

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**2N-67W-10 Butterball 21-10HZ Pad**

**BUTTERBALL 25N-34HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**13 October, 2016**



Azimuths to True North  
Magnetic North: 8.19°

Magnetic Field  
Strength: 52431.0snT  
Dip Angle: 66.65°  
Date: 10/12/2016  
Model: IGRF2010

SITE: 2N-67W-10 Butterball 21-10HZ Pad

Well: BUTTERBALL 25N-34HZ  
Wellbore: Plan A  
Design: Permit Rev-1

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1032.00	1036.17	Fox Hills
3973.00	3992.91	Parkman
4387.00	4416.91	Sussex
7147.00	7224.76	Sharon Springs
7230.00	7365.11	Niobrara
7289.00	7514.63	Nio B

#### WELL DETAILS: BUTTERBALL 25N-34HZ

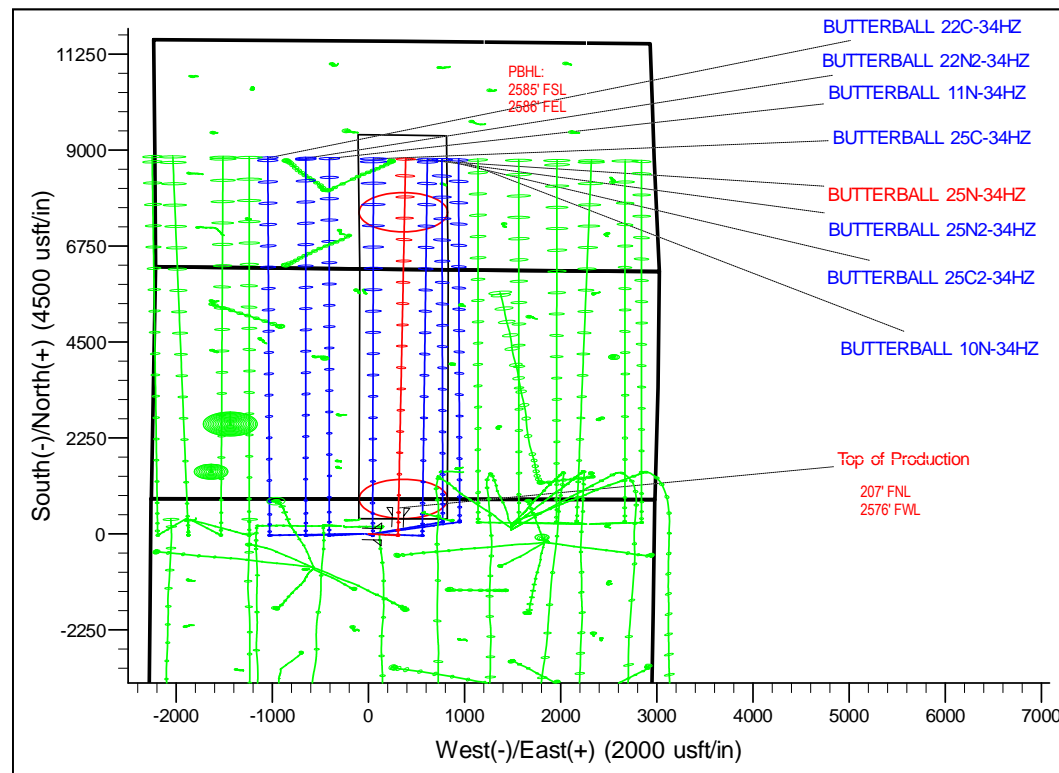
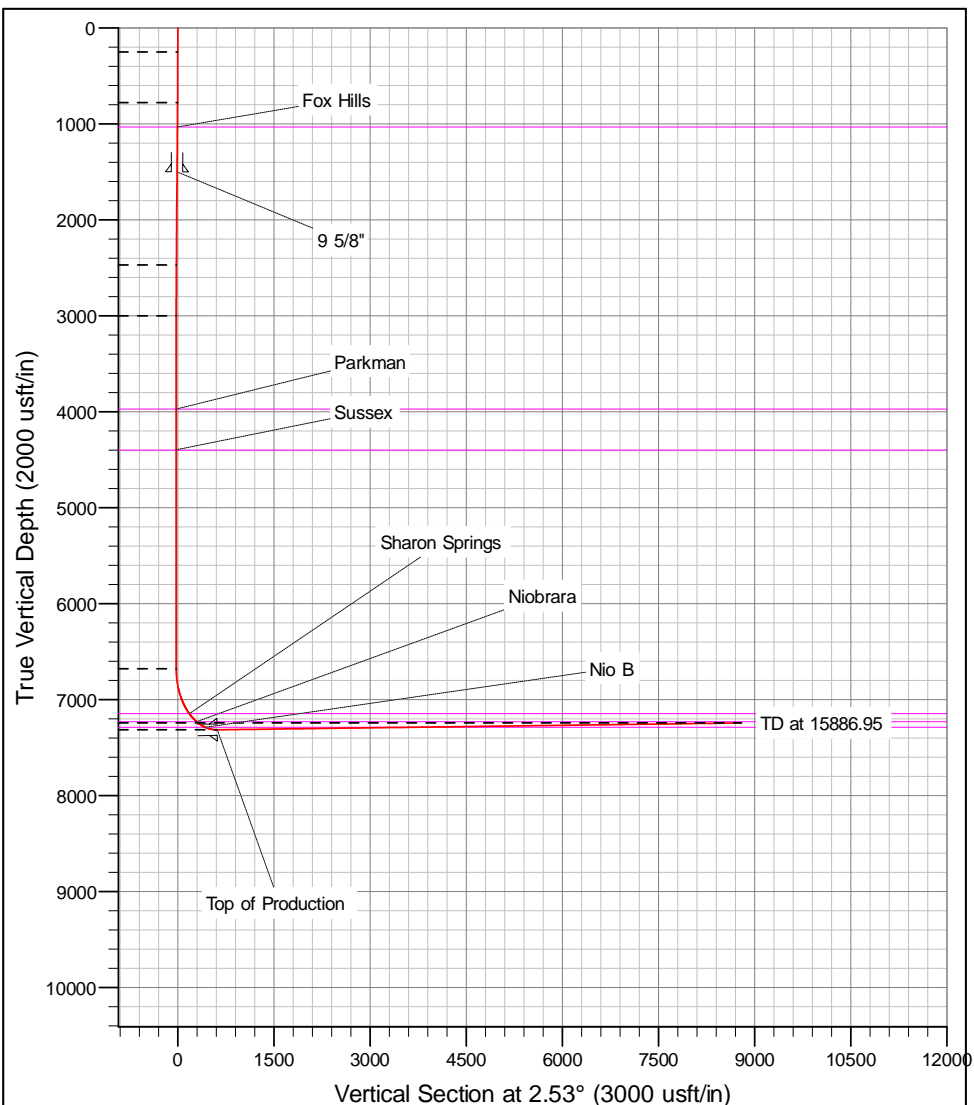
+N/-S	+E/-W	GL: 4934.00 Northing	RKB @ 4951.00usft (D Rig) Easting	Latitude	Longitude	Slot
0.00	0.00	14584160.48	1674565.94	40.157639	-104.877779	

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00
781.28	7.97	97.03	779.57	-4.51	36.61	1.50	-2.89
2468.63	7.97	97.03	2470.43	-33.49	271.54	0.00	-21.47
3019.91	0.00	0.00	3000.00	-38.00	308.15	1.50	-24.36
6698.72	0.00	0.00	6678.81	-38.00	308.15	0.00	-24.36
7704.28	90.50	0.52	7315.41	604.15	313.97	9.00	617.42
15886.95	90.50	0.52	7244.00	8786.18	388.15	0.00	8794.75

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
BUTTERBALL 25N-34HZ_PBHL	7244.00	8786.18	388.15	14592947.18	1674942.00	40.181767	-104.876389



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 25N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 21-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 25N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

Site						2N-67W-10 Butterball 21-10HZ Pad											
Site Position:						Northing:			14,584,161.08 usft			Latitude:			40.157641		
From:			Lat/Long			Easting:			1,674,475.97 usft			Longitude:			-104.878101		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.08		

Well	BUTTERBALL 25N-34HZ					
Well Position	+N/-S	-0.73 usft	Northing:	14,584,160.47 usft	Latitude:	40.157639
	+E/-W	89.97 usft	Easting:	1,674,565.94 usft	Longitude:	-104.877779
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,934.00 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	10/12/2016	8.19	66.65	52,431

<b>Design</b>	Permit Rev-1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	2.53

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
781.28	7.97	97.03	779.57	-4.51	36.61	1.50	1.50	0.00	97.03	
2,488.63	7.97	97.03	2,470.43	-33.49	271.54	0.00	0.00	0.00	0.00	
3,019.91	0.00	0.00	3,000.00	-38.00	308.15	1.50	-1.50	0.00	180.00	
6,698.72	0.00	0.00	6,678.81	-38.00	308.15	0.00	0.00	0.00	0.00	
7,704.28	90.50	0.52	7,315.41	604.15	313.97	9.00	9.00	0.00	0.52	
15,886.95	90.50	0.52	7,244.00	8,786.18	388.15	0.00	0.00	0.00	0.00	BUTTERBALL 25N-

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 25N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 21-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 25N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.75	97.03	300.00	-0.04	0.32	-0.03	1.50	1.50	0.00
400.00	2.25	97.03	399.96	-0.36	2.92	-0.23	1.50	1.50	0.00
500.00	3.75	97.03	499.82	-1.00	8.12	-0.64	1.50	1.50	0.00
600.00	5.25	97.03	599.51	-1.96	15.90	-1.26	1.50	1.50	0.00
700.00	6.75	97.03	698.96	-3.24	26.28	-2.08	1.50	1.50	0.00
781.28	7.97	97.03	779.57	-4.51	36.61	-2.89	1.50	1.50	0.00
800.00	7.97	97.03	798.11	-4.83	39.19	-3.10	0.00	0.00	0.00
900.00	7.97	97.03	897.14	-6.53	52.95	-4.19	0.00	0.00	0.00
1,000.00	7.97	97.03	996.18	-8.23	66.71	-5.27	0.00	0.00	0.00
1,036.17	7.97	97.03	1,032.00	-8.84	71.68	-5.67	0.00	0.00	0.00
<b>Fox Hills</b>									
1,100.00	7.97	97.03	1,095.21	-9.92	80.47	-6.36	0.00	0.00	0.00
1,200.00	7.97	97.03	1,194.25	-11.62	94.23	-7.45	0.00	0.00	0.00
1,300.00	7.97	97.03	1,293.28	-13.32	107.99	-8.54	0.00	0.00	0.00
1,400.00	7.97	97.03	1,392.31	-15.01	121.75	-9.63	0.00	0.00	0.00
1,500.00	7.97	97.03	1,491.35	-16.71	135.51	-10.71	0.00	0.00	0.00
1,508.74	7.97	97.03	1,500.00	-16.86	136.71	-10.81	0.00	0.00	0.00
<b>9 5/8"</b>									
1,600.00	7.97	97.03	1,590.38	-18.41	149.27	-11.80	0.00	0.00	0.00
1,700.00	7.97	97.03	1,689.42	-20.10	163.03	-12.89	0.00	0.00	0.00
1,800.00	7.97	97.03	1,788.45	-21.80	176.78	-13.98	0.00	0.00	0.00
1,900.00	7.97	97.03	1,887.48	-23.50	190.54	-15.06	0.00	0.00	0.00
2,000.00	7.97	97.03	1,986.52	-25.19	204.30	-16.15	0.00	0.00	0.00
2,100.00	7.97	97.03	2,085.55	-26.89	218.06	-17.24	0.00	0.00	0.00
2,200.00	7.97	97.03	2,184.59	-28.59	231.82	-18.33	0.00	0.00	0.00
2,300.00	7.97	97.03	2,283.62	-30.28	245.58	-19.42	0.00	0.00	0.00
2,400.00	7.97	97.03	2,382.66	-31.98	259.34	-20.50	0.00	0.00	0.00
2,488.63	7.97	97.03	2,470.43	-33.49	271.54	-21.47	0.00	0.00	0.00
2,500.00	7.80	97.03	2,481.69	-33.68	273.09	-21.59	1.50	-1.50	0.00
2,600.00	6.30	97.03	2,580.93	-35.18	285.27	-22.55	1.50	-1.50	0.00
2,700.00	4.80	97.03	2,680.46	-36.36	294.86	-23.31	1.50	-1.50	0.00
2,800.00	3.30	97.03	2,780.21	-37.23	301.87	-23.87	1.50	-1.50	0.00
2,900.00	1.80	97.03	2,880.11	-37.77	306.28	-24.22	1.50	-1.50	0.00
3,000.00	0.30	97.03	2,980.09	-37.99	308.10	-24.36	1.50	-1.50	0.00
3,019.91	0.00	0.00	3,000.00	-38.00	308.15	-24.36	1.50	-1.50	0.00
3,100.00	0.00	0.00	3,080.09	-38.00	308.15	-24.36	0.00	0.00	0.00
3,200.00	0.00	0.00	3,180.09	-38.00	308.15	-24.36	0.00	0.00	0.00
3,300.00	0.00	0.00	3,280.09	-38.00	308.15	-24.36	0.00	0.00	0.00
3,400.00	0.00	0.00	3,380.09	-38.00	308.15	-24.36	0.00	0.00	0.00
3,500.00	0.00	0.00	3,480.09	-38.00	308.15	-24.36	0.00	0.00	0.00
3,600.00	0.00	0.00	3,580.09	-38.00	308.15	-24.36	0.00	0.00	0.00
3,700.00	0.00	0.00	3,680.09	-38.00	308.15	-24.36	0.00	0.00	0.00
3,800.00	0.00	0.00	3,780.09	-38.00	308.15	-24.36	0.00	0.00	0.00
3,900.00	0.00	0.00	3,880.09	-38.00	308.15	-24.36	0.00	0.00	0.00
3,992.91	0.00	0.00	3,973.00	-38.00	308.15	-24.36	0.00	0.00	0.00
<b>Parkman</b>									
4,000.00	0.00	0.00	3,980.09	-38.00	308.15	-24.36	0.00	0.00	0.00
4,100.00	0.00	0.00	4,080.09	-38.00	308.15	-24.36	0.00	0.00	0.00
4,200.00	0.00	0.00	4,180.09	-38.00	308.15	-24.36	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 25N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 21-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 25N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,300.00	0.00	0.00	4,280.09	-38.00	308.15	-24.36	0.00	0.00	0.00
4,400.00	0.00	0.00	4,380.09	-38.00	308.15	-24.36	0.00	0.00	0.00
4,416.91	0.00	0.00	4,397.00	-38.00	308.15	-24.36	0.00	0.00	0.00
<b>Sussex</b>									
4,500.00	0.00	0.00	4,480.09	-38.00	308.15	-24.36	0.00	0.00	0.00
4,600.00	0.00	0.00	4,580.09	-38.00	308.15	-24.36	0.00	0.00	0.00
4,700.00	0.00	0.00	4,680.09	-38.00	308.15	-24.36	0.00	0.00	0.00
4,800.00	0.00	0.00	4,780.09	-38.00	308.15	-24.36	0.00	0.00	0.00
4,900.00	0.00	0.00	4,880.09	-38.00	308.15	-24.36	0.00	0.00	0.00
5,000.00	0.00	0.00	4,980.09	-38.00	308.15	-24.36	0.00	0.00	0.00
5,100.00	0.00	0.00	5,080.09	-38.00	308.15	-24.36	0.00	0.00	0.00
5,200.00	0.00	0.00	5,180.09	-38.00	308.15	-24.36	0.00	0.00	0.00
5,300.00	0.00	0.00	5,280.09	-38.00	308.15	-24.36	0.00	0.00	0.00
5,400.00	0.00	0.00	5,380.09	-38.00	308.15	-24.36	0.00	0.00	0.00
5,500.00	0.00	0.00	5,480.09	-38.00	308.15	-24.36	0.00	0.00	0.00
5,600.00	0.00	0.00	5,580.09	-38.00	308.15	-24.36	0.00	0.00	0.00
5,700.00	0.00	0.00	5,680.09	-38.00	308.15	-24.36	0.00	0.00	0.00
5,800.00	0.00	0.00	5,780.09	-38.00	308.15	-24.36	0.00	0.00	0.00
5,900.00	0.00	0.00	5,880.09	-38.00	308.15	-24.36	0.00	0.00	0.00
6,000.00	0.00	0.00	5,980.09	-38.00	308.15	-24.36	0.00	0.00	0.00
6,100.00	0.00	0.00	6,080.09	-38.00	308.15	-24.36	0.00	0.00	0.00
6,200.00	0.00	0.00	6,180.09	-38.00	308.15	-24.36	0.00	0.00	0.00
6,300.00	0.00	0.00	6,280.09	-38.00	308.15	-24.36	0.00	0.00	0.00
6,400.00	0.00	0.00	6,380.09	-38.00	308.15	-24.36	0.00	0.00	0.00
6,500.00	0.00	0.00	6,480.09	-38.00	308.15	-24.36	0.00	0.00	0.00
6,600.00	0.00	0.00	6,580.09	-38.00	308.15	-24.36	0.00	0.00	0.00
6,698.72	0.00	0.00	6,678.81	-38.00	308.15	-24.36	0.00	0.00	0.00
6,700.00	0.12	0.52	6,680.09	-38.00	308.15	-24.36	9.00	9.00	0.00
6,800.00	9.12	0.52	6,779.66	-29.96	308.22	-16.33	9.00	9.00	0.00
6,900.00	18.12	0.52	6,876.75	-6.45	308.44	7.17	9.00	9.00	0.00
7,000.00	27.12	0.52	6,968.87	31.97	308.78	45.56	9.00	9.00	0.00
7,100.00	36.12	0.52	7,054.04	84.33	309.26	97.90	9.00	9.00	0.00
7,200.00	45.12	0.52	7,129.87	149.36	309.85	162.89	9.00	9.00	0.00
7,224.76	47.34	0.52	7,147.00	167.24	310.01	180.76	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,300.00	54.12	0.52	7,194.60	225.45	310.54	238.93	9.00	9.00	0.00
7,365.11	59.97	0.52	7,230.00	280.05	311.03	293.51	9.00	9.00	0.00
<b>Niobrara</b>									
7,400.00	63.12	0.52	7,246.62	310.73	311.31	324.16	9.00	9.00	0.00
7,500.00	72.12	0.52	7,284.67	403.09	312.15	416.48	9.00	9.00	0.00
7,514.64	73.43	0.52	7,289.00	417.07	312.28	430.44	9.00	9.00	0.00
<b>Nio B</b>									
7,600.00	81.12	0.52	7,307.79	500.27	313.03	513.60	9.00	9.00	0.00
7,700.00	90.12	0.52	7,315.43	599.87	313.93	613.14	9.00	9.00	0.00
7,704.28	90.50	0.52	7,315.41	604.15	313.97	617.42	8.99	8.99	0.00
<b>Top of Production - BUTTERBALL 25N-34HZ_PHL</b>									
7,800.00	90.50	0.52	7,314.57	699.86	314.84	713.08	0.00	0.00	0.00
7,900.00	90.50	0.52	7,313.70	799.86	315.75	813.01	0.00	0.00	0.00
8,000.00	90.50	0.52	7,312.83	899.85	316.65	912.95	0.00	0.00	0.00
8,100.00	90.50	0.52	7,311.95	999.84	317.56	1,012.88	0.00	0.00	0.00
8,200.00	90.50	0.52	7,311.08	1,099.83	318.47	1,112.82	0.00	0.00	0.00
8,300.00	90.50	0.52	7,310.21	1,199.82	319.37	1,212.75	0.00	0.00	0.00
8,400.00	90.50	0.52	7,309.34	1,299.82	320.28	1,312.69	0.00	0.00	0.00
8,500.00	90.50	0.52	7,308.46	1,399.81	321.19	1,412.62	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 25N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 21-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 25N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,600.00	90.50	0.52	7,307.59	1,499.80	322.09	1,512.55	0.00	0.00	0.00
8,700.00	90.50	0.52	7,306.72	1,599.79	323.00	1,612.49	0.00	0.00	0.00
8,800.00	90.50	0.52	7,305.84	1,699.78	323.90	1,712.42	0.00	0.00	0.00
8,900.00	90.50	0.52	7,304.97	1,799.78	324.81	1,812.36	0.00	0.00	0.00
9,000.00	90.50	0.52	7,304.10	1,899.77	325.72	1,912.29	0.00	0.00	0.00
9,100.00	90.50	0.52	7,303.23	1,999.76	326.62	2,012.23	0.00	0.00	0.00
9,200.00	90.50	0.52	7,302.35	2,099.75	327.53	2,112.16	0.00	0.00	0.00
9,300.00	90.50	0.52	7,301.48	2,199.75	328.44	2,212.10	0.00	0.00	0.00
9,400.00	90.50	0.52	7,300.61	2,299.74	329.34	2,312.03	0.00	0.00	0.00
9,500.00	90.50	0.52	7,299.74	2,399.73	330.25	2,411.97	0.00	0.00	0.00
9,600.00	90.50	0.52	7,298.86	2,499.72	331.16	2,511.90	0.00	0.00	0.00
9,700.00	90.50	0.52	7,297.99	2,599.71	332.06	2,611.84	0.00	0.00	0.00
9,800.00	90.50	0.52	7,297.12	2,699.71	332.97	2,711.77	0.00	0.00	0.00
9,900.00	90.50	0.52	7,296.25	2,799.70	333.88	2,811.71	0.00	0.00	0.00
10,000.00	90.50	0.52	7,295.37	2,899.69	334.78	2,911.64	0.00	0.00	0.00
10,100.00	90.50	0.52	7,294.50	2,999.68	335.69	3,011.57	0.00	0.00	0.00
10,200.00	90.50	0.52	7,293.63	3,099.67	336.60	3,111.51	0.00	0.00	0.00
10,300.00	90.50	0.52	7,292.75	3,199.67	337.50	3,211.44	0.00	0.00	0.00
10,400.00	90.50	0.52	7,291.88	3,299.66	338.41	3,311.38	0.00	0.00	0.00
10,500.00	90.50	0.52	7,291.01	3,399.65	339.32	3,411.31	0.00	0.00	0.00
10,600.00	90.50	0.52	7,290.14	3,499.64	340.22	3,511.25	0.00	0.00	0.00
10,700.00	90.50	0.52	7,289.26	3,599.63	341.13	3,611.18	0.00	0.00	0.00
10,800.00	90.50	0.52	7,288.39	3,699.63	342.04	3,711.12	0.00	0.00	0.00
10,900.00	90.50	0.52	7,287.52	3,799.62	342.94	3,811.05	0.00	0.00	0.00
11,000.00	90.50	0.52	7,286.65	3,899.61	343.85	3,910.99	0.00	0.00	0.00
11,100.00	90.50	0.52	7,285.77	3,999.60	344.75	4,010.92	0.00	0.00	0.00
11,200.00	90.50	0.52	7,284.90	4,099.59	345.66	4,110.86	0.00	0.00	0.00
11,300.00	90.50	0.52	7,284.03	4,199.59	346.57	4,210.79	0.00	0.00	0.00
11,400.00	90.50	0.52	7,283.16	4,299.58	347.47	4,310.73	0.00	0.00	0.00
11,500.00	90.50	0.52	7,282.28	4,399.57	348.38	4,410.66	0.00	0.00	0.00
11,600.00	90.50	0.52	7,281.41	4,499.56	349.29	4,510.59	0.00	0.00	0.00
11,700.00	90.50	0.52	7,280.54	4,599.56	350.19	4,610.53	0.00	0.00	0.00
11,800.00	90.50	0.52	7,279.67	4,699.55	351.10	4,710.46	0.00	0.00	0.00
11,900.00	90.50	0.52	7,278.79	4,799.54	352.01	4,810.40	0.00	0.00	0.00
12,000.00	90.50	0.52	7,277.92	4,899.53	352.91	4,910.33	0.00	0.00	0.00
12,100.00	90.50	0.52	7,277.05	4,999.52	353.82	5,010.27	0.00	0.00	0.00
12,200.00	90.50	0.52	7,276.17	5,099.52	354.73	5,110.20	0.00	0.00	0.00
12,300.00	90.50	0.52	7,275.30	5,199.51	355.63	5,210.14	0.00	0.00	0.00
12,400.00	90.50	0.52	7,274.43	5,299.50	356.54	5,310.07	0.00	0.00	0.00
12,500.00	90.50	0.52	7,273.56	5,399.49	357.45	5,410.01	0.00	0.00	0.00
12,600.00	90.50	0.52	7,272.68	5,499.48	358.35	5,509.94	0.00	0.00	0.00
12,700.00	90.50	0.52	7,271.81	5,599.48	359.26	5,609.88	0.00	0.00	0.00
12,800.00	90.50	0.52	7,270.94	5,699.47	360.17	5,709.81	0.00	0.00	0.00
12,900.00	90.50	0.52	7,270.07	5,799.46	361.07	5,809.74	0.00	0.00	0.00
13,000.00	90.50	0.52	7,269.19	5,899.45	361.98	5,909.68	0.00	0.00	0.00
13,100.00	90.50	0.52	7,268.32	5,999.44	362.89	6,009.61	0.00	0.00	0.00
13,200.00	90.50	0.52	7,267.45	6,099.44	363.79	6,109.55	0.00	0.00	0.00
13,300.00	90.50	0.52	7,266.58	6,199.43	364.70	6,209.48	0.00	0.00	0.00
13,400.00	90.50	0.52	7,265.70	6,299.42	365.61	6,309.42	0.00	0.00	0.00
13,500.00	90.50	0.52	7,264.83	6,399.41	366.51	6,409.35	0.00	0.00	0.00
13,600.00	90.50	0.52	7,263.96	6,499.40	367.42	6,509.29	0.00	0.00	0.00
13,700.00	90.50	0.52	7,263.08	6,599.40	368.32	6,609.22	0.00	0.00	0.00
13,800.00	90.50	0.52	7,262.21	6,699.39	369.23	6,709.16	0.00	0.00	0.00
13,900.00	90.50	0.52	7,261.34	6,799.38	370.14	6,809.09	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 25N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 21-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 25N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
14,000.00	90.50	0.52	7,260.47	6,899.37	371.04	6,909.03	0.00	0.00	0.00
14,100.00	90.50	0.52	7,259.59	6,999.37	371.95	7,008.96	0.00	0.00	0.00
14,200.00	90.50	0.52	7,258.72	7,099.36	372.86	7,108.90	0.00	0.00	0.00
14,300.00	90.50	0.52	7,257.85	7,199.35	373.76	7,208.83	0.00	0.00	0.00
14,400.00	90.50	0.52	7,256.98	7,299.34	374.67	7,308.76	0.00	0.00	0.00
14,500.00	90.50	0.52	7,256.10	7,399.33	375.58	7,408.70	0.00	0.00	0.00
14,600.00	90.50	0.52	7,255.23	7,499.33	376.48	7,508.63	0.00	0.00	0.00
14,700.00	90.50	0.52	7,254.36	7,599.32	377.39	7,608.57	0.00	0.00	0.00
14,800.00	90.50	0.52	7,253.49	7,699.31	378.30	7,708.50	0.00	0.00	0.00
14,900.00	90.50	0.52	7,252.61	7,799.30	379.20	7,808.44	0.00	0.00	0.00
15,000.00	90.50	0.52	7,251.74	7,899.29	380.11	7,908.37	0.00	0.00	0.00
15,100.00	90.50	0.52	7,250.87	7,999.29	381.02	8,008.31	0.00	0.00	0.00
15,200.00	90.50	0.52	7,249.99	8,099.28	381.92	8,108.24	0.00	0.00	0.00
15,300.00	90.50	0.52	7,249.12	8,199.27	382.83	8,208.18	0.00	0.00	0.00
15,400.00	90.50	0.52	7,248.25	8,299.26	383.74	8,308.11	0.00	0.00	0.00
15,500.00	90.50	0.52	7,247.38	8,399.25	384.64	8,408.05	0.00	0.00	0.00
15,600.00	90.50	0.52	7,246.50	8,499.25	385.55	8,507.98	0.00	0.00	0.00
15,700.00	90.50	0.52	7,245.63	8,599.24	386.46	8,607.92	0.00	0.00	0.00
15,800.00	90.50	0.52	7,244.76	8,699.23	387.36	8,707.85	0.00	0.00	0.00
15,886.95	90.50	0.52	7,244.00	8,786.18	388.15	8,794.75	0.00	0.00	0.00
BUTTERBALL 25N-34HZ_PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BUTTERBALL 25N-34	0.00	0.00	7,244.00	8,786.18	388.15	14,592,947.18	1,674,942.00	40.181767	-104.876390
- hit/miss target									
- plan hits target center									
- Point									
BUTTERBALL 25N-34	0.00	0.00	7,315.41	604.15	313.97	14,584,765.06	1,674,879.08	40.159298	-104.876656
- hit/miss target									
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,508.74	1,500.00	9 5/8"	9-5/8	13-1/2	
7,704.28	7,315.41	Top of Production	5-1/2	8-1/2	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BUTTERBALL 25N-34HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4951.00usft (D Rig)
<b>Site:</b>	2N-67W-10 Butterball 21-10HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	BUTTERBALL 25N-34HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Formations						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,036.17	1,032.00	Fox Hills			
	3,992.91	3,973.00	Parkman			
	4,416.91	4,397.00	Sussex			
	7,224.76	7,147.00	Sharon Springs			
	7,365.11	7,230.00	Niobrara			
	7,514.64	7,289.00	Nio B			