W	0.00	
4713.00†	24.000	56.402	4479.76	-653.36	654.62	985.56	40°09'36.385"N	104°52'08.155"W	0.00	
4813.00†	24.000	56.402	4571.11	-675.83	677.12	1019.43	40°09'36.607"N	104°52'07.719"W	0.00	
4913.00†	24.000	56.402	4662.47	-698.29	699.63	1053.31	40°09'36.830"N	104°52'07.283"W	0.00	
5013.00†	24.000	56.402	4753.82	-720.75	722.14	1087.19	40°09'37.052"N	104°52'06.846"W	0.00	
5113.00†	24.000	56.402	4845.18	-743.22	744.65	1121.07	40°09'37.274"N	104°52'06.410"W	0.00	
5213.00†	24.000	56.402	4936.53	-765.68	767.15	1154.95	40°09'37.497"N	104°52'05.973"W	0.00	
5313.00†	24.000	56.402	5027.88	-788.14	789.66	1188.83	40°09'37.719"N	104°52'05.537"W	0.00	
5413.00†	24.000	56.402	5119.24	-810.61	812.17	1222.71	40°09'37.942"N	104°52'05.101"W	0.00	
5513.00†	24.000	56.402	5210.59	-833.07	834.67	1256.59	40°09'38.164"N	104°52'04.664"W	0.00	
5613.00†	24.000	56.402	5301.95	-855.54	857.18	1290.47	40°09'38.386"N	104°52'04.228"W	0.00	
5713.00†	24.000	56.402	5393.30	-878.00	879.69	1324.34	40°09'38.609"N	104°52'03.792"W	0.00	
5813.00†	24.000	56.402	5484.66	-900.46	902.20	1358.22	40°09'38.831"N	104°52'03.355"W	0.00	
5913.00†	24.000	56.402	5576.01	-922.93	924.70	1392.10	40°09'39.054"N	104°52'02.919"W	0.00	
5994.56	24.000	56.402	5650.52	-941.25	943.06	1419.73	40°09'39.235"N	104°52'02.563"W	0.00	BEGIN DROP
6013.00†	23.631	56.402	5667.39	-945.36	947.18	1425.94	40°09'39.276"N	104°52'02.483"W	2.00	
6113.00†	21.631	56.402	5759.69	-966.61	968.47	1457.99	40°09'39.486"N	104°52'02.070"W	2.00	
6213.00†	19.631	56.402	5853.27	-986.07	987.97	1487.33	40°09'39.679"N	104°52'01.692"W	2.00	
6313.00†	17.631	56.402	5948.02	-1003.72	1005.65	1513.94	40°09'39.853"N	104°52'01.349"W	2.00	
6413.00†	15.631	56.402	6043.83	-1019.52	1021.48	1537.78	40°09'40.010"N	104°52'01.042"W	2.00	
6513.00†	13.631	56.402	6140.59	-1033.47	1035.46	1558.82	40°09'40.148"N	104°52'00.771"W	2.00	
6613.00†	11.631	56.402	6238.16	-1045.55	1047.56	1577.03	40°09'40.268"N	104°52'00.537"W	2.00	
6713.00†	9.631	56.402	6336.44	-1055.74	1057.77	1592.40	40°09'40.368"N	104°52'00.339"W	2.00	
6813.00†	7.631	56.402	6435.30	-1064.03	1066.07	1604.90	40°09'40.450"N	104°52'00.178"W	2.00	
6913.00†	5.631	56.402	6534.63	-1070.40	1072.46	1614.52	40°09'40.514"N	104°52'00.054"W	2.00	
7013.00†	3.631	56.402	6634.30	-1074.86	1076.93	1621.24	40°09'40.558"N	104°51'59.967"W	2.00	
7113.00†	1.631	56.402	6734.19	-1077.40	1079.47	1625.07	40°09'40.583"N	104°51'59.918"W	2.00	
7194.56	0.000	179.927	6815.74	-1078.04	1080.11	1626.03	40°09'40.589"N	104°51'59.906"W	2.00	END DROP
7213.00†	0.000	179.927	6834.18	-1078.04	1080.11	1626.03	40°09'40.589"N	104°51'59.906"W	0.00	
7246.87	0.000	179.927	6868.04	-1078.04	1080.11	1626.03	40°09'40.589"N	104°51'59.906"W	0.00	KOP, BUILD @ 10°/100'
7313.00†	6.613	179.927	6934.03	-1074.23	1076.30	1626.04	40°09'40.552"N	104°51'59.906"W	10.00	
7413.00†	16.613	179.927	7031.86	-1054.12	1056.19	1626.06	40°09'40.353"N	104°51'59.905"W	10.00	
7472.62†	22.575	179.927	7088.00	-1034.14	1036.21	1626.09	40°09'40.155"N	104°51'59.905"W	10.00	SHARON SPRINGS
7513.00†	26.613	179.927	7124.71	-1017.33	1019.41	1626.11	40°09'39.989"N	104°51'59.905"W	10.00	
7569.63†	32.276	179.927	7174.00	-989.51	991.58	1626.15	40°09'39.714"N	104°51'59.904"W	10.00	NIORARA A
7613.00†	36.613	179.927	7209.76	-964.98	967.06	1626.18	40°09'39.472"N	104°51'59.904"W	10.00	
7619.56†	37.269	179.927	7215.00	-961.04	963.12	1626.18	40°09'39.433"N	104°51'59.904"W	10.00	NIORARA B

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (154 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
7708.03†	46.116	179.927	7281.00	-902.25	904.33	1626.26	40°09'38.852"N	104°51'59.903"W	10.00	NIOBRARA C
7713.00†	46.613	179.927	7284.43	-898.66	900.73	1626.26	40°09'38.817"N	104°51'59.903"W	10.00	
7813.00†	56.613	179.927	7346.45	-820.37	822.45	1626.36	40°09'38.043"N	104°51'59.902"W	10.00	
7913.00†	66.613	179.927	7393.93	-732.51	734.58	1626.47	40°09'37.175"N	104°51'59.900"W	10.00	
7960.64†	71.377	179.927	7411.00	-688.05	690.12	1626.53	40°09'36.735"N	104°51'59.900"W	10.00	FORT HAYS
8013.00†	76.613	179.927	7425.43	-637.73	639.81	1626.59	40°09'36.238"N	104°51'59.899"W	10.00	
8071.12†	82.425	179.927	7436.00	-580.61	582.68	1626.67	40°09'35.674"N	104°51'59.898"W	10.00	CODELL
8113.00†	86.613	179.927	7440.00	-538.93	541.00	1626.72	40°09'35.262"N	104°51'59.897"W	10.00	
8146.87	90.000	179.927	7441.00	-505.08	507.15	1626.76	40°09'34.927"N	104°51'59.897"W	10.00	LANDING POINT
8146.87†	90.000	179.927	7441.00	-505.08	507.15	1626.76	40°09'34.927"N	104°51'59.897"W	0.00	PRODUCTION TOP
8213.00†	90.000	179.927	7441.00	-438.95	441.02	1626.85	40°09'34.274"N	104°51'59.896"W	0.00	
8313.00†	90.000	179.927	7441.00	-338.95	341.02	1626.97	40°09'33.285"N	104°51'59.894"W	0.00	
8413.00†	90.000	179.927	7441.00	-238.95	241.02	1627.10	40°09'32.297"N	104°51'59.893"W	0.00	
8513.00†	90.000	179.927	7441.00	-138.95	141.02	1627.23	40°09'31.309"N	104°51'59.891"W	0.00	
8613.00†	90.000	179.927	7441.00	-38.95	41.02	1627.36	40°09'30.321"N	104°51'59.890"W	0.00	
8713.00†	90.000	179.927	7441.00	61.05	-58.98	1627.48	40°09'29.333"N	104°51'59.888"W	0.00	
8813.00†	90.000	179.927	7441.00	161.05	-158.98	1627.61	40°09'28.344"N	104°51'59.886"W	0.00	
8913.00†	90.000	179.927	7441.00	261.05	-258.98	1627.74	40°09'27.356"N	104°51'59.885"W	0.00	
9013.00†	90.000	179.927	7441.00	361.05	-358.98	1627.86	40°09'26.368"N	104°51'59.883"W	0.00	
9113.00†	90.000	179.927	7441.00	461.05	-458.98	1627.99	40°09'25.380"N	104°51'59.882"W	0.00	
9213.00†	90.000	179.927	7441.00	561.05	-558.98	1628.12	40°09'24.392"N	104°51'59.880"W	0.00	
9313.00†	90.000	179.927	7441.00	661.05	-658.98	1628.25	40°09'23.403"N	104°51'59.879"W	0.00	
9413.00†	90.000	179.927	7441.00	761.05	-758.98	1628.37	40°09'22.415"N	104°51'59.877"W	0.00	
9513.00†	90.000	179.927	7441.00	861.05	-858.98	1628.50	40°09'21.427"N	104°51'59.876"W	0.00	
9613.00†	90.000	179.927	7441.00	961.05	-958.98	1628.63	40°09'20.439"N	104°51'59.874"W	0.00	
9713.00†	90.000	179.927	7441.00	1061.05	-1058.98	1628.76	40°09'19.451"N	104°51'59.872"W	0.00	
9813.00†	90.000	179.927	7441.00	1161.05	-1158.98	1628.88	40°09'18.462"N	104°51'59.871"W	0.00	
9851.95	90.000	179.927	7441.00	1200.00	-1197.92	1628.93	40°09'18.078"N	104°51'59.870"W	0.00	TARGET @ 1200'VS
9913.00†	88.779	179.927	7441.65	1261.05	-1258.97	1629.01	40°09'17.474"N	104°51'59.869"W	2.00	
9933.18	88.375	179.927	7442.15	1281.22	-1279.15	1629.04	40°09'17.275"N	104°51'59.869"W	2.00	BEGIN BUILD
10013.00†	88.375	179.927	7444.41	1361.01	-1358.93	1629.14	40°09'16.486"N	104°51'59.868"W	0.00	
10113.00†	88.375	179.927	7447.25	1460.97	-1458.89	1629.26	40°09'15.499"N	104°51'59.866"W	0.00	
10213.00†	88.375	179.927	7450.09	1560.93	-1558.85	1629.39	40°09'14.511"N	104°51'59.865"W	0.00	
10313.00†	88.375	179.927	7452.92	1660.89	-1658.81	1629.52	40°09'13.523"N	104°51'59.863"W	0.00	
10413.00†	88.375	179.927	7455.76	1760.85	-1758.77	1629.65	40°09'12.535"N	104°51'59.862"W	0.00	
10513.00†	88.375	179.927	7458.59	1860.81	-1858.73	1629.77	40°09'11.547"N	104°51'59.860"W	0.00	
10613.00†	88.375	179.927	7461.43	1960.77	-1958.69	1629.90	40°09'10.560"N	104°51'59.858"W	0.00	
10713.00†	88.375	179.927	7464.26	2060.73	-2058.65	1630.03	40°09'09.572"N	104°51'59.857"W	0.00	
10813.00†	88.375	179.927	7467.10	2160.69	-2158.61	1630.16	40°09'08.584"N	104°51'59.855"W	0.00	
10913.00†	88.375	179.927	7469.93	2260.65	-2258.57	1630.28	40°09'07.596"N	104°51'59.854"W	0.00	
11013.00†	88.375	179.927	7472.77	2360.61	-2358.53	1630.41	40°09'06.608"N	104°51'59.852"W	0.00	
11113.00†	88.375	179.927	7475.60	2460.57	-2458.49	1630.54	40°09'05.621"N	104°51'59.851"W	0.00	
11213.00†	88.375	179.927	7478.44	2560.53	-2558.45	1630.66	40°09'04.633"N	104°51'59.849"W	0.00	
11313.00†	88.375	179.927	7481.27	2660.49	-2658.41	1630.79	40°09'03.645"N	104°51'59.848"W	0.00	
11413.00†	88.375	179.927	7484.11	2760.45	-2758.37	1630.92	40°09'02.657"N	104°51'59.846"W	0.00	

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH DATA (154 stations) † = interpolated/extrapolated station										
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Latitude	Longitude	DLS [°/100ft]	Comments
11513.00†	88.375	179.927	7486.94	2860.41	-2858.33	1631.05	40°09'01.669"N	104°51'59.844"W	0.00	
11613.00†	88.375	179.927	7489.78	2960.37	-2958.29	1631.17	40°09'00.681"N	104°51'59.843"W	0.00	
11713.00†	88.375	179.927	7492.61	3060.33	-3058.25	1631.30	40°08'59.694"N	104°51'59.841"W	0.00	
11813.00†	88.375	179.927	7495.45	3160.28	-3158.21	1631.43	40°08'58.706"N	104°51'59.840"W	0.00	
11913.00†	88.375	179.927	7498.28	3260.24	-3258.17	1631.55	40°08'57.718"N	104°51'59.838"W	0.00	
12013.00†	88.375	179.927	7501.12	3360.20	-3358.13	1631.68	40°08'56.730"N	104°51'59.837"W	0.00	
12113.00†	88.375	179.927	7503.95	3460.16	-3458.09	1631.81	40°08'55.742"N	104°51'59.835"W	0.00	
12213.00†	88.375	179.927	7506.79	3560.12	-3558.05	1631.94	40°08'54.755"N	104°51'59.834"W	0.00	
12313.00†	88.375	179.927	7509.62	3660.08	-3658.01	1632.06	40°08'53.767"N	104°51'59.832"W	0.00	
12413.00†	88.375	179.927	7512.46	3760.04	-3757.97	1632.19	40°08'52.779"N	104°51'59.830"W	0.00	
12513.00†	88.375	179.927	7515.30	3860.00	-3857.93	1632.32	40°08'51.791"N	104°51'59.829"W	0.00	
12613.00†	88.375	179.927	7518.13	3959.96	-3957.89	1632.45	40°08'50.803"N	104°51'59.827"W	0.00	
12713.00†	88.375	179.927	7520.97	4059.92	-4057.85	1632.57	40°08'49.816"N	104°51'59.826"W	0.00	
12813.00†	88.375	179.927	7523.80	4159.88	-4157.81	1632.70	40°08'48.828"N	104°51'59.824"W	0.00	
12913.00†	88.375	179.927	7526.64	4259.84	-4257.77	1632.83	40°08'47.840"N	104°51'59.823"W	0.00	
13013.00†	88.375	179.927	7529.47	4359.80	-4357.73	1632.95	40°08'46.852"N	104°51'59.821"W	0.00	
13113.00†	88.375	179.927	7532.31	4459.76	-4457.69	1633.08	40°08'45.864"N	104°51'59.820"W	0.00	
13213.00†	88.375	179.927	7535.14	4559.72	-4557.64	1633.21	40°08'44.877"N	104°51'59.818"W	0.00	
13243.26	88.375	179.927	7536.00†	4589.97	-4587.90	1633.25	40°08'44.578"N	104°51'59.818"W	0.00	TOTAL DEPTH

HOLE & CASING SECTIONS -									
Ref Wellbore: BUTTERBALL 34C-11HZ PWB					Ref Wellpath: BUTTERBALL 34C-11HZ (PERMIT REV-2) 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	16.00	1158.00	1142.00	16.00	1157.95	0.00	0.00	-0.41	3.15
9.625in Casing Surface	16.00	1148.00	1132.00	16.00	1147.95	0.00	0.00	-0.40	3.21
7.875in Open Hole	1158.00	13243.26	12085.26	1157.95	7536.00	-0.41	3.15	-4587.89	1633.25
5.5in Casing Production	16.00	13243.26	13227.26	16.00	7536.00	0.00	0.00	-4587.89	1633.25

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		-77.00	-4217.63	-3268.33	3172160.30	1296895.72	40°08'48.235"N	104°53'02.936"W	polygon
SEC.11-T2N-R67W SECTION LINES		-13.00	-9436.68	4509.45	3179974.47	1291732.06	40°07'56.658"N	104°51'22.792"W	polygon
1) BUTTERBALL 34C-11HZ BHL ON PLAT REV-3 (130'FSL & 175'FWL, SEC.11)	13243.26	7536.00	-4587.90	1633.25	3177064.15	1296560.16	40°08'44.578"N	104°51'59.818"W	point
BUTTERBALL 34C-11HZ LANDBOX		7536.00	0.00	0.00	3175398.55	1301136.18	40°09'29.916"N	104°52'20.849"W	polygon

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

SURVEY PROGRAM - Ref Wellbore: BUTTERBALL 34C-11HZ PWB Ref Wellpath: BUTTERBALL 34C-11HZ (PERMIT REV-2) PWP				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
16.00	1113.00	ISCWSA MWD, Rev. 2 (Standard)		BUTTERBALL 34C-11HZ AWB <1113>
1113.00	8146.87	ISCWSA MWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)		BUTTERBALL 34C-11HZ PWB
8146.87	13243.26	ISCWSA MWD, Rev. 2, axial magnetic correction (Standard) (MagVAR IFR Wattenberg)		BUTTERBALL 34C-11HZ PWB

REFERENCE WELLPATH IDENTIFICATION			
Operator	KERR-MCGEE OIL & GAS ONSHORE LP	Slot	SLOT#21 BUTTERBALL 34C-11HZ (567'FNL & 1489'FEL, SEC.10)
Area	COLORADO	Well	BUTTERBALL 34C-11HZ
Field	WELD COUNTY (KERR MCGEE)	Wellbore	BUTTERBALL 34C-11HZ PWB
Facility	SEC.10-T2N-R67W		

WELLPATH COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
612.02	0.555	78.127	612.00	BASE FOX HILLS
4147.34	24.000	56.402	3963.00	PARKMAN
4604.90	24.000	56.402	4381.00	SUSSEX
7472.62	22.575	179.927	7088.00	SHARON SPRINGS
7569.63	32.276	179.927	7174.00	NIOBRARA A
7619.56	37.269	179.927	7215.00	NIOBRARA B
7708.03	46.116	179.927	7281.00	NIOBRARA C
7960.64	71.377	179.927	7411.00	FORT HAYS
8071.12	82.425	179.927	7436.00	CODELL
8146.87	90.000	179.927	7441.00	PRODUCTION TOP

DESIGN COMMENTS				
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Comment
1113.00	0.400	261.800	1112.95	TIE-INTO MWD SURVEYS
1200.05	0.400	261.800	1200.00	BEGIN NUDGE
2418.15	24.000	56.402	2383.31	END NUDGE
5994.56	24.000	56.402	5650.52	BEGIN DROP
7194.56	0.000	179.927	6815.74	END DROP
7246.87	0.000	179.927	6868.04	KOP, BUILD @ 10°/100'
8146.87	90.000	179.927	7441.00	LANDING POINT
9851.95	90.000	179.927	7441.00	TARGET @ 1200'VS
9933.18	88.375	179.927	7442.15	BEGIN BUILD
13243.26	88.375	179.927	7536.00	TOTAL DEPTH