

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**3N-66W-21 SARCHET 35-21HZ PAD**

**SARCHET 21-6HZ**

**Plan A**

**Plan: Permit Rev-1**

SHL Lat/Long: 40.204662/-104.790394

Survey Program: MWD+IFR+MSA

## **Standard Planning Report**

**11 September, 2018**

Project: WELD-NAD83-UTMFT13N  
Site: 3N-66W-21 SARCHET 35-21HZ PAD  
Well: SARCHET 21-6HZ  
Wellbore: Plan A  
Design: Permit Rev-1

# US ROCKIES WATTENBERG PLANNING

CASING DETAILS		
TVD	MD	Size
1500.00	1526.50	9-5/8
7235.00	8087.22	5-1/2

WELL DETAILS: SARCHET 21-6HZ  
GL = 4983.00  
RKB = 17' @ 5000.00usft (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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	2050.00	27.75	125.95	1978.52	-257.91	355.64	1.50	125.95	-257.79	
4	4850.00	27.75	125.95	4456.48	-1023.30	1411.04	0.00	0.00	-1022.81	
5	6237.50	0.00	0.00	5790.37	-1216.73	1677.77	2.00	-180.00	-1216.15	
6	6965.94	0.00	0.00	6518.81	-1216.73	1677.77	0.00	0.00	-1216.15	
7	8087.22	89.70	359.23	7235.00	-504.32	1668.19	8.00	359.23	-503.74	
8	10185.66	89.70	359.23	7245.90	1593.90	1640.00	0.00	0.00	1594.47	SARCHET 21-6HZ_target
9	10418.64	89.71	2.72	7247.11	1826.80	1643.97	1.50	89.96	1827.38	
10	11386.82	89.71	2.72	7252.09	2793.88	1690.00	0.00	0.00	2794.47	SARCHET 21-6HZ_target 2
11	11575.18	89.70	359.90	7253.06	2982.17	1694.31	1.50	-90.02	2982.76	
12	18540.57	89.70	359.90	7289.00	9947.45	1682.07	0.00	0.00	9948.04	SARCHET 21-6HZ_BHL

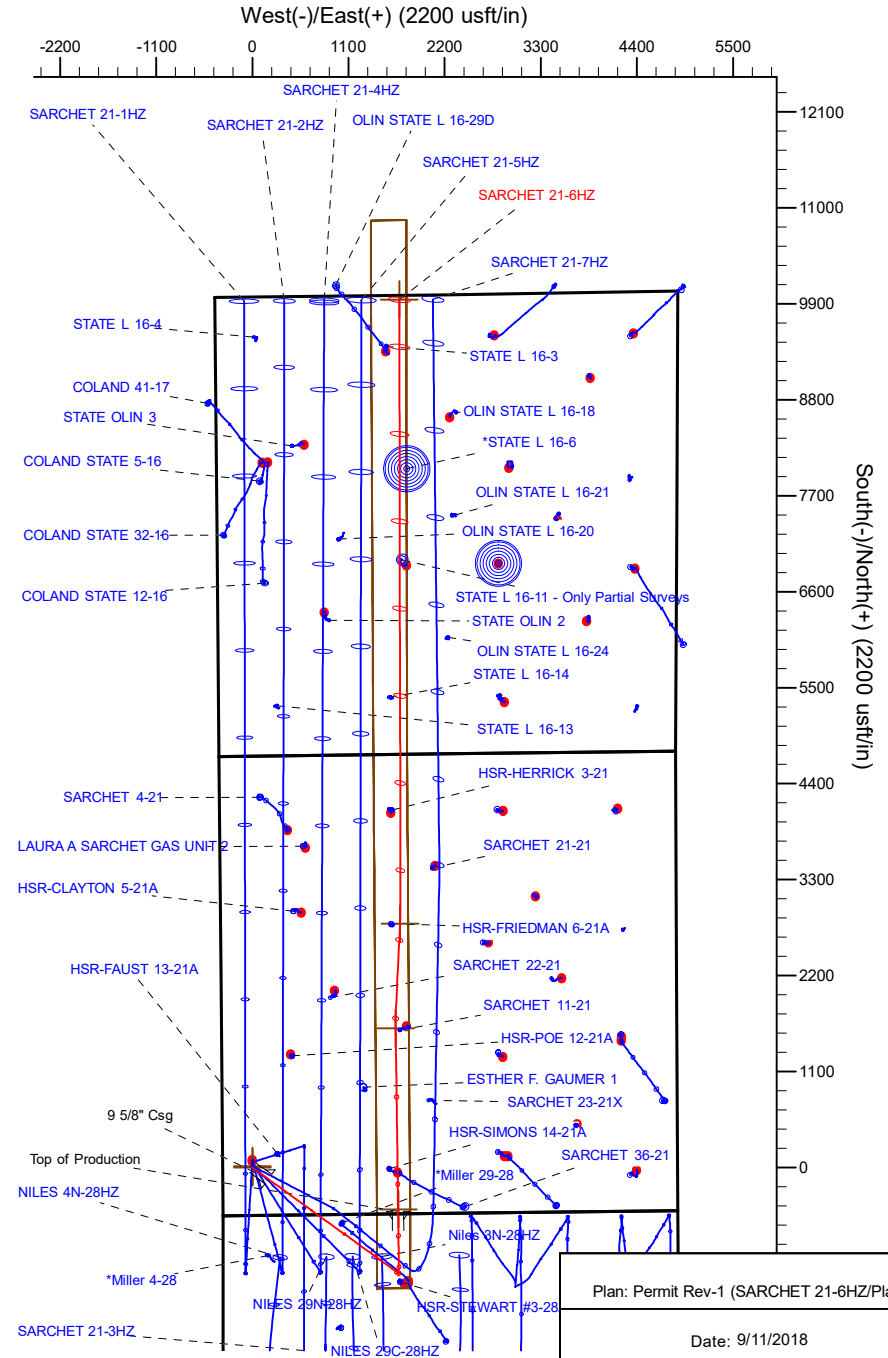
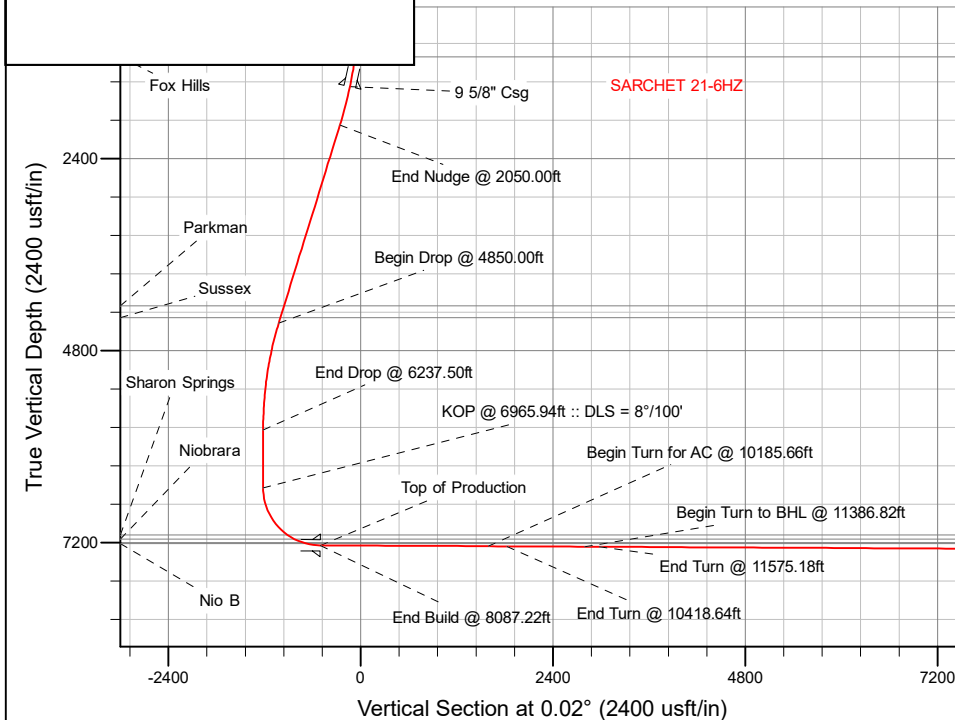
WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
SARCHET 21-6HZ_SHL	0.00	0.00	0.00	40.204662	-104.790394
SARCHET 21-6HZ_BHL	7289.00	9947.45	1682.07	40.231978	-104.784367

FORMATION TOP DETAILS		
TVDPATH	MDPATH	Formation
1125.00	1134.29	Fox Hills
4240.00	4605.38	Parkman
4388.00	4772.62	Sussex
7107.00	7656.09	Sharon Springs
7159.00	7757.99	Niobrara
7214.00	7917.05	Nio B

SHL  
550' FSL  
339' FWL

HEEL  
10' FSL  
2005' FWL

TOE  
50' FNL  
2111' FWL



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SARCHET 21-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-21 SARCHET 35-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SARCHET 21-6HZ	<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		3N-66W-21 SARCHET 35-21HZ PAD			
Site Position:		Northing:	14,601,419.55 usft	Latitude:	40.204909
From:	Lat/Long	Easting:	1,698,941.77 usft	Longitude:	-104.790392
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.14 °

Well	SARCHET 21-6HZ					
Well Position	+N/-S	-89.95 usft	Northing:	14,601,329.60 usft	Latitude:	40.204662
	+E/-W	-0.56 usft	Easting:	1,698,941.42 usft	Longitude:	-104.790394
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,983.00 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	9/5/2018	8.08	66.66	52,147.86564682

<b>Design</b>	Permit Rev-1			
<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	0.02

<b>Plan Survey Tool Program</b>		<b>Date</b>	9/9/2018		
<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-1 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declinatio	
2	1,500.00	18,540.57	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SARCHET 21-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-21 SARCHET 35-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SARCHET 21-6HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,050.00	27.75	125.95	1,978.52	-257.91	355.64	1.50	1.50	0.00	125.95	
4,850.00	27.75	125.95	4,456.48	-1,023.30	1,411.04	0.00	0.00	0.00	0.00	
6,237.50	0.00	0.00	5,790.37	-1,216.73	1,677.77	2.00	-2.00	-9.08	-180.00	
6,965.94	0.00	0.00	6,518.81	-1,216.73	1,677.77	0.00	0.00	0.00	0.00	
8,087.22	89.70	359.23	7,235.00	-504.32	1,668.19	8.00	8.00	-0.07	359.23	
10,185.66	89.70	359.23	7,245.90	1,593.90	1,640.00	0.00	0.00	0.00	0.00	SARCHET 21-6HZ_ta
10,418.64	89.71	2.72	7,247.11	1,826.80	1,643.97	1.50	0.00	1.50	89.96	
11,386.82	89.71	2.72	7,252.09	2,793.88	1,690.00	0.00	0.00	0.00	0.00	SARCHET 21-6HZ_ta
11,575.18	89.70	359.90	7,253.06	2,982.17	1,694.31	1.50	0.00	-1.50	-90.02	
18,540.57	89.70	359.90	7,289.00	9,947.45	1,682.07	0.00	0.00	0.00	0.00	SARCHET 21-6HZ_B

# Corporate Planning Report

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<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-21 SARCHET 35-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SARCHET 21-6HZ	<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
Begin Nudge @ 200.00ft									
300.00	1.50	125.95	299.99	-0.77	1.06	-0.77	1.50	1.50	0.00
400.00	3.00	125.95	399.91	-3.07	4.24	-3.07	1.50	1.50	0.00
500.00	4.50	125.95	499.69	-6.91	9.53	-6.91	1.50	1.50	0.00
600.00	6.00	125.95	599.27	-12.28	16.94	-12.28	1.50	1.50	0.00
700.00	7.50	125.95	698.57	-19.18	26.45	-19.18	1.50	1.50	0.00
800.00	9.00	125.95	797.54	-27.61	38.07	-27.60	1.50	1.50	0.00
900.00	10.50	125.95	896.09	-37.55	51.78	-37.53	1.50	1.50	0.00
1,000.00	12.00	125.95	994.16	-49.00	67.57	-48.98	1.50	1.50	0.00
1,100.00	13.50	125.95	1,091.70	-61.96	85.44	-61.93	1.50	1.50	0.00
1,134.29	14.01	125.95	1,125.00	-66.75	92.04	-66.71	1.50	1.50	0.00
Fox Hills									
1,200.00	15.00	125.95	1,188.62	-76.41	105.36	-76.37	1.50	1.50	0.00
1,300.00	16.50	125.95	1,284.86	-92.35	127.34	-92.30	1.50	1.50	0.00
1,400.00	18.00	125.95	1,380.36	-109.75	151.34	-109.70	1.50	1.50	0.00
1,500.00	19.50	125.95	1,475.05	-128.63	177.36	-128.56	1.50	1.50	0.00
1,526.50	19.90	125.95	1,500.00	-133.87	184.59	-133.81	1.50	1.50	0.00
9 5/8" Csg									
1,600.00	21.00	125.95	1,568.86	-148.94	205.38	-148.87	1.50	1.50	0.00
1,700.00	22.50	125.95	1,661.74	-170.70	235.38	-170.62	1.50	1.50	0.00
1,800.00	24.00	125.95	1,753.62	-193.87	267.33	-193.78	1.50	1.50	0.00
1,900.00	25.50	125.95	1,844.43	-218.45	301.22	-218.35	1.50	1.50	0.00
2,000.00	27.00	125.95	1,934.12	-244.42	337.03	-244.30	1.50	1.50	0.00
2,050.00	27.75	125.95	1,978.52	-257.91	355.64	-257.79	1.50	1.50	0.00
End Nudge @ 2050.00ft									
2,100.00	27.75	125.95	2,022.77	-271.58	374.48	-271.45	0.00	0.00	0.00
2,200.00	27.75	125.95	2,111.26	-298.92	412.18	-298.77	0.00	0.00	0.00
2,300.00	27.75	125.95	2,199.76	-326.25	449.87	-326.09	0.00	0.00	0.00
2,400.00	27.75	125.95	2,288.26	-353.59	487.56	-353.42	0.00	0.00	0.00
2,500.00	27.75	125.95	2,376.76	-380.92	525.26	-380.74	0.00	0.00	0.00
2,600.00	27.75	125.95	2,465.26	-408.26	562.95	-408.06	0.00	0.00	0.00
2,700.00	27.75	125.95	2,553.76	-435.59	600.64	-435.38	0.00	0.00	0.00
2,800.00	27.75	125.95	2,642.26	-462.93	638.33	-462.70	0.00	0.00	0.00
2,900.00	27.75	125.95	2,730.76	-490.26	676.03	-490.03	0.00	0.00	0.00
3,000.00	27.75	125.95	2,819.25	-517.60	713.72	-517.35	0.00	0.00	0.00
3,100.00	27.75	125.95	2,907.75	-544.93	751.41	-544.67	0.00	0.00	0.00
3,200.00	27.75	125.95	2,996.25	-572.27	789.11	-571.99	0.00	0.00	0.00
3,300.00	27.75	125.95	3,084.75	-599.60	826.80	-599.31	0.00	0.00	0.00
3,400.00	27.75	125.95	3,173.25	-626.94	864.49	-626.64	0.00	0.00	0.00
3,500.00	27.75	125.95	3,261.75	-654.27	902.19	-653.96	0.00	0.00	0.00
3,600.00	27.75	125.95	3,350.25	-681.61	939.88	-681.28	0.00	0.00	0.00
3,700.00	27.75	125.95	3,438.75	-708.94	977.57	-708.60	0.00	0.00	0.00
3,800.00	27.75	125.95	3,527.24	-736.28	1,015.26	-735.93	0.00	0.00	0.00
3,900.00	27.75	125.95	3,615.74	-763.61	1,052.96	-763.25	0.00	0.00	0.00
4,000.00	27.75	125.95	3,704.24	-790.95	1,090.65	-790.57	0.00	0.00	0.00
4,100.00	27.75	125.95	3,792.74	-818.29	1,128.34	-817.89	0.00	0.00	0.00
4,200.00	27.75	125.95	3,881.24	-845.62	1,166.04	-845.21	0.00	0.00	0.00
4,300.00	27.75	125.95	3,969.74	-872.96	1,203.73	-872.54	0.00	0.00	0.00
4,400.00	27.75	125.95	4,058.24	-900.29	1,241.42	-899.86	0.00	0.00	0.00
4,500.00	27.75	125.95	4,146.74	-927.63	1,279.11	-927.18	0.00	0.00	0.00
4,600.00	27.75	125.95	4,235.24	-954.96	1,316.81	-954.50	0.00	0.00	0.00

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<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-21 SARCHET 35-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SARCHET 21-6HZ	<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)
4,605.38	27.75	125.95	4,240.00	-956.43	1,318.84	-955.97	0.00	0.00	0.00
<b>Parkman</b>									
4,700.00	27.75	125.95	4,323.73	-982.30	1,354.50	-981.82	0.00	0.00	0.00
4,772.62	27.75	125.95	4,388.00	-1,002.15	1,381.87	-1,001.66	0.00	0.00	0.00
<b>Sussex</b>									
4,800.00	27.75	125.95	4,412.23	-1,009.63	1,392.19	-1,009.15	0.00	0.00	0.00
4,850.00	27.75	125.95	4,456.48	-1,023.30	1,411.04	-1,022.81	0.00	0.00	0.00
<b>Begin Drop @ 4850.00ft</b>									
4,900.00	26.75	125.95	4,500.93	-1,036.74	1,429.57	-1,036.24	2.00	-2.00	0.00
5,000.00	24.75	125.95	4,591.00	-1,062.24	1,464.74	-1,061.73	2.00	-2.00	0.00
5,100.00	22.75	125.95	4,682.52	-1,085.89	1,497.34	-1,085.36	2.00	-2.00	0.00
5,200.00	20.75	125.95	4,775.40	-1,107.64	1,527.34	-1,107.11	2.00	-2.00	0.00
5,300.00	18.75	125.95	4,869.51	-1,127.48	1,554.69	-1,126.94	2.00	-2.00	0.00
5,400.00	16.75	125.95	4,964.75	-1,145.38	1,579.37	-1,144.82	2.00	-2.00	0.00
5,500.00	14.75	125.95	5,060.99	-1,161.31	1,601.34	-1,160.75	2.00	-2.00	0.00
5,600.00	12.75	125.95	5,158.12	-1,175.26	1,620.58	-1,174.70	2.00	-2.00	0.00
5,700.00	10.75	125.95	5,256.02	-1,187.22	1,637.07	-1,186.65	2.00	-2.00	0.00
5,800.00	8.75	125.95	5,354.57	-1,197.16	1,650.78	-1,196.58	2.00	-2.00	0.00
5,900.00	6.75	125.95	5,453.65	-1,205.08	1,661.69	-1,204.50	2.00	-2.00	0.00
6,000.00	4.75	125.95	5,553.14	-1,210.96	1,669.80	-1,210.37	2.00	-2.00	0.00
6,100.00	2.75	125.95	5,652.92	-1,214.80	1,675.10	-1,214.21	2.00	-2.00	0.00
6,200.00	0.75	125.95	5,752.87	-1,216.59	1,677.57	-1,216.00	2.00	-2.00	0.00
6,237.50	0.00	0.00	5,790.37	-1,216.73	1,677.77	-1,216.15	2.00	-2.00	-335.87
<b>End Drop @ 6237.50ft</b>									
6,300.00	0.00	0.00	5,852.87	-1,216.73	1,677.77	-1,216.15	0.00	0.00	0.00
6,400.00	0.00	0.00	5,952.87	-1,216.73	1,677.77	-1,216.15	0.00	0.00	0.00
6,500.00	0.00	0.00	6,052.87	-1,216.73	1,677.77	-1,216.15	0.00	0.00	0.00
6,600.00	0.00	0.00	6,152.87	-1,216.73	1,677.77	-1,216.15	0.00	0.00	0.00
6,700.00	0.00	0.00	6,252.87	-1,216.73	1,677.77	-1,216.15	0.00	0.00	0.00
6,800.00	0.00	0.00	6,352.87	-1,216.73	1,677.77	-1,216.15	0.00	0.00	0.00
6,900.00	0.00	0.00	6,452.87	-1,216.73	1,677.77	-1,216.15	0.00	0.00	0.00
6,965.94	0.00	0.00	6,518.81	-1,216.73	1,677.77	-1,216.15	0.00	0.00	0.00
<b>KOP @ 6965.94ft :: DLS = 8°/100'</b>									
7,000.00	2.72	359.23	6,552.86	-1,215.92	1,677.76	-1,215.34	8.00	8.00	-2.26
7,100.00	10.72	359.23	6,652.09	-1,204.22	1,677.60	-1,203.64	8.00	8.00	0.00
7,200.00	18.72	359.23	6,748.73	-1,178.83	1,677.26	-1,178.24	8.00	8.00	0.00
7,300.00	26.72	359.23	6,840.89	-1,140.23	1,676.74	-1,139.65	8.00	8.00	0.00
7,400.00	34.72	359.23	6,926.78	-1,089.19	1,676.05	-1,088.60	8.00	8.00	0.00
7,500.00	42.72	359.23	7,004.73	-1,026.69	1,675.21	-1,026.10	8.00	8.00	0.00
7,600.00	50.72	359.23	7,073.23	-953.95	1,674.24	-953.36	8.00	8.00	0.00
7,656.09	55.21	359.23	7,107.00	-909.18	1,673.64	-908.60	8.00	8.00	0.00
<b>Sharon Springs</b>									
7,700.00	58.72	359.23	7,130.93	-872.38	1,673.14	-871.80	8.00	8.00	0.00
7,757.99	63.36	359.23	7,159.00	-821.66	1,672.46	-821.07	8.00	8.00	0.00
<b>Niobrara</b>									
7,800.00	66.72	359.23	7,176.72	-783.58	1,671.95	-783.00	8.00	8.00	0.00
7,900.00	74.72	359.23	7,209.70	-689.27	1,670.68	-688.69	8.00	8.00	0.00
7,917.05	76.09	359.23	7,214.00	-672.77	1,670.46	-672.19	8.00	8.00	0.00
<b>Nio B</b>									
8,000.00	82.72	359.23	7,229.24	-591.29	1,669.36	-590.71	8.00	8.00	0.00
8,087.22	89.70	359.23	7,235.00	-504.32	1,668.19	-503.74	8.00	8.00	0.00
<b>End Build @ 8087.22ft - Top of Production</b>									
8,100.00	89.70	359.23	7,235.06	-491.54	1,668.02	-490.96	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SARCHET 21-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-21 SARCHET 35-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SARCHET 21-6HZ	<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)
8,200.00	89.70	359.23	7,235.58	-391.55	1,666.68	-390.97	0.00	0.00	0.00
8,300.00	89.70	359.23	7,236.10	-291.56	1,665.34	-290.98	0.00	0.00	0.00
8,400.00	89.70	359.23	7,236.62	-191.57	1,663.99	-190.99	0.00	0.00	0.00
8,500.00	89.70	359.23	7,237.14	-91.58	1,662.65	-91.00	0.00	0.00	0.00
8,600.00	89.70	359.23	7,237.66	8.41	1,661.31	8.99	0.00	0.00	0.00
8,700.00	89.70	359.23	7,238.18	108.40	1,659.96	108.97	0.00	0.00	0.00
8,800.00	89.70	359.23	7,238.70	208.38	1,658.62	208.96	0.00	0.00	0.00
8,900.00	89.70	359.23	7,239.22	308.37	1,657.27	308.95	0.00	0.00	0.00
9,000.00	89.70	359.23	7,239.74	408.36	1,655.93	408.94	0.00	0.00	0.00
9,100.00	89.70	359.23	7,240.26	508.35	1,654.59	508.93	0.00	0.00	0.00
9,200.00	89.70	359.23	7,240.78	608.34	1,653.24	608.92	0.00	0.00	0.00
9,300.00	89.70	359.23	7,241.30	708.33	1,651.90	708.91	0.00	0.00	0.00
9,400.00	89.70	359.23	7,241.82	808.32	1,650.56	808.90	0.00	0.00	0.00
9,500.00	89.70	359.23	7,242.34	908.31	1,649.21	908.89	0.00	0.00	0.00
9,600.00	89.70	359.23	7,242.86	1,008.30	1,647.87	1,008.88	0.00	0.00	0.00
9,700.00	89.70	359.23	7,243.38	1,108.29	1,646.53	1,108.87	0.00	0.00	0.00
9,800.00	89.70	359.23	7,243.90	1,208.28	1,645.18	1,208.86	0.00	0.00	0.00
9,900.00	89.70	359.23	7,244.42	1,308.27	1,643.84	1,308.84	0.00	0.00	0.00
10,000.00	89.70	359.23	7,244.94	1,408.26	1,642.49	1,408.83	0.00	0.00	0.00
10,100.00	89.70	359.23	7,245.46	1,508.25	1,641.15	1,508.82	0.00	0.00	0.00
10,185.66	89.70	359.23	7,245.90	1,593.90	1,640.00	1,594.47	0.00	0.00	0.00
Begin Turn for AC @ 10185.66ft									
10,200.00	89.70	359.45	7,245.97	1,608.24	1,639.83	1,608.81	1.50	0.00	1.50
10,300.00	89.70	0.95	7,246.49	1,708.24	1,640.18	1,708.81	1.50	0.00	1.50
10,400.00	89.70	2.45	7,247.01	1,808.19	1,643.13	1,808.76	1.50	0.00	1.50
10,418.64	89.71	2.72	7,247.11	1,826.80	1,643.97	1,827.38	1.50	0.00	1.50
End Turn @ 10418.64ft									
10,500.00	89.71	2.72	7,247.52	1,908.08	1,647.84	1,908.65	0.00	0.00	0.00
10,600.00	89.71	2.72	7,248.04	2,007.96	1,652.60	2,008.54	0.00	0.00	0.00
10,700.00	89.71	2.72	7,248.55	2,107.85	1,657.35	2,108.42	0.00	0.00	0.00
10,800.00	89.71	2.72	7,249.07	2,207.73	1,662.10	2,208.31	0.00	0.00	0.00
10,900.00	89.71	2.72	7,249.58	2,307.62	1,666.86	2,308.20	0.00	0.00	0.00
11,000.00	89.71	2.72	7,250.10	2,407.50	1,671.61	2,408.09	0.00	0.00	0.00
11,100.00	89.71	2.72	7,250.61	2,507.39	1,676.37	2,507.97	0.00	0.00	0.00
11,200.00	89.71	2.72	7,251.13	2,607.27	1,681.12	2,607.86	0.00	0.00	0.00
11,300.00	89.71	2.72	7,251.64	2,707.16	1,685.87	2,707.75	0.00	0.00	0.00
11,386.82	89.71	2.72	7,252.09	2,793.88	1,690.00	2,794.47	0.00	0.00	0.00
Begin Turn to BHL @ 11386.82ft									
11,400.00	89.70	2.53	7,252.16	2,807.05	1,690.60	2,807.64	1.50	0.00	-1.50
11,500.00	89.70	1.03	7,252.67	2,906.99	1,693.70	2,907.59	1.50	0.00	-1.50
11,575.18	89.70	359.90	7,253.06	2,982.17	1,694.31	2,982.76	1.50	0.00	-1.50
End Turn @ 11575.18ft									
11,600.00	89.70	359.90	7,253.19	3,006.99	1,694.27	3,007.58	0.00	0.00	0.00
11,700.00	89.70	359.90	7,253.71	3,106.99	1,694.09	3,107.58	0.00	0.00	0.00
11,800.00	89.70	359.90	7,254.22	3,206.99	1,693.92	3,207.58	0.00	0.00	0.00
11,900.00	89.70	359.90	7,254.74	3,306.98	1,693.74	3,307.58	0.00	0.00	0.00
12,000.00	89.70	359.90	7,255.25	3,406.98	1,693.57	3,407.57	0.00	0.00	0.00
12,100.00	89.70	359.90	7,255.77	3,506.98	1,693.39	3,507.57	0.00	0.00	0.00
12,200.00	89.70	359.90	7,256.29	3,606.98	1,693.21	3,607.57	0.00	0.00	0.00
12,300.00	89.70	359.90	7,256.80	3,706.98	1,693.04	3,707.57	0.00	0.00	0.00
12,400.00	89.70	359.90	7,257.32	3,806.98	1,692.86	3,807.57	0.00	0.00	0.00
12,500.00	89.70	359.90	7,257.83	3,906.98	1,692.69	3,907.57	0.00	0.00	0.00
12,600.00	89.70	359.90	7,258.35	4,006.97	1,692.51	4,007.57	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SARCHET 21-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-21 SARCHET 35-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SARCHET 21-6HZ	<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)
12,700.00	89.70	359.90	7,258.86	4,106.97	1,692.34	4,107.56	0.00	0.00	0.00
12,800.00	89.70	359.90	7,259.38	4,206.97	1,692.16	4,207.56	0.00	0.00	0.00
12,900.00	89.70	359.90	7,259.90	4,306.97	1,691.98	4,307.56	0.00	0.00	0.00
13,000.00	89.70	359.90	7,260.41	4,406.97	1,691.81	4,407.56	0.00	0.00	0.00
13,100.00	89.70	359.90	7,260.93	4,506.97	1,691.63	4,507.56	0.00	0.00	0.00
13,200.00	89.70	359.90	7,261.44	4,606.97	1,691.46	4,607.56	0.00	0.00	0.00
13,300.00	89.70	359.90	7,261.96	4,706.96	1,691.28	4,707.55	0.00	0.00	0.00
13,400.00	89.70	359.90	7,262.48	4,806.96	1,691.11	4,807.55	0.00	0.00	0.00
13,500.00	89.70	359.90	7,262.99	4,906.96	1,690.93	4,907.55	0.00	0.00	0.00
13,600.00	89.70	359.90	7,263.51	5,006.96	1,690.76	5,007.55	0.00	0.00	0.00
13,700.00	89.70	359.90	7,264.02	5,106.96	1,690.58	5,107.55	0.00	0.00	0.00
13,800.00	89.70	359.90	7,264.54	5,206.96	1,690.40	5,207.55	0.00	0.00	0.00
13,900.00	89.70	359.90	7,265.06	5,306.96	1,690.23	5,307.54	0.00	0.00	0.00
14,000.00	89.70	359.90	7,265.57	5,406.95	1,690.05	5,407.54	0.00	0.00	0.00
14,100.00	89.70	359.90	7,266.09	5,506.95	1,689.88	5,507.54	0.00	0.00	0.00
14,200.00	89.70	359.90	7,266.60	5,606.95	1,689.70	5,607.54	0.00	0.00	0.00
14,300.00	89.70	359.90	7,267.12	5,706.95	1,689.53	5,707.54	0.00	0.00	0.00
14,400.00	89.70	359.90	7,267.64	5,806.95	1,689.35	5,807.54	0.00	0.00	0.00
14,500.00	89.70	359.90	7,268.15	5,906.95	1,689.17	5,907.54	0.00	0.00	0.00
14,600.00	89.70	359.90	7,268.67	6,006.94	1,689.00	6,007.53	0.00	0.00	0.00
14,700.00	89.70	359.90	7,269.18	6,106.94	1,688.82	6,107.53	0.00	0.00	0.00
14,800.00	89.70	359.90	7,269.70	6,206.94	1,688.65	6,207.53	0.00	0.00	0.00
14,900.00	89.70	359.90	7,270.22	6,306.94	1,688.47	6,307.53	0.00	0.00	0.00
15,000.00	89.70	359.90	7,270.73	6,406.94	1,688.30	6,407.53	0.00	0.00	0.00
15,100.00	89.70	359.90	7,271.25	6,506.94	1,688.12	6,507.53	0.00	0.00	0.00
15,200.00	89.70	359.90	7,271.76	6,606.94	1,687.94	6,607.52	0.00	0.00	0.00
15,300.00	89.70	359.90	7,272.28	6,706.93	1,687.77	6,707.52	0.00	0.00	0.00
15,400.00	89.70	359.90	7,272.80	6,806.93	1,687.59	6,807.52	0.00	0.00	0.00
15,500.00	89.70	359.90	7,273.31	6,906.93	1,687.42	6,907.52	0.00	0.00	0.00
15,600.00	89.70	359.90	7,273.83	7,006.93	1,687.24	7,007.52	0.00	0.00	0.00
15,700.00	89.70	359.90	7,274.34	7,106.93	1,687.07	7,107.52	0.00	0.00	0.00
15,800.00	89.70	359.90	7,274.86	7,206.93	1,686.89	7,207.52	0.00	0.00	0.00
15,900.00	89.70	359.90	7,275.38	7,306.93	1,686.71	7,307.51	0.00	0.00	0.00
16,000.00	89.70	359.90	7,275.89	7,406.92	1,686.54	7,407.51	0.00	0.00	0.00
16,100.00	89.70	359.90	7,276.41	7,506.92	1,686.36	7,507.51	0.00	0.00	0.00
16,200.00	89.70	359.90	7,276.92	7,606.92	1,686.19	7,607.51	0.00	0.00	0.00
16,300.00	89.70	359.90	7,277.44	7,706.92	1,686.01	7,707.51	0.00	0.00	0.00
16,400.00	89.70	359.90	7,277.96	7,806.92	1,685.84	7,807.51	0.00	0.00	0.00
16,500.00	89.70	359.90	7,278.47	7,906.92	1,685.66	7,907.50	0.00	0.00	0.00
16,600.00	89.70	359.90	7,278.99	8,006.92	1,685.48	8,007.50	0.00	0.00	0.00
16,700.00	89.70	359.90	7,279.50	8,106.91	1,685.31	8,107.50	0.00	0.00	0.00
16,800.00	89.70	359.90	7,280.02	8,206.91	1,685.13	8,207.50	0.00	0.00	0.00
16,900.00	89.70	359.90	7,280.54	8,306.91	1,684.96	8,307.50	0.00	0.00	0.00
17,000.00	89.70	359.90	7,281.05	8,406.91	1,684.78	8,407.50	0.00	0.00	0.00
17,100.00	89.70	359.90	7,281.57	8,506.91	1,684.61	8,507.50	0.00	0.00	0.00
17,200.00	89.70	359.90	7,282.08	8,606.91	1,684.43	8,607.49	0.00	0.00	0.00
17,300.00	89.70	359.90	7,282.60	8,706.90	1,684.25	8,707.49	0.00	0.00	0.00
17,400.00	89.70	359.90	7,283.12	8,806.90	1,684.08	8,807.49	0.00	0.00	0.00
17,500.00	89.70	359.90	7,283.63	8,906.90	1,683.90	8,907.49	0.00	0.00	0.00
17,600.00	89.70	359.90	7,284.15	9,006.90	1,683.73	9,007.49	0.00	0.00	0.00
17,700.00	89.70	359.90	7,284.66	9,106.90	1,683.55	9,107.49	0.00	0.00	0.00
17,800.00	89.70	359.90	7,285.18	9,206.90	1,683.38	9,207.48	0.00	0.00	0.00
17,900.00	89.70	359.90	7,285.70	9,306.90	1,683.20	9,307.48	0.00	0.00	0.00
18,000.00	89.70	359.90	7,286.21	9,406.89	1,683.02	9,407.48	0.00	0.00	0.00



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SARCHET 21-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5000.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-21 SARCHET 35-21HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SARCHET 21-6HZ	<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)	
18,100.00	89.70	359.90	7,286.73	9,506.89	1,682.85	9,507.48	0.00	0.00	0.00	
18,200.00	89.70	359.90	7,287.24	9,606.89	1,682.67	9,607.48	0.00	0.00	0.00	
18,300.00	89.70	359.90	7,287.76	9,706.89	1,682.50	9,707.48	0.00	0.00	0.00	
18,400.00	89.70	359.90	7,288.27	9,806.89	1,682.32	9,807.48	0.00	0.00	0.00	
18,500.00	89.70	359.90	7,288.79	9,906.89	1,682.15	9,907.47	0.00	0.00	0.00	
18,540.57	89.70	359.90	7,289.00	9,947.45	1,682.07	9,948.04	0.00	0.00	0.00	
TD Well @ 18540.57ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,526.50	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
8,087.22	7,235.00	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,134.29	1,125.00	Fox Hills			
4,605.38	4,240.00	Parkman			
4,772.62	4,388.00	Sussex			
7,656.09	7,107.00	Sharon Springs			
7,757.99	7,159.00	Niobrara			
7,917.05	7,214.00	Nio B			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
200.00	200.00	0.00	0.00	Begin Nudge @ 200.00ft	
2,050.00	1,978.52	-257.91	355.64	End Nudge @ 2050.00ft	
4,850.00	4,456.48	-1,023.30	1,411.04	Begin Drop @ 4850.00ft	
6,237.50	5,790.37	-1,216.73	1,677.77	End Drop @ 6237.50ft	
6,965.94	6,518.81	-1,216.73	1,677.77	KOP @ 6965.94ft :: DLS = 8°/100'	
8,087.22	7,235.00	-504.32	1,668.19	End Build @ 8087.22ft	
10,185.66	7,245.90	1,593.90	1,640.00	Begin Turn for AC @ 10185.66ft	
10,418.64	7,247.11	1,826.80	1,643.97	End Turn @ 10418.64ft	
11,386.82	7,252.09	2,793.88	1,690.00	Begin Turn to BHL @ 11386.82ft	
11,575.18	7,253.06	2,982.17	1,694.31	End Turn @ 11575.18ft	
18,540.57	7,289.00	9,947.45	1,682.07	TD Well @ 18540.57ft	