

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
3N-67W-04 SWARTZ 2-4HZ PAD
SWARTZ 4-11HZ**

Plan C

Plan: Permit Rev-1

Standard Planning Report

04 April, 2024

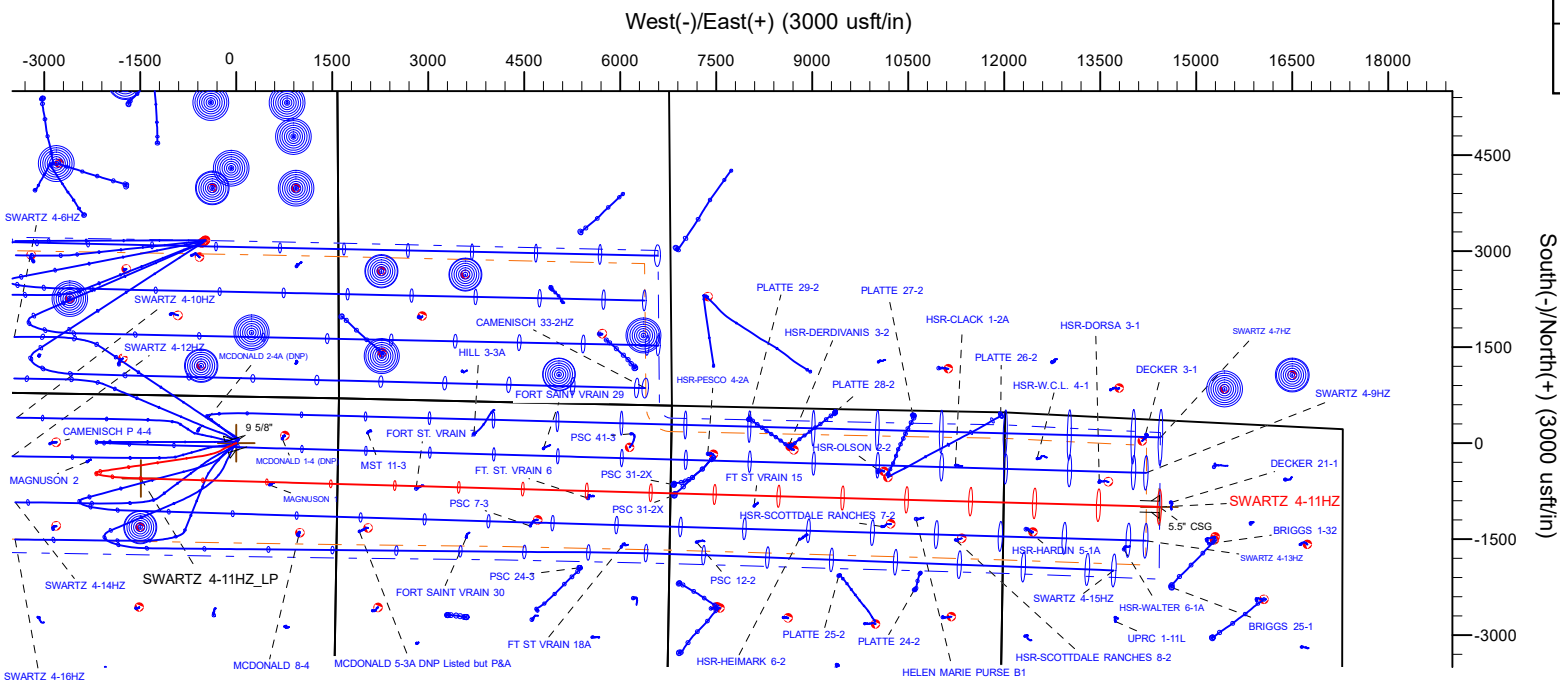
US ROCKIES WATTENBERG PLANNING

CASING DETAILS			
TVD	MD	Name	Size
1500.00	1513.89	9 5/8"	9-5/8
7189.00	23852.68	5.5" CSG	5-1/2



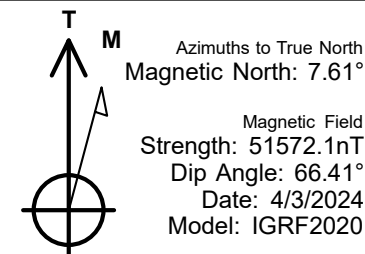
SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1841.00	12.58	238.14	1820.84	-92.88	-203.35	0.00	0.00	-200.68	
1961.00	12.58	238.14	1937.96	-106.68	-225.55	0.00	0.00	-222.48	
3051.42	27.20	261.40	2961.96	-207.31	-575.19	1.50	39.87	-569.18	
6475.97	27.20	261.40	6007.81	-441.38	-2122.95	0.00	0.00	-2109.80	
7928.58	89.47	91.60	7042.00	-552.12	-1492.75	8.00	-168.62	-1476.75	
23852.68	89.47	91.60	7189.00	-995.88	14424.48	0.00	0.00	14446.67	SWARTZ 4-11HZ BHL

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	Northing	Easting	Latitude	Longitude
SWARTZ 4-11HZ_SHL	0.00	14621482.27	1670612.31	40.260142	-104.891766
SWARTZ 4-11HZ_LP	7042.00	14620928.33	1669120.24	40.258626	-104.897117
SWARTZ 4-11HZ_BHL	7189.00	14620504.00	1685038.00	40.257396	-104.840065



WELL DETAILS: SWARTZ 4-11HZ
GL = 4825'
RKB = 26' @ 4851.00usft (BIG RIG)
Plan: Permit Rev-1 (SWARTZ 4-11HZ/Plan C)
Date: 4/4/2024

FORMATION TOP DETAILS		
TVDPPath	MDPath	Formation
716.00	716.46	Fox Hills
3607.00	3776.66	Parkman
4089.00	4318.58	Sussex
6850.00	7397.12	Sharon Springs
6880.00	7442.84	Niobrara
7032.00	7814.98	Nio B
7064.00	10311.89	Nio C



Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SWARTZ 4-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Site:	3N-67W-04 SWARTZ 2-4HZ PAD	North Reference:	True
Well:	SWARTZ 4-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
Design:	Permit Rev-1		

Project	WELD-NAD83-UTMFT13N		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Zone 13N (108 W to 102 W)		

Site		3N-67W-04 SWARTZ 2-4HZ PAD			
Site Position:		Northing:	14,621,599.90 usft	Latitude:	40.260465
From:	Map	Easting:	1,670,705.29 usft	Longitude:	-104.891433
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	

Well		SWARTZ 4-11HZ				
Well Position	+N/-S	0.00 usft	Northing:	14,621,482.27 usft	Latitude:	40.260142
	+E/-W	0.00 usft	Easting:	1,670,612.31 usft	Longitude:	-104.891766
Position Uncertainty		3.28 usft	Wellhead Elevation:	usft	Ground Level:	4,825.00 usft
Grid Convergence:		0.07 °				

Wellbore	Plan C				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF202013	4/3/2024	7.61	66.41	51,572.11686344

Design	Permit Rev-1				
Audit Notes:					
Version:		Phase:	PLAN	Tie On Depth:	1,841.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	91.60	

Plan Survey Tool Program		Date	4/3/2024		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	91.00	1,841.00	Total Surface MWD+IFR Surveys	APC_ISCWSA REV 2 MWD+I	Fixed:v2:crustal field declinatio
2	1,841.00	23,852.68	Permit Rev-1 (Plan C)	APC_ISCWSA REV 2 MWD+I	Fixed:v2:Rockies, crustal dec +

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Site:	3N-67W-04 SWARTZ 2-4HZ PAD	North Reference:	True
Well:	SWARTZ 4-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
Design:	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
1,841.00	12.58	238.14	1,820.84	-92.88	-203.35	0.00	0.00	0.00	0.00	
1,961.00	12.58	238.14	1,937.96	-106.68	-225.55	0.00	0.00	0.00	0.00	
3,051.42	27.20	261.40	2,961.96	-207.31	-575.19	1.50	1.34	2.13	39.87	
6,475.97	27.20	261.40	6,007.81	-441.38	-2,122.95	0.00	0.00	0.00	0.00	
7,928.58	89.47	91.60	7,042.00	-552.12	-1,492.75	8.00	4.29	-11.69	-168.62	
23,852.68	89.47	91.60	7,189.00	-995.88	14,424.49	0.00	0.00	0.00	0.00	SWARTZ 4-11HZ_BH

Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Site:	3N-67W-04 SWARTZ 2-4HZ PAD	North Reference:	True
Well:	SWARTZ 4-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
Design:	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	0.11	183.65	91.00	-0.08	-0.01	0.00	0.12	0.12	0.00
183.00	0.32	224.13	183.00	-0.35	-0.19	-0.18	0.27	0.23	44.00
275.00	0.36	197.44	275.00	-0.81	-0.46	-0.43	0.18	0.04	-29.01
365.00	0.77	218.08	364.99	-1.56	-0.91	-0.87	0.50	0.46	22.93
455.00	1.12	265.07	454.98	-2.11	-2.16	-2.10	0.91	0.39	52.21
544.00	1.48	257.27	543.96	-2.44	-4.15	-4.08	0.45	0.40	-8.76
634.00	3.54	248.50	633.87	-3.71	-7.87	-7.76	2.32	2.29	-9.74
723.00	6.83	250.49	722.49	-6.49	-15.42	-15.23	3.70	3.70	2.24
813.00	8.53	250.78	811.68	-10.47	-26.76	-26.46	1.89	1.89	0.32
902.00	9.89	241.86	899.54	-16.25	-39.74	-39.27	2.21	1.53	-10.02
992.00	10.82	239.99	988.07	-24.12	-53.87	-53.17	1.10	1.03	-2.08
1,081.00	10.54	242.63	1,075.53	-32.04	-68.33	-67.41	0.63	-0.31	2.97
1,170.00	11.70	244.74	1,162.86	-39.63	-83.72	-82.58	1.38	1.30	2.37
1,260.00	10.78	248.66	1,251.13	-46.59	-99.81	-98.47	1.33	-1.02	4.36
1,349.00	11.69	247.58	1,338.42	-53.06	-115.90	-114.38	1.05	1.02	-1.21
1,439.00	11.45	249.82	1,426.60	-59.62	-132.72	-131.00	0.57	-0.27	2.49
1,513.89	11.42	252.81	1,500.00	-64.37	-146.78	-144.92	0.79	-0.04	4.00
9 5/8"									
1,529.00	11.42	253.42	1,514.81	-65.24	-149.64	-147.76	0.79	-0.01	4.01
1,618.00	10.63	244.78	1,602.17	-71.25	-165.51	-163.46	2.06	-0.89	-9.71
1,708.00	10.33	240.08	1,690.67	-78.82	-180.02	-177.75	1.01	-0.33	-5.22
1,797.00	12.57	238.54	1,777.90	-87.85	-195.20	-192.67	2.54	2.52	-1.73
1,841.00	12.58	238.14	1,820.84	-92.88	-203.35	-200.68	0.20	0.02	-0.91
Tie-Onto Sfc Svcs & Hold @ 1841.00ft									
1,900.00	12.58	238.14	1,878.43	-99.66	-214.26	-211.40	0.00	0.00	0.00
1,961.00	12.58	238.14	1,937.96	-106.68	-225.55	-222.48	0.00	0.00	0.00
Increase Sail Angle @ 1961.00ft									
2,000.00	13.03	239.80	1,975.99	-111.13	-232.96	-229.76	1.50	1.16	4.26
2,100.00	14.24	243.58	2,073.17	-122.28	-253.72	-250.21	1.50	1.21	3.78
2,200.00	15.50	246.77	2,169.82	-133.02	-277.02	-273.19	1.50	1.26	3.19
2,300.00	16.80	249.48	2,265.87	-143.36	-302.83	-298.71	1.50	1.30	2.71
2,400.00	18.12	251.81	2,361.27	-153.28	-331.14	-326.73	1.50	1.33	2.33
2,500.00	19.48	253.83	2,455.93	-162.78	-361.93	-357.24	1.50	1.35	2.02
2,600.00	20.85	255.59	2,549.80	-171.85	-395.18	-390.22	1.50	1.37	1.76
2,700.00	22.23	257.15	2,642.81	-180.49	-430.86	-425.65	1.50	1.39	1.56
2,800.00	23.63	258.53	2,734.91	-188.68	-468.95	-463.50	1.50	1.40	1.38
2,900.00	25.05	259.76	2,826.02	-196.43	-509.43	-503.75	1.50	1.41	1.23
3,000.00	26.47	260.87	2,916.08	-203.73	-552.26	-546.36	1.50	1.42	1.11
3,051.42	27.20	261.40	2,961.96	-207.31	-575.19	-569.18	1.50	1.43	1.03
Hold Tangent @ 3051.42ft									
3,100.00	27.20	261.40	3,005.17	-210.63	-597.15	-591.04	0.00	0.00	0.00
3,200.00	27.20	261.40	3,094.11	-217.46	-642.35	-636.03	0.00	0.00	0.00
3,300.00	27.20	261.40	3,183.05	-224.30	-687.54	-681.01	0.00	0.00	0.00
3,400.00	27.20	261.40	3,272.00	-231.13	-732.74	-726.00	0.00	0.00	0.00
3,500.00	27.20	261.40	3,360.94	-237.97	-777.94	-770.99	0.00	0.00	0.00
3,600.00	27.20	261.40	3,449.88	-244.80	-823.13	-815.98	0.00	0.00	0.00
3,700.00	27.20	261.40	3,538.82	-251.64	-868.33	-860.96	0.00	0.00	0.00
3,776.66	27.20	261.40	3,607.00	-256.88	-902.97	-895.45	0.00	0.00	0.00
Parkman									
3,800.00	27.20	261.40	3,627.76	-258.47	-913.52	-905.95	0.00	0.00	0.00
3,900.00	27.20	261.40	3,716.70	-265.31	-958.72	-950.94	0.00	0.00	0.00
4,000.00	27.20	261.40	3,805.65	-272.15	-1,003.91	-995.92	0.00	0.00	0.00
4,100.00	27.20	261.40	3,894.59	-278.98	-1,049.11	-1,040.91	0.00	0.00	0.00

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Site:	3N-67W-04 SWARTZ 2-4HZ PAD	North Reference:	True
Well:	SWARTZ 4-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
Design:	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)
4,200.00	27.20	261.40	3,983.53	-285.82	-1,094.31	-1,085.90	0.00	0.00	0.00
4,300.00	27.20	261.40	4,072.47	-292.65	-1,139.50	-1,130.89	0.00	0.00	0.00
4,318.58	27.20	261.40	4,089.00	-293.92	-1,147.90	-1,139.25	0.00	0.00	0.00
Sussex									
4,400.00	27.20	261.40	4,161.41	-299.49	-1,184.70	-1,175.87	0.00	0.00	0.00
4,500.00	27.20	261.40	4,250.35	-306.32	-1,229.89	-1,220.86	0.00	0.00	0.00
4,600.00	27.20	261.40	4,339.30	-313.16	-1,275.09	-1,265.85	0.00	0.00	0.00
4,700.00	27.20	261.40	4,428.24	-319.99	-1,320.29	-1,310.84	0.00	0.00	0.00
4,800.00	27.20	261.40	4,517.18	-326.83	-1,365.48	-1,355.82	0.00	0.00	0.00
4,900.00	27.20	261.40	4,606.12	-333.66	-1,410.68	-1,400.81	0.00	0.00	0.00
5,000.00	27.20	261.40	4,695.06	-340.50	-1,455.87	-1,445.80	0.00	0.00	0.00
5,100.00	27.20	261.40	4,784.00	-347.33	-1,501.07	-1,490.79	0.00	0.00	0.00
5,200.00	27.20	261.40	4,872.95	-354.17	-1,546.27	-1,535.77	0.00	0.00	0.00
5,300.00	27.20	261.40	4,961.89	-361.00	-1,591.46	-1,580.76	0.00	0.00	0.00
5,400.00	27.20	261.40	5,050.83	-367.84	-1,636.66	-1,625.75	0.00	0.00	0.00
5,500.00	27.20	261.40	5,139.77	-374.67	-1,681.85	-1,670.74	0.00	0.00	0.00
5,600.00	27.20	261.40	5,228.71	-381.51	-1,727.05	-1,715.72	0.00	0.00	0.00
5,700.00	27.20	261.40	5,317.65	-388.34	-1,772.24	-1,760.71	0.00	0.00	0.00
5,800.00	27.20	261.40	5,406.60	-395.18	-1,817.44	-1,805.70	0.00	0.00	0.00
5,900.00	27.20	261.40	5,495.54	-402.01	-1,862.64	-1,850.69	0.00	0.00	0.00
6,000.00	27.20	261.40	5,584.48	-408.85	-1,907.83	-1,895.67	0.00	0.00	0.00
6,100.00	27.20	261.40	5,673.42	-415.69	-1,953.03	-1,940.66	0.00	0.00	0.00
6,200.00	27.20	261.40	5,762.36	-422.52	-1,998.22	-1,985.65	0.00	0.00	0.00
6,300.00	27.20	261.40	5,851.30	-429.36	-2,043.42	-2,030.63	0.00	0.00	0.00
6,400.00	27.20	261.40	5,940.25	-436.19	-2,088.62	-2,075.62	0.00	0.00	0.00
6,475.97	27.20	261.40	6,007.81	-441.38	-2,122.95	-2,109.80	0.00	0.00	0.00
KOP @ 6475.97ft :: DLS = 8°/100'									
6,500.00	25.32	260.51	6,029.36	-443.05	-2,133.45	-2,120.25	8.00	-7.83	-3.69
6,550.00	21.42	258.20	6,075.25	-446.68	-2,152.94	-2,139.63	8.00	-7.79	-4.62
6,600.00	17.57	254.93	6,122.38	-450.51	-2,169.18	-2,155.75	8.00	-7.70	-6.54
6,650.00	13.81	249.93	6,170.51	-454.52	-2,182.07	-2,168.53	8.00	-7.53	-10.02
6,700.00	10.21	241.38	6,219.41	-458.70	-2,191.57	-2,177.91	8.00	-7.19	-17.10
6,750.00	7.07	224.61	6,268.84	-463.01	-2,197.63	-2,183.84	8.00	-6.30	-33.53
6,800.00	5.24	190.54	6,318.57	-467.45	-2,200.20	-2,186.29	8.00	-3.65	-68.14
6,850.00	6.07	149.90	6,368.35	-471.98	-2,199.29	-2,185.26	8.00	1.67	-81.29
6,900.00	8.84	127.14	6,417.93	-476.59	-2,194.90	-2,180.74	8.00	5.54	-45.51
6,950.00	12.31	116.07	6,467.08	-481.26	-2,187.05	-2,172.76	8.00	6.93	-22.14
7,000.00	16.02	109.93	6,515.55	-485.95	-2,175.77	-2,161.35	8.00	7.43	-12.28
7,050.00	19.84	106.08	6,563.12	-490.66	-2,161.13	-2,146.58	8.00	7.64	-7.70
7,100.00	23.72	103.44	6,609.54	-495.35	-2,143.18	-2,128.52	8.00	7.76	-5.28
7,150.00	27.63	101.51	6,654.59	-500.00	-2,122.03	-2,107.24	8.00	7.82	-3.86
7,200.00	31.57	100.03	6,698.06	-504.60	-2,097.77	-2,082.86	8.00	7.86	-2.97
7,250.00	35.51	98.84	6,739.73	-509.11	-2,070.52	-2,055.50	8.00	7.89	-2.37
7,300.00	39.47	97.86	6,779.39	-513.51	-2,040.42	-2,025.29	8.00	7.91	-1.95
7,350.00	43.43	97.04	6,816.86	-517.80	-2,007.61	-1,992.37	8.00	7.93	-1.65
7,397.12	47.17	96.36	6,850.00	-521.70	-1,974.35	-1,959.01	8.00	7.94	-1.43
Sharon Springs									
7,400.00	47.40	96.33	6,851.95	-521.93	-1,972.25	-1,956.90	8.00	7.94	-1.34
7,442.84	50.80	95.78	6,880.00	-525.34	-1,940.05	-1,924.63	8.00	7.94	-1.26
Niobrara									
7,450.00	51.37	95.70	6,884.50	-525.90	-1,934.51	-1,919.07	8.00	7.95	-1.19
7,500.00	55.34	95.14	6,914.33	-529.68	-1,894.58	-1,879.05	8.00	7.95	-1.12
7,550.00	59.32	94.63	6,941.32	-533.26	-1,852.65	-1,837.03	8.00	7.95	-1.02

Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Site:	3N-67W-04 SWARTZ 2-4HZ PAD	North Reference:	True
Well:	SWARTZ 4-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
Design:	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)
7,600.00	63.30	94.16	6,965.31	-536.62	-1,808.92	-1,793.23	8.00	7.96	-0.94
7,650.00	67.28	93.72	6,986.21	-539.74	-1,763.62	-1,747.86	8.00	7.96	-0.87
7,700.00	71.26	93.31	7,003.90	-542.60	-1,716.95	-1,701.13	8.00	7.96	-0.83
7,750.00	75.24	92.92	7,018.31	-545.20	-1,669.15	-1,653.28	8.00	7.96	-0.79
7,800.00	79.23	92.54	7,029.35	-547.52	-1,620.45	-1,604.53	8.00	7.97	-0.76
7,814.98	80.42	92.42	7,032.00	-548.15	-1,605.72	-1,589.79	8.00	7.97	-0.74
Nio B									
7,850.00	83.21	92.17	7,036.99	-549.54	-1,571.09	-1,555.13	8.00	7.97	-0.74
7,900.00	87.19	91.80	7,041.17	-551.27	-1,521.31	-1,505.32	8.00	7.97	-0.73
7,928.58	89.47	91.60	7,042.00	-552.12	-1,492.75	-1,476.75	8.00	7.97	-0.72
End Build @ 7928.58ft									
8,000.00	89.47	91.60	7,042.66	-554.11	-1,421.36	-1,405.34	0.00	0.00	0.00
8,100.00	89.47	91.60	7,043.58	-556.89	-1,321.41	-1,305.34	0.00	0.00	0.00
8,200.00	89.47	91.60	7,044.50	-559.68	-1,221.45	-1,205.35	0.00	0.00	0.00
8,300.00	89.47	91.60	7,045.43	-562.47	-1,121.49	-1,105.35	0.00	0.00	0.00
8,400.00	89.47	91.60	7,046.35	-565.25	-1,021.54	-1,005.35	0.00	0.00	0.00
8,500.00	89.47	91.60	7,047.27	-568.04	-921.58	-905.36	0.00	0.00	0.00
8,600.00	89.47	91.60	7,048.20	-570.83	-821.62	-805.36	0.00	0.00	0.00
8,700.00	89.47	91.60	7,049.12	-573.61	-721.66	-705.37	0.00	0.00	0.00
8,800.00	89.47	91.60	7,050.04	-576.40	-621.71	-605.37	0.00	0.00	0.00
8,900.00	89.47	91.60	7,050.97	-579.19	-521.75	-505.38	0.00	0.00	0.00
9,000.00	89.47	91.60	7,051.89	-581.97	-421.79	-405.38	0.00	0.00	0.00
9,100.00	89.47	91.60	7,052.81	-584.76	-321.84	-305.38	0.00	0.00	0.00
9,200.00	89.47	91.60	7,053.74	-587.55	-221.88	-205.39	0.00	0.00	0.00
9,300.00	89.47	91.60	7,054.66	-590.33	-121.92	-105.39	0.00	0.00	0.00
9,400.00	89.47	91.60	7,055.58	-593.12	-21.97	-5.40	0.00	0.00	0.00
9,500.00	89.47	91.60	7,056.51	-595.91	77.99	94.60	0.00	0.00	0.00
9,600.00	89.47	91.60	7,057.43	-598.69	177.95	194.59	0.00	0.00	0.00
9,700.00	89.47	91.60	7,058.35	-601.48	277.90	294.59	0.00	0.00	0.00
9,800.00	89.47	91.60	7,059.27	-604.27	377.86	394.59	0.00	0.00	0.00
9,900.00	89.47	91.60	7,060.20	-607.05	477.82	494.58	0.00	0.00	0.00
10,000.00	89.47	91.60	7,061.12	-609.84	577.78	594.58	0.00	0.00	0.00
10,100.00	89.47	91.60	7,062.04	-612.63	677.73	694.57	0.00	0.00	0.00
10,200.00	89.47	91.60	7,062.97	-615.41	777.69	794.57	0.00	0.00	0.00
10,300.00	89.47	91.60	7,063.89	-618.20	877.65	894.57	0.00	0.00	0.00
10,311.89	89.47	91.60	7,064.00	-618.53	889.53	906.46	0.00	0.00	0.00
Nio C									
10,400.00	89.47	91.60	7,064.81	-620.99	977.60	994.56	0.00	0.00	0.00
10,500.00	89.47	91.60	7,065.74	-623.77	1,077.56	1,094.56	0.00	0.00	0.00
10,600.00	89.47	91.60	7,066.66	-626.56	1,177.52	1,194.55	0.00	0.00	0.00
10,700.00	89.47	91.60	7,067.58	-629.35	1,277.47	1,294.55	0.00	0.00	0.00
10,800.00	89.47	91.60	7,068.51	-632.13	1,377.43	1,394.54	0.00	0.00	0.00
10,900.00	89.47	91.60	7,069.43	-634.92	1,477.39	1,494.54	0.00	0.00	0.00
11,000.00	89.47	91.60	7,070.35	-637.71	1,577.34	1,594.54	0.00	0.00	0.00
11,100.00	89.47	91.60	7,071.28	-640.50	1,677.30	1,694.53	0.00	0.00	0.00
11,200.00	89.47	91.60	7,072.20	-643.28	1,777.26	1,794.53	0.00	0.00	0.00
11,300.00	89.47	91.60	7,073.12	-646.07	1,877.22	1,894.52	0.00	0.00	0.00
11,400.00	89.47	91.60	7,074.04	-648.86	1,977.17	1,994.52	0.00	0.00	0.00
11,500.00	89.47	91.60	7,074.97	-651.64	2,077.13	2,094.51	0.00	0.00	0.00
11,600.00	89.47	91.60	7,075.89	-654.43	2,177.09	2,194.51	0.00	0.00	0.00
11,700.00	89.47	91.60	7,076.81	-657.22	2,277.04	2,294.51	0.00	0.00	0.00
11,800.00	89.47	91.60	7,077.74	-660.00	2,377.00	2,394.50	0.00	0.00	0.00
11,900.00	89.47	91.60	7,078.66	-662.79	2,476.96	2,494.50	0.00	0.00	0.00

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SWARTZ 4-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Site:	3N-67W-04 SWARTZ 2-4HZ PAD	North Reference:	True
Well:	SWARTZ 4-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
Design:	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)	
12,000.00	89.47	91.60	7,079.58	-665.58	2,576.91	2,594.49	0.00	0.00	0.00	
12,100.00	89.47	91.60	7,080.51	-668.36	2,676.87	2,694.49	0.00	0.00	0.00	
12,200.00	89.47	91.60	7,081.43	-671.15	2,776.83	2,794.48	0.00	0.00	0.00	
12,300.00	89.47	91.60	7,082.35	-673.94	2,876.78	2,894.48	0.00	0.00	0.00	
12,400.00	89.47	91.60	7,083.28	-676.72	2,976.74	2,994.48	0.00	0.00	0.00	
12,500.00	89.47	91.60	7,084.20	-679.51	3,076.70	3,094.47	0.00	0.00	0.00	
12,600.00	89.47	91.60	7,085.12	-682.30	3,176.65	3,194.47	0.00	0.00	0.00	
12,700.00	89.47	91.60	7,086.05	-685.08	3,276.61	3,294.46	0.00	0.00	0.00	
12,800.00	89.47	91.60	7,086.97	-687.87	3,376.57	3,394.46	0.00	0.00	0.00	
12,900.00	89.47	91.60	7,087.89	-690.66	3,476.53	3,494.45	0.00	0.00	0.00	
13,000.00	89.47	91.60	7,088.82	-693.44	3,576.48	3,594.45	0.00	0.00	0.00	
13,100.00	89.47	91.60	7,089.74	-696.23	3,676.44	3,694.45	0.00	0.00	0.00	
13,200.00	89.47	91.60	7,090.66	-699.02	3,776.40	3,794.44	0.00	0.00	0.00	
13,300.00	89.47	91.60	7,091.58	-701.80	3,876.35	3,894.44	0.00	0.00	0.00	
13,400.00	89.47	91.60	7,092.51	-704.59	3,976.31	3,994.43	0.00	0.00	0.00	
13,500.00	89.47	91.60	7,093.43	-707.38	4,076.27	4,094.43	0.00	0.00	0.00	
13,600.00	89.47	91.60	7,094.35	-710.16	4,176.22	4,194.42	0.00	0.00	0.00	
13,700.00	89.47	91.60	7,095.28	-712.95	4,276.18	4,294.42	0.00	0.00	0.00	
13,800.00	89.47	91.60	7,096.20	-715.74	4,376.14	4,394.42	0.00	0.00	0.00	
13,900.00	89.47	91.60	7,097.12	-718.52	4,476.09	4,494.41	0.00	0.00	0.00	
14,000.00	89.47	91.60	7,098.05	-721.31	4,576.05	4,594.41	0.00	0.00	0.00	
14,100.00	89.47	91.60	7,098.97	-724.10	4,676.01	4,694.40	0.00	0.00	0.00	
14,200.00	89.47	91.60	7,099.89	-726.88	4,775.97	4,794.40	0.00	0.00	0.00	
14,300.00	89.47	91.60	7,100.82	-729.67	4,875.92	4,894.39	0.00	0.00	0.00	
14,400.00	89.47	91.60	7,101.74	-732.46	4,975.88	4,994.39	0.00	0.00	0.00	
14,500.00	89.47	91.60	7,102.66	-735.24	5,075.84	5,094.39	0.00	0.00	0.00	
14,600.00	89.47	91.60	7,103.59	-738.03	5,175.79	5,194.38	0.00	0.00	0.00	
14,700.00	89.47	91.60	7,104.51	-740.82	5,275.75	5,294.38	0.00	0.00	0.00	
14,800.00	89.47	91.60	7,105.43	-743.61	5,375.71	5,394.37	0.00	0.00	0.00	
14,900.00	89.47	91.60	7,106.35	-746.39	5,475.66	5,494.37	0.00	0.00	0.00	
15,000.00	89.47	91.60	7,107.28	-749.18	5,575.62	5,594.36	0.00	0.00	0.00	
15,100.00	89.47	91.60	7,108.20	-751.97	5,675.58	5,694.36	0.00	0.00	0.00	
15,200.00	89.47	91.60	7,109.12	-754.75	5,775.53	5,794.36	0.00	0.00	0.00	
15,300.00	89.47	91.60	7,110.05	-757.54	5,875.49	5,894.35	0.00	0.00	0.00	
15,400.00	89.47	91.60	7,110.97	-760.33	5,975.45	5,994.35	0.00	0.00	0.00	
15,500.00	89.47	91.60	7,111.89	-763.11	6,075.41	6,094.34	0.00	0.00	0.00	
15,600.00	89.47	91.60	7,112.82	-765.90	6,175.36	6,194.34	0.00	0.00	0.00	
15,700.00	89.47	91.60	7,113.74	-768.69	6,275.32	6,294.34	0.00	0.00	0.00	
15,800.00	89.47	91.60	7,114.66	-771.47	6,375.28	6,394.33	0.00	0.00	0.00	
15,900.00	89.47	91.60	7,115.59	-774.26	6,475.23	6,494.33	0.00	0.00	0.00	
16,000.00	89.47	91.60	7,116.51	-777.05	6,575.19	6,594.32	0.00	0.00	0.00	
16,100.00	89.47	91.60	7,117.43	-779.83	6,675.15	6,694.32	0.00	0.00	0.00	
16,200.00	89.47	91.60	7,118.36	-782.62	6,775.10	6,794.31	0.00	0.00	0.00	
16,300.00	89.47	91.60	7,119.28	-785.41	6,875.06	6,894.31	0.00	0.00	0.00	
16,400.00	89.47	91.60	7,120.20	-788.19	6,975.02	6,994.31	0.00	0.00	0.00	
16,500.00	89.47	91.60	7,121.12	-790.98	7,074.97	7,094.30	0.00	0.00	0.00	
16,600.00	89.47	91.60	7,122.05	-793.77	7,174.93	7,194.30	0.00	0.00	0.00	
16,700.00	89.47	91.60	7,122.97	-796.55	7,274.89	7,294.29	0.00	0.00	0.00	
16,800.00	89.47	91.60	7,123.89	-799.34	7,374.84	7,394.29	0.00	0.00	0.00	
16,900.00	89.47	91.60	7,124.82	-802.13	7,474.80	7,494.28	0.00	0.00	0.00	
17,000.00	89.47	91.60	7,125.74	-804.91	7,574.76	7,594.28	0.00	0.00	0.00	
17,100.00	89.47	91.60	7,126.66	-807.70	7,674.72	7,694.28	0.00	0.00	0.00	
17,200.00	89.47	91.60	7,127.59	-810.49	7,774.67	7,794.27	0.00	0.00	0.00	
17,300.00	89.47	91.60	7,128.51	-813.27	7,874.63	7,894.27	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SWARTZ 4-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Site:	3N-67W-04 SWARTZ 2-4HZ PAD	North Reference:	True
Well:	SWARTZ 4-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
Design:	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)	
17,400.00	89.47	91.60	7,129.43	-816.06	7,974.59	7,994.26	0.00	0.00	0.00	
17,500.00	89.47	91.60	7,130.36	-818.85	8,074.54	8,094.26	0.00	0.00	0.00	
17,600.00	89.47	91.60	7,131.28	-821.63	8,174.50	8,194.25	0.00	0.00	0.00	
17,700.00	89.47	91.60	7,132.20	-824.42	8,274.46	8,294.25	0.00	0.00	0.00	
17,800.00	89.47	91.60	7,133.13	-827.21	8,374.41	8,394.25	0.00	0.00	0.00	
17,900.00	89.47	91.60	7,134.05	-829.99	8,474.37	8,494.24	0.00	0.00	0.00	
18,000.00	89.47	91.60	7,134.97	-832.78	8,574.33	8,594.24	0.00	0.00	0.00	
18,100.00	89.47	91.60	7,135.90	-835.57	8,674.28	8,694.23	0.00	0.00	0.00	
18,200.00	89.47	91.60	7,136.82	-838.35	8,774.24	8,794.23	0.00	0.00	0.00	
18,300.00	89.47	91.60	7,137.74	-841.14	8,874.20	8,894.22	0.00	0.00	0.00	
18,400.00	89.47	91.60	7,138.66	-843.93	8,974.16	8,994.22	0.00	0.00	0.00	
18,500.00	89.47	91.60	7,139.59	-846.72	9,074.11	9,094.22	0.00	0.00	0.00	
18,600.00	89.47	91.60	7,140.51	-849.50	9,174.07	9,194.21	0.00	0.00	0.00	
18,700.00	89.47	91.60	7,141.43	-852.29	9,274.03	9,294.21	0.00	0.00	0.00	
18,800.00	89.47	91.60	7,142.36	-855.08	9,373.98	9,394.20	0.00	0.00	0.00	
18,900.00	89.47	91.60	7,143.28	-857.86	9,473.94	9,494.20	0.00	0.00	0.00	
19,000.00	89.47	91.60	7,144.20	-860.65	9,573.90	9,594.19	0.00	0.00	0.00	
19,100.00	89.47	91.60	7,145.13	-863.44	9,673.85	9,694.19	0.00	0.00	0.00	
19,200.00	89.47	91.60	7,146.05	-866.22	9,773.81	9,794.19	0.00	0.00	0.00	
19,300.00	89.47	91.60	7,146.97	-869.01	9,873.77	9,894.18	0.00	0.00	0.00	
19,400.00	89.47	91.60	7,147.90	-871.80	9,973.72	9,994.18	0.00	0.00	0.00	
19,500.00	89.47	91.60	7,148.82	-874.58	10,073.68	10,094.17	0.00	0.00	0.00	
19,600.00	89.47	91.60	7,149.74	-877.37	10,173.64	10,194.17	0.00	0.00	0.00	
19,700.00	89.47	91.60	7,150.67	-880.16	10,273.59	10,294.16	0.00	0.00	0.00	
19,800.00	89.47	91.60	7,151.59	-882.94	10,373.55	10,394.16	0.00	0.00	0.00	
19,900.00	89.47	91.60	7,152.51	-885.73	10,473.51	10,494.16	0.00	0.00	0.00	
20,000.00	89.47	91.60	7,153.43	-888.52	10,573.47	10,594.15	0.00	0.00	0.00	
20,100.00	89.47	91.60	7,154.36	-891.30	10,673.42	10,694.15	0.00	0.00	0.00	
20,200.00	89.47	91.60	7,155.28	-894.09	10,773.38	10,794.14	0.00	0.00	0.00	
20,300.00	89.47	91.60	7,156.20	-896.88	10,873.34	10,894.14	0.00	0.00	0.00	
20,400.00	89.47	91.60	7,157.13	-899.66	10,973.29	10,994.13	0.00	0.00	0.00	
20,500.00	89.47	91.60	7,158.05	-902.45	11,073.25	11,094.13	0.00	0.00	0.00	
20,600.00	89.47	91.60	7,158.97	-905.24	11,173.21	11,194.13	0.00	0.00	0.00	
20,700.00	89.47	91.60	7,159.90	-908.02	11,273.16	11,294.12	0.00	0.00	0.00	
20,800.00	89.47	91.60	7,160.82	-910.81	11,373.12	11,394.12	0.00	0.00	0.00	
20,900.00	89.47	91.60	7,161.74	-913.60	11,473.08	11,494.11	0.00	0.00	0.00	
21,000.00	89.47	91.60	7,162.67	-916.38	11,573.03	11,594.11	0.00	0.00	0.00	
21,100.00	89.47	91.60	7,163.59	-919.17	11,672.99	11,694.11	0.00	0.00	0.00	
21,200.00	89.47	91.60	7,164.51	-921.96	11,772.95	11,794.10	0.00	0.00	0.00	
21,300.00	89.47	91.60	7,165.44	-924.74	11,872.91	11,894.10	0.00	0.00	0.00	
21,400.00	89.47	91.60	7,166.36	-927.53	11,972.86	11,994.09	0.00	0.00	0.00	
21,500.00	89.47	91.60	7,167.28	-930.32	12,072.82	12,094.09	0.00	0.00	0.00	
21,600.00	89.47	91.60	7,168.20	-933.10	12,172.78	12,194.08	0.00	0.00	0.00	
21,700.00	89.47	91.60	7,169.13	-935.89	12,272.73	12,294.08	0.00	0.00	0.00	
21,800.00	89.47	91.60	7,170.05	-938.68	12,372.69	12,394.08	0.00	0.00	0.00	
21,900.00	89.47	91.60	7,170.97	-941.46	12,472.65	12,494.07	0.00	0.00	0.00	
22,000.00	89.47	91.60	7,171.90	-944.25	12,572.60	12,594.07	0.00	0.00	0.00	
22,100.00	89.47	91.60	7,172.82	-947.04	12,672.56	12,694.06	0.00	0.00	0.00	
22,200.00	89.47	91.60	7,173.74	-949.83	12,772.52	12,794.06	0.00	0.00	0.00	
22,300.00	89.47	91.60	7,174.67	-952.61	12,872.47	12,894.05	0.00	0.00	0.00	
22,400.00	89.47	91.60	7,175.59	-955.40	12,972.43	12,994.05	0.00	0.00	0.00	
22,500.00	89.47	91.60	7,176.51	-958.19	13,072.39	13,094.05	0.00	0.00	0.00	
22,600.00	89.47	91.60	7,177.44	-960.97	13,172.35	13,194.04	0.00	0.00	0.00	
22,700.00	89.47	91.60	7,178.36	-963.76	13,272.30	13,294.04	0.00	0.00	0.00	

Planning Report

Database:	EDM 5000.16 Single User Db	Local Co-ordinate Reference:	Well SWARTZ 4-11HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 26' @ 4851.00usft (BIG RIG)
Site:	3N-67W-04 SWARTZ 2-4HZ PAD	North Reference:	True
Well:	SWARTZ 4-11HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
Design:	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)
22,800.00	89.47	91.60	7,179.28	-966.55	13,372.26	13,394.03	0.00	0.00	0.00
22,900.00	89.47	91.60	7,180.21	-969.33	13,472.22	13,494.03	0.00	0.00	0.00
23,000.00	89.47	91.60	7,181.13	-972.12	13,572.17	13,594.02	0.00	0.00	0.00
23,100.00	89.47	91.60	7,182.05	-974.91	13,672.13	13,694.02	0.00	0.00	0.00
23,200.00	89.47	91.60	7,182.98	-977.69	13,772.09	13,794.02	0.00	0.00	0.00
23,300.00	89.47	91.60	7,183.90	-980.48	13,872.04	13,894.01	0.00	0.00	0.00
23,400.00	89.47	91.60	7,184.82	-983.27	13,972.00	13,994.01	0.00	0.00	0.00
23,500.00	89.47	91.60	7,185.74	-986.05	14,071.96	14,094.00	0.00	0.00	0.00
23,600.00	89.47	91.60	7,186.67	-988.84	14,171.91	14,194.00	0.00	0.00	0.00
23,700.00	89.47	91.60	7,187.59	-991.63	14,271.87	14,293.99	0.00	0.00	0.00
23,800.00	89.47	91.60	7,188.51	-994.41	14,371.83	14,393.99	0.00	0.00	0.00
23,852.68	89.47	91.60	7,189.00	-995.88	14,424.49	14,446.67	0.00	0.00	0.00
TD Well @ 23852.68ft - 5.5" CSG									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,513.89	1,500.00	9 5/8"	9-5/8	13-1/2	
23,852.68	7,189.00	5.5" CSG	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
716.46	716.00	Fox Hills			
3,776.66	3,607.00	Parkman			
4,318.58	4,089.00	Sussex			
7,397.12	6,850.00	Sharon Springs			
7,442.84	6,880.00	Niobrara			
7,814.98	7,032.00	Nio B			
10,311.89	7,064.00	Nio C			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,841.00	1,820.84	-92.88	-203.35	Tie-Onto Sfc Svys & Hold @ 1841.00ft
1,961.00	1,937.96	-106.68	-225.55	Increase Sail Angle @ 1961.00ft
3,051.42	2,961.96	-207.31	-575.19	Hold Tangent @ 3051.42ft
6,475.97	6,007.81	-441.38	-2,122.95	KOP @ 6475.97ft :: DLS = 8°/100'
7,928.58	7,042.00	-552.12	-1,492.75	End Build @ 7928.58ft
23,852.68	7,189.00	-995.88	14,424.49	TD Well @ 23852.68ft