

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**1N-67W-11 Leinweber 1-11HZ Pad**

**LEINWEBER FED 31N-8HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**17 June, 2016**



Azimuths to True North  
Magnetic North: 8.22°

Magnetic Field  
Strength: 52428.5snT  
Dip Angle: 66.60°  
Date: 5/25/2016  
Model: IGRF2010

SITE: 1N-67W-11 Leinweber 1-11HZ Pad

Well: LEINWEBER FED 31N-8HZ  
Wellbore: Plan A  
Design: Permit Rev-1

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1324.00	1330.53	Fox Hills
3301.00	3378.94	Parkman
4539.00	4653.27	Sussex
7198.00	7377.52	Sharon Springs
7243.00	7451.23	Niobrara
7344.00	7720.25	Nio B

#### WELL DETAILS: LEINWEBER FED 31N-8HZ

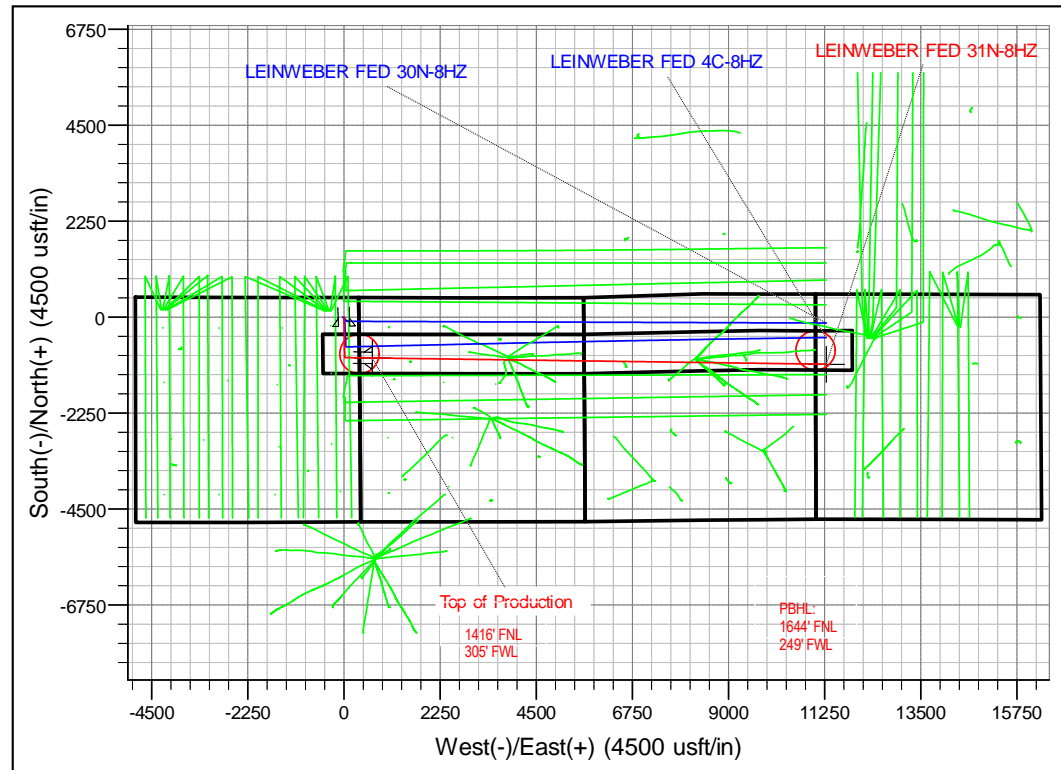
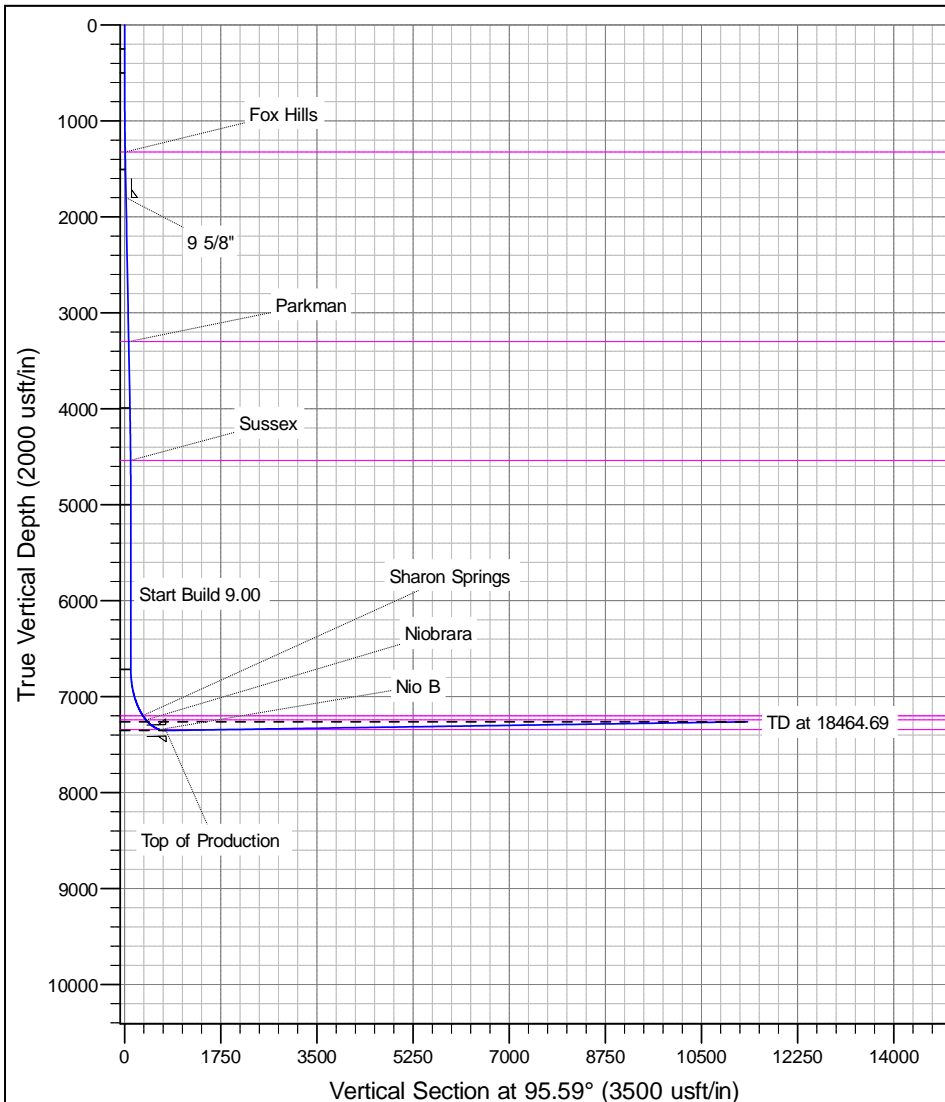
+N/-S	+E/-W	GL: 4958.00 Northing	RKB @ 4975.00usft (D Rig) Easting	Latitude 40.071501	Longitude -104.849939	Slot
0.00	0.00	14552805.43	1682397.54			

#### 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
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00
1519.79	15.30	178.79	1507.72	-135.30	2.85	1.50	16.02
4095.61	15.30	178.79	3992.25	-814.70	17.15	0.00	96.49
5115.40	0.00	0.00	5000.00	-950.00	20.00	1.50	112.52
6832.68	0.00	0.00	6717.28	-950.00	20.00	0.00	112.52
7838.13	90.49	90.79	7353.88	-958.87	662.00	9.00	752.33
18464.69	90.49	90.79	7263.00	-1105.65	11287.17	0.00	1341.19

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
LEINWEBER FED 31N-8HZ_PHL	7263.00	-1105.65	11287.17	14551718.81	1693686.55	40.068458	-104.805959
LEINWEBER FED 31N-8HZ_PHL	7353.88	-958.87	662.01	14551847.68	1683061.16	40.068868	-104.847573



# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well LEINWEBER FED 31N-8HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Site:</b>	1N-67W-11 Leinweber 1-11HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	LEINWEBER FED 31N-8HZ	<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		1N-67W-11 Leinweber 1-11HZ Pad			
Site Position:		Northing:	14,552,805.74 usft	Latitude:	40.071502
From:	Lat/Long	Easting:	1,682,367.60 usft	Longitude:	-104.850046
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.10 °

Well	LEINWEBER FED 31N-8HZ					
Well Position	+N/-S	-0.36 usft	Northing:	14,552,805.42 usft	Latitude:	40.071501
	+E/-W	29.93 usft	Easting:	1,682,397.53 usft	Longitude:	-104.849939
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,958.00 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	5/25/2016	8.22	66.60	52,428

<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	95.59

<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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,519.79	15.30	178.79	1,507.72	-135.30	2.85	1.50	1.50	0.00	178.79	
4,095.61	15.30	178.79	3,992.28	-814.70	17.15	0.00	0.00	0.00	0.00	
5,115.40	0.00	0.00	5,000.00	-950.00	20.00	1.50	-1.50	0.00	180.00	
6,832.68	0.00	0.00	6,717.28	-950.00	20.00	0.00	0.00	0.00	0.00	
7,838.13	90.49	90.79	7,353.88	-958.87	662.00	9.00	9.00	0.00	90.79	
18,464.69	90.49	90.79	7,263.00	-1,105.65	11,287.17	0.00	0.00	0.00	0.00	LEINWEBER FED :

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## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well LEINWEBER FED 31N-8HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Site:</b>	1N-67W-11 Leinweber 1-11HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	LEINWEBER FED 31N-8HZ	<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	0.00	0.00	300.00	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
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	1.50	178.79	599.99	-1.31	0.03	0.15	1.50	1.50	0.00
700.00	3.00	178.79	699.91	-5.23	0.11	0.62	1.50	1.50	0.00
800.00	4.50	178.79	799.69	-11.77	0.25	1.39	1.50	1.50	0.00
900.00	6.00	178.79	899.27	-20.92	0.44	2.48	1.50	1.50	0.00
1,000.00	7.50	178.79	998.57	-32.67	0.69	3.87	1.50	1.50	0.00
1,100.00	9.00	178.79	1,097.54	-47.02	0.99	5.57	1.50	1.50	0.00
1,200.00	10.50	178.79	1,196.09	-63.95	1.35	7.57	1.50	1.50	0.00
1,300.00	12.00	178.79	1,294.16	-83.45	1.76	9.88	1.50	1.50	0.00
1,330.53	12.46	178.79	1,324.00	-89.92	1.89	10.65	1.50	1.50	0.00
<b>Fox Hills</b>									
1,400.00	13.50	178.79	1,391.70	-105.52	2.22	12.50	1.50	1.50	0.00
1,500.00	15.00	178.79	1,488.62	-130.12	2.74	15.41	1.50	1.50	0.00
1,519.79	15.30	178.79	1,507.72	-135.30	2.85	16.02	1.50	1.50	0.00
1,600.00	15.30	178.79	1,585.09	-156.45	3.29	18.53	0.00	0.00	0.00
1,700.00	15.30	178.79	1,681.54	-182.83	3.85	21.65	0.00	0.00	0.00
1,800.00	15.30	178.79	1,778.00	-209.20	4.40	24.78	0.00	0.00	0.00
1,822.81	15.30	178.79	1,800.00	-215.22	4.53	25.49	0.00	0.00	0.00
<b>9 5/8"</b>									
1,900.00	15.30	178.79	1,874.46	-235.58	4.96	27.90	0.00	0.00	0.00
2,000.00	15.30	178.79	1,970.92	-261.96	5.51	31.03	0.00	0.00	0.00
2,100.00	15.30	178.79	2,067.37	-288.33	6.07	34.15	0.00	0.00	0.00
2,200.00	15.30	178.79	2,163.83	-314.71	6.63	37.27	0.00	0.00	0.00
2,300.00	15.30	178.79	2,260.29	-341.09	7.18	40.40	0.00	0.00	0.00
2,400.00	15.30	178.79	2,356.74	-367.46	7.74	43.52	0.00	0.00	0.00
2,500.00	15.30	178.79	2,453.20	-393.84	8.29	46.65	0.00	0.00	0.00
2,600.00	15.30	178.79	2,549.66	-420.21	8.85	49.77	0.00	0.00	0.00
2,700.00	15.30	178.79	2,646.12	-446.59	9.40	52.90	0.00	0.00	0.00
2,800.00	15.30	178.79	2,742.57	-472.97	9.96	56.02	0.00	0.00	0.00
2,900.00	15.30	178.79	2,839.03	-499.34	10.51	59.14	0.00	0.00	0.00
3,000.00	15.30	178.79	2,935.49	-525.72	11.07	62.27	0.00	0.00	0.00
3,100.00	15.30	178.79	3,031.94	-552.10	11.62	65.39	0.00	0.00	0.00
3,200.00	15.30	178.79	3,128.40	-578.47	12.18	68.52	0.00	0.00	0.00
3,300.00	15.30	178.79	3,224.86	-604.85	12.73	71.64	0.00	0.00	0.00
3,378.94	15.30	178.79	3,301.00	-625.67	13.17	74.11	0.00	0.00	0.00
<b>Parkman</b>									
3,400.00	15.30	178.79	3,321.32	-631.22	13.29	74.76	0.00	0.00	0.00
3,500.00	15.30	178.79	3,417.77	-657.60	13.84	77.89	0.00	0.00	0.00
3,600.00	15.30	178.79	3,514.23	-683.98	14.40	81.01	0.00	0.00	0.00
3,700.00	15.30	178.79	3,610.69	-710.35	14.95	84.14	0.00	0.00	0.00
3,800.00	15.30	178.79	3,707.14	-736.73	15.51	87.26	0.00	0.00	0.00
3,900.00	15.30	178.79	3,803.60	-763.11	16.07	90.38	0.00	0.00	0.00
4,000.00	15.30	178.79	3,900.06	-789.48	16.62	93.51	0.00	0.00	0.00
4,095.61	15.30	178.79	3,992.28	-814.70	17.15	96.49	0.00	0.00	0.00
4,100.00	15.23	178.79	3,996.52	-815.86	17.18	96.63	1.50	-1.50	0.00
4,200.00	13.73	178.79	4,093.34	-840.86	17.70	99.59	1.50	-1.50	0.00
4,300.00	12.23	178.79	4,190.78	-863.31	18.18	102.25	1.50	-1.50	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well LEINWEBER FED 31N-8HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Site:</b>	1N-67W-11 Leinweber 1-11HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	LEINWEBER FED 31N-8HZ	<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)
4,400.00	10.73	178.79	4,288.77	-883.21	18.59	104.61	1.50	-1.50	0.00
4,500.00	9.23	178.79	4,387.26	-900.54	18.96	106.66	1.50	-1.50	0.00
4,600.00	7.73	178.79	4,486.16	-915.28	19.27	108.41	1.50	-1.50	0.00
4,653.27	6.93	178.79	4,539.00	-922.08	19.41	109.21	1.50	-1.50	0.00
<b>Sussex</b>									
4,700.00	6.23	178.79	4,585.42	-927.44	19.53	109.85	1.50	-1.50	0.00
4,800.00	4.73	178.79	4,684.96	-936.98	19.73	110.98	1.50	-1.50	0.00
4,900.00	3.23	178.79	4,784.71	-943.93	19.87	111.80	1.50	-1.50	0.00
5,000.00	1.73	178.79	4,884.62	-948.25	19.96	112.31	1.50	-1.50	0.00
5,100.00	0.23	178.79	4,984.60	-949.96	20.00	112.52	1.50	-1.50	0.00
5,115.40	0.00	0.00	5,000.00	-950.00	20.00	112.52	1.50	-1.50	0.00
5,200.00	0.00	0.00	5,084.60	-950.00	20.00	112.52	0.00	0.00	0.00
5,300.00	0.00	0.00	5,184.60	-950.00	20.00	112.52	0.00	0.00	0.00
5,400.00	0.00	0.00	5,284.60	-950.00	20.00	112.52	0.00	0.00	0.00
5,500.00	0.00	0.00	5,384.60	-950.00	20.00	112.52	0.00	0.00	0.00
5,600.00	0.00	0.00	5,484.60	-950.00	20.00	112.52	0.00	0.00	0.00
5,700.00	0.00	0.00	5,584.60	-950.00	20.00	112.52	0.00	0.00	0.00
5,800.00	0.00	0.00	5,684.60	-950.00	20.00	112.52	0.00	0.00	0.00
5,900.00	0.00	0.00	5,784.60	-950.00	20.00	112.52	0.00	0.00	0.00
6,000.00	0.00	0.00	5,884.60	-950.00	20.00	112.52	0.00	0.00	0.00
6,100.00	0.00	0.00	5,984.60	-950.00	20.00	112.52	0.00	0.00	0.00
6,200.00	0.00	0.00	6,084.60	-950.00	20.00	112.52	0.00	0.00	0.00
6,300.00	0.00	0.00	6,184.60	-950.00	20.00	112.52	0.00	0.00	0.00
6,400.00	0.00	0.00	6,284.60	-950.00	20.00	112.52	0.00	0.00	0.00
6,500.00	0.00	0.00	6,384.60	-950.00	20.00	112.52	0.00	0.00	0.00
6,600.00	0.00	0.00	6,484.60	-950.00	20.00	112.52	0.00	0.00	0.00
6,700.00	0.00	0.00	6,584.60	-950.00	20.00	112.52	0.00	0.00	0.00
6,800.00	0.00	0.00	6,684.60	-950.00	20.00	112.52	0.00	0.00	0.00
6,832.68	0.00	0.00	6,717.28	-950.00	20.00	112.52	0.00	0.00	0.00
6,900.00	6.06	90.79	6,784.47	-950.05	23.56	116.06	9.00	9.00	0.00
7,000.00	15.06	90.79	6,882.68	-950.30	41.86	134.30	9.00	9.00	0.00
7,100.00	24.06	90.79	6,976.81	-950.76	75.30	167.63	9.00	9.00	0.00
7,200.00	33.06	90.79	7,064.56	-951.42	123.05	215.22	9.00	9.00	0.00
7,300.00	42.06	90.79	7,143.75	-952.26	183.94	275.90	9.00	9.00	0.00
7,377.52	49.03	90.79	7,198.00	-953.02	239.23	331.00	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,400.00	51.06	90.79	7,212.44	-953.26	256.47	348.18	9.00	9.00	0.00
7,451.23	55.67	90.79	7,243.00	-953.83	297.56	389.13	9.00	9.00	0.00
<b>Niobrara</b>									
7,500.00	60.06	90.79	7,268.94	-954.40	338.84	430.27	9.00	9.00	0.00
7,600.00	69.06	90.79	7,311.85	-955.65	429.04	520.17	9.00	9.00	0.00
7,700.00	78.06	90.79	7,340.13	-956.97	524.85	615.64	9.00	9.00	0.00
7,720.25	79.88	90.79	7,344.00	-957.24	544.72	635.45	9.00	9.00	0.00
<b>Nio B</b>									
7,800.00	87.06	90.79	7,353.06	-958.34	623.89	714.35	9.00	9.00	0.00
7,838.13	90.49	90.79	7,353.88	-958.87	662.01	752.33	9.00	9.00	0.00
<b>Top of Production - LEINWEBER FED 31N-8HZ_PHL</b>									
7,900.00	90.49	90.79	7,353.35	-959.72	723.87	813.98	0.00	0.00	0.00
8,000.00	90.49	90.79	7,352.49	-961.10	823.85	913.63	0.00	0.00	0.00
8,100.00	90.49	90.79	7,351.64	-962.48	923.84	1,013.27	0.00	0.00	0.00
8,200.00	90.49	90.79	7,350.78	-963.86	1,023.83	1,112.92	0.00	0.00	0.00
8,300.00	90.49	90.79	7,349.93	-965.24	1,123.81	1,212.56	0.00	0.00	0.00
8,400.00	90.49	90.79	7,349.07	-966.63	1,223.80	1,312.21	0.00	0.00	0.00
8,500.00	90.49	90.79	7,348.22	-968.01	1,323.79	1,411.85	0.00	0.00	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well LEINWEBER FED 31N-8HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Site:</b>	1N-67W-11 Leinweber 1-11HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	LEINWEBER FED 31N-8HZ	<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	90.49	90.79	7,347.36	-969.39	1,423.78	1,511.50	0.00	0.00	0.00
8,700.00	90.49	90.79	7,346.51	-970.77	1,523.76	1,611.14	0.00	0.00	0.00
8,800.00	90.49	90.79	7,345.65	-972.15	1,623.75	1,710.79	0.00	0.00	0.00
8,900.00	90.49	90.79	7,344.80	-973.53	1,723.74	1,810.43	0.00	0.00	0.00
9,000.00	90.49	90.79	7,343.94	-974.91	1,823.72	1,910.08	0.00	0.00	0.00
9,100.00	90.49	90.79	7,343.09	-976.30	1,923.71	2,009.72	0.00	0.00	0.00
9,200.00	90.49	90.79	7,342.23	-977.68	2,023.70	2,109.37	0.00	0.00	0.00
9,300.00	90.49	90.79	7,341.38	-979.06	2,123.68	2,209.01	0.00	0.00	0.00
9,400.00	90.49	90.79	7,340.52	-980.44	2,223.67	2,308.66	0.00	0.00	0.00
9,500.00	90.49	90.79	7,339.67	-981.82	2,323.66	2,408.31	0.00	0.00	0.00
9,600.00	90.49	90.79	7,338.81	-983.20	2,423.64	2,507.95	0.00	0.00	0.00
9,700.00	90.49	90.79	7,337.96	-984.58	2,523.63	2,607.60	0.00	0.00	0.00
9,800.00	90.49	90.79	7,337.10	-985.96	2,623.62	2,707.24	0.00	0.00	0.00
9,900.00	90.49	90.79	7,336.25	-987.35	2,723.60	2,806.89	0.00	0.00	0.00
10,000.00	90.49	90.79	7,335.39	-988.73	2,823.59	2,906.53	0.00	0.00	0.00
10,100.00	90.49	90.79	7,334.54	-990.11	2,923.58	3,006.18	0.00	0.00	0.00
10,200.00	90.49	90.79	7,333.68	-991.49	3,023.56	3,105.82	0.00	0.00	0.00
10,300.00	90.49	90.79	7,332.82	-992.87	3,123.55	3,205.47	0.00	0.00	0.00
10,400.00	90.49	90.79	7,331.97	-994.25	3,223.54	3,305.11	0.00	0.00	0.00
10,500.00	90.49	90.79	7,331.11	-995.63	3,323.52	3,404.76	0.00	0.00	0.00
10,600.00	90.49	90.79	7,330.26	-997.01	3,423.51	3,504.40	0.00	0.00	0.00
10,700.00	90.49	90.79	7,329.40	-998.40	3,523.50	3,604.05	0.00	0.00	0.00
10,800.00	90.49	90.79	7,328.55	-999.78	3,623.49	3,703.69	0.00	0.00	0.00
10,900.00	90.49	90.79	7,327.69	-1,001.16	3,723.47	3,803.34	0.00	0.00	0.00
11,000.00	90.49	90.79	7,326.84	-1,002.54	3,823.46	3,902.98	0.00	0.00	0.00
11,100.00	90.49	90.79	7,325.98	-1,003.92	3,923.45	4,002.63	0.00	0.00	0.00
11,200.00	90.49	90.79	7,325.13	-1,005.30	4,023.43	4,102.27	0.00	0.00	0.00
11,300.00	90.49	90.79	7,324.27	-1,006.68	4,123.42	4,201.92	0.00	0.00	0.00
11,400.00	90.49	90.79	7,323.42	-1,008.07	4,223.41	4,301.56	0.00	0.00	0.00
11,500.00	90.49	90.79	7,322.56	-1,009.45	4,323.39	4,401.21	0.00	0.00	0.00
11,600.00	90.49	90.79	7,321.71	-1,010.83	4,423.38	4,500.85	0.00	0.00	0.00
11,700.00	90.49	90.79	7,320.85	-1,012.21	4,523.37	4,600.50	0.00	0.00	0.00
11,800.00	90.49	90.79	7,320.00	-1,013.59	4,623.35	4,700.14	0.00	0.00	0.00
11,900.00	90.49	90.79	7,319.14	-1,014.97	4,723.34	4,799.79	0.00	0.00	0.00
12,000.00	90.49	90.79	7,318.29	-1,016.35	4,823.33	4,899.43	0.00	0.00	0.00
12,100.00	90.49	90.79	7,317.43	-1,017.73	4,923.31	4,999.08	0.00	0.00	0.00
12,200.00	90.49	90.79	7,316.58	-1,019.12	5,023.30	5,098.73	0.00	0.00	0.00
12,300.00	90.49	90.79	7,315.72	-1,020.50	5,123.29	5,198.37	0.00	0.00	0.00
12,400.00	90.49	90.79	7,314.87	-1,021.88	5,223.27	5,298.02	0.00	0.00	0.00
12,500.00	90.49	90.79	7,314.01	-1,023.26	5,323.26	5,397.66	0.00	0.00	0.00
12,600.00	90.49	90.79	7,313.16	-1,024.64	5,423.25	5,497.31	0.00	0.00	0.00
12,700.00	90.49	90.79	7,312.30	-1,026.02	5,523.23	5,596.95	0.00	0.00	0.00
12,800.00	90.49	90.79	7,311.44	-1,027.40	5,623.22	5,696.60	0.00	0.00	0.00
12,900.00	90.49	90.79	7,310.59	-1,028.78	5,723.21	5,796.24	0.00	0.00	0.00
13,000.00	90.49	90.79	7,309.73	-1,030.17	5,823.19	5,895.89	0.00	0.00	0.00
13,100.00	90.49	90.79	7,308.88	-1,031.55	5,923.18	5,995.53	0.00	0.00	0.00
13,200.00	90.49	90.79	7,308.02	-1,032.93	6,023.17	6,095.18	0.00	0.00	0.00
13,300.00	90.49	90.79	7,307.17	-1,034.31	6,123.16	6,194.82	0.00	0.00	0.00
13,400.00	90.49	90.79	7,306.31	-1,035.69	6,223.14	6,294.47	0.00	0.00	0.00
13,500.00	90.49	90.79	7,305.46	-1,037.07	6,323.13	6,394.11	0.00	0.00	0.00
13,600.00	90.49	90.79	7,304.60	-1,038.45	6,423.12	6,493.76	0.00	0.00	0.00
13,700.00	90.49	90.79	7,303.75	-1,039.83	6,523.10	6,593.40	0.00	0.00	0.00
13,800.00	90.49	90.79	7,302.89	-1,041.22	6,623.09	6,693.05	0.00	0.00	0.00
13,900.00	90.49	90.79	7,302.04	-1,042.60	6,723.08	6,792.69	0.00	0.00	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well LEINWEBER FED 31N-8HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Site:</b>	1N-67W-11 Leinweber 1-11HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	LEINWEBER FED 31N-8HZ	<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	90.49	90.79	7,301.18	-1,043.98	6,823.06	6,892.34	0.00	0.00	0.00
14,100.00	90.49	90.79	7,300.33	-1,045.36	6,923.05	6,991.98	0.00	0.00	0.00
14,200.00	90.49	90.79	7,299.47	-1,046.74	7,023.04	7,091.63	0.00	0.00	0.00
14,300.00	90.49	90.79	7,298.62	-1,048.12	7,123.02	7,191.27	0.00	0.00	0.00
14,400.00	90.49	90.79	7,297.76	-1,049.50	7,223.01	7,290.92	0.00	0.00	0.00
14,500.00	90.49	90.79	7,296.91	-1,050.89	7,323.00	7,390.56	0.00	0.00	0.00
14,600.00	90.49	90.79	7,296.05	-1,052.27	7,422.98	7,490.21	0.00	0.00	0.00
14,700.00	90.49	90.79	7,295.20	-1,053.65	7,522.97	7,589.85	0.00	0.00	0.00
14,800.00	90.49	90.79	7,294.34	-1,055.03	7,622.96	7,689.50	0.00	0.00	0.00
14,900.00	90.49	90.79	7,293.49	-1,056.41	7,722.94	7,789.15	0.00	0.00	0.00
15,000.00	90.49	90.79	7,292.63	-1,057.79	7,822.93	7,888.79	0.00	0.00	0.00
15,100.00	90.49	90.79	7,291.78	-1,059.17	7,922.92	7,988.44	0.00	0.00	0.00
15,200.00	90.49	90.79	7,290.92	-1,060.55	8,022.90	8,088.08	0.00	0.00	0.00
15,300.00	90.49	90.79	7,290.06	-1,061.94	8,122.89	8,187.73	0.00	0.00	0.00
15,400.00	90.49	90.79	7,289.21	-1,063.32	8,222.88	8,287.37	0.00	0.00	0.00
15,500.00	90.49	90.79	7,288.35	-1,064.70	8,322.86	8,387.02	0.00	0.00	0.00
15,600.00	90.49	90.79	7,287.50	-1,066.08	8,422.85	8,486.66	0.00	0.00	0.00
15,700.00	90.49	90.79	7,286.64	-1,067.46	8,522.84	8,586.31	0.00	0.00	0.00
15,800.00	90.49	90.79	7,285.79	-1,068.84	8,622.83	8,685.95	0.00	0.00	0.00
15,900.00	90.49	90.79	7,284.93	-1,070.22	8,722.81	8,785.60	0.00	0.00	0.00
16,000.00	90.49	90.79	7,284.08	-1,071.60	8,822.80	8,885.24	0.00	0.00	0.00
16,100.00	90.49	90.79	7,283.22	-1,072.99	8,922.79	8,984.89	0.00	0.00	0.00
16,200.00	90.49	90.79	7,282.37	-1,074.37	9,022.77	9,084.53	0.00	0.00	0.00
16,300.00	90.49	90.79	7,281.51	-1,075.75	9,122.76	9,184.18	0.00	0.00	0.00
16,400.00	90.49	90.79	7,280.66	-1,077.13	9,222.75	9,283.82	0.00	0.00	0.00
16,500.00	90.49	90.79	7,279.80	-1,078.51	9,322.73	9,383.47	0.00	0.00	0.00
16,600.00	90.49	90.79	7,278.95	-1,079.89	9,422.72	9,483.11	0.00	0.00	0.00
16,700.00	90.49	90.79	7,278.09	-1,081.27	9,522.71	9,582.76	0.00	0.00	0.00
16,800.00	90.49	90.79	7,277.24	-1,082.66	9,622.69	9,682.40	0.00	0.00	0.00
16,900.00	90.49	90.79	7,276.38	-1,084.04	9,722.68	9,782.05	0.00	0.00	0.00
17,000.00	90.49	90.79	7,275.53	-1,085.42	9,822.67	9,881.69	0.00	0.00	0.00
17,100.00	90.49	90.79	7,274.67	-1,086.80	9,922.65	9,981.34	0.00	0.00	0.00
17,200.00	90.49	90.79	7,273.82	-1,088.18	10,022.64	10,080.98	0.00	0.00	0.00
17,300.00	90.49	90.79	7,272.96	-1,089.56	10,122.63	10,180.63	0.00	0.00	0.00
17,400.00	90.49	90.79	7,272.11	-1,090.94	10,222.61	10,280.27	0.00	0.00	0.00
17,500.00	90.49	90.79	7,271.25	-1,092.32	10,322.60	10,379.92	0.00	0.00	0.00
17,600.00	90.49	90.79	7,270.40	-1,093.71	10,422.59	10,479.57	0.00	0.00	0.00
17,700.00	90.49	90.79	7,269.54	-1,095.09	10,522.57	10,579.21	0.00	0.00	0.00
17,800.00	90.49	90.79	7,268.68	-1,096.47	10,622.56	10,678.86	0.00	0.00	0.00
17,900.00	90.49	90.79	7,267.83	-1,097.85	10,722.55	10,778.50	0.00	0.00	0.00
18,000.00	90.49	90.79	7,266.97	-1,099.23	10,822.53	10,878.15	0.00	0.00	0.00
18,100.00	90.49	90.79	7,266.12	-1,100.61	10,922.52	10,977.79	0.00	0.00	0.00
18,200.00	90.49	90.79	7,265.26	-1,101.99	11,022.51	11,077.44	0.00	0.00	0.00
18,300.00	90.49	90.79	7,264.41	-1,103.37	11,122.50	11,177.08	0.00	0.00	0.00
18,400.00	90.49	90.79	7,263.55	-1,104.76	11,222.48	11,276.73	0.00	0.00	0.00
18,464.69	90.49	90.79	7,263.00	-1,105.65	11,287.17	11,341.19	0.00	0.00	0.00
LEINWEBER FED 31N-8HZ_PBHL									

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well LEINWEBER FED 31N-8HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 4975.00usft (D Rig)
<b>Site:</b>	1N-67W-11 Leinweber 1-11HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	LEINWEBER FED 31N-8HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

### Design Targets

#### Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
LEINWEBER FED 31I - plan hits target center - Point	0.00	0.00	7,263.00	-1,105.65	11,287.17	14,551,718.81	1,693,686.55	40.068458	-104.809595
LEINWEBER FED 31I - plan hits target center - Point	0.00	0.00	7,353.88	-958.87	662.01	14,551,847.68	1,683,061.15	40.068868	-104.847573

### Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,822.81	1,800.00	9 5/8"	9-5/8	13-1/2
7,838.13	7,353.88	Top of Production	5-1/2	8-1/2

### Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,330.53	1,324.00	Fox Hills			
3,378.94	3,301.00	Parkman			
4,653.27	4,539.00	Sussex			
7,377.52	7,198.00	Sharon Springs			
7,451.23	7,243.00	Niobrara			
7,720.25	7,344.00	Nio B			