

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 10-T2N-R67W

Butterball 30C-15HZ

Plan A 0

Plan: Plan A 0 - PERMIT

Sperry Drilling Services

Proposal Report

24 June, 2013

Well Coordinates: 1,296,874.27 N, 3,172,216.33 E (40° 08' 48.02" N, 104° 53' 02.22" W)

Ground Level: 4,996.00 ft

Local Coordinate Origin:

Centered on Well Butterball 30C-15HZ

Viewing Datum:

RKB = 17 @ 5013.00ft (Drilling Rig)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 10-T2N-R67W
 Well: Butterball 30C-15HZ
 Wellbore: Plan A 0
 Design: Plan A 0 - PERMIT



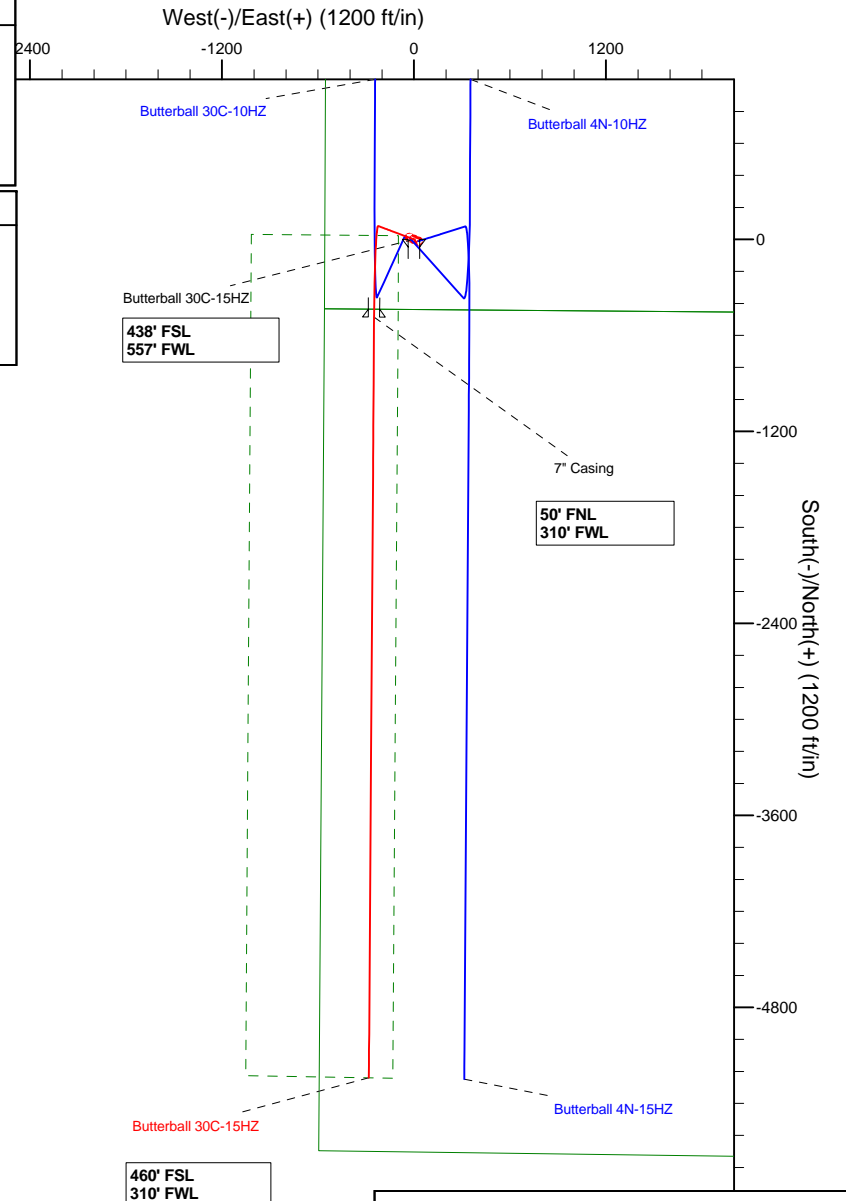
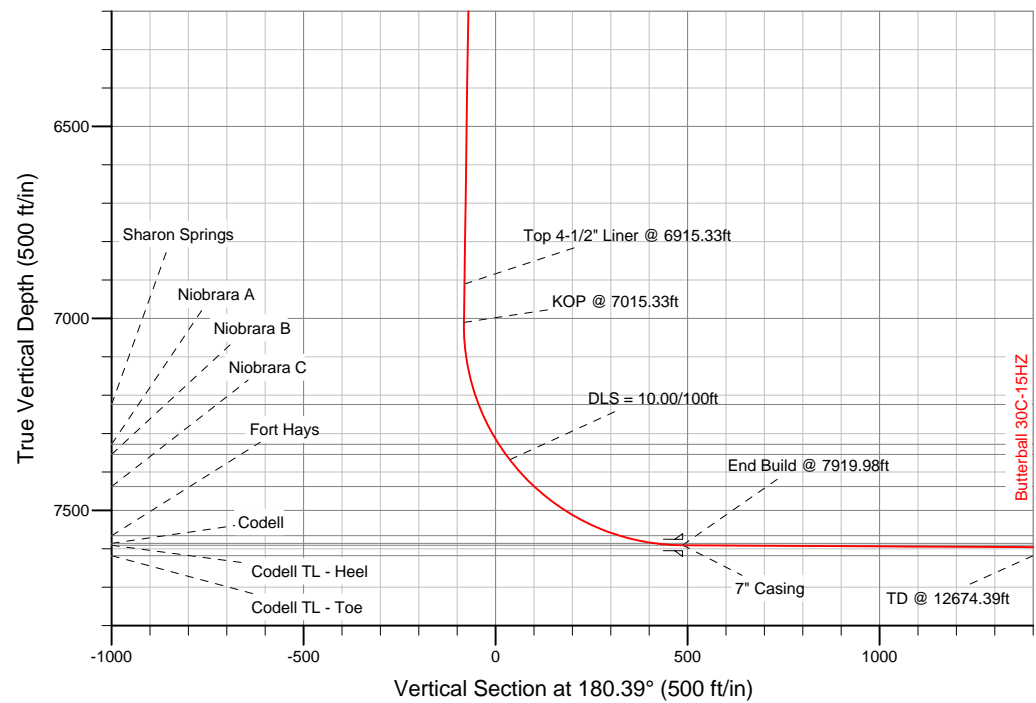
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
3	1114.90	2.30	290.51	1114.87	0.81	-2.16	2.00	290.51	-0.79	
4	7015.33	2.30	290.51	7010.56	83.69	-223.76	0.00	0.00	-82.17	
5	7919.98	89.67	180.39	7591.00	-485.80	-249.40	10.00	-110.11	487.49	Butterball 30C-15HZ_CP
6	12674.39	89.67	180.39	7618.00	-5240.02	-281.86	0.00	0.00	5241.81	Butterball 30C-15HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Butterball 30C-15HZ_LD	0.00	0.00	0.00	40.146672	-104.883949	Polygon
Butterball 30C-15HZ_SHL	0.00	0.00	0.00	40.146672	-104.883949	Point
Butterball_Sec10	0.00	21.86	-55.91	40.146732	-104.884149	Polygon
Butterball_Sec15	0.00	0.00	0.00	40.146672	-104.883949	Polygon
Butterball 30C-15HZ_CP	7591.00	-485.80	-249.40	40.145338	-104.884841	Point
Butterball 30C-15HZ_BHL	7618.00	-5240.02	-281.86	40.132288	-104.884957	Point

MD	TVD	
6915.33	6910.63	Top 4-1/2" Liner @ 6915.33ft
7015.33	7010.55	KOP @ 7015.33ft

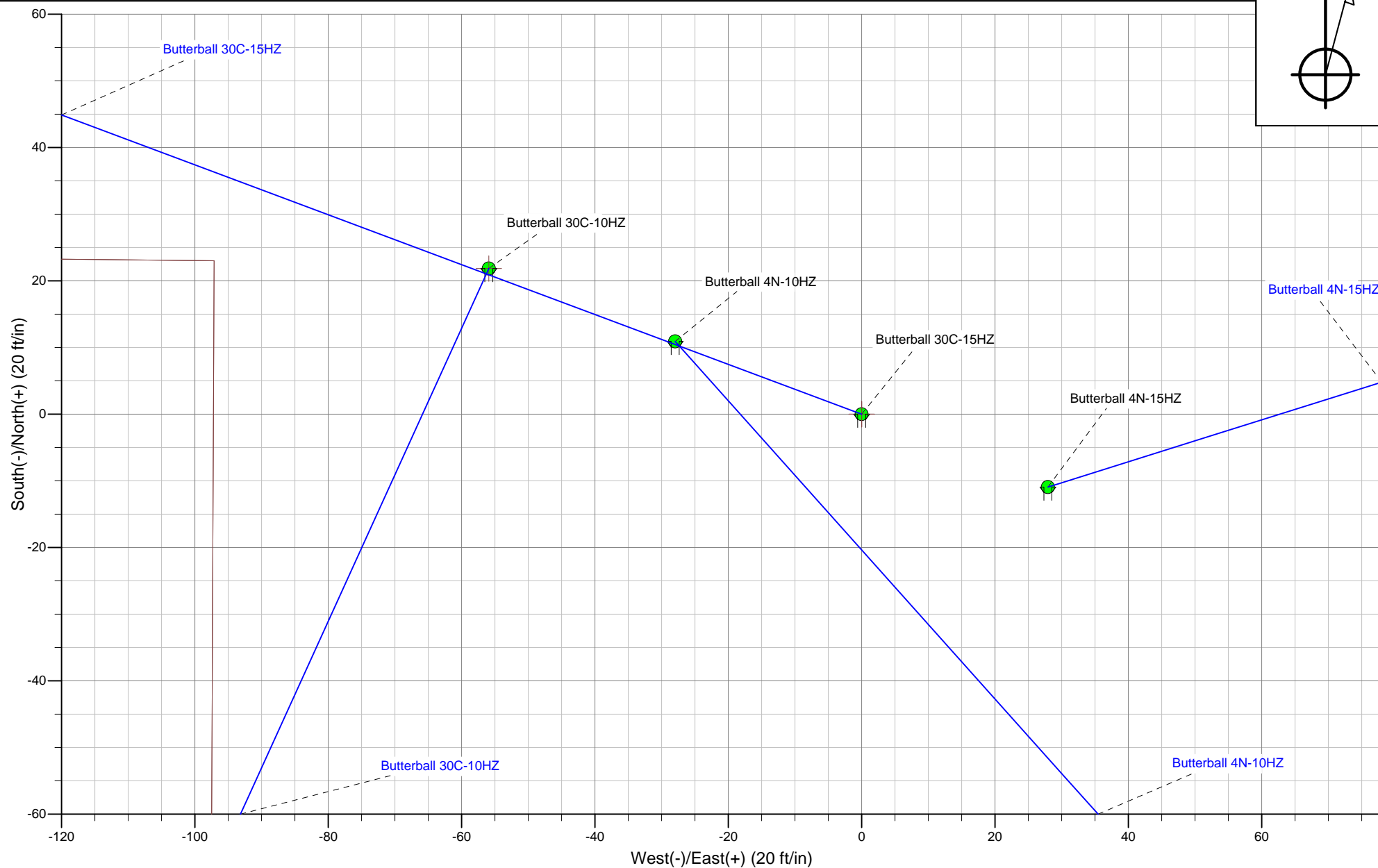
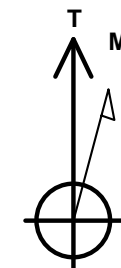


WELL DETAILS: Butterball 30C-15HZ	
Ground Level:	4996.00
RKB = 17 @ 5013.00ft (Drilling Rig)	
Plan: Plan A 0 - PERMIT (Butterball 30C-15HZ/Plan A 0)	
Created By: Fred Hartmann Date: 06/24/2013	

Project: Weld County, CO (NAD 83)
Site: Sec. 10-T2N-R67W
Well: Butterball 13-10HZ Pad



HALLIBURTON
Sperry Drilling



Plan Report for Butterball 30C-15HZ - Plan A 0 - PERMIT

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
867.00	0.00	0.00	867.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8" Casing										
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1000.00ft										
1,100.00	2.00	290.51	1,099.98	0.61	-1.63	-0.60	2.00	2.00	0.00	290.51
1,114.90	2.30	290.51	1,114.87	0.81	-2.16	-0.79	2.00	2.00	0.00	0.00
End Nudge @ 1114.90ft										
1,200.00	2.30	290.51	1,199.90	2.00	-5.35	-1.97	0.00	0.00	0.00	0.00
1,300.00	2.30	290.51	1,299.82	3.41	-9.11	-3.35	0.00	0.00	0.00	0.00
1,400.00	2.30	290.51	1,399.74	4.81	-12.87	-4.72	0.00	0.00	0.00	0.00
1,500.00	2.30	290.51	1,499.66	6.22	-16.62	-6.10	0.00	0.00	0.00	0.00
1,600.00	2.30	290.51	1,599.58	7.62	-20.38	-7.48	0.00	0.00	0.00	0.00
1,700.00	2.30	290.51	1,699.50	9.03	-24.13	-8.86	0.00	0.00	0.00	0.00
1,800.00	2.30	290.51	1,799.42	10.43	-27.89	-10.24	0.00	0.00	0.00	0.00
1,900.00	2.30	290.51	1,899.34	11.84	-31.64	-11.62	0.00	0.00	0.00	0.00
2,000.00	2.30	290.51	1,999.26	13.24	-35.40	-13.00	0.00	0.00	0.00	0.00
2,100.00	2.30	290.51	2,099.18	14.64	-39.16	-14.38	0.00	0.00	0.00	0.00
2,200.00	2.30	290.51	2,199.10	16.05	-42.91	-15.76	0.00	0.00	0.00	0.00
2,300.00	2.30	290.51	2,299.02	17.45	-46.67	-17.14	0.00	0.00	0.00	0.00
2,400.00	2.30	290.51	2,398.94	18.86	-50.42	-18.52	0.00	0.00	0.00	0.00
2,500.00	2.30	290.51	2,498.86	20.26	-54.18	-19.89	0.00	0.00	0.00	0.00
2,600.00	2.30	290.51	2,598.77	21.67	-57.93	-21.27	0.00	0.00	0.00	0.00
2,700.00	2.30	290.51	2,698.69	23.07	-61.69	-22.65	0.00	0.00	0.00	0.00
2,800.00	2.30	290.51	2,798.61	24.48	-65.45	-24.03	0.00	0.00	0.00	0.00
2,900.00	2.30	290.51	2,898.53	25.88	-69.20	-25.41	0.00	0.00	0.00	0.00
3,000.00	2.30	290.51	2,998.45	27.29	-72.96	-26.79	0.00	0.00	0.00	0.00
3,100.00	2.30	290.51	3,098.37	28.69	-76.71	-28.17	0.00	0.00	0.00	0.00
3,200.00	2.30	290.51	3,198.29	30.10	-80.47	-29.55	0.00	0.00	0.00	0.00
3,300.00	2.30	290.51	3,298.21	31.50	-84.22	-30.93	0.00	0.00	0.00	0.00
3,400.00	2.30	290.51	3,398.13	32.91	-87.98	-32.31	0.00	0.00	0.00	0.00
3,500.00	2.30	290.51	3,498.05	34.31	-91.74	-33.69	0.00	0.00	0.00	0.00
3,600.00	2.30	290.51	3,597.97	35.72	-95.49	-35.06	0.00	0.00	0.00	0.00
3,700.00	2.30	290.51	3,697.89	37.12	-99.25	-36.44	0.00	0.00	0.00	0.00
3,800.00	2.30	290.51	3,797.81	38.52	-103.00	-37.82	0.00	0.00	0.00	0.00
3,900.00	2.30	290.51	3,897.73	39.93	-106.76	-39.20	0.00	0.00	0.00	0.00
4,000.00	2.30	290.51	3,997.65	41.33	-110.51	-40.58	0.00	0.00	0.00	0.00
4,029.37	2.30	290.51	4,027.00	41.75	-111.62	-40.99	0.00	0.00	0.00	0.00
Parkman										
4,100.00	2.30	290.51	4,097.57	42.74	-114.27	-41.96	0.00	0.00	0.00	0.00
4,200.00	2.30	290.51	4,197.49	44.14	-118.03	-43.34	0.00	0.00	0.00	0.00
4,300.00	2.30	290.51	4,297.41	45.55	-121.78	-44.72	0.00	0.00	0.00	0.00
4,400.00	2.30	290.51	4,397.33	46.95	-125.54	-46.10	0.00	0.00	0.00	0.00
4,455.72	2.30	290.51	4,453.00	47.74	-127.63	-46.87	0.00	0.00	0.00	0.00
Sussex										
4,500.00	2.30	290.51	4,497.25	48.36	-129.29	-47.48	0.00	0.00	0.00	0.00
4,600.00	2.30	290.51	4,597.17	49.76	-133.05	-48.86	0.00	0.00	0.00	0.00
4,700.00	2.30	290.51	4,697.09	51.17	-136.80	-50.23	0.00	0.00	0.00	0.00
4,800.00	2.30	290.51	4,797.01	52.57	-140.56	-51.61	0.00	0.00	0.00	0.00

Plan Report for Butterball 30C-15HZ - Plan A 0 - PERMIT

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
4,900.00	2.30	290.51	4,896.93	53.98	-144.32	-52.99	0.00	0.00	0.00	0.00
5,000.00	2.30	290.51	4,996.84	55.38	-148.07	-54.37	0.00	0.00	0.00	0.00
5,100.00	2.30	290.51	5,096.76	56.79	-151.83	-55.75	0.00	0.00	0.00	0.00
5,200.00	2.30	290.51	5,196.68	58.19	-155.58	-57.13	0.00	0.00	0.00	0.00
5,300.00	2.30	290.51	5,296.60	59.59	-159.34	-58.51	0.00	0.00	0.00	0.00
5,400.00	2.30	290.51	5,396.52	61.00	-163.09	-59.89	0.00	0.00	0.00	0.00
5,500.00	2.30	290.51	5,496.44	62.40	-166.85	-61.27	0.00	0.00	0.00	0.00
5,600.00	2.30	290.51	5,596.36	63.81	-170.61	-62.65	0.00	0.00	0.00	0.00
5,700.00	2.30	290.51	5,696.28	65.21	-174.36	-64.03	0.00	0.00	0.00	0.00
5,800.00	2.30	290.51	5,796.20	66.62	-178.12	-65.40	0.00	0.00	0.00	0.00
5,900.00	2.30	290.51	5,896.12	68.02	-181.87	-66.78	0.00	0.00	0.00	0.00
6,000.00	2.30	290.51	5,996.04	69.43	-185.63	-68.16	0.00	0.00	0.00	0.00
6,100.00	2.30	290.51	6,095.96	70.83	-189.38	-69.54	0.00	0.00	0.00	0.00
6,200.00	2.30	290.51	6,195.88	72.24	-193.14	-70.92	0.00	0.00	0.00	0.00
6,300.00	2.30	290.51	6,295.80	73.64	-196.90	-72.30	0.00	0.00	0.00	0.00
6,400.00	2.30	290.51	6,395.72	75.05	-200.65	-73.68	0.00	0.00	0.00	0.00
6,500.00	2.30	290.51	6,495.64	76.45	-204.41	-75.06	0.00	0.00	0.00	0.00
6,600.00	2.30	290.51	6,595.56	77.86	-208.16	-76.44	0.00	0.00	0.00	0.00
6,700.00	2.30	290.51	6,695.48	79.26	-211.92	-77.82	0.00	0.00	0.00	0.00
6,800.00	2.30	290.51	6,795.40	80.67	-215.68	-79.20	0.00	0.00	0.00	0.00
6,900.00	2.30	290.51	6,895.32	82.07	-219.43	-80.57	0.00	0.00	0.00	0.00
6,915.33	2.30	290.51	6,910.63	82.29	-220.01	-80.79	0.00	0.00	0.00	0.00
Top 4-1/2" Liner @ 6915.33ft										
7,000.00	2.30	290.51	6,995.24	83.47	-223.19	-81.95	0.00	0.00	0.00	0.00
7,015.33	2.30	290.51	7,010.55	83.69	-223.76	-82.16	0.00	0.00	0.00	0.00
KOP @ 7015.33ft										
7,100.00	7.97	195.99	7,094.93	78.63	-226.98	-77.08	10.00	6.70	-111.63	-110.11
7,200.00	17.80	187.12	7,192.30	56.74	-230.79	-55.17	10.00	9.83	-8.87	-15.75
7,233.62	21.14	185.97	7,224.00	45.61	-232.06	-44.02	10.00	9.94	-3.41	-7.07
Sharon Springs										
7,300.00	27.75	184.49	7,284.39	18.26	-234.51	-16.66	10.00	9.96	-2.24	-5.99
7,350.51	32.79	183.73	7,328.00	-7.13	-236.32	8.74	10.00	9.97	-1.49	-4.64
Niobrara A										
7,382.01	35.93	183.36	7,354.00	-24.87	-237.42	26.49	10.00	9.98	-1.18	-3.99
Niobrara B										
7,400.00	37.73	183.17	7,368.40	-35.64	-238.04	37.26	10.00	9.98	-1.05	-3.68
DLS = 10.00/100ft										
7,494.42	47.16	182.38	7,438.00	-99.21	-241.08	100.85	10.00	9.98	-0.84	-3.53
Niobrara C										
7,500.00	47.71	182.34	7,441.77	-103.32	-241.25	104.96	10.00	9.99	-0.69	-2.94
7,600.00	57.70	181.74	7,502.29	-182.72	-244.05	184.38	10.00	9.99	-0.60	-2.92
7,700.00	67.69	181.26	7,548.10	-271.44	-246.37	273.11	10.00	9.99	-0.48	-2.55
7,753.27	73.02	181.04	7,566.00	-321.58	-247.37	323.25	10.00	9.99	-0.42	-2.33
Fort Hays										
7,800.00	77.68	180.85	7,577.82	-366.77	-248.12	368.45	10.00	9.99	-0.40	-2.26
7,847.39	82.42	180.67	7,586.00	-413.43	-248.73	415.12	10.00	9.99	-0.39	-2.21
Codell										
7,900.00	87.68	180.47	7,590.54	-465.82	-249.25	467.51	10.00	9.99	-0.38	-2.18
7,919.98	89.67	180.39	7,591.00	-485.80	-249.40	487.49	10.00	9.99	-0.38	-2.16
End Build @ 7919.98ft - Codell TL - Heel - 7" Casing - Butterball 30C-15HZ_CP										
8,000.00	89.67	180.39	7,591.45	-565.81	-249.95	567.50	0.00	0.00	0.00	-2.16
8,100.00	89.67	180.39	7,592.02	-665.81	-250.63	667.50	0.00	0.00	0.00	0.00
8,200.00	89.67	180.39	7,592.59	-765.81	-251.31	767.50	0.00	0.00	0.00	0.00
8,300.00	89.67	180.39	7,593.16	-865.80	-251.99	867.50	0.00	0.00	0.00	0.00
8,400.00	89.67	180.39	7,593.73	-965.80	-252.68	967.49	0.00	0.00	0.00	0.00
8,500.00	89.67	180.39	7,594.29	-1,065.79	-253.36	1,067.49	0.00	0.00	0.00	0.00
8,600.00	89.67	180.39	7,594.86	-1,165.79	-254.04	1,167.49	0.00	0.00	0.00	0.00
8,700.00	89.67	180.39	7,595.43	-1,265.79	-254.73	1,267.49	0.00	0.00	0.00	0.00

Plan Report for Butterball 30C-15HZ - Plan A 0 - PERMIT

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
8,800.00	89.67	180.39	7,596.00	-1,365.78	-255.41	1,367.49	0.00	0.00	0.00	0.00
8,900.00	89.67	180.39	7,596.57	-1,465.78	-256.09	1,467.49	0.00	0.00	0.00	0.00
9,000.00	89.67	180.39	7,597.13	-1,565.77	-256.77	1,567.49	0.00	0.00	0.00	0.00
9,100.00	89.67	180.39	7,597.70	-1,665.77	-257.46	1,667.48	0.00	0.00	0.00	0.00
9,200.00	89.67	180.39	7,598.27	-1,765.77	-258.14	1,767.48	0.00	0.00	0.00	0.00
9,300.00	89.67	180.39	7,598.84	-1,865.76	-258.82	1,867.48	0.00	0.00	0.00	0.00
9,400.00	89.67	180.39	7,599.40	-1,965.76	-259.50	1,967.48	0.00	0.00	0.00	0.00
9,500.00	89.67	180.39	7,599.97	-2,065.75	-260.19	2,067.48	0.00	0.00	0.00	0.00
9,600.00	89.67	180.39	7,600.54	-2,165.75	-260.87	2,167.48	0.00	0.00	0.00	0.00
9,700.00	89.67	180.39	7,601.11	-2,265.75	-261.55	2,267.47	0.00	0.00	0.00	0.00
9,800.00	89.67	180.39	7,601.68	-2,365.74	-262.24	2,367.47	0.00	0.00	0.00	0.00
9,900.00	89.67	180.39	7,602.24	-2,465.74	-262.92	2,467.47	0.00	0.00	0.00	0.00
10,000.00	89.67	180.39	7,602.81	-2,565.73	-263.60	2,567.47	0.00	0.00	0.00	0.00
10,100.00	89.67	180.39	7,603.38	-2,665.73	-264.28	2,667.47	0.00	0.00	0.00	0.00
10,200.00	89.67	180.39	7,603.95	-2,765.73	-264.97	2,767.47	0.00	0.00	0.00	0.00
10,300.00	89.67	180.39	7,604.52	-2,865.72	-265.65	2,867.46	0.00	0.00	0.00	0.00
10,400.00	89.67	180.39	7,605.08	-2,965.72	-266.33	2,967.46	0.00	0.00	0.00	0.00
10,500.00	89.67	180.39	7,605.65	-3,065.71	-267.01	3,067.46	0.00	0.00	0.00	0.00
10,600.00	89.67	180.39	7,606.22	-3,165.71	-267.70	3,167.46	0.00	0.00	0.00	0.00
10,700.00	89.67	180.39	7,606.79	-3,265.71	-268.38	3,267.46	0.00	0.00	0.00	0.00
10,800.00	89.67	180.39	7,607.36	-3,365.70	-269.06	3,367.46	0.00	0.00	0.00	0.00
10,900.00	89.67	180.39	7,607.92	-3,465.70	-269.74	3,467.45	0.00	0.00	0.00	0.00
11,000.00	89.67	180.39	7,608.49	-3,565.69	-270.43	3,567.45	0.00	0.00	0.00	0.00
11,100.00	89.67	180.39	7,609.06	-3,665.69	-271.11	3,667.45	0.00	0.00	0.00	0.00
11,200.00	89.67	180.39	7,609.63	-3,765.69	-271.79	3,767.45	0.00	0.00	0.00	0.00
11,300.00	89.67	180.39	7,610.19	-3,865.68	-272.48	3,867.45	0.00	0.00	0.00	0.00
11,400.00	89.67	180.39	7,610.76	-3,965.68	-273.16	3,967.45	0.00	0.00	0.00	0.00
11,500.00	89.67	180.39	7,611.33	-4,065.68	-273.84	4,067.44	0.00	0.00	0.00	0.00
11,600.00	89.67	180.39	7,611.90	-4,165.67	-274.52	4,167.44	0.00	0.00	0.00	0.00
11,700.00	89.67	180.39	7,612.47	-4,265.67	-275.21	4,267.44	0.00	0.00	0.00	0.00
11,800.00	89.67	180.39	7,613.03	-4,365.66	-275.89	4,367.44	0.00	0.00	0.00	0.00
11,900.00	89.67	180.39	7,613.60	-4,465.66	-276.57	4,467.44	0.00	0.00	0.00	0.00
12,000.00	89.67	180.39	7,614.17	-4,565.66	-277.25	4,567.44	0.00	0.00	0.00	0.00
12,100.00	89.67	180.39	7,614.74	-4,665.65	-277.94	4,667.44	0.00	0.00	0.00	0.00
12,200.00	89.67	180.39	7,615.31	-4,765.65	-278.62	4,767.43	0.00	0.00	0.00	0.00
12,300.00	89.67	180.39	7,615.87	-4,865.64	-279.30	4,867.43	0.00	0.00	0.00	0.00
12,400.00	89.67	180.39	7,616.44	-4,965.64	-279.99	4,967.43	0.00	0.00	0.00	0.00
12,500.00	89.67	180.39	7,617.01	-5,065.64	-280.67	5,067.43	0.00	0.00	0.00	0.00
12,600.00	89.67	180.39	7,617.58	-5,165.63	-281.35	5,167.43	0.00	0.00	0.00	0.00
12,674.39	89.67	180.39	7,618.00	-5,240.02	-281.86	5,241.81	0.00	0.00	0.00	0.00

Codell TL - Toe - Butterball 30C-15HZ_BHL

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.00	1,000.00	0.00	0.00	Begin Nudge @ 1000.00ft
1,114.90	1,114.87	0.81	-2.16	End Nudge @ 1114.90ft
6,915.33	6,910.63	82.29	-220.01	Top 4-1/2" Liner @ 6915.33ft
7,015.33	7,010.55	83.69	-223.76	KOP @ 7015.33ft
7,400.00	7,368.40	-35.64	-238.04	DLS = 10.00/100ft
7,919.98	7,591.00	-485.80	-249.40	End Build @ 7919.98ft
12,674.39	7,618.00	-5,240.02	-281.86	TD @ 12674.39ft

Plan Report for Butterball 30C-15HZ - Plan A 0 - PERMIT

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
User	No Target (Freehand)	180.39	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	12,674.39	Plan A 0 - PERMIT	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
867.00	867.00	9 5/8" Casing	9-5/8	13-1/2
7,919.98	7,591.00	7" Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,029.37	4,027.00	Parkman		0.00	
4,455.72	4,453.00	Sussex		0.00	
7,233.62	7,224.00	Sharon Springs		0.00	
7,350.51	7,328.00	Niobrara A		0.00	
7,382.01	7,354.00	Niobrara B		0.00	
7,494.42	7,438.00	Niobrara C		0.00	
7,753.27	7,566.00	Fort Hays		0.00	
7,847.39	7,586.00	Codell		0.00	
7,919.98	7,591.00	Codell TL - Heel		0.00	
12,674.39	7,618.00	Codell TL - Toe		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Butterball 30C-15HZ_BHL	7,618.00	-5,240.02	-281.86	Point
Butterball_Sec15	0.00	0.00	0.00	Polygon
Butterball Sec10	0.00	21.86	-55.91	Polygon
Butterball 30C-15HZ_SHL	0.00	0.00	0.00	Point
Butterball 30C-15HZ_CP	7,591.00	-485.80	-249.40	Point
Butterball 30C-15HZ_LD	0.00	0.00	0.00	Polygon

North Reference Sheet for Sec. 10-T2N-R67W - Butterball 30C-15HZ - Plan A 0

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
 Vertical Depths are relative to RKB = 17 @ 5013.00ft (Drilling Rig). Northing and Easting are relative to Butterball 30C-15HZ
 Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980

Projection method is Lambert Conformal Conic (2 parallel)
 Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°
 False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99995849

Grid Coordinates of Well: 1,296,874.27 ft N, 3,172,216.33 ft E
 Geographical Coordinates of Well: 40° 08' 48.02" N, 104° 53' 02.22" W
 Grid Convergence at Surface is: 0.40°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,674.39ft
 the Bottom Hole Displacement is 5,247.59ft in the Direction of 183.08° (True).

Magnetic Convergence at surface is: -8.26° (24 June 2013, , BGGM2013)

