

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
4N-68W-11 S&B 5-11HZ PAD  
BAKE 11-16HZ**

## **Plan A**

### **Plan: Permit Rev-2**

SHL Lat/Long: 40.329881/-104.977256  
Survey Program: MWD+IFR+MSA

## **Standard Planning Report**

**21 March, 2019**

Project: WELD-NAD83-UTMFT13N  
Site: 4N-68W-11 S&B 5-11HZ PAD  
Well: BAKE 11-16HZ  
Wellbore: Plan A  
Design: Permit Rev-2

# US ROCKIES WATTENBERG PLANNING

CASING DETAILS			WELL DETAILS: BAKE 11-16HZ
TVD	MD	Size	
1500.00 7111.00	1523.46 7857.30	9-5/8 5-1/2	
			GL = 4994.00 RKB = 17' @ 5011.00usft (Drilling Rig)

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1886.67	24.55	225.96	1837.04	-240.04	-248.23	1.50	225.96	-249.98	
4	3233.34	24.55	225.96	3061.98	-629.00	-650.44	0.00	0.00	-655.04	
5	3425.48	24.55	232.90	3236.78	-680.84	-710.98	1.50	93.16	-715.96	
6	4696.02	24.55	232.90	4392.47	-999.27	-1132.03	0.00	0.00	-1139.32	
7	5923.52	0.00	0.00	5582.75	-1155.49	-1338.58	2.00	180.00	-1347.02	
8	6735.58	0.00	0.00	6394.81	-1155.49	-1338.58	0.00	0.00	-1347.02	
9	7857.30	89.74	89.58	7111.00	-1150.23	-625.69	8.00	89.58	-634.10	
10	17902.71	89.74	89.58	7157.00	-1076.14	9419.34	0.00	0.00	9411.20	BAKE 11-16HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BAKE 11-16HZ_SHL	0.00	0.00	0.00	40.329881	-104.977256
BAKE 11-16HZ_BHL	7157.00	-1076.14	9419.34	40.326921	-104.943460

SHL  
2054' FNL  
702' FWL

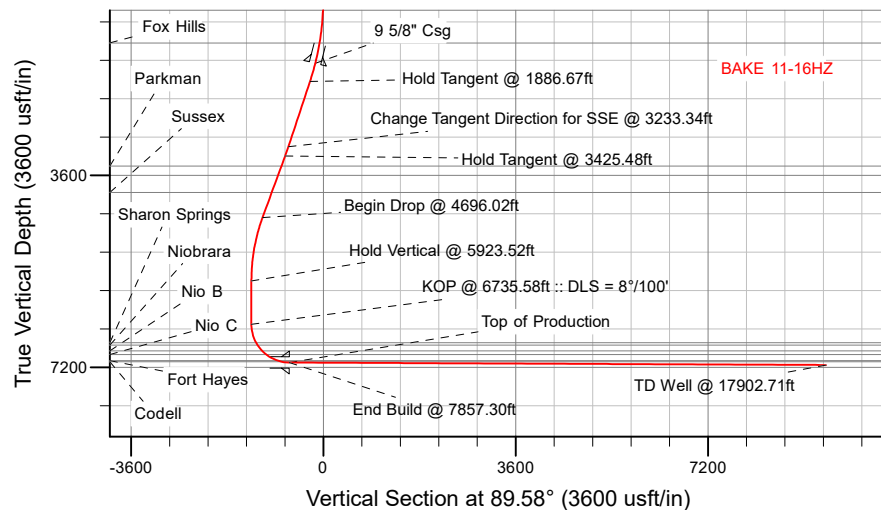
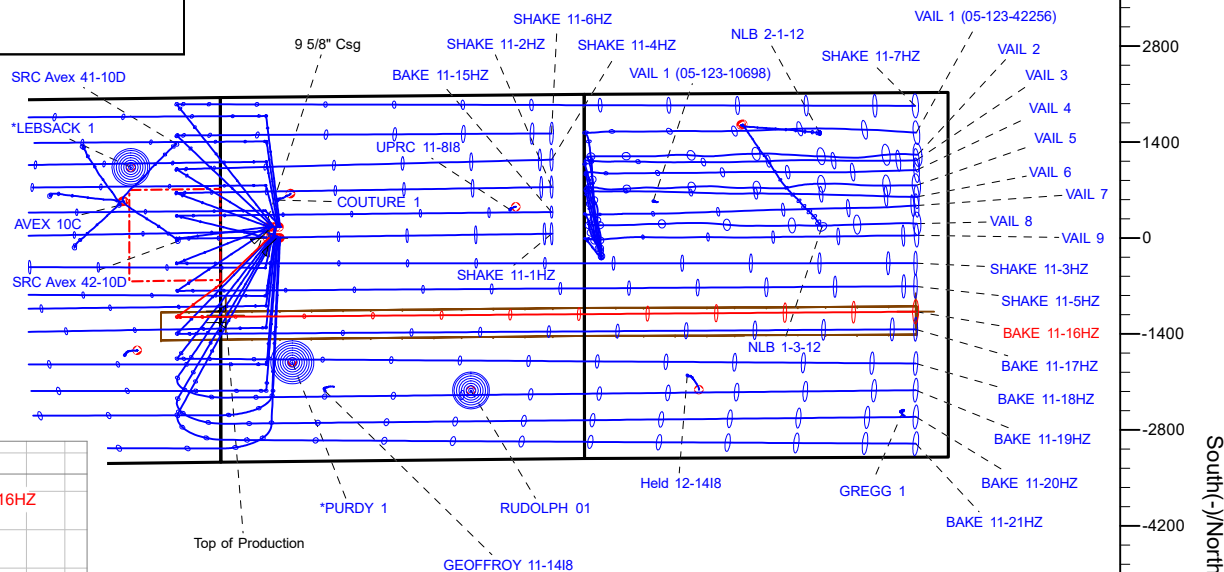
HEEL  
2121' FSL  
75' FWL

TOE  
2124' FSL  
475' FEL

## FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
1119.00	1126.68	Fox Hills
3424.00	3631.30	Parkman
3920.00	4176.60	Sussex
6742.00	7098.05	Sharon Springs
6785.00	7148.23	Niobrara
6892.00	7285.13	Nio B
6960.00	7386.91	Nio C
7077.00	7638.99	Fort Hayes
7096.00	7713.71	Codell

West(-)/East(+) (2800 usft/in)



Plan: Permit Rev-2 (BAKE 11-16HZ/Plan A)

Date: 3/21/2019

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BAKE 11-16HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-11 S&B 5-11HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAKE 11-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

<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)		

<b>Site</b>	4N-68W-11 S&B 5-11HZ PAD			
<b>Site Position:</b>		<b>Northing:</b>	14,647,020.58 usft	<b>Latitude:</b> 40.330320
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,646,741.13 usft	<b>Longitude:</b> -104.977307
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.01 °

<b>Well</b>	BAKE 11-16HZ			
<b>Well Position</b>	<b>+N/-S</b>	-159.87 usft	<b>Northing:</b>	14,646,860.72 usft
	<b>+E/-W</b>	14.21 usft	<b>Easting:</b>	1,646,755.39 usft
<b>Position Uncertainty</b>	3.28 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 4,994.00 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>
	IGRF2015	2/7/2019	8.14	66.72	52,144.75330052

<b>Design</b>	Permit Rev-2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<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	89.58

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/21/2019		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	1,500.00	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio
2	1,500.00	17,902.71	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BAKE 11-16HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-11 S&B 5-11HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAKE 11-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Plan Sections										
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	
1,886.67	24.55	225.96	1,837.04	-240.04	-248.23	1.50	1.50	0.00	225.96	
3,233.34	24.55	225.96	3,061.98	-629.00	-650.44	0.00	0.00	0.00	0.00	
3,425.48	24.55	232.90	3,236.78	-680.84	-710.98	1.50	0.00	3.61	93.16	
4,696.02	24.55	232.90	4,392.47	-999.27	-1,132.03	0.00	0.00	0.00	0.00	
5,923.52	0.00	0.00	5,582.75	-1,155.49	-1,338.58	2.00	-2.00	10.35	180.00	
6,735.58	0.00	0.00	6,394.81	-1,155.49	-1,338.58	0.00	0.00	0.00	0.00	
7,857.30	89.74	89.58	7,111.00	-1,150.23	-625.69	8.00	8.00	7.99	89.58	
17,902.71	89.74	89.58	7,157.00	-1,076.14	9,419.34	0.00	0.00	0.00	0.00	BAKE 11-16HZ_BHL

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BAKE 11-16HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-11 S&B 5-11HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAKE 11-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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
Begin Nudge @ 250.00ft									
300.00	0.75	225.96	300.00	-0.23	-0.24	-0.24	1.50	1.50	0.00
400.00	2.25	225.96	399.96	-2.05	-2.12	-2.13	1.50	1.50	0.00
500.00	3.75	225.96	499.82	-5.69	-5.88	-5.92	1.50	1.50	0.00
600.00	5.25	225.96	599.51	-11.14	-11.52	-11.60	1.50	1.50	0.00
700.00	6.75	225.96	698.96	-18.41	-19.03	-19.17	1.50	1.50	0.00
800.00	8.25	225.96	798.10	-27.48	-28.42	-28.62	1.50	1.50	0.00
900.00	9.75	225.96	896.87	-38.35	-39.66	-39.94	1.50	1.50	0.00
1,000.00	11.25	225.96	995.19	-51.02	-52.76	-53.13	1.50	1.50	0.00
1,100.00	12.75	225.96	1,093.00	-65.47	-67.71	-68.18	1.50	1.50	0.00
1,126.68	13.15	225.96	1,119.00	-69.63	-72.00	-72.51	1.50	1.50	0.00
Fox Hills									
1,200.00	14.25	225.96	1,190.24	-81.70	-84.49	-85.08	1.50	1.50	0.00
1,300.00	15.75	225.96	1,286.83	-99.69	-103.09	-103.82	1.50	1.50	0.00
1,400.00	17.25	225.96	1,382.71	-119.44	-123.51	-124.38	1.50	1.50	0.00
1,500.00	18.75	225.96	1,477.81	-140.92	-145.72	-146.75	1.50	1.50	0.00
1,523.46	19.10	225.96	1,500.00	-146.21	-151.19	-152.26	1.50	1.50	0.00
9 5/8" Csg									
1,600.00	20.25	225.96	1,572.07	-164.12	-169.72	-170.91	1.50	1.50	0.00
1,700.00	21.75	225.96	1,665.43	-189.03	-195.48	-196.86	1.50	1.50	0.00
1,800.00	23.25	225.96	1,757.81	-215.64	-222.98	-224.56	1.50	1.50	0.00
1,886.67	24.55	225.96	1,837.04	-240.04	-248.23	-249.98	1.50	1.50	0.00
Hold Tangent @ 1886.67ft									
1,900.00	24.55	225.96	1,849.17	-243.89	-252.21	-253.99	0.00	0.00	0.00
2,000.00	24.55	225.96	1,940.13	-272.78	-282.07	-284.07	0.00	0.00	0.00
2,100.00	24.55	225.96	2,031.09	-301.66	-311.94	-314.15	0.00	0.00	0.00
2,200.00	24.55	225.96	2,122.05	-330.54	-341.81	-344.22	0.00	0.00	0.00
2,300.00	24.55	225.96	2,213.01	-359.43	-371.68	-374.30	0.00	0.00	0.00
2,400.00	24.55	225.96	2,303.97	-388.31	-401.54	-404.38	0.00	0.00	0.00
2,500.00	24.55	225.96	2,394.93	-417.19	-431.41	-434.46	0.00	0.00	0.00
2,600.00	24.55	225.96	2,485.89	-446.08	-461.28	-464.54	0.00	0.00	0.00
2,700.00	24.55	225.96	2,576.85	-474.96	-491.15	-494.62	0.00	0.00	0.00
2,800.00	24.55	225.96	2,667.81	-503.84	-521.01	-524.69	0.00	0.00	0.00
2,900.00	24.55	225.96	2,758.77	-532.72	-550.88	-554.77	0.00	0.00	0.00
3,000.00	24.55	225.96	2,849.73	-561.61	-580.75	-584.85	0.00	0.00	0.00
3,100.00	24.55	225.96	2,940.69	-590.49	-610.62	-614.93	0.00	0.00	0.00
3,200.00	24.55	225.96	3,031.65	-619.37	-640.48	-645.01	0.00	0.00	0.00
3,233.34	24.55	225.96	3,061.98	-629.00	-650.44	-655.04	0.00	0.00	0.00
Change Tangent Direction for SSE @ 3233.34ft									
3,300.00	24.51	228.37	3,122.62	-647.82	-670.73	-675.46	1.50	-0.05	3.61
3,400.00	24.53	231.98	3,213.61	-674.39	-702.60	-707.52	1.50	0.02	3.61
3,425.48	24.55	232.90	3,236.78	-680.84	-710.98	-715.96	1.50	0.07	3.61
Hold Tangent @ 3425.48ft									
3,500.00	24.55	232.90	3,304.57	-699.52	-735.68	-740.79	0.00	0.00	0.00
3,600.00	24.55	232.90	3,395.53	-724.58	-768.82	-774.11	0.00	0.00	0.00
3,631.30	24.55	232.90	3,424.00	-732.42	-779.19	-784.54	0.00	0.00	0.00
Parkman									
3,700.00	24.55	232.90	3,486.49	-749.64	-801.96	-807.43	0.00	0.00	0.00
3,800.00	24.55	232.90	3,577.45	-774.70	-835.10	-840.75	0.00	0.00	0.00

**Corporate**  
Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BAKE 11-16HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-11 S&B 5-11HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAKE 11-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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)
3,900.00	24.55	232.90	3,668.41	-799.77	-868.23	-874.07	0.00	0.00	0.00
4,000.00	24.55	232.90	3,759.37	-824.83	-901.37	-907.40	0.00	0.00	0.00
4,100.00	24.55	232.90	3,850.33	-849.89	-934.51	-940.72	0.00	0.00	0.00
4,176.60	24.55	232.90	3,920.00	-869.09	-959.90	-966.24	0.00	0.00	0.00
<b>Sussex</b>									
4,200.00	24.55	232.90	3,941.29	-874.95	-967.65	-974.04	0.00	0.00	0.00
4,300.00	24.55	232.90	4,032.25	-900.02	-1,000.79	-1,007.36	0.00	0.00	0.00
4,400.00	24.55	232.90	4,123.21	-925.08	-1,033.93	-1,040.68	0.00	0.00	0.00
4,500.00	24.55	232.90	4,214.17	-950.14	-1,067.07	-1,074.00	0.00	0.00	0.00
4,600.00	24.55	232.90	4,305.13	-975.20	-1,100.20	-1,107.32	0.00	0.00	0.00
4,696.02	24.55	232.90	4,392.47	-999.27	-1,132.03	-1,139.32	0.00	0.00	0.00
<b>Begin Drop @ 4696.02ft</b>									
4,700.00	24.47	232.90	4,396.09	-1,000.26	-1,133.34	-1,140.64	2.00	-2.00	0.00
4,800.00	22.47	232.90	4,487.81	-1,024.29	-1,165.11	-1,172.58	2.00	-2.00	0.00
4,900.00	20.47	232.90	4,580.87	-1,046.37	-1,194.30	-1,201.94	2.00	-2.00	0.00
5,000.00	18.47	232.90	4,675.14	-1,066.47	-1,220.88	-1,228.67	2.00	-2.00	0.00
5,100.00	16.47	232.90	4,770.52	-1,084.58	-1,244.82	-1,252.74	2.00	-2.00	0.00
5,200.00	14.47	232.90	4,866.90	-1,100.67	-1,266.10	-1,274.13	2.00	-2.00	0.00
5,300.00	12.47	232.90	4,964.14	-1,114.72	-1,284.68	-1,292.81	2.00	-2.00	0.00
5,400.00	10.47	232.90	5,062.14	-1,126.71	-1,300.54	-1,308.76	2.00	-2.00	0.00
5,500.00	8.47	232.90	5,160.77	-1,136.64	-1,313.66	-1,321.96	2.00	-2.00	0.00
5,600.00	6.47	232.90	5,259.92	-1,144.48	-1,324.03	-1,332.38	2.00	-2.00	0.00
5,700.00	4.47	232.90	5,359.46	-1,150.23	-1,331.63	-1,340.03	2.00	-2.00	0.00
5,800.00	2.47	232.90	5,459.27	-1,153.88	-1,336.46	-1,344.88	2.00	-2.00	0.00
5,900.00	0.47	232.90	5,559.23	-1,155.43	-1,338.51	-1,346.94	2.00	-2.00	0.00
5,923.52	0.00	0.00	5,582.75	-1,155.49	-1,338.58	-1,347.02	2.00	-2.00	540.28
<b>Hold Vertical @ 5923.52ft</b>									
6,000.00	0.00	0.00	5,659.23	-1,155.49	-1,338.58	-1,347.02	0.00	0.00	0.00
6,100.00	0.00	0.00	5,759.23	-1,155.49	-1,338.58	-1,347.02	0.00	0.00	0.00
6,200.00	0.00	0.00	5,859.23	-1,155.49	-1,338.58	-1,347.02	0.00	0.00	0.00
6,300.00	0.00	0.00	5,959.23	-1,155.49	-1,338.58	-1,347.02	0.00	0.00	0.00
6,400.00	0.00	0.00	6,059.23	-1,155.49	-1,338.58	-1,347.02	0.00	0.00	0.00
6,500.00	0.00	0.00	6,159.23	-1,155.49	-1,338.58	-1,347.02	0.00	0.00	0.00
6,600.00	0.00	0.00	6,259.23	-1,155.49	-1,338.58	-1,347.02	0.00	0.00	0.00
6,700.00	0.00	0.00	6,359.23	-1,155.49	-1,338.58	-1,347.02	0.00	0.00	0.00
6,735.58	0.00	0.00	6,394.81	-1,155.49	-1,338.58	-1,347.02	0.00	0.00	0.00
<b>KOP @ 6735.58ft :: DLS = 8°/100'</b>									
6,800.00	5.15	89.58	6,459.14	-1,155.47	-1,335.69	-1,344.12	8.00	8.00	139.05
6,900.00	13.15	89.58	6,557.79	-1,155.35	-1,319.79	-1,328.23	8.00	8.00	0.00
7,000.00	21.15	89.58	6,653.26	-1,155.13	-1,290.33	-1,298.76	8.00	8.00	0.00
7,098.05	29.00	89.58	6,742.00	-1,154.83	-1,248.80	-1,257.24	8.00	8.00	0.00
<b>Sharon Springs</b>									
7,100.00	29.15	89.58	6,743.71	-1,154.82	-1,247.86	-1,256.29	8.00	8.00	0.00
7,148.23	33.01	89.58	6,785.00	-1,154.64	-1,222.96	-1,231.39	8.00	8.00	0.00
<b>Niobrara</b>									
7,200.00	37.15	89.58	6,827.36	-1,154.42	-1,193.21	-1,201.64	8.00	8.00	0.00
7,285.13	43.96	89.58	6,892.00	-1,154.01	-1,137.89	-1,146.32	8.00	8.00	0.00
<b>Nio B</b>									
7,300.00	45.15	89.58	6,902.59	-1,153.93	-1,127.46	-1,135.89	8.00	8.00	0.00
7,386.91	52.11	89.58	6,960.00	-1,153.45	-1,062.28	-1,070.70	8.00	8.00	0.00
<b>Nio C</b>									
7,400.00	53.15	89.58	6,967.94	-1,153.37	-1,051.88	-1,060.30	8.00	8.00	0.00
7,500.00	61.15	89.58	7,022.14	-1,152.75	-967.94	-976.36	8.00	8.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BAKE 11-16HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-11 S&B 5-11HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAKE 11-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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)
7,600.00	69.15	89.58	7,064.12	-1,152.09	-877.27	-885.69	8.00	8.00	0.00
7,638.99	72.27	89.58	7,077.00	-1,151.81	-840.47	-848.89	8.00	8.00	0.00
<b>Fort Hayes</b>									
7,700.00	77.15	89.58	7,093.08	-1,151.38	-781.64	-790.06	8.00	8.00	0.00
7,713.71	78.25	89.58	7,096.00	-1,151.28	-768.24	-776.66	8.00	8.00	0.00
<b>Codell</b>									
7,800.00	85.15	89.58	7,108.45	-1,150.65	-682.91	-691.33	8.00	8.00	0.00
7,857.30	89.74	89.58	7,111.00	-1,150.23	-625.69	-634.10	8.00	8.00	0.00
<b>End Build @ 7857.30ft - Top of Production</b>									
7,900.00	89.74	89.58	7,111.19	-1,149.92	-582.99	-591.40	0.00	0.00	0.00
8,000.00	89.74	89.58	7,111.65	-1,149.18	-482.99	-491.40	0.00	0.00	0.00
8,100.00	89.74	89.58	7,112.11	-1,148.44	-383.00	-391.40	0.00	0.00	0.00
8,200.00	89.74	89.58	7,112.57	-1,147.70	-283.00	-291.40	0.00	0.00	0.00
8,300.00	89.74	89.58	7,113.03	-1,146.97	-183.00	-191.41	0.00	0.00	0.00
8,400.00	89.74	89.58	7,113.48	-1,146.23	-83.01	-91.41	0.00	0.00	0.00
8,500.00	89.74	89.58	7,113.94	-1,145.49	16.99	8.59	0.00	0.00	0.00
8,600.00	89.74	89.58	7,114.40	-1,144.75	116.99	108.59	0.00	0.00	0.00
8,700.00	89.74	89.58	7,114.86	-1,144.02	216.98	208.59	0.00	0.00	0.00
8,800.00	89.74	89.58	7,115.32	-1,143.28	316.98	308.59	0.00	0.00	0.00
8,900.00	89.74	89.58	7,115.77	-1,142.54	416.97	408.59	0.00	0.00	0.00
9,000.00	89.74	89.58	7,116.23	-1,141.80	516.97	508.59	0.00	0.00	0.00
9,100.00	89.74	89.58	7,116.69	-1,141.06	616.97	608.59	0.00	0.00	0.00
9,200.00	89.74	89.58	7,117.15	-1,140.33	716.96	708.59	0.00	0.00	0.00
9,300.00	89.74	89.58	7,117.61	-1,139.59	816.96	808.58	0.00	0.00	0.00
9,400.00	89.74	89.58	7,118.06	-1,138.85	916.96	908.58	0.00	0.00	0.00
9,500.00	89.74	89.58	7,118.52	-1,138.11	1,016.95	1,008.58	0.00	0.00	0.00
9,600.00	89.74	89.58	7,118.98	-1,137.38	1,116.95	1,108.58	0.00	0.00	0.00
9,700.00	89.74	89.58	7,119.44	-1,136.64	1,216.94	1,208.58	0.00	0.00	0.00
9,800.00	89.74	89.58	7,119.89	-1,135.90	1,316.94	1,308.58	0.00	0.00	0.00
9,900.00	89.74	89.58	7,120.35	-1,135.16	1,416.94	1,408.58	0.00	0.00	0.00
10,000.00	89.74	89.58	7,120.81	-1,134.43	1,516.93	1,508.58	0.00	0.00	0.00
10,100.00	89.74	89.58	7,121.27	-1,133.69	1,616.93	1,608.58	0.00	0.00	0.00
10,200.00	89.74	89.58	7,121.73	-1,132.95	1,716.93	1,708.57	0.00	0.00	0.00
10,300.00	89.74	89.58	7,122.18	-1,132.21	1,816.92	1,808.57	0.00	0.00	0.00
10,400.00	89.74	89.58	7,122.64	-1,131.48	1,916.92	1,908.57	0.00	0.00	0.00
10,500.00	89.74	89.58	7,123.10	-1,130.74	2,016.91	2,008.57	0.00	0.00	0.00
10,600.00	89.74	89.58	7,123.56	-1,130.00	2,116.91	2,108.57	0.00	0.00	0.00
10,700.00	89.74	89.58	7,124.02	-1,129.26	2,216.91	2,208.57	0.00	0.00	0.00
10,800.00	89.74	89.58	7,124.47	-1,128.53	2,316.90	2,308.57	0.00	0.00	0.00
10,900.00	89.74	89.58	7,124.93	-1,127.79	2,416.90	2,408.57	0.00	0.00	0.00
11,000.00	89.74	89.58	7,125.39	-1,127.05	2,516.90	2,508.57	0.00	0.00	0.00
11,100.00	89.74	89.58	7,125.85	-1,126.31	2,616.89	2,608.57	0.00	0.00	0.00
11,200.00	89.74	89.58	7,126.31	-1,125.58	2,716.89	2,708.56	0.00	0.00	0.00
11,300.00	89.74	89.58	7,126.76	-1,124.84	2,816.88	2,808.56	0.00	0.00	0.00
11,400.00	89.74	89.58	7,127.22	-1,124.10	2,916.88	2,908.56	0.00	0.00	0.00
11,500.00	89.74	89.58	7,127.68	-1,123.36	3,016.88	3,008.56	0.00	0.00	0.00
11,600.00	89.74	89.58	7,128.14	-1,122.63	3,116.87	3,108.56	0.00	0.00	0.00
11,700.00	89.74	89.58	7,128.60	-1,121.89	3,216.87	3,208.56	0.00	0.00	0.00
11,800.00	89.74	89.58	7,129.05	-1,121.15	3,316.87	3,308.56	0.00	0.00	0.00
11,900.00	89.74	89.58	7,129.51	-1,120.41	3,416.86	3,408.56	0.00	0.00	0.00
12,000.00	89.74	89.58	7,129.97	-1,119.68	3,516.86	3,508.56	0.00	0.00	0.00
12,100.00	89.74	89.58	7,130.43	-1,118.94	3,616.85	3,608.55	0.00	0.00	0.00
12,200.00	89.74	89.58	7,130.89	-1,118.20	3,716.85	3,708.55	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BAKE 11-16HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-11 S&B 5-11HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAKE 11-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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)
12,300.00	89.74	89.58	7,131.34	-1,117.46	3,816.85	3,808.55	0.00	0.00	0.00
12,400.00	89.74	89.58	7,131.80	-1,116.73	3,916.84	3,908.55	0.00	0.00	0.00
12,500.00	89.74	89.58	7,132.26	-1,115.99	4,016.84	4,008.55	0.00	0.00	0.00
12,600.00	89.74	89.58	7,132.72	-1,115.25	4,116.84	4,108.55	0.00	0.00	0.00
12,700.00	89.74	89.58	7,133.18	-1,114.51	4,216.83	4,208.55	0.00	0.00	0.00
12,800.00	89.74	89.58	7,133.63	-1,113.78	4,316.83	4,308.55	0.00	0.00	0.00
12,900.00	89.74	89.58	7,134.09	-1,113.04	4,416.82	4,408.55	0.00	0.00	0.00
13,000.00	89.74	89.58	7,134.55	-1,112.30	4,516.82	4,508.55	0.00	0.00	0.00
13,100.00	89.74	89.58	7,135.01	-1,111.56	4,616.82	4,608.54	0.00	0.00	0.00
13,200.00	89.74	89.58	7,135.46	-1,110.83	4,716.81	4,708.54	0.00	0.00	0.00
13,300.00	89.74	89.58	7,135.92	-1,110.09	4,816.81	4,808.54	0.00	0.00	0.00
13,400.00	89.74	89.58	7,136.38	-1,109.35	4,916.81	4,908.54	0.00	0.00	0.00
13,500.00	89.74	89.58	7,136.84	-1,108.61	5,016.80	5,008.54	0.00	0.00	0.00
13,600.00	89.74	89.58	7,137.30	-1,107.87	5,116.80	5,108.54	0.00	0.00	0.00
13,700.00	89.74	89.58	7,137.75	-1,107.14	5,216.79	5,208.54	0.00	0.00	0.00
13,800.00	89.74	89.58	7,138.21	-1,106.40	5,316.79	5,308.54	0.00	0.00	0.00
13,900.00	89.74	89.58	7,138.67	-1,105.66	5,416.79	5,408.54	0.00	0.00	0.00
14,000.00	89.74	89.58	7,139.13	-1,104.92	5,516.78	5,508.54	0.00	0.00	0.00
14,100.00	89.74	89.58	7,139.59	-1,104.19	5,616.78	5,608.53	0.00	0.00	0.00
14,200.00	89.74	89.58	7,140.04	-1,103.45	5,716.78	5,708.53	0.00	0.00	0.00
14,300.00	89.74	89.58	7,140.50	-1,102.71	5,816.77	5,808.53	0.00	0.00	0.00
14,400.00	89.74	89.58	7,140.96	-1,101.97	5,916.77	5,908.53	0.00	0.00	0.00
14,500.00	89.74	89.58	7,141.42	-1,101.24	6,016.76	6,008.53	0.00	0.00	0.00
14,600.00	89.74	89.58	7,141.88	-1,100.50	6,116.76	6,108.53	0.00	0.00	0.00
14,700.00	89.74	89.58	7,142.33	-1,099.76	6,216.76	6,208.53	0.00	0.00	0.00
14,800.00	89.74	89.58	7,142.79	-1,099.02	6,316.75	6,308.53	0.00	0.00	0.00
14,900.00	89.74	89.58	7,143.25	-1,098.29	6,416.75	6,408.53	0.00	0.00	0.00
15,000.00	89.74	89.58	7,143.71	-1,097.55	6,516.75	6,508.52	0.00	0.00	0.00
15,100.00	89.74	89.58	7,144.17	-1,096.81	6,616.74	6,608.52	0.00	0.00	0.00
15,200.00	89.74	89.58	7,144.62	-1,096.07	6,716.74	6,708.52	0.00	0.00	0.00
15,300.00	89.74	89.58	7,145.08	-1,095.34	6,816.73	6,808.52	0.00	0.00	0.00
15,400.00	89.74	89.58	7,145.54	-1,094.60	6,916.73	6,908.52	0.00	0.00	0.00
15,500.00	89.74	89.58	7,146.00	-1,093.86	7,016.73	7,008.52	0.00	0.00	0.00
15,600.00	89.74	89.58	7,146.46	-1,093.12	7,116.72	7,108.52	0.00	0.00	0.00
15,700.00	89.74	89.58	7,146.91	-1,092.39	7,216.72	7,208.52	0.00	0.00	0.00
15,800.00	89.74	89.58	7,147.37	-1,091.65	7,316.71	7,308.52	0.00	0.00	0.00
15,900.00	89.74	89.58	7,147.83	-1,090.91	7,416.71	7,408.52	0.00	0.00	0.00
16,000.00	89.74	89.58	7,148.29	-1,090.17	7,516.71	7,508.51	0.00	0.00	0.00
16,100.00	89.74	89.58	7,148.74	-1,089.44	7,616.70	7,608.51	0.00	0.00	0.00
16,200.00	89.74	89.58	7,149.20	-1,088.70	7,716.70	7,708.51	0.00	0.00	0.00
16,300.00	89.74	89.58	7,149.66	-1,087.96	7,816.70	7,808.51	0.00	0.00	0.00
16,400.00	89.74	89.58	7,150.12	-1,087.22	7,916.69	7,908.51	0.00	0.00	0.00
16,500.00	89.74	89.58	7,150.58	-1,086.49	8,016.69	8,008.51	0.00	0.00	0.00
16,600.00	89.74	89.58	7,151.03	-1,085.75	8,116.68	8,108.51	0.00	0.00	0.00
16,700.00	89.74	89.58	7,151.49	-1,085.01	8,216.68	8,208.51	0.00	0.00	0.00
16,800.00	89.74	89.58	7,151.95	-1,084.27	8,316.68	8,308.51	0.00	0.00	0.00
16,900.00	89.74	89.58	7,152.41	-1,083.54	8,416.67	8,408.50	0.00	0.00	0.00
17,000.00	89.74	89.58	7,152.87	-1,082.80	8,516.67	8,508.50	0.00	0.00	0.00
17,100.00	89.74	89.58	7,153.32	-1,082.06	8,616.67	8,608.50	0.00	0.00	0.00
17,200.00	89.74	89.58	7,153.78	-1,081.32	8,716.66	8,708.50	0.00	0.00	0.00
17,300.00	89.74	89.58	7,154.24	-1,080.59	8,816.66	8,808.50	0.00	0.00	0.00
17,400.00	89.74	89.58	7,154.70	-1,079.85	8,916.65	8,908.50	0.00	0.00	0.00
17,500.00	89.74	89.58	7,155.16	-1,079.11	9,016.65	9,008.50	0.00	0.00	0.00
17,600.00	89.74	89.58	7,155.61	-1,078.37	9,116.65	9,108.50	0.00	0.00	0.00



## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well BAKE 11-16HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5011.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-11 S&B 5-11HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	BAKE 11-16HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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)
17,700.00	89.74	89.58	7,156.07	-1,077.64	9,216.64	9,208.50	0.00	0.00	0.00
17,800.00	89.74	89.58	7,156.53	-1,076.90	9,316.64	9,308.50	0.00	0.00	0.00
17,900.00	89.74	89.58	7,156.99	-1,076.16	9,416.64	9,408.49	0.00	0.00	0.00
17,902.71	89.74	89.58	7,157.00	-1,076.14	9,419.34	9,411.20	0.00	0.00	0.00
TD Well @ 17902.71ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,523.46	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
7,857.30	7,111.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,126.68	1,119.00	Fox Hills				
3,631.30	3,424.00	Parkman				
4,176.60	3,920.00	Sussex				
7,098.05	6,742.00	Sharon Springs				
7,148.23	6,785.00	Niobrara				
7,285.13	6,892.00	Nio B				
7,386.91	6,960.00	Nio C				
7,638.99	7,077.00	Fort Hayes				
7,713.71	7,096.00	Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft	
1,886.67	1,837.04	-240.04	-248.23	Hold Tangent @ 1886.67ft	
3,233.34	3,061.98	-629.00	-650.44	Change Tangent Direction for SSE @ 3233.34ft	
3,425.48	3,236.78	-680.84	-710.98	Hold Tangent @ 3425.48ft	
4,696.02	4,392.47	-999.27	-1,132.03	Begin Drop @ 4696.02ft	
5,923.52	5,582.75	-1,155.49	-1,338.58	Hold Vertical @ 5923.52ft	
6,735.58	6,394.81	-1,155.49	-1,338.58	KOP @ 6735.58ft :: DLS = 8°/100'	
7,857.30	7,111.00	-1,150.23	-625.69	End Build @ 7857.30ft	
17,902.71	7,157.00	-1,076.14	9,419.34	TD Well @ 17902.71ft	