

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**3N-67W-35 S.S. MINNOW 21-35HZ Pad**

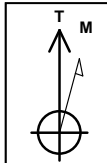
**S.S.MINNOW 14N2-14HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**12 September, 2016**



Azimuths to True North  
Magnetic North: 8.20°

Magnetic Field  
Strength: 52463.3snT  
Dip Angle: 66.68°  
Date: 8/22/2016  
Model: IGRF2010

SITE: 3N-67W-35 S.S. MINNOW 21-35HZ Pad

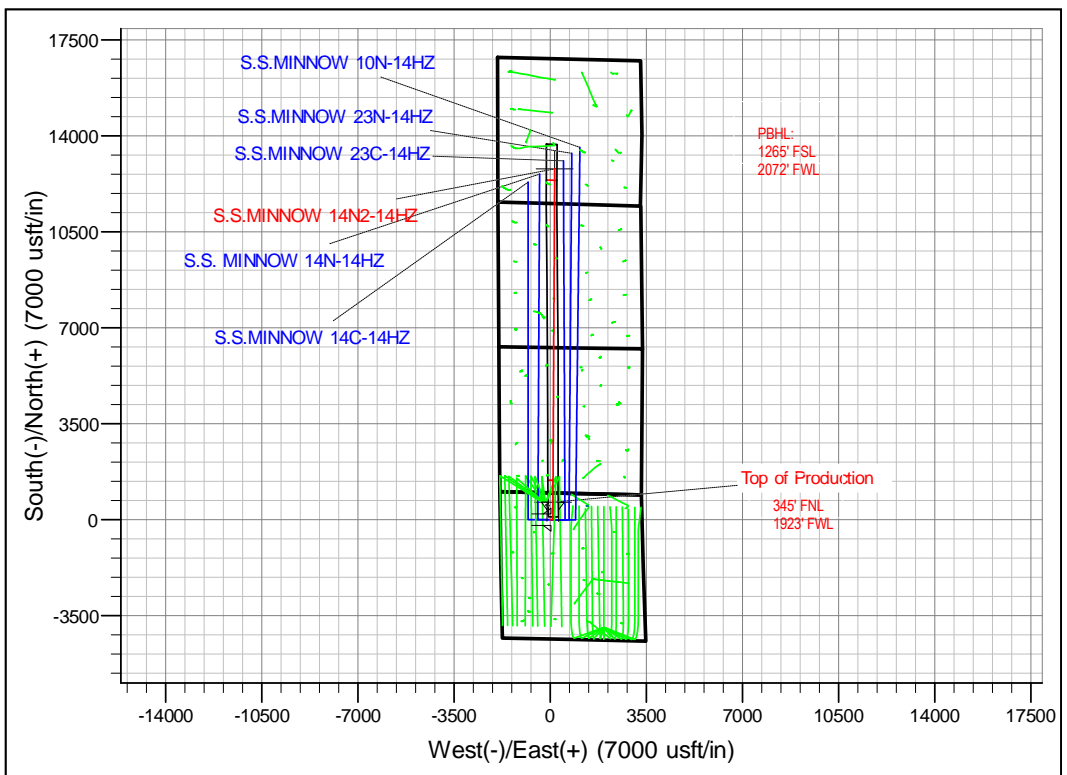
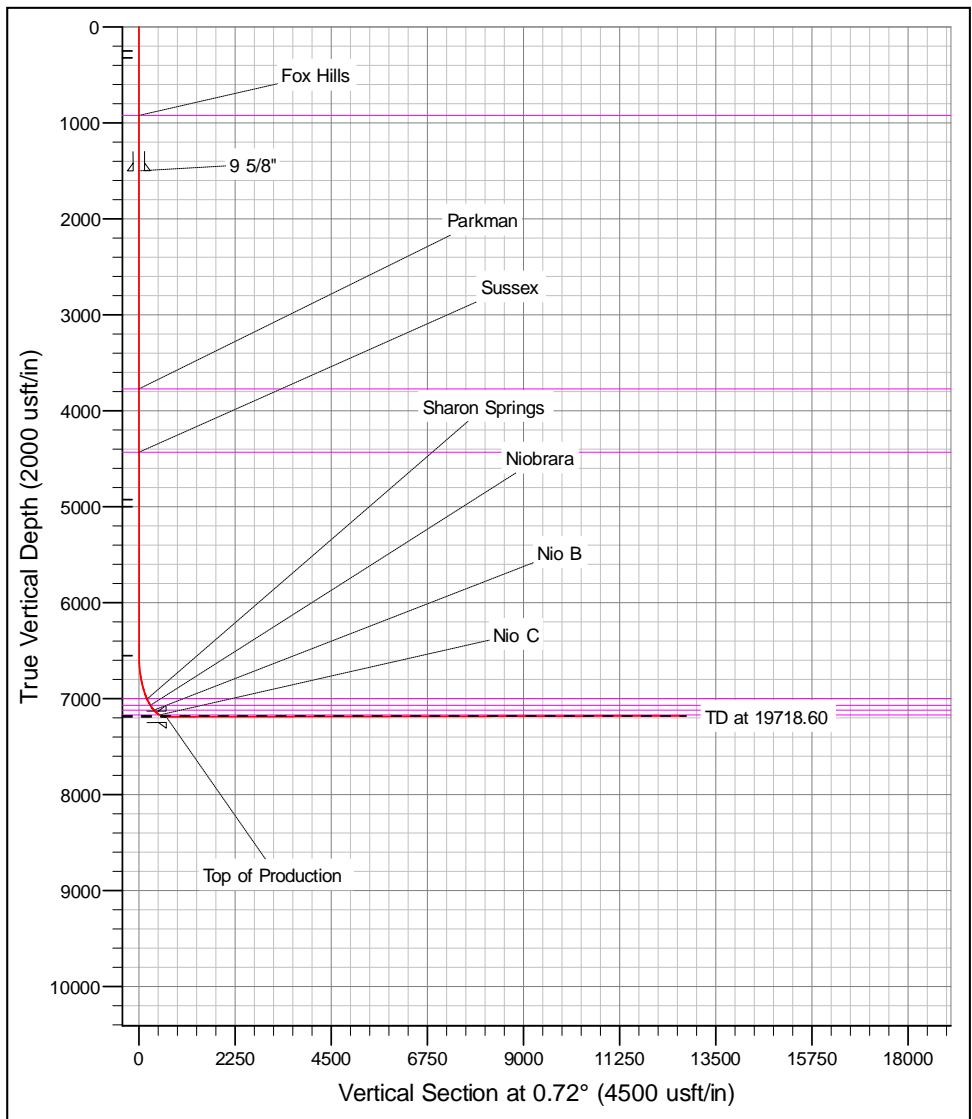
Well: S.S.MINNOW 14N2-14HZ  
Wellbore: Plan A  
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
924.00	924.12	Fox Hills
3772.00	3772.64	Parkman
4433.00	4433.77	Sussex
7005.00	7056.06	Sharon Springs
7070.00	7156.51	Niobrara
7120.00	7252.16	Nio B
7171.00	7396.42	Nio C

WELL DETAILS: S.S.MINNOW 14N2-14HZ						
+N/-S	+E/-W	GL: 4826.00	RKB @ 4843.00usft (D Rig)	Latitude	Longitude	Slot
0.00	0.00	Northing 14594631.76	Easting 1679323.18	40.186375	-104.860694	

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
323.50	1.10	90.00	323.50	0.00	0.71	1.50	0.01
4927.36	1.10	90.00	4926.50	0.00	89.29	0.00	1.12
5000.86	0.00	0.00	5000.00	0.00	90.00	1.50	1.12
6554.86	0.00	0.00	6553.99	0.00	90.00	0.00	1.12
7555.41	90.05	0.31	7190.61	637.17	93.48	9.00	638.28
19718.60	90.05	0.31	7180.00	12800.17	160.00	0.00	2801.17

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SS MINNOW 14N2-14HZ_PBHL	7180.00	12800.17	160.00	14607432.16	1679463.09	40.221525	-104.860121



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well S.S.MINNOW 14N2-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4843.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4843.00usft (D Rig)
<b>Site:</b>	3N-67W-35 S.S. MINNOW 21-35HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	S.S.MINNOW 14N2-14HZ	<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)		

<b>Site</b>	3N-67W-35 S.S. MINNOW 21-35HZ Pad				
<b>Site Position:</b>		<b>Northing:</b>	14,594,631.68 usft	<b>Latitude:</b>	40.186375
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,679,278.21 usft	<b>Longitude:</b>	-104.860855
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.09 °

<b>Well</b>	S.S.MINNOW 14N2-14HZ					
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>	14,594,631.75 usft	<b>Latitude:</b>	40.186375
	<b>+E/-W</b>	44.97 usft	<b>Easting:</b>	1,679,323.18 usft	<b>Longitude:</b>	-104.860694
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>	0.00 usft	<b>Ground Level:</b>	4,826.00 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	8/22/2016	8.20	66.68	52,463

<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	0.72

<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	
323.50	1.10	90.00	323.50	0.00	0.71	1.50	1.50	0.00	90.00	
4,927.36	1.10	90.00	4,926.50	0.00	89.29	0.00	0.00	0.00	0.00	
5,000.86	0.00	0.00	5,000.00	0.00	90.00	1.50	-1.50	0.00	180.00	
6,554.86	0.00	0.00	6,554.00	0.00	90.00	0.00	0.00	0.00	0.00	
7,555.41	90.05	0.31	7,190.61	637.17	93.48	9.00	9.00	0.00	0.31	
19,718.60	90.05	0.31	7,180.00	12,800.17	160.00	0.00	0.00	0.00	0.00	SS MINNOW 14N2-

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well S.S.MINNOW 14N2-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4843.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4843.00usft (D Rig)
<b>Site:</b>	3N-67W-35 S.S. MINNOW 21-35HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	S.S.MINNOW 14N2-14HZ	<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	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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.75	90.00	300.00	0.00	0.33	0.00	1.50	1.50	0.00	0.00
323.50	1.10	90.00	323.50	0.00	0.71	0.01	1.50	1.50	0.00	0.00
400.00	1.10	90.00	399.98	0.00	2.18	0.03	0.00	0.00	0.00	0.00
500.00	1.10	90.00	499.96	0.00	4.10	0.05	0.00	0.00	0.00	0.00
600.00	1.10	90.00	599.94	0.00	6.03	0.08	0.00	0.00	0.00	0.00
700.00	1.10	90.00	699.93	0.00	7.95	0.10	0.00	0.00	0.00	0.00
800.00	1.10	90.00	799.91	0.00	9.88	0.12	0.00	0.00	0.00	0.00
900.00	1.10	90.00	899.89	0.00	11.80	0.15	0.00	0.00	0.00	0.00
924.12	1.10	90.00	924.00	0.00	12.26	0.15	0.00	0.00	0.00	0.00
<b>Fox Hills</b>										
1,000.00	1.10	90.00	999.87	0.00	13.72	0.17	0.00	0.00	0.00	0.00
1,100.00	1.10	90.00	1,099.85	0.00	15.65	0.20	0.00	0.00	0.00	0.00
1,200.00	1.10	90.00	1,199.83	0.00	17.57	0.22	0.00	0.00	0.00	0.00
1,300.00	1.10	90.00	1,299.81	0.00	19.50	0.24	0.00	0.00	0.00	0.00
1,400.00	1.10	90.00	1,399.80	0.00	21.42	0.27	0.00	0.00	0.00	0.00
1,500.00	1.10	90.00	1,499.78	0.00	23.34	0.29	0.00	0.00	0.00	0.00
1,500.22	1.10	90.00	1,500.00	0.00	23.35	0.29	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
1,600.00	1.10	90.00	1,599.76	0.00	25.27	0.32	0.00	0.00	0.00	0.00
1,700.00	1.10	90.00	1,699.74	0.00	27.19	0.34	0.00	0.00	0.00	0.00
1,800.00	1.10	90.00	1,799.72	0.00	29.12	0.36	0.00	0.00	0.00	0.00
1,900.00	1.10	90.00	1,899.70	0.00	31.04	0.39	0.00	0.00	0.00	0.00
2,000.00	1.10	90.00	1,999.69	0.00	32.97	0.41	0.00	0.00	0.00	0.00
2,100.00	1.10	90.00	2,099.67	0.00	34.89	0.44	0.00	0.00	0.00	0.00
2,200.00	1.10	90.00	2,199.65	0.00	36.81	0.46	0.00	0.00	0.00	0.00
2,300.00	1.10	90.00	2,299.63	0.00	38.74	0.48	0.00	0.00	0.00	0.00
2,400.00	1.10	90.00	2,399.61	0.00	40.66	0.51	0.00	0.00	0.00	0.00
2,500.00	1.10	90.00	2,499.59	0.00	42.59	0.53	0.00	0.00	0.00	0.00
2,600.00	1.10	90.00	2,599.57	0.00	44.51	0.56	0.00	0.00	0.00	0.00
2,700.00	1.10	90.00	2,699.56	0.00	46.43	0.58	0.00	0.00	0.00	0.00
2,800.00	1.10	90.00	2,799.54	0.00	48.36	0.60	0.00	0.00	0.00	0.00
2,900.00	1.10	90.00	2,899.52	0.00	50.28	0.63	0.00	0.00	0.00	0.00
3,000.00	1.10	90.00	2,999.50	0.00	52.21	0.65	0.00	0.00	0.00	0.00
3,100.00	1.10	90.00	3,099.48	0.00	54.13	0.68	0.00	0.00	0.00	0.00
3,200.00	1.10	90.00	3,199.46	0.00	56.06	0.70	0.00	0.00	0.00	0.00
3,300.00	1.10	90.00	3,299.44	0.00	57.98	0.72	0.00	0.00	0.00	0.00
3,400.00	1.10	90.00	3,399.43	0.00	59.90	0.75	0.00	0.00	0.00	0.00
3,500.00	1.10	90.00	3,499.41	0.00	61.83	0.77	0.00	0.00	0.00	0.00
3,600.00	1.10	90.00	3,599.39	0.00	63.75	0.80	0.00	0.00	0.00	0.00
3,700.00	1.10	90.00	3,699.37	0.00	65.68	0.82	0.00	0.00	0.00	0.00
3,772.64	1.10	90.00	3,772.00	0.00	67.07	0.84	0.00	0.00	0.00	0.00
<b>Parkman</b>										
3,800.00	1.10	90.00	3,799.35	0.00	67.60	0.84	0.00	0.00	0.00	0.00
3,900.00	1.10	90.00	3,899.33	0.00	69.52	0.87	0.00	0.00	0.00	0.00
4,000.00	1.10	90.00	3,999.31	0.00	71.45	0.89	0.00	0.00	0.00	0.00
4,100.00	1.10	90.00	4,099.30	0.00	73.37	0.92	0.00	0.00	0.00	0.00
4,200.00	1.10	90.00	4,199.28	0.00	75.30	0.94	0.00	0.00	0.00	0.00
4,300.00	1.10	90.00	4,299.26	0.00	77.22	0.97	0.00	0.00	0.00	0.00
4,400.00	1.10	90.00	4,399.24	0.00	79.15	0.99	0.00	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well S.S.MINNOW 14N2-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4843.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4843.00usft (D Rig)
<b>Site:</b>	3N-67W-35 S.S. MINNOW 21-35HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	S.S.MINNOW 14N2-14HZ	<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)	
4,433.77	1.10	90.00	4,433.00	0.00	79.80	1.00	0.00	0.00	0.00	
<b>Sussex</b>										
4,500.00	1.10	90.00	4,499.22	0.00	81.07	1.01	0.00	0.00	0.00	
4,600.00	1.10	90.00	4,599.20	0.00	82.99	1.04	0.00	0.00	0.00	
4,700.00	1.10	90.00	4,699.19	0.00	84.92	1.06	0.00	0.00	0.00	
4,800.00	1.10	90.00	4,799.17	0.00	86.84	1.09	0.00	0.00	0.00	
4,900.00	1.10	90.00	4,899.15	0.00	88.77	1.11	0.00	0.00	0.00	
4,927.36	1.10	90.00	4,926.50	0.00	89.29	1.12	0.00	0.00	0.00	
5,000.00	0.01	90.00	4,999.14	0.00	90.00	1.12	1.50	-1.50	0.00	
5,000.86	0.00	0.00	5,000.00	0.00	90.00	1.12	1.50	-1.50	0.00	
5,100.00	0.00	0.00	5,099.14	0.00	90.00	1.12	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,199.14	0.00	90.00	1.12	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,299.14	0.00	90.00	1.12	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,399.14	0.00	90.00	1.12	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,499.14	0.00	90.00	1.12	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,599.14	0.00	90.00	1.12	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,699.14	0.00	90.00	1.12	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,799.14	0.00	90.00	1.12	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,899.14	0.00	90.00	1.12	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,999.14	0.00	90.00	1.12	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,099.14	0.00	90.00	1.12	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,199.14	0.00	90.00	1.12	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,299.14	0.00	90.00	1.12	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,399.14	0.00	90.00	1.12	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,499.14	0.00	90.00	1.12	0.00	0.00	0.00	
6,554.86	0.00	0.00	6,554.00	0.00	90.00	1.12	0.00	0.00	0.00	
6,600.00	4.06	0.31	6,599.10	1.60	90.01	2.72	9.00	9.00	0.00	
6,700.00	13.06	0.31	6,697.88	16.47	90.09	17.60	9.00	9.00	0.00	
6,800.00	22.06	0.31	6,793.13	46.62	90.25	47.74	9.00	9.00	0.00	
6,900.00	31.06	0.31	6,882.48	91.29	90.50	92.41	9.00	9.00	0.00	
7,000.00	40.06	0.31	6,963.74	149.39	90.82	150.51	9.00	9.00	0.00	
7,056.06	45.11	0.31	7,005.00	187.31	91.02	188.43	9.00	9.00	0.00	
<b>Sharon Springs</b>										
7,100.00	49.06	0.31	7,034.92	219.48	91.20	220.61	9.00	9.00	0.00	
7,156.51	54.15	0.31	7,070.00	263.76	91.44	264.88	9.00	9.00	0.00	
<b>Niobrara</b>										
7,200.00	58.06	0.31	7,094.25	299.85	91.64	300.97	9.00	9.00	0.00	
7,252.16	62.76	0.31	7,120.00	345.20	91.89	346.32	9.00	9.00	0.00	
<b>Nio B</b>										
7,300.00	67.06	0.31	7,140.28	388.51	92.12	389.63	9.00	9.00	0.00	
7,396.42	75.74	0.31	7,171.00	479.80	92.62	480.92	9.00	9.00	0.00	
<b>Nio C</b>										
7,400.00	76.06	0.31	7,171.87	483.28	92.64	484.40	9.00	9.00	0.00	
7,500.00	85.06	0.31	7,188.25	581.82	93.18	582.94	9.00	9.00	0.00	
7,555.41	90.05	0.31	7,190.61	637.16	93.48	638.28	9.00	9.00	0.00	
<b>Top of Production - S.S. Minnow 14N2-14HZ_PHL</b>										
7,600.00	90.05	0.31	7,190.58	681.75	93.73	682.87	0.00	0.00	0.00	
7,700.00	90.05	0.31	7,190.49	781.75	94.28	782.87	0.00	0.00	0.00	
7,800.00	90.05	0.31	7,190.40	881.75	94.82	882.87	0.00	0.00	0.00	
7,900.00	90.05	0.31	7,190.31	981.75	95.37	982.86	0.00	0.00	0.00	
8,000.00	90.05	0.31	7,190.23	1,081.75	95.92	1,082.86	0.00	0.00	0.00	
8,100.00	90.05	0.31	7,190.14	1,181.75	96.46	1,182.86	0.00	0.00	0.00	
8,200.00	90.05	0.31	7,190.05	1,281.74	97.01	1,282.86	0.00	0.00	0.00	

## Corporate Planning Report

**Database:** PLANNING  
**Company:** US ROCKIES WATTENBERG PLANNING  
**Project:** WELD-NAD83-UTMFT13N  
**Site:** 3N-67W-35 S.S. MINNOW 21-35HZ Pad  
**Well:** S.S.MINNOW 14N2-14HZ  
**Wellbore:** Plan A  
**Design:** Permit Rev-1

**Local Co-ordinate Reference:**  
**TVD Reference:**  
**MD Reference:**  
**North Reference:**  
**Survey Calculation Method:**

Well S.S.MINNOW 14N2-14HZ  
 RKB @ 4843.00usft (D Rig)  
 RKB @ 4843.00usft (D Rig)  
 True  
 Minimum Curvature

### 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)
8,300.00	90.05	0.31	7,189.96	1,381.74	97.56	1,382.85	0.00	0.00	0.00
8,400.00	90.05	0.31	7,189.88	1,481.74	98.10	1,482.85	0.00	0.00	0.00
8,500.00	90.05	0.31	7,189.79	1,581.74	98.65	1,582.85	0.00	0.00	0.00
8,600.00	90.05	0.31	7,189.70	1,681.74	99.20	1,682.85	0.00	0.00	0.00
8,700.00	90.05	0.31	7,189.62	1,781.74	99.74	1,782.84	0.00	0.00	0.00
8,800.00	90.05	0.31	7,189.53	1,881.73	100.29	1,882.84	0.00	0.00	0.00
8,900.00	90.05	0.31	7,189.44	1,981.73	100.84	1,982.84	0.00	0.00	0.00
9,000.00	90.05	0.31	7,189.35	2,081.73	101.38	2,082.84	0.00	0.00	0.00
9,100.00	90.05	0.31	7,189.27	2,181.73	101.93	2,182.83	0.00	0.00	0.00
9,200.00	90.05	0.31	7,189.18	2,281.73	102.48	2,282.83	0.00	0.00	0.00
9,300.00	90.05	0.31	7,189.09	2,381.73	103.02	2,382.83	0.00	0.00	0.00
9,400.00	90.05	0.31	7,189.00	2,481.73	103.57	2,482.83	0.00	0.00	0.00
9,500.00	90.05	0.31	7,188.92	2,581.72	104.12	2,582.82	0.00	0.00	0.00
9,600.00	90.05	0.31	7,188.83	2,681.72	104.67	2,682.82	0.00	0.00	0.00
9,700.00	90.05	0.31	7,188.74	2,781.72	105.21	2,782.82	0.00	0.00	0.00
9,800.00	90.05	0.31	7,188.66	2,881.72	105.76	2,882.82	0.00	0.00	0.00
9,900.00	90.05	0.31	7,188.57	2,981.72	106.31	2,982.81	0.00	0.00	0.00
10,000.00	90.05	0.31	7,188.48	3,081.72	106.85	3,082.81	0.00	0.00	0.00
10,100.00	90.05	0.31	7,188.39	3,181.72	107.40	3,182.81	0.00	0.00	0.00
10,200.00	90.05	0.31	7,188.31	3,281.71	107.95	3,282.81	0.00	0.00	0.00
10,300.00	90.05	0.31	7,188.22	3,381.71	108.49	3,382.80	0.00	0.00	0.00
10,400.00	90.05	0.31	7,188.13	3,481.71	109.04	3,482.80	0.00	0.00	0.00
10,500.00	90.05	0.31	7,188.04	3,581.71	109.59	3,582.80	0.00	0.00	0.00
10,600.00	90.05	0.31	7,187.96	3,681.71	110.13	3,682.80	0.00	0.00	0.00
10,700.00	90.05	0.31	7,187.87	3,781.71	110.68	3,782.79	0.00	0.00	0.00
10,800.00	90.05	0.31	7,187.78	3,881.70	111.23	3,882.79	0.00	0.00	0.00
10,900.00	90.05	0.31	7,187.70	3,981.70	111.77	3,982.79	0.00	0.00	0.00
11,000.00	90.05	0.31	7,187.61	4,081.70	112.32	4,082.79	0.00	0.00	0.00
11,100.00	90.05	0.31	7,187.52	4,181.70	112.87	4,182.78	0.00	0.00	0.00
11,200.00	90.05	0.31	7,187.43	4,281.70	113.42	4,282.78	0.00	0.00	0.00
11,300.00	90.05	0.31	7,187.35	4,381.70	113.96	4,382.78	0.00	0.00	0.00
11,400.00	90.05	0.31	7,187.26	4,481.70	114.51	4,482.78	0.00	0.00	0.00
11,500.00	90.05	0.31	7,187.17	4,581.69	115.06	4,582.77	0.00	0.00	0.00
11,600.00	90.05	0.31	7,187.08	4,681.69	115.60	4,682.77	0.00	0.00	0.00
11,700.00	90.05	0.31	7,187.00	4,781.69	116.15	4,782.77	0.00	0.00	0.00
11,800.00	90.05	0.31	7,186.91	4,881.69	116.70	4,882.77	0.00	0.00	0.00
11,900.00	90.05	0.31	7,186.82	4,981.69	117.24	4,982.76	0.00	0.00	0.00
12,000.00	90.05	0.31	7,186.74	5,081.69	117.79	5,082.76	0.00	0.00	0.00
12,100.00	90.05	0.31	7,186.65	5,181.68	118.34	5,182.76	0.00	0.00	0.00
12,200.00	90.05	0.31	7,186.56	5,281.68	118.88	5,282.76	0.00	0.00	0.00
12,300.00	90.05	0.31	7,186.47	5,381.68	119.43	5,382.75	0.00	0.00	0.00
12,400.00	90.05	0.31	7,186.39	5,481.68	119.98	5,482.75	0.00	0.00	0.00
12,500.00	90.05	0.31	7,186.30	5,581.68	120.52	5,582.75	0.00	0.00	0.00
12,600.00	90.05	0.31	7,186.21	5,681.68	121.07	5,682.75	0.00	0.00	0.00
12,700.00	90.05	0.31	7,186.13	5,781.68	121.62	5,782.74	0.00	0.00	0.00
12,800.00	90.05	0.31	7,186.04	5,881.67	122.16	5,882.74	0.00	0.00	0.00
12,900.00	90.05	0.31	7,185.95	5,981.67	122.71	5,982.74	0.00	0.00	0.00
13,000.00	90.05	0.31	7,185.86	6,081.67	123.26	6,082.74	0.00	0.00	0.00
13,100.00	90.05	0.31	7,185.78	6,181.67	123.81	6,182.73	0.00	0.00	0.00
13,200.00	90.05	0.31	7,185.69	6,281.67	124.35	6,282.73	0.00	0.00	0.00
13,300.00	90.05	0.31	7,185.60	6,381.67	124.90	6,382.73	0.00	0.00	0.00
13,400.00	90.05	0.31	7,185.51	6,481.66	125.45	6,482.73	0.00	0.00	0.00
13,500.00	90.05	0.31	7,185.43	6,581.66	125.99	6,582.72	0.00	0.00	0.00
13,600.00	90.05	0.31	7,185.34	6,681.66	126.54	6,682.72	0.00	0.00	0.00

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well S.S.MINNOW 14N2-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4843.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4843.00usft (D Rig)
<b>Site:</b>	3N-67W-35 S.S. MINNOW 21-35HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	S.S.MINNOW 14N2-14HZ	<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)	
13,700.00	90.05	0.31	7,185.25	6,781.66	127.09	6,782.72	0.00	0.00	0.00	
13,800.00	90.05	0.31	7,185.17	6,881.66	127.63	6,882.72	0.00	0.00	0.00	
13,900.00	90.05	0.31	7,185.08	6,981.66	128.18	6,982.71	0.00	0.00	0.00	
14,000.00	90.05	0.31	7,184.99	7,081.66	128.73	7,082.71	0.00	0.00	0.00	
14,100.00	90.05	0.31	7,184.90	7,181.65	129.27	7,182.71	0.00	0.00	0.00	
14,200.00	90.05	0.31	7,184.82	7,281.65	129.82	7,282.71	0.00	0.00	0.00	
14,300.00	90.05	0.31	7,184.73	7,381.65	130.37	7,382.70	0.00	0.00	0.00	
14,400.00	90.05	0.31	7,184.64	7,481.65	130.91	7,482.70	0.00	0.00	0.00	
14,500.00	90.05	0.31	7,184.55	7,581.65	131.46	7,582.70	0.00	0.00	0.00	
14,600.00	90.05	0.31	7,184.47	7,681.65	132.01	7,682.70	0.00	0.00	0.00	
14,700.00	90.05	0.31	7,184.38	7,781.64	132.56	7,782.69	0.00	0.00	0.00	
14,800.00	90.05	0.31	7,184.29	7,881.64	133.10	7,882.69	0.00	0.00	0.00	
14,900.00	90.05	0.31	7,184.21	7,981.64	133.65	7,982.69	0.00	0.00	0.00	
15,000.00	90.05	0.31	7,184.12	8,081.64	134.20	8,082.69	0.00	0.00	0.00	
15,100.00	90.05	0.31	7,184.03	8,181.64	134.74	8,182.68	0.00	0.00	0.00	
15,200.00	90.05	0.31	7,183.94	8,281.64	135.29	8,282.68	0.00	0.00	0.00	
15,300.00	90.05	0.31	7,183.86	8,381.64	135.84	8,382.68	0.00	0.00	0.00	
15,400.00	90.05	0.31	7,183.77	8,481.63	136.38	8,482.68	0.00	0.00	0.00	
15,500.00	90.05	0.31	7,183.68	8,581.63	136.93	8,582.67	0.00	0.00	0.00	
15,600.00	90.05	0.31	7,183.59	8,681.63	137.48	8,682.67	0.00	0.00	0.00	
15,700.00	90.05	0.31	7,183.51	8,781.63	138.02	8,782.67	0.00	0.00	0.00	
15,800.00	90.05	0.31	7,183.42	8,881.63	138.57	8,882.67	0.00	0.00	0.00	
15,900.00	90.05	0.31	7,183.33	8,981.63	139.12	8,982.66	0.00	0.00	0.00	
16,000.00	90.05	0.31	7,183.25	9,081.62	139.66	9,082.66	0.00	0.00	0.00	
16,100.00	90.05	0.31	7,183.16	9,181.62	140.21	9,182.66	0.00	0.00	0.00	
16,200.00	90.05	0.31	7,183.07	9,281.62	140.76	9,282.66	0.00	0.00	0.00	
16,300.00	90.05	0.31	7,182.98	9,381.62	141.31	9,382.65	0.00	0.00	0.00	
16,400.00	90.05	0.31	7,182.90	9,481.62	141.85	9,482.65	0.00	0.00	0.00	
16,500.00	90.05	0.31	7,182.81	9,581.62	142.40	9,582.65	0.00	0.00	0.00	
16,600.00	90.05	0.31	7,182.72	9,681.62	142.95	9,682.65	0.00	0.00	0.00	
16,700.00	90.05	0.31	7,182.63	9,781.61	143.49	9,782.64	0.00	0.00	0.00	
16,800.00	90.05	0.31	7,182.55	9,881.61	144.04	9,882.64	0.00	0.00	0.00	
16,900.00	90.05	0.31	7,182.46	9,981.61	144.59	9,982.64	0.00	0.00	0.00	
17,000.00	90.05	0.31	7,182.37	10,081.61	145.13	10,082.64	0.00	0.00	0.00	
17,100.00	90.05	0.31	7,182.29	10,181.61	145.68	10,182.63	0.00	0.00	0.00	
17,200.00	90.05	0.31	7,182.20	10,281.61	146.23	10,282.63	0.00	0.00	0.00	
17,300.00	90.05	0.31	7,182.11	10,381.60	146.77	10,382.63	0.00	0.00	0.00	
17,400.00	90.05	0.31	7,182.02	10,481.60	147.32	10,482.63	0.00	0.00	0.00	
17,500.00	90.05	0.31	7,181.94	10,581.60	147.87	10,582.62	0.00	0.00	0.00	
17,600.00	90.05	0.31	7,181.85	10,681.60	148.41	10,682.62	0.00	0.00	0.00	
17,700.00	90.05	0.31	7,181.76	10,781.60	148.96	10,782.62	0.00	0.00	0.00	
17,800.00	90.05	0.31	7,181.67	10,881.60	149.51	10,882.62	0.00	0.00	0.00	
17,900.00	90.05	0.31	7,181.59	10,981.60	150.05	10,982.61	0.00	0.00	0.00	
18,000.00	90.05	0.31	7,181.50	11,081.59	150.60	11,082.61	0.00	0.00	0.00	
18,100.00	90.05	0.31	7,181.41	11,181.59	151.15	11,182.61	0.00	0.00	0.00	
18,200.00	90.05	0.31	7,181.33	11,281.59	151.70	11,282.61	0.00	0.00	0.00	
18,300.00	90.05	0.31	7,181.24	11,381.59	152.24	11,382.60	0.00	0.00	0.00	
18,400.00	90.05	0.31	7,181.15	11,481.59	152.79	11,482.60	0.00	0.00	0.00	
18,500.00	90.05	0.31	7,181.06	11,581.59	153.34	11,582.60	0.00	0.00	0.00	
18,600.00	90.05	0.31	7,180.98	11,681.58	153.88	11,682.60	0.00	0.00	0.00	
18,700.00	90.05	0.31	7,180.89	11,781.58	154.43	11,782.59	0.00	0.00	0.00	
18,800.00	90.05	0.31	7,180.80	11,881.58	154.98	11,882.59	0.00	0.00	0.00	
18,900.00	90.05	0.31	7,180.71	11,981.58	155.52	11,982.59	0.00	0.00	0.00	
19,000.00	90.05	0.31	7,180.63	12,081.58	156.07	12,082.59	0.00	0.00	0.00	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well S.S.MINNOW 14N2-14HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4843.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4843.00usft (D Rig)
<b>Site:</b>	3N-67W-35 S.S. MINNOW 21-35HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	S.S.MINNOW 14N2-14HZ	<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)	
19,100.00	90.05	0.31	7,180.54	12,181.58	156.62	12,182.58	0.00	0.00	0.00	
19,200.00	90.05	0.31	7,180.45	12,281.58	157.16	12,282.58	0.00	0.00	0.00	
19,300.00	90.05	0.31	7,180.37	12,381.57	157.71	12,382.58	0.00	0.00	0.00	
19,400.00	90.05	0.31	7,180.28	12,481.57	158.26	12,482.58	0.00	0.00	0.00	
19,500.00	90.05	0.31	7,180.19	12,581.57	158.80	12,582.57	0.00	0.00	0.00	
19,600.00	90.05	0.31	7,180.10	12,681.57	159.35	12,682.57	0.00	0.00	0.00	
19,700.00	90.05	0.31	7,180.02	12,781.57	159.90	12,782.57	0.00	0.00	0.00	
19,718.60	90.05	0.31	7,180.00	12,800.17	160.00	12,801.17	0.00	0.00	0.00	
<b>SS MINNOW 14N2-14HZ_PBHL</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SS MINNOW 14N2-14 - hit/miss target - Shape - Point	0.00	0.00	7,180.00	12,800.17	160.00	14,607,432.16	1,679,463.09	40.221526	-104.860121	
S.S. Minnow 14N2-14 - plan hits target center - Point	0.00	0.00	7,190.61	637.16	93.48	14,595,269.06	1,679,415.66	40.188125	-104.860360	

Casing Points							
Measured Depth (usft)	Vertical Depth (usft)	Name			Casing Diameter (")	Hole Diameter (")	
1,500.22	1,500.00	9 5/8"			9-5/8	13-1/2	
7,555.41	7,190.61	Top of Production			5-1/2	8-1/2	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
924.12	924.00	Fox Hills				
3,772.64	3,772.00	Parkman				
4,433.77	4,433.00	Sussex				
7,056.06	7,005.00	Sharon Springs				
7,156.51	7,070.00	Niobrara				
7,252.16	7,120.00	Nio B				
7,396.42	7,171.00	Nio C				