

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
3N-67W-04 SWARTZ 2-4HZ PAD  
SWARTZ 4-10HZ**

**Plan C**

**Plan: Permit Rev-1**

## **Standard Planning Report**

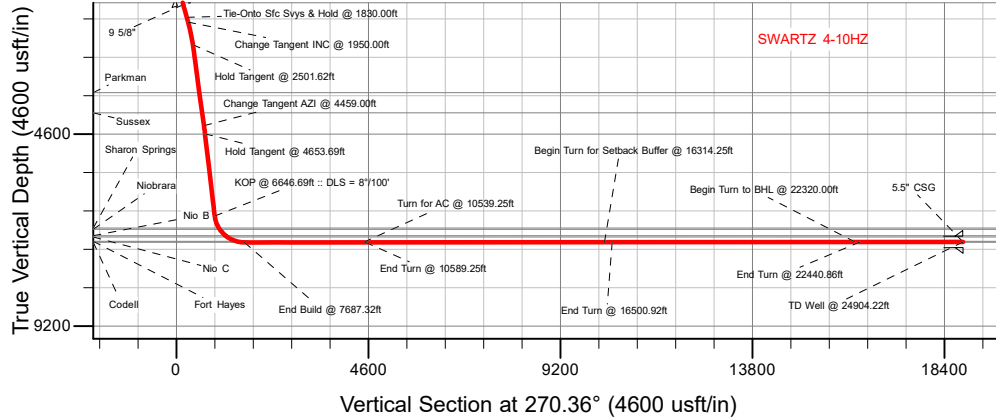
**04 April, 2024**

Project: WELD-NAD83-UTMFT13N  
 Site: 3N-67W-04 SWARTZ 2-4HZ PAD  
 Well: SWARTZ 4-10HZ  
 Wellbore: Plan C  
 Design: Permit Rev-1

# US ROCKIES WATTENBERG PLANNING

## CASING DETAILS

TVD	MD	Name	Size
1500.00	1515.23	9 5/8"	9-5/8
7183.00	24904.22	5.5" CSG	5-1/2



## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSetc	Target
1830.00	16.26	284.19	1803.28	50.89	-242.65	0.00	0.00	242.96	
1950.00	16.26	284.19	1918.48	59.13	-275.22	0.00	0.00	275.59	
2501.62	8.00	281.73	2457.32	85.91	-387.87	1.50	-177.62	388.40	
4459.00	8.00	281.73	4395.65	141.29	-654.60	0.00	0.00	655.47	
4653.69	8.00	302.83	4588.49	151.39	-679.25	1.50	100.45	680.19	
6646.69	8.00	302.83	6562.09	301.77	-912.32	0.00	0.00	914.20	
7687.32	90.03	270.85	7192.00	359.23	-1623.11	8.00	-32.23	1625.34	
10539.25	90.03	270.85	7190.50	401.54	-4474.73	0.00	0.00	4477.16	
10589.25	90.03	271.60	7190.48	402.60	-4524.71	1.50	90.00	4527.16	
16314.25	90.03	271.60	7187.48	562.46	-10247.48	0.00	0.00	10250.82	
16500.92	90.03	268.80	7187.38	563.11	-10434.13	1.50	-90.00	10437.46	
22320.00	90.03	268.80	7184.34	441.24	-16251.94	0.00	0.00	16254.39	
22440.86	90.03	270.61	7184.27	440.62	-16372.79	1.50	90.01	16375.23	
24904.22	90.03	270.61	7183.00	466.97	-18836.01	0.00	0.00	18838.57	SWARTZ 4-10HZ BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	Northing	Easting	Latitude	Longitude
SWARTZ 4-10HZ SHL	0.00	14621494.03	1670621.61	40.260174	-104.891733
SWARTZ 4-10HZ LP	7192.00	14621851.28	1668998.06	40.261161	-104.897551
SWARTZ 4-10HZ BHL	7183.00	14621938.00	1651785.04	40.261437	-104.959250

**SHL**  
717' FNL  
1583' FEL

**LP**  
384' FNL  
2042' FWL

**BHL**  
514' FNL  
415' FWL

WELL DETAILS: SWARTZ 4-10HZ

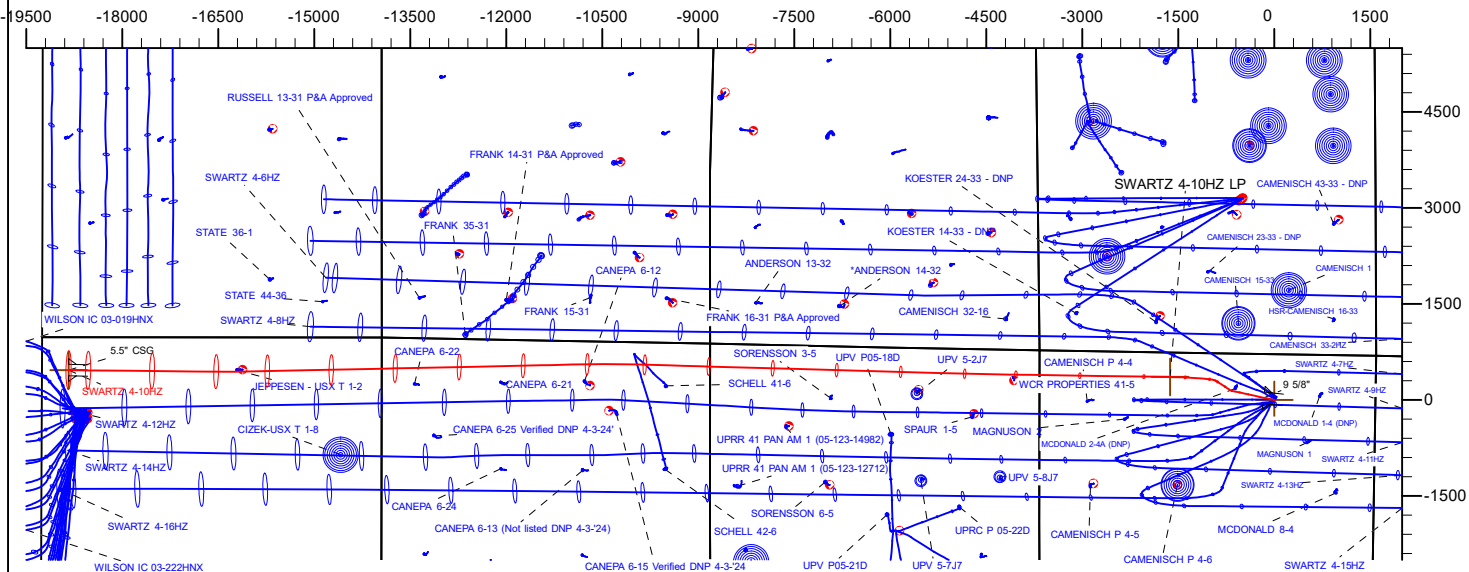
GL = 4825'

RKB = 26' @ 4851.00usft (BIG RIG)

Plan: Permit Rev-1 (SWARTZ 4-10HZ/Plan C)

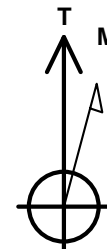
Date: 4/4/2024

## West(-)/East(+) (3000 usft/in)



## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
716.00	716.62	Fox Hills
3607.00	3662.60	Parkman
4089.00	4149.33	Sussex
6850.00	6954.57	Sharon Springs
6880.00	6990.38	Niobrara
7032.00	7198.12	Nio B
7064.00	7251.49	Nio C
7166.00	7493.11	Fort Hayes
7187.00	7602.16	Codell



Azimuths to True North  
Magnetic North: 7.61°

Magnetic Field  
Strength: 51572.1nT  
Dip Angle: 66.41°  
Date: 4/3/2024  
Model: IGRF2020

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<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-04 SWARTZ 2-4HZ PAD			
<b>Site Position:</b>		<b>Northing:</b>	14,621,599.90 usft
<b>From:</b>	Map	<b>Easting:</b>	1,670,705.29 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	40.260465
		<b>Longitude:</b>	-104.891433

<b>Well</b> SWARTZ 4-10HZ			
<b>Well Position</b>	+N/-S	0.00 usft	<b>Northing:</b> 14,621,494.03 usft
	+E/-W	0.00 usft	<b>Easting:</b> 1,670,621.61 usft
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b> usft
<b>Grid Convergence:</b>		0.07 °	<b>Latitude:</b> 40.260174
			<b>Longitude:</b> -104.891733
			<b>Ground Level:</b> 4,825.00 usft

<b>Wellbore</b> Plan C					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	4/3/2024	7.61	66.41	51,572.13722937

<b>Design</b> Permit Rev-1				
<b>Audit Notes:</b>				
<b>Version:</b>		<b>Phase:</b>	PLAN	<b>Tie On Depth:</b> 1,830.00
<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	270.36

<b>Plan Survey Tool Program</b>		<b>Date</b> 4/4/2024		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	91.00	1,830.00 Total MWD + IFR Surface Survey	APC_ISCWSA REV 2 MWD+I	Fixed:v2:crustal field declinatio
2	1,830.00	24,904.22 Permit Rev-1 (Plan C)	APC_ISCWSA REV 2 MWD+I	Fixed:v2:Rockies, crustal dec +

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<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
1,830.00	16.26	284.19	1,803.28	50.89	-242.65	0.00	0.00	0.00	0.00	
1,950.00	16.26	284.19	1,918.48	59.13	-275.22	0.00	0.00	0.00	0.00	
2,501.62	8.00	281.73	2,457.32	85.91	-387.87	1.50	-1.50	-0.45	-177.62	
4,459.00	8.00	281.73	4,395.65	141.29	-654.60	0.00	0.00	0.00	0.00	
4,653.69	8.00	302.83	4,588.49	151.39	-679.25	1.50	0.00	10.84	100.45	
6,646.69	8.00	302.83	6,562.09	301.77	-912.32	0.00	0.00	0.00	0.00	
7,687.32	90.03	270.85	7,192.00	359.23	-1,623.11	8.00	7.88	-3.07	-32.23	
10,539.25	90.03	270.85	7,190.51	401.54	-4,474.73	0.00	0.00	0.00	0.00	
10,589.25	90.03	271.60	7,190.48	402.60	-4,524.71	1.50	0.00	1.50	90.00	
16,314.25	90.03	271.60	7,187.48	562.46	-10,247.48	0.00	0.00	0.00	0.00	
16,500.92	90.03	268.80	7,187.38	563.11	-10,434.13	1.50	0.00	-1.50	-90.00	
22,320.00	90.03	268.80	7,184.34	441.24	-16,251.94	0.00	0.00	0.00	0.00	
22,440.86	90.03	270.61	7,184.27	440.62	-16,372.79	1.50	0.00	1.50	90.01	
24,904.22	90.03	270.61	7,183.00	466.97	-18,836.01	0.00	0.00	0.00	0.00	SWARTZ 4-10HZ BHI

Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<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
91.00	0.69	153.21	91.00	-0.44	0.22	-0.23	0.76	0.76	0.00
183.00	0.14	69.22	183.00	-0.90	0.58	-0.58	0.75	-0.60	-91.29
275.00	0.50	47.04	274.99	-0.58	0.98	-0.98	0.41	0.39	-24.11
365.00	0.65	53.19	364.99	-0.01	1.67	-1.67	0.18	0.17	6.83
455.00	0.69	313.41	454.99	0.67	1.69	-1.68	1.14	0.04	-110.87
544.00	2.93	297.67	543.94	2.09	-0.72	0.73	2.55	2.52	-17.69
634.00	4.08	279.57	633.77	3.70	-5.91	5.93	1.76	1.28	-20.11
723.00	7.23	269.77	722.33	4.20	-14.64	14.66	3.69	3.54	-11.01
813.00	8.84	273.92	811.44	4.65	-27.20	27.23	1.90	1.79	4.61
902.00	9.20	282.51	899.34	6.66	-40.97	41.01	1.56	0.40	9.65
992.00	9.54	286.04	988.14	10.28	-55.16	55.22	0.74	0.38	3.92
1,081.00	10.44	288.11	1,075.79	14.82	-69.91	70.01	1.09	1.01	2.33
1,170.00	12.01	285.63	1,163.09	19.82	-86.50	86.62	1.85	1.76	-2.79
1,260.00	12.18	283.16	1,251.09	24.51	-104.76	104.91	0.61	0.19	-2.74
1,349.00	12.02	283.67	1,338.11	28.84	-122.91	123.08	0.22	-0.18	0.57
1,439.00	13.35	276.79	1,425.92	32.28	-142.33	142.53	2.23	1.48	-7.64
1,515.23	13.92	276.74	1,500.00	34.40	-160.17	160.39	0.74	0.74	-0.07
<b>9 5/8"</b>									
1,529.00	14.02	276.73	1,513.37	34.79	-163.48	163.69	0.74	0.74	-0.06
1,618.00	15.27	281.23	1,599.48	38.33	-185.68	185.92	1.90	1.40	5.06
1,708.00	15.76	281.54	1,686.20	43.08	-209.28	209.55	0.55	0.54	0.34
1,797.00	16.74	284.01	1,771.64	48.61	-233.56	233.86	1.35	1.10	2.78
1,830.00	16.26	284.19	1,803.28	50.89	-242.65	242.96	1.46	-1.45	0.55
<b>Tie-Onto Sfc Svys &amp; Hold @ 1830.00ft</b>									
1,900.00	16.26	284.19	1,870.48	55.69	-261.65	261.99	0.00	0.00	0.00
1,950.00	16.26	284.19	1,918.48	59.13	-275.22	275.59	0.00	0.00	0.00
<b>Change Tangent INC @ 1950.00ft</b>									
2,000.00	15.51	284.07	1,966.57	62.47	-288.49	288.88	1.50	-1.50	-0.23
2,100.00	14.01	283.80	2,063.27	68.61	-313.22	313.65	1.50	-1.50	-0.27
2,200.00	12.51	283.47	2,160.60	74.02	-335.52	335.97	1.50	-1.50	-0.33
2,300.00	11.02	283.05	2,258.49	78.70	-355.36	355.85	1.50	-1.50	-0.42
2,400.00	9.52	282.50	2,356.89	82.65	-372.74	373.25	1.50	-1.50	-0.55
2,501.62	8.00	281.73	2,457.32	85.91	-387.87	388.40	1.50	-1.50	-0.76
<b>Hold Tangent @ 2501.62ft</b>									
2,600.00	8.00	281.73	2,554.74	88.69	-401.28	401.83	0.00	0.00	0.00
2,700.00	8.00	281.73	2,653.77	91.52	-414.90	415.47	0.00	0.00	0.00
2,800.00	8.00	281.73	2,752.80	94.35	-428.53	429.12	0.00	0.00	0.00
2,900.00	8.00	281.73	2,851.82	97.18	-442.16	442.76	0.00	0.00	0.00
3,000.00	8.00	281.73	2,950.85	100.01	-455.78	456.40	0.00	0.00	0.00
3,100.00	8.00	281.73	3,049.88	102.84	-469.41	470.05	0.00	0.00	0.00
3,200.00	8.00	281.73	3,148.90	105.67	-483.04	483.69	0.00	0.00	0.00
3,300.00	8.00	281.73	3,247.93	108.50	-496.66	497.34	0.00	0.00	0.00
3,400.00	8.00	281.73	3,346.96	111.33	-510.29	510.98	0.00	0.00	0.00
3,500.00	8.00	281.73	3,445.99	114.15	-523.92	524.62	0.00	0.00	0.00
3,600.00	8.00	281.73	3,545.01	116.98	-537.54	538.27	0.00	0.00	0.00
3,662.60	8.00	281.73	3,607.00	118.75	-546.07	546.81	0.00	0.00	0.00
<b>Parkman</b>									
3,700.00	8.00	281.73	3,644.04	119.81	-551.17	551.91	0.00	0.00	0.00
3,800.00	8.00	281.73	3,743.07	122.64	-564.80	565.56	0.00	0.00	0.00
3,900.00	8.00	281.73	3,842.09	125.47	-578.42	579.20	0.00	0.00	0.00
4,000.00	8.00	281.73	3,941.12	128.30	-592.05	592.85	0.00	0.00	0.00
4,100.00	8.00	281.73	4,040.15	131.13	-605.68	606.49	0.00	0.00	0.00
4,149.33	8.00	281.73	4,089.00	132.53	-612.40	613.22	0.00	0.00	0.00

Planning Report

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<b>Well:</b>	SWARTZ 4-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<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)
<b>Sussex</b>									
4,200.00	8.00	281.73	4,139.17	133.96	-619.30	620.13	0.00	0.00	0.00
4,300.00	8.00	281.73	4,238.20	136.79	-632.93	633.78	0.00	0.00	0.00
4,400.00	8.00	281.73	4,337.23	139.62	-646.56	647.42	0.00	0.00	0.00
4,459.00	8.00	281.73	4,395.65	141.29	-654.60	655.47	0.00	0.00	0.00
<b>Change Tangent AZI @ 4459.00ft</b>									
4,500.00	7.91	286.13	4,436.26	142.65	-660.10	660.98	1.50	-0.22	10.73
4,600.00	7.89	297.05	4,535.31	147.69	-672.83	673.74	1.50	-0.02	10.93
4,653.69	8.00	302.83	4,588.49	151.39	-679.25	680.19	1.50	0.20	10.76
<b>Hold Tangent @ 4653.69ft</b>									
4,700.00	8.00	302.83	4,634.35	154.88	-684.67	685.63	0.00	0.00	0.00
4,800.00	8.00	302.83	4,733.38	162.43	-696.36	697.37	0.00	0.00	0.00
4,900.00	8.00	302.83	4,832.40	169.97	-708.06	709.11	0.00	0.00	0.00
5,000.00	8.00	302.83	4,931.43	177.52	-719.75	720.85	0.00	0.00	0.00
5,100.00	8.00	302.83	5,030.46	185.06	-731.45	732.59	0.00	0.00	0.00
5,200.00	8.00	302.83	5,129.48	192.61	-743.14	744.34	0.00	0.00	0.00
5,300.00	8.00	302.83	5,228.51	200.16	-754.83	756.08	0.00	0.00	0.00
5,400.00	8.00	302.83	5,327.54	207.70	-766.53	767.82	0.00	0.00	0.00
5,500.00	8.00	302.83	5,426.56	215.25	-778.22	779.56	0.00	0.00	0.00
5,600.00	8.00	302.83	5,525.59	222.79	-789.92	791.30	0.00	0.00	0.00
5,700.00	8.00	302.83	5,624.62	230.34	-801.61	803.04	0.00	0.00	0.00
5,800.00	8.00	302.83	5,723.64	237.88	-813.31	814.79	0.00	0.00	0.00
5,900.00	8.00	302.83	5,822.67	245.43	-825.00	826.53	0.00	0.00	0.00
6,000.00	8.00	302.83	5,921.70	252.97	-836.70	838.27	0.00	0.00	0.00
6,100.00	8.00	302.83	6,020.72	260.52	-848.39	850.01	0.00	0.00	0.00
6,200.00	8.00	302.83	6,119.75	268.06	-860.08	861.75	0.00	0.00	0.00
6,300.00	8.00	302.83	6,218.78	275.61	-871.78	873.49	0.00	0.00	0.00
6,400.00	8.00	302.83	6,317.80	283.15	-883.47	885.23	0.00	0.00	0.00
6,500.00	8.00	302.83	6,416.83	290.70	-895.17	896.98	0.00	0.00	0.00
6,600.00	8.00	302.83	6,515.86	298.24	-906.86	908.72	0.00	0.00	0.00
6,646.69	8.00	302.83	6,562.09	301.77	-912.32	914.20	0.00	0.00	0.00
<b>KOP @ 6646.69ft :: DLS = 8°/100'</b>									
6,650.00	8.23	301.84	6,565.37	302.02	-912.72	914.60	8.00	6.80	-29.82
6,700.00	11.83	291.67	6,614.60	305.80	-920.52	922.42	8.00	7.20	-20.34
6,750.00	15.62	286.29	6,663.17	309.58	-931.75	933.68	8.00	7.59	-10.77
6,800.00	19.50	282.99	6,710.83	313.34	-946.35	948.30	8.00	7.75	-6.60
6,850.00	23.41	280.75	6,757.36	317.07	-964.24	966.22	8.00	7.83	-4.47
6,900.00	27.35	279.12	6,802.52	320.75	-985.35	987.35	8.00	7.88	-3.25
6,950.00	31.31	277.88	6,846.10	324.35	-1,009.57	1,011.59	8.00	7.91	-2.49
6,954.57	31.67	277.78	6,850.00	324.68	-1,011.94	1,013.96	8.00	7.92	-2.18
<b>Sharon Springs</b>									
6,990.38	34.51	277.07	6,880.00	327.20	-1,031.32	1,033.36	8.00	7.93	-2.00
<b>Niobrara</b>									
7,000.00	35.27	276.89	6,887.89	327.87	-1,036.78	1,038.82	8.00	7.93	-1.82
7,050.00	39.24	276.08	6,927.68	331.28	-1,066.85	1,068.91	8.00	7.94	-1.62
7,100.00	43.21	275.40	6,965.28	334.56	-1,099.63	1,101.71	8.00	7.95	-1.37
7,150.00	47.19	274.81	7,000.50	337.71	-1,134.96	1,137.06	8.00	7.96	-1.18
7,198.12	51.02	274.30	7,032.00	340.60	-1,171.22	1,173.33	8.00	7.96	-1.04
<b>Nio B</b>									
7,200.00	51.17	274.29	7,033.18	340.71	-1,172.68	1,174.79	8.00	7.96	-0.98
7,250.00	55.16	273.82	7,063.15	343.53	-1,212.59	1,214.72	8.00	7.97	-0.93
7,251.49	55.27	273.81	7,064.00	343.61	-1,213.81	1,215.94	8.00	7.97	-0.88
<b>Nio C</b>									

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<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)
7,300.00	59.14	273.40	7,090.27	346.17	-1,254.50	1,256.65	8.00	7.97	-0.84
7,350.00	63.12	273.01	7,114.41	348.62	-1,298.21	1,300.37	8.00	7.97	-0.77
7,400.00	67.11	272.65	7,135.44	350.86	-1,343.50	1,345.68	8.00	7.97	-0.72
7,450.00	71.10	272.31	7,153.27	352.88	-1,390.16	1,392.35	8.00	7.97	-0.68
7,493.11	74.54	272.03	7,166.00	354.44	-1,431.31	1,433.51	8.00	7.98	-0.65
<b>Fort Hayes</b>									
7,500.00	75.09	271.99	7,167.81	354.67	-1,437.96	1,440.16	8.00	7.98	-0.64
7,550.00	79.08	271.68	7,178.98	356.23	-1,486.66	1,488.86	8.00	7.98	-0.63
7,600.00	83.06	271.37	7,186.74	357.54	-1,536.02	1,538.24	8.00	7.98	-0.61
7,602.16	83.24	271.36	7,187.00	357.59	-1,538.17	1,540.38	8.00	7.98	-0.60
<b>Codell</b>									
7,650.00	87.05	271.07	7,191.05	358.60	-1,585.81	1,588.04	8.00	7.98	-0.60
7,687.32	90.03	270.85	7,192.00	359.23	-1,623.11	1,625.34	8.00	7.98	-0.59
<b>End Build @ 7687.32ft</b>									
7,700.00	90.03	270.85	7,191.99	359.42	-1,635.79	1,638.02	0.00	0.00	0.00
7,800.00	90.03	270.85	7,191.94	360.90	-1,735.78	1,738.01	0.00	0.00	0.00
7,900.00	90.03	270.85	7,191.89	362.38	-1,835.77	1,838.01	0.00	0.00	0.00
8,000.00	90.03	270.85	7,191.83	363.87	-1,935.76	1,938.01	0.00	0.00	0.00
8,100.00	90.03	270.85	7,191.78	365.35	-2,035.75	2,038.00	0.00	0.00	0.00
8,200.00	90.03	270.85	7,191.73	366.83	-2,135.74	2,138.00	0.00	0.00	0.00
8,300.00	90.03	270.85	7,191.68	368.32	-2,235.73	2,238.00	0.00	0.00	0.00
8,400.00	90.03	270.85	7,191.63	369.80	-2,335.71	2,337.99	0.00	0.00	0.00
8,500.00	90.03	270.85	7,191.57	371.28	-2,435.70	2,437.99	0.00	0.00	0.00
8,600.00	90.03	270.85	7,191.52	372.77	-2,535.69	2,537.98	0.00	0.00	0.00
8,700.00	90.03	270.85	7,191.47	374.25	-2,635.68	2,637.98	0.00	0.00	0.00
8,800.00	90.03	270.85	7,191.42	375.73	-2,735.67	2,737.98	0.00	0.00	0.00
8,900.00	90.03	270.85	7,191.36	377.22	-2,835.66	2,837.97	0.00	0.00	0.00
9,000.00	90.03	270.85	7,191.31	378.70	-2,935.65	2,937.97	0.00	0.00	0.00
9,100.00	90.03	270.85	7,191.26	380.18	-3,035.64	3,037.97	0.00	0.00	0.00
9,200.00	90.03	270.85	7,191.21	381.67	-3,135.63	3,137.96	0.00	0.00	0.00
9,300.00	90.03	270.85	7,191.15	383.15	-3,235.62	3,237.96	0.00	0.00	0.00
9,400.00	90.03	270.85	7,191.10	384.64	-3,335.60	3,337.96	0.00	0.00	0.00
9,500.00	90.03	270.85	7,191.05	386.12	-3,435.59	3,437.95	0.00	0.00	0.00
9,600.00	90.03	270.85	7,191.00	387.60	-3,535.58	3,537.95	0.00	0.00	0.00
9,700.00	90.03	270.85	7,190.94	389.09	-3,635.57	3,637.94	0.00	0.00	0.00
9,800.00	90.03	270.85	7,190.89	390.57	-3,735.56	3,737.94	0.00	0.00	0.00
9,900.00	90.03	270.85	7,190.84	392.05	-3,835.55	3,837.94	0.00	0.00	0.00
10,000.00	90.03	270.85	7,190.79	393.54	-3,935.54	3,937.93	0.00	0.00	0.00
10,100.00	90.03	270.85	7,190.74	395.02	-4,035.53	4,037.93	0.00	0.00	0.00
10,200.00	90.03	270.85	7,190.68	396.50	-4,135.52	4,137.93	0.00	0.00	0.00
10,300.00	90.03	270.85	7,190.63	397.99	-4,235.51	4,237.92	0.00	0.00	0.00
10,400.00	90.03	270.85	7,190.58	399.47	-4,335.49	4,337.92	0.00	0.00	0.00
10,500.00	90.03	270.85	7,190.53	400.95	-4,435.48	4,437.91	0.00	0.00	0.00
10,539.25	90.03	270.85	7,190.51	401.54	-4,474.73	4,477.16	0.00	0.00	0.00
<b>Turn for AC @ 10539.25ft</b>									
10,589.25	90.03	271.60	7,190.48	402.60	-4,524.71	4,527.16	1.50	0.00	1.50
<b>End Turn @ 10589.25ft</b>									
10,600.00	90.03	271.60	7,190.47	402.90	-4,535.46	4,537.90	0.00	0.00	0.00
10,700.00	90.03	271.60	7,190.42	405.70	-4,635.42	4,637.88	0.00	0.00	0.00
10,800.00	90.03	271.60	7,190.37	408.49	-4,735.38	4,737.86	0.00	0.00	0.00
10,900.00	90.03	271.60	7,190.32	411.28	-4,835.35	4,837.83	0.00	0.00	0.00
11,000.00	90.03	271.60	7,190.26	414.07	-4,935.31	4,937.81	0.00	0.00	0.00
11,100.00	90.03	271.60	7,190.21	416.87	-5,035.27	5,037.79	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<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)
11,200.00	90.03	271.60	7,190.16	419.66	-5,135.23	5,137.76	0.00	0.00	0.00
11,300.00	90.03	271.60	7,190.11	422.45	-5,235.19	5,237.74	0.00	0.00	0.00
11,400.00	90.03	271.60	7,190.05	425.24	-5,335.15	5,337.72	0.00	0.00	0.00
11,500.00	90.03	271.60	7,190.00	428.03	-5,435.11	5,437.69	0.00	0.00	0.00
11,600.00	90.03	271.60	7,189.95	430.83	-5,535.07	5,537.67	0.00	0.00	0.00
11,700.00	90.03	271.60	7,189.90	433.62	-5,635.03	5,637.65	0.00	0.00	0.00
11,800.00	90.03	271.60	7,189.84	436.41	-5,734.99	5,737.62	0.00	0.00	0.00
11,900.00	90.03	271.60	7,189.79	439.20	-5,834.96	5,837.60	0.00	0.00	0.00
12,000.00	90.03	271.60	7,189.74	442.00	-5,934.92	5,937.58	0.00	0.00	0.00
12,100.00	90.03	271.60	7,189.69	444.79	-6,034.88	6,037.55	0.00	0.00	0.00
12,200.00	90.03	271.60	7,189.64	447.58	-6,134.84	6,137.53	0.00	0.00	0.00
12,300.00	90.03	271.60	7,189.58	450.37	-6,234.80	6,237.51	0.00	0.00	0.00
12,400.00	90.03	271.60	7,189.53	453.16	-6,334.76	6,337.48	0.00	0.00	0.00
12,500.00	90.03	271.60	7,189.48	455.96	-6,434.72	6,437.46	0.00	0.00	0.00
12,600.00	90.03	271.60	7,189.43	458.75	-6,534.68	6,537.44	0.00	0.00	0.00
12,700.00	90.03	271.60	7,189.37	461.54	-6,634.64	6,637.41	0.00	0.00	0.00
12,800.00	90.03	271.60	7,189.32	464.33	-6,734.60	6,737.39	0.00	0.00	0.00
12,900.00	90.03	271.60	7,189.27	467.12	-6,834.57	6,837.37	0.00	0.00	0.00
13,000.00	90.03	271.60	7,189.22	469.92	-6,934.53	6,937.34	0.00	0.00	0.00
13,100.00	90.03	271.60	7,189.16	472.71	-7,034.49	7,037.32	0.00	0.00	0.00
13,200.00	90.03	271.60	7,189.11	475.50	-7,134.45	7,137.30	0.00	0.00	0.00
13,300.00	90.03	271.60	7,189.06	478.29	-7,234.41	7,237.27	0.00	0.00	0.00
13,400.00	90.03	271.60	7,189.01	481.09	-7,334.37	7,337.25	0.00	0.00	0.00
13,500.00	90.03	271.60	7,188.95	483.88	-7,434.33	7,437.23	0.00	0.00	0.00
13,600.00	90.03	271.60	7,188.90	486.67	-7,534.29	7,537.20	0.00	0.00	0.00
13,700.00	90.03	271.60	7,188.85	489.46	-7,634.25	7,637.18	0.00	0.00	0.00
13,800.00	90.03	271.60	7,188.80	492.25	-7,734.21	7,737.16	0.00	0.00	0.00
13,900.00	90.03	271.60	7,188.75	495.05	-7,834.18	7,837.13	0.00	0.00	0.00
14,000.00	90.03	271.60	7,188.69	497.84	-7,934.14	7,937.11	0.00	0.00	0.00
14,100.00	90.03	271.60	7,188.64	500.63	-8,034.10	8,037.08	0.00	0.00	0.00
14,200.00	90.03	271.60	7,188.59	503.42	-8,134.06	8,137.06	0.00	0.00	0.00
14,300.00	90.03	271.60	7,188.54	506.21	-8,234.02	8,237.04	0.00	0.00	0.00
14,400.00	90.03	271.60	7,188.48	509.01	-8,333.98	8,337.01	0.00	0.00	0.00
14,500.00	90.03	271.60	7,188.43	511.80	-8,433.94	8,436.99	0.00	0.00	0.00
14,600.00	90.03	271.60	7,188.38	514.59	-8,533.90	8,536.97	0.00	0.00	0.00
14,700.00	90.03	271.60	7,188.33	517.38	-8,633.86	8,636.94	0.00	0.00	0.00
14,800.00	90.03	271.60	7,188.27	520.18	-8,733.82	8,736.92	0.00	0.00	0.00
14,900.00	90.03	271.60	7,188.22	522.97	-8,833.79	8,836.90	0.00	0.00	0.00
15,000.00	90.03	271.60	7,188.17	525.76	-8,933.75	8,936.87	0.00	0.00	0.00
15,100.00	90.03	271.60	7,188.12	528.55	-9,033.71	9,036.85	0.00	0.00	0.00
15,200.00	90.03	271.60	7,188.06	531.34	-9,133.67	9,136.83	0.00	0.00	0.00
15,300.00	90.03	271.60	7,188.01	534.14	-9,233.63	9,236.80	0.00	0.00	0.00
15,400.00	90.03	271.60	7,187.96	536.93	-9,333.59	9,336.78	0.00	0.00	0.00
15,500.00	90.03	271.60	7,187.91	539.72	-9,433.55	9,436.76	0.00	0.00	0.00
15,600.00	90.03	271.60	7,187.86	542.51	-9,533.51	9,536.73	0.00	0.00	0.00
15,700.00	90.03	271.60	7,187.80	545.31	-9,633.47	9,636.71	0.00	0.00	0.00
15,800.00	90.03	271.60	7,187.75	548.10	-9,733.43	9,736.69	0.00	0.00	0.00
15,900.00	90.03	271.60	7,187.70	550.89	-9,833.40	9,836.66	0.00	0.00	0.00
16,000.00	90.03	271.60	7,187.65	553.68	-9,933.36	9,936.64	0.00	0.00	0.00
16,100.00	90.03	271.60	7,187.59	556.47	-10,033.32	10,036.62	0.00	0.00	0.00
16,200.00	90.03	271.60	7,187.54	559.27	-10,133.28	10,136.59	0.00	0.00	0.00
16,300.00	90.03	271.60	7,187.49	562.06	-10,233.24	10,236.57	0.00	0.00	0.00
16,314.25	90.03	271.60	7,187.48	562.46	-10,247.48	10,250.82	0.00	0.00	0.00

**Begin Turn for Setback Buffer @ 16314.25ft**

Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<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)
16,400.00	90.03	270.31	7,187.44	563.89	-10,333.22	10,336.56	1.50	0.00	-1.50
16,500.92	90.03	268.80	7,187.38	563.11	-10,434.13	10,437.46	1.50	0.00	-1.50
<b>End Turn @ 16500.92ft</b>									
16,600.00	90.03	268.80	7,187.33	561.03	-10,533.19	10,536.51	0.00	0.00	0.00
16,700.00	90.03	268.80	7,187.28	558.94	-10,633.17	10,636.47	0.00	0.00	0.00
16,800.00	90.03	268.80	7,187.23	556.84	-10,733.15	10,736.44	0.00	0.00	0.00
16,900.00	90.03	268.80	7,187.17	554.75	-10,833.13	10,836.40	0.00	0.00	0.00
17,000.00	90.03	268.80	7,187.12	552.66	-10,933.11	10,936.36	0.00	0.00	0.00
17,100.00	90.03	268.80	7,187.07	550.56	-11,033.08	11,036.32	0.00	0.00	0.00
17,200.00	90.03	268.80	7,187.02	548.47	-11,133.06	11,136.29	0.00	0.00	0.00
17,300.00	90.03	268.80	7,186.97	546.37	-11,233.04	11,236.25	0.00	0.00	0.00
17,400.00	90.03	268.80	7,186.91	544.28	-11,333.02	11,336.21	0.00	0.00	0.00
17,500.00	90.03	268.80	7,186.86	542.18	-11,433.00	11,436.18	0.00	0.00	0.00
17,600.00	90.03	268.80	7,186.81	540.09	-11,532.97	11,536.14	0.00	0.00	0.00
17,700.00	90.03	268.80	7,186.76	538.00	-11,632.95	11,636.10	0.00	0.00	0.00
17,800.00	90.03	268.80	7,186.70	535.90	-11,732.93	11,736.07	0.00	0.00	0.00
17,900.00	90.03	268.80	7,186.65	533.81	-11,832.91	11,836.03	0.00	0.00	0.00
18,000.00	90.03	268.80	7,186.60	531.71	-11,932.89	11,935.99	0.00	0.00	0.00
18,100.00	90.03	268.80	7,186.55	529.62	-12,032.86	12,035.95	0.00	0.00	0.00
18,200.00	90.03	268.80	7,186.49	527.52	-12,132.84	12,135.92	0.00	0.00	0.00
18,300.00	90.03	268.80	7,186.44	525.43	-12,232.82	12,235.88	0.00	0.00	0.00
18,400.00	90.03	268.80	7,186.39	523.34	-12,332.80	12,335.84	0.00	0.00	0.00
18,500.00	90.03	268.80	7,186.34	521.24	-12,432.78	12,435.81	0.00	0.00	0.00
18,600.00	90.03	268.80	7,186.28	519.15	-12,532.75	12,535.77	0.00	0.00	0.00
18,700.00	90.03	268.80	7,186.23	517.05	-12,632.73	12,635.73	0.00	0.00	0.00
18,800.00	90.03	268.80	7,186.18	514.96	-12,732.71	12,735.69	0.00	0.00	0.00
18,900.00	90.03	268.80	7,186.13	512.87	-12,832.69	12,835.66	0.00	0.00	0.00
19,000.00	90.03	268.80	7,186.08	510.77	-12,932.67	12,935.62	0.00	0.00	0.00
19,100.00	90.03	268.80	7,186.02	508.68	-13,032.64	13,035.58	0.00	0.00	0.00
19,200.00	90.03	268.80	7,185.97	506.58	-13,132.62	13,135.55	0.00	0.00	0.00
19,300.00	90.03	268.80	7,185.92	504.49	-13,232.60	13,235.51	0.00	0.00	0.00
19,400.00	90.03	268.80	7,185.87	502.39	-13,332.58	13,335.47	0.00	0.00	0.00
19,500.00	90.03	268.80	7,185.81	500.30	-13,432.56	13,435.43	0.00	0.00	0.00
19,600.00	90.03	268.80	7,185.76	498.21	-13,532.53	13,535.40	0.00	0.00	0.00
19,700.00	90.03	268.80	7,185.71	496.11	-13,632.51	13,635.36	0.00	0.00	0.00
19,800.00	90.03	268.80	7,185.66	494.02	-13,732.49	13,735.32	0.00	0.00	0.00
19,900.00	90.03	268.80	7,185.60	491.92	-13,832.47	13,835.29	0.00	0.00	0.00
20,000.00	90.03	268.80	7,185.55	489.83	-13,932.45	13,935.25	0.00	0.00	0.00
20,100.00	90.03	268.80	7,185.50	487.73	-14,032.42	14,035.21	0.00	0.00	0.00
20,200.00	90.03	268.80	7,185.45	485.64	-14,132.40	14,135.18	0.00	0.00	0.00
20,300.00	90.03	268.80	7,185.39	483.55	-14,232.38	14,235.14	0.00	0.00	0.00
20,400.00	90.03	268.80	7,185.34	481.45	-14,332.36	14,335.10	0.00	0.00	0.00
20,500.00	90.03	268.80	7,185.29	479.36	-14,432.34	14,435.06	0.00	0.00	0.00
20,600.00	90.03	268.80	7,185.24	477.26	-14,532.32	14,535.03	0.00	0.00	0.00
20,700.00	90.03	268.80	7,185.18	475.17	-14,632.29	14,634.99	0.00	0.00	0.00
20,800.00	90.03	268.80	7,185.13	473.07	-14,732.27	14,734.95	0.00	0.00	0.00
20,900.00	90.03	268.80	7,185.08	470.98	-14,832.25	14,834.92	0.00	0.00	0.00
21,000.00	90.03	268.80	7,185.03	468.89	-14,932.23	14,934.88	0.00	0.00	0.00
21,100.00	90.03	268.80	7,184.98	466.79	-15,032.21	15,034.84	0.00	0.00	0.00
21,200.00	90.03	268.80	7,184.92	464.70	-15,132.18	15,134.80	0.00	0.00	0.00
21,300.00	90.03	268.80	7,184.87	462.60	-15,232.16	15,234.77	0.00	0.00	0.00
21,400.00	90.03	268.80	7,184.82	460.51	-15,332.14	15,334.73	0.00	0.00	0.00
21,500.00	90.03	268.80	7,184.77	458.41	-15,432.12	15,434.69	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<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)
21,600.00	90.03	268.80	7,184.71	456.32	-15,532.10	15,534.66	0.00	0.00	0.00
21,700.00	90.03	268.80	7,184.66	454.23	-15,632.07	15,634.62	0.00	0.00	0.00
21,800.00	90.03	268.80	7,184.61	452.13	-15,732.05	15,734.58	0.00	0.00	0.00
21,900.00	90.03	268.80	7,184.56	450.04	-15,832.03	15,834.55	0.00	0.00	0.00
22,000.00	90.03	268.80	7,184.50	447.94	-15,932.01	15,934.51	0.00	0.00	0.00
22,100.00	90.03	268.80	7,184.45	445.85	-16,031.99	16,034.47	0.00	0.00	0.00
22,200.00	90.03	268.80	7,184.40	443.76	-16,131.96	16,134.43	0.00	0.00	0.00
22,300.00	90.03	268.80	7,184.35	441.66	-16,231.94	16,234.40	0.00	0.00	0.00
22,320.00	90.03	268.80	7,184.34	441.24	-16,251.94	16,254.39	0.00	0.00	0.00
<b>Begin Turn to BHL @ 22320.00ft</b>									
22,400.00	90.03	270.00	7,184.29	440.40	-16,331.93	16,334.38	1.50	0.00	1.50
22,440.86	90.03	270.61	7,184.27	440.62	-16,372.79	16,375.23	1.50	0.00	1.50
<b>End Turn @ 22440.86ft</b>									
22,500.00	90.03	270.61	7,184.24	441.26	-16,431.93	16,434.38	0.00	0.00	0.00
22,600.00	90.03	270.61	7,184.19	442.32	-16,531.92	16,534.37	0.00	0.00	0.00
22,700.00	90.03	270.61	7,184.14	443.39	-16,631.92	16,634.37	0.00	0.00	0.00
22,800.00	90.03	270.61	7,184.09	444.46	-16,731.91	16,734.37	0.00	0.00	0.00
22,900.00	90.03	270.61	7,184.04	445.53	-16,831.90	16,834.37	0.00	0.00	0.00
23,000.00	90.03	270.61	7,183.98	446.60	-16,931.90	16,934.37	0.00	0.00	0.00
23,100.00	90.03	270.61	7,183.93	447.67	-17,031.89	17,034.37	0.00	0.00	0.00
23,200.00	90.03	270.61	7,183.88	448.74	-17,131.89	17,134.37	0.00	0.00	0.00
23,300.00	90.03	270.61	7,183.83	449.81	-17,231.88	17,234.37	0.00	0.00	0.00
23,400.00	90.03	270.61	7,183.78	450.88	-17,331.88	17,334.37	0.00	0.00	0.00
23,500.00	90.03	270.61	7,183.73	451.95	-17,431.87	17,434.37	0.00	0.00	0.00
23,600.00	90.03	270.61	7,183.67	453.02	-17,531.86	17,534.37	0.00	0.00	0.00
23,700.00	90.03	270.61	7,183.62	454.09	-17,631.86	17,634.36	0.00	0.00	0.00
23,800.00	90.03	270.61	7,183.57	455.16	-17,731.85	17,734.36	0.00	0.00	0.00
23,900.00	90.03	270.61	7,183.52	456.23	-17,831.85	17,834.36	0.00	0.00	0.00
24,000.00	90.03	270.61	7,183.47	457.30	-17,931.84	17,934.36	0.00	0.00	0.00
24,100.00	90.03	270.61	7,183.42	458.37	-18,031.84	18,034.36	0.00	0.00	0.00
24,200.00	90.03	270.61	7,183.36	459.44	-18,131.83	18,134.36	0.00	0.00	0.00
24,300.00	90.03	270.61	7,183.31	460.51	-18,231.82	18,234.36	0.00	0.00	0.00
24,400.00	90.03	270.61	7,183.26	461.58	-18,331.82	18,334.36	0.00	0.00	0.00
24,500.00	90.03	270.61	7,183.21	462.65	-18,431.81	18,434.36	0.00	0.00	0.00
24,600.00	90.03	270.61	7,183.16	463.72	-18,531.81	18,534.36	0.00	0.00	0.00
24,700.00	90.03	270.61	7,183.11	464.79	-18,631.80	18,634.35	0.00	0.00	0.00
24,800.00	90.03	270.61	7,183.05	465.86	-18,731.80	18,734.35	0.00	0.00	0.00
24,904.22	90.03	270.61	7,183.00	466.97	-18,836.01	18,838.57	0.00	0.00	0.00
<b>TD Well @ 24904.22ft - 5.5" CSG</b>									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,515.23	1,500.00	9 5/8"	9-5/8	13-1/2	
24,904.22	7,183.00	5.5" CSG	5-1/2	7-7/8	

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 26' @ 4851.00usft (BIG RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<b>Design:</b>	Permit Rev-1		

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
716.62	716.00	Fox Hills			
3,662.60	3,607.00	Parkman			
4,149.33	4,089.00	Sussex			
6,954.57	6,850.00	Sharon Springs			
6,990.38	6,880.00	Niobrara			
7,198.12	7,032.00	Nio B			
7,251.49	7,064.00	Nio C			
7,493.11	7,166.00	Fort Hayes			
7,602.16	7,187.00	Codell			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,830.00	1,803.28	50.89	-242.65	Tie-Onto Sfc Svys & Hold @ 1830.00ft
1,950.00	1,918.48	59.13	-275.22	Change Tangent INC @ 1950.00ft
2,501.62	2,457.32	85.91	-387.87	Hold Tangent @ 2501.62ft
4,459.00	4,395.65	141.29	-654.60	Change Tangent AZI @ 4459.00ft
4,653.69	4,588.49	151.39	-679.25	Hold Tangent @ 4653.69ft
6,646.69	6,562.09	301.77	-912.32	KOP @ 6646.69ft :: DLS = 8°/100'
7,687.32	7,192.00	359.23	-1,623.11	End Build @ 7687.32ft
10,539.25	7,190.51	401.54	-4,474.73	Turn for AC @ 10539.25ft
10,589.25	7,190.48	402.60	-4,524.71	End Turn @ 10589.25ft
16,314.25	7,187.48	562.46	-10,247.48	Begin Turn for Setback Buffer @ 16314.25ft
16,500.92	7,187.38	563.11	-10,434.13	End Turn @ 16500.92ft
22,320.00	7,184.34	441.24	-16,251.94	Begin Turn to BHL @ 22320.00ft
22,440.86	7,184.27	440.62	-16,372.79	End Turn @ 22440.86ft
24,904.22	7,183.00	466.97	-18,836.01	TD Well @ 24904.22ft