

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
3N-67W-04 SWARTZ 2-4HZ PAD  
SWARTZ 4-6HZ**

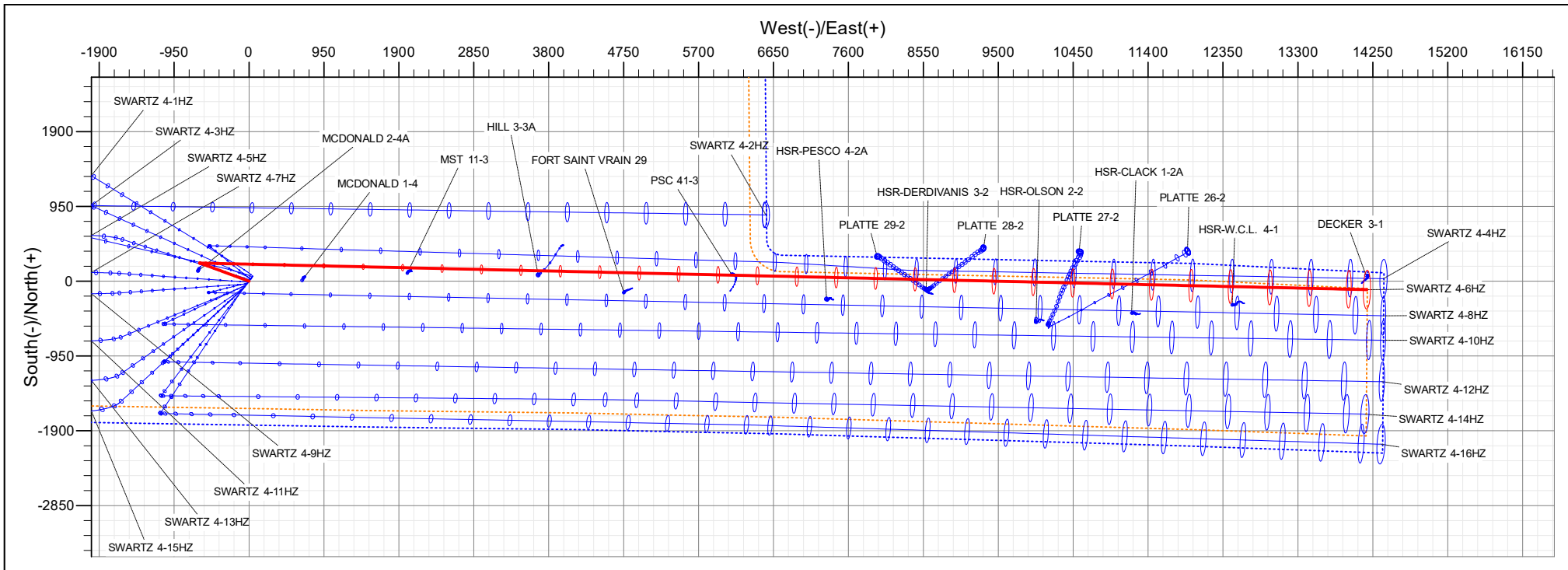
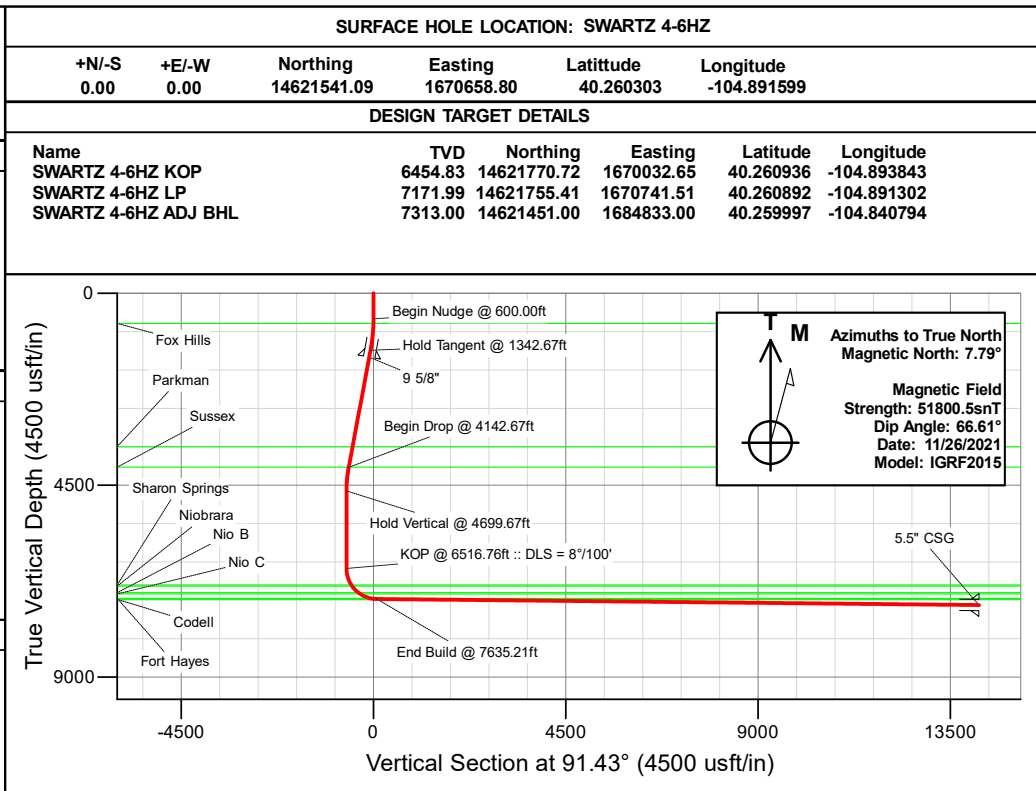
**Plan A**

**Plan: Permit Rev-2**

## **Standard Planning Report**

**25 January, 2022**

Project: WELD-NAD83-UTMFT13N Site: 3N-67W-04 SWARTZ 2-4HZ PAD Well: SWARTZ 4-6HZ Wellbore: Plan A Design: Permit Rev-2										
SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	
3	1342.67	11.14	290.21	1338.00	24.86	-67.54	1.50	290.21	-68.14	
4	4142.67	11.14	290.21	4085.24	211.75	-575.21	0.00	0.00	-580.32	
5	4699.67	0.00	0.00	4638.74	230.40	-625.87	2.00	180.00	-631.42	
6	6516.76	0.00	0.00	6455.83	230.40	-625.87	0.00	0.00	-631.42	
7	7634.60	89.43	91.31	7171.99	214.22	82.98	8.00	91.31	77.61	
8	21730.07	89.43	91.31	7313.00	-107.42	14174.08	0.00	0.00	14172.35	
CASING DETAILS					FORMATION TOP DETAILS					
TVD	MD	Name	Size		TVDPath	MDPath		Formation		
1500.00	1507.78	9 5/8"	9-5/8		707.00	707.01		Fox Hills		
7313.00	21730.07	5.5" CSG	5-1/2		3598.00	3646.07		Parkman		
					4080.00	4137.33		Sussex		
					6841.00	6923.43		Sharon Springs		
					6871.00	6959.62		Niobrara		
					7023.00	7171.33		Nio B		
					7055.00	7226.55		Nio C		
					7157.00	7494.79		Fort Hayes		
					7178.00	8235.29		Codell		
ELEVATION										
GROUND ELEVATION:				4825.00						
RKB = 17' @				4842ft						
FOOTAGE CALLOUTS										
SHL			LP					BHL		



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-6HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

<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>Latitude:</b> 40.260465
<b>From:</b>	Map	<b>Easting:</b>	1,670,705.29 usft	<b>Longitude:</b> -104.891433
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.07 °

<b>Well</b>	SWARTZ 4-6HZ			
<b>Well Position</b>	<b>+N/-S</b>	-58.75 usft	<b>Northing:</b>	14,621,541.09 usft
	<b>+E/-W</b>	-46.56 usft	<b>Easting:</b>	1,670,658.80 usft
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>	<b>Latitude:</b> 40.260304
				<b>Longitude:</b> -104.891600
				<b>Ground Level:</b> 4,825.00 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	11/26/2021	7.79	66.61	51,800.45901014

<b>Design</b>	Permit Rev-2			
<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	91.43

<b>Plan Survey Tool Program</b>	<b>Date</b>	1/25/2022		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	2,000.00	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD Fixed:v2:standard declination
2	2,000.00	21,729.07	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +

# Corporate Planning Report

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<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-6HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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	
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,342.67	11.14	290.21	1,338.00	24.86	-67.54	1.50	1.50	0.00	290.21	
4,142.67	11.14	290.21	4,085.24	211.75	-575.21	0.00	0.00	0.00	0.00	
4,699.67	0.00	0.00	4,638.74	230.40	-625.87	2.00	-2.00	0.00	180.00	
6,516.76	0.00	0.00	6,455.83	230.40	-625.87	0.00	0.00	0.00	0.00	
7,634.60	89.43	91.31	7,171.99	214.22	82.98	8.00	8.00	8.17	91.31	
21,730.07	89.43	91.31	7,313.00	-107.42	14,174.08	0.00	0.00	0.00	0.00	SWARTZ 4-6HZ ADJ

**Corporate**  
Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-6HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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
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	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 600.00ft</b>									
700.00	1.50	290.21	699.99	0.45	-1.23	-1.24	1.50	1.50	0.00
707.01	1.61	290.21	707.00	0.52	-1.41	-1.42	1.50	1.50	0.00
<b>Fox Hills</b>									
800.00	3.00	290.21	799.91	1.81	-4.91	-4.96	1.50	1.50	0.00
900.00	4.50	290.21	899.69	4.07	-11.05	-11.15	1.50	1.50	0.00
1,000.00	6.00	290.21	999.27	7.23	-19.64	-19.81	1.50	1.50	0.00
1,100.00	7.50	290.21	1,098.57	11.29	-30.67	-30.94	1.50	1.50	0.00
1,200.00	9.00	290.21	1,197.54	16.25	-44.13	-44.52	1.50	1.50	0.00
1,300.00	10.50	290.21	1,296.09	22.10	-60.02	-60.56	1.50	1.50	0.00
1,342.67	11.14	290.21	1,338.00	24.86	-67.54	-68.14	1.50	1.50	0.00
<b>Hold Tangent @ 1342.67ft</b>									
1,400.00	11.14	290.21	1,394.25	28.69	-77.94	-78.63	0.00	0.00	0.00
1,500.00	11.14	290.21	1,492.37	35.36	-96.07	-96.92	0.00	0.00	0.00
1,507.78	11.14	290.21	1,500.00	35.88	-97.48	-98.34	0.00	0.00	0.00
<b>9 5/8"</b>									
1,600.00	11.14	290.21	1,590.48	42.04	-114.20	-115.21	0.00	0.00	0.00
1,700.00	11.14	290.21	1,688.60	48.71	-132.33	-133.50	0.00	0.00	0.00
1,800.00	11.14	290.21	1,786.71	55.39	-150.46	-151.80	0.00	0.00	0.00
1,900.00	11.14	290.21	1,884.83	62.06	-168.59	-170.09	0.00	0.00	0.00
2,000.00	11.14	290.21	1,982.94	68.74	-186.72	-188.38	0.00	0.00	0.00
2,100.00	11.14	290.21	2,081.06	75.41	-204.85	-206.67	0.00	0.00	0.00
2,200.00	11.14	290.21	2,179.18	82.09	-222.98	-224.96	0.00	0.00	0.00
2,300.00	11.14	290.21	2,277.29	88.76	-241.12	-243.26	0.00	0.00	0.00
2,400.00	11.14	290.21	2,375.41	95.44	-259.25	-261.55	0.00	0.00	0.00
2,500.00	11.14	290.21	2,473.52	102.11	-277.38	-279.84	0.00	0.00	0.00
2,600.00	11.14	290.21	2,571.64	108.78	-295.51	-298.13	0.00	0.00	0.00
2,700.00	11.14	290.21	2,669.75	115.46	-313.64	-316.42	0.00	0.00	0.00
2,800.00	11.14	290.21	2,767.87	122.13	-331.77	-334.72	0.00	0.00	0.00
2,900.00	11.14	290.21	2,865.99	128.81	-349.90	-353.01	0.00	0.00	0.00
3,000.00	11.14	290.21	2,964.10	135.48	-368.03	-371.30	0.00	0.00	0.00
3,100.00	11.14	290.21	3,062.22	142.16	-386.17	-389.59	0.00	0.00	0.00
3,200.00	11.14	290.21	3,160.33	148.83	-404.30	-407.88	0.00	0.00	0.00
3,300.00	11.14	290.21	3,258.45	155.51	-422.43	-426.18	0.00	0.00	0.00
3,400.00	11.14	290.21	3,356.57	162.18	-440.56	-444.47	0.00	0.00	0.00
3,500.00	11.14	290.21	3,454.68	168.86	-458.69	-462.76	0.00	0.00	0.00
3,600.00	11.14	290.21	3,552.80	175.53	-476.82	-481.05	0.00	0.00	0.00
3,646.07	11.14	290.21	3,598.00	178.61	-485.17	-489.48	0.00	0.00	0.00
<b>Parkman</b>									
3,700.00	11.14	290.21	3,650.91	182.21	-494.95	-499.35	0.00	0.00	0.00
3,800.00	11.14	290.21	3,749.03	188.88	-513.08	-517.64	0.00	0.00	0.00
3,900.00	11.14	290.21	3,847.14	195.55	-531.21	-535.93	0.00	0.00	0.00
4,000.00	11.14	290.21	3,945.26	202.23	-549.35	-554.22	0.00	0.00	0.00
4,100.00	11.14	290.21	4,043.38	208.90	-567.48	-572.51	0.00	0.00	0.00
4,137.33	11.14	290.21	4,080.00	211.39	-574.24	-579.34	0.00	0.00	0.00
<b>Sussex</b>									

**Corporate**  
Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-6HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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)
4,142.67	11.14	290.21	4,085.24	211.75	-575.21	-580.32	0.00	0.00	0.00
<b>Begin Drop @ 4142.67ft</b>									
4,200.00	9.99	290.21	4,141.60	215.38	-585.08	-590.27	2.00	-2.00	0.00
4,300.00	7.99	290.21	4,240.36	220.78	-599.75	-605.07	2.00	-2.00	0.00
4,400.00	5.99	290.21	4,339.62	224.99	-611.17	-616.60	2.00	-2.00	0.00
4,500.00	3.99	290.21	4,439.23	228.00	-619.34	-624.84	2.00	-2.00	0.00
4,600.00	1.99	290.21	4,539.09	229.80	-624.24	-629.78	2.00	-2.00	0.00
4,699.67	0.00	0.00	4,638.74	230.40	-625.87	-631.42	2.00	-2.00	0.00
<b>Hold Vertical @ 4699.67ft</b>									
4,700.00	0.00	0.00	4,639.07	230.40	-625.87	-631.42	0.00	0.00	0.00
4,800.00	0.00	0.00	4,739.07	230.40	-625.87	-631.42	0.00	0.00	0.00
4,900.00	0.00	0.00	4,839.07	230.40	-625.87	-631.42	0.00	0.00	0.00
5,000.00	0.00	0.00	4,939.07	230.40	-625.87	-631.42	0.00	0.00	0.00
5,100.00	0.00	0.00	5,039.07	230.40	-625.87	-631.42	0.00	0.00	0.00
5,200.00	0.00	0.00	5,139.07	230.40	-625.87	-631.42	0.00	0.00	0.00
5,300.00	0.00	0.00	5,239.07	230.40	-625.87	-631.42	0.00	0.00	0.00
5,400.00	0.00	0.00	5,339.07	230.40	-625.87	-631.42	0.00	0.00	0.00
5,500.00	0.00	0.00	5,439.07	230.40	-625.87	-631.42	0.00	0.00	0.00
5,600.00	0.00	0.00	5,539.07	230.40	-625.87	-631.42	0.00	0.00	0.00
5,700.00	0.00	0.00	5,639.07	230.40	-625.87	-631.42	0.00	0.00	0.00
5,800.00	0.00	0.00	5,739.07	230.40	-625.87	-631.42	0.00	0.00	0.00
5,900.00	0.00	0.00	5,839.07	230.40	-625.87	-631.42	0.00	0.00	0.00
6,000.00	0.00	0.00	5,939.07	230.40	-625.87	-631.42	0.00	0.00	0.00
6,100.00	0.00	0.00	6,039.07	230.40	-625.87	-631.42	0.00	0.00	0.00
6,200.00	0.00	0.00	6,139.07	230.40	-625.87	-631.42	0.00	0.00	0.00
6,300.00	0.00	0.00	6,239.07	230.40	-625.87	-631.42	0.00	0.00	0.00
6,400.00	0.00	0.00	6,339.07	230.40	-625.87	-631.42	0.00	0.00	0.00
6,500.00	0.00	0.00	6,439.07	230.40	-625.87	-631.42	0.00	0.00	0.00
6,516.76	0.00	0.00	6,455.83	230.40	-625.87	-631.42	0.00	0.00	0.00
<b>KOP @ 6516.76ft :: DLS = 8°/100'</b>									
6,600.00	6.66	91.31	6,538.88	230.29	-621.04	-626.59	8.00	8.00	0.00
6,700.00	14.66	91.31	6,637.08	229.87	-602.56	-608.11	8.00	8.00	0.00
6,800.00	22.66	91.31	6,731.74	229.14	-570.60	-576.14	8.00	8.00	0.00
6,900.00	30.66	91.31	6,821.04	228.11	-525.78	-531.31	8.00	8.00	0.00
6,923.43	32.53	91.31	6,841.00	227.83	-513.51	-519.03	8.00	8.00	0.00
<b>Sharon Springs</b>									
6,959.62	35.43	91.31	6,871.00	227.37	-493.29	-498.81	8.00	8.00	0.00
<b>Niobrara</b>									
7,000.00	38.66	91.31	6,903.23	226.82	-468.97	-474.49	8.00	8.00	0.00
7,100.00	46.66	91.31	6,976.71	225.27	-401.28	-406.78	8.00	8.00	0.00
7,171.33	52.37	91.31	7,023.00	224.04	-347.07	-352.55	8.00	8.00	0.00
<b>Nio B</b>									
7,200.00	54.66	91.31	7,040.05	223.51	-324.03	-329.50	8.00	8.00	0.00
7,226.55	56.78	91.31	7,055.00	223.01	-302.10	-307.57	8.00	8.00	0.00
<b>Nio C</b>									
7,300.00	62.66	91.31	7,092.02	221.56	-238.71	-244.16	8.00	8.00	0.00
7,400.00	70.66	91.31	7,131.61	219.47	-146.99	-152.42	8.00	8.00	0.00
7,494.79	78.24	91.31	7,157.00	217.39	-55.76	-61.17	8.00	8.00	0.00
<b>Fort Hayes</b>									
7,500.00	78.66	91.31	7,158.04	217.27	-50.66	-56.06	8.00	8.00	0.00
7,600.00	86.66	91.31	7,170.81	215.01	48.42	43.04	8.00	8.00	0.00
7,634.60	89.43	91.31	7,171.99	214.22	82.98	77.61	8.00	8.00	0.00
7,635.21	89.43	91.31	7,172.00	214.20	83.59	78.22	0.00	0.00	0.00

**Corporate**  
Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-6HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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>End Build @ 7635.21ft</b>									
7,700.00	89.43	91.31	7,172.65	212.73	148.36	143.01	0.00	0.00	0.00
7,800.00	89.43	91.31	7,173.65	210.44	248.33	243.00	0.00	0.00	0.00
7,900.00	89.43	91.31	7,174.65	208.16	348.30	343.00	0.00	0.00	0.00
8,000.00	89.43	91.31	7,175.65	205.88	448.27	442.99	0.00	0.00	0.00
8,100.00	89.43	91.31	7,176.65	203.60	548.24	542.99	0.00	0.00	0.00
8,200.00	89.43	91.31	7,177.65	201.32	648.21	642.98	0.00	0.00	0.00
8,235.29	89.43	91.31	7,178.00	200.51	683.49	678.27	0.00	0.00	0.00
<b>Codell</b>									
8,300.00	89.43	91.31	7,178.65	199.04	748.18	742.98	0.00	0.00	0.00
8,400.00	89.43	91.31	7,179.65	196.75	848.15	842.97	0.00	0.00	0.00
8,500.00	89.43	91.31	7,180.65	194.47	948.12	942.97	0.00	0.00	0.00
8,600.00	89.43	91.31	7,181.65	192.19	1,048.08	1,042.96	0.00	0.00	0.00
8,700.00	89.43	91.31	7,182.65	189.91	1,148.05	1,142.96	0.00	0.00	0.00
8,800.00	89.43	91.31	7,183.65	187.63	1,248.02	1,242.95	0.00	0.00	0.00
8,900.00	89.43	91.31	7,184.65	185.34	1,347.99	1,342.95	0.00	0.00	0.00
9,000.00	89.43	91.31	7,185.65	183.06	1,447.96	1,442.94	0.00	0.00	0.00
9,100.00	89.43	91.31	7,186.65	180.78	1,547.93	1,542.94	0.00	0.00	0.00
9,200.00	89.43	91.31	7,187.65	178.50	1,647.90	1,642.93	0.00	0.00	0.00
9,300.00	89.43	91.31	7,188.65	176.22	1,747.87	1,742.93	0.00	0.00	0.00
9,400.00	89.43	91.31	7,189.65	173.93	1,847.84	1,842.92	0.00	0.00	0.00
9,500.00	89.43	91.31	7,190.65	171.65	1,947.81	1,942.91	0.00	0.00	0.00
9,600.00	89.43	91.31	7,191.65	169.37	2,047.77	2,042.91	0.00	0.00	0.00
9,700.00	89.43	91.31	7,192.65	167.09	2,147.74	2,142.90	0.00	0.00	0.00
9,800.00	89.43	91.31	7,193.65	164.81	2,247.71	2,242.90	0.00	0.00	0.00
9,900.00	89.43	91.31	7,194.65	162.53	2,347.68	2,342.89	0.00	0.00	0.00
10,000.00	89.43	91.31	7,195.65	160.24	2,447.65	2,442.89	0.00	0.00	0.00
10,100.00	89.43	91.31	7,196.65	157.96	2,547.62	2,542.88	0.00	0.00	0.00
10,200.00	89.43	91.31	7,197.65	155.68	2,647.59	2,642.88	0.00	0.00	0.00
10,300.00	89.43	91.31	7,198.66	153.40	2,747.56	2,742.87	0.00	0.00	0.00
10,400.00	89.43	91.31	7,199.66	151.12	2,847.53	2,842.87	0.00	0.00	0.00
10,500.00	89.43	91.31	7,200.66	148.83	2,947.49	2,942.86	0.00	0.00	0.00
10,600.00	89.43	91.31	7,201.66	146.55	3,047.46	3,042.86	0.00	0.00	0.00
10,700.00	89.43	91.31	7,202.66	144.27	3,147.43	3,142.85	0.00	0.00	0.00
10,800.00	89.43	91.31	7,203.66	141.99	3,247.40	3,242.85	0.00	0.00	0.00
10,900.00	89.43	91.31	7,204.66	139.71	3,347.37	3,342.84	0.00	0.00	0.00
11,000.00	89.43	91.31	7,205.66	137.42	3,447.34	3,442.84	0.00	0.00	0.00
11,100.00	89.43	91.31	7,206.66	135.14	3,547.31	3,542.83	0.00	0.00	0.00
11,200.00	89.43	91.31	7,207.66	132.86	3,647.28	3,642.83	0.00	0.00	0.00
11,300.00	89.43	91.31	7,208.66	130.58	3,747.25	3,742.82	0.00	0.00	0.00
11,400.00	89.43	91.31	7,209.66	128.30	3,847.22	3,842.82	0.00	0.00	0.00
11,500.00	89.43	91.31	7,210.66	126.02	3,947.18	3,942.81	0.00	0.00	0.00
11,600.00	89.43	91.31	7,211.66	123.73	4,047.15	4,042.80	0.00	0.00	0.00
11,700.00	89.43	91.31	7,212.66	121.45	4,147.12	4,142.80	0.00	0.00	0.00
11,800.00	89.43	91.31	7,213.66	119.17	4,247.09	4,242.79	0.00	0.00	0.00
11,900.00	89.43	91.31	7,214.66	116.89	4,347.06	4,342.79	0.00	0.00	0.00
12,000.00	89.43	91.31	7,215.66	114.61	4,447.03	4,442.78	0.00	0.00	0.00
12,100.00	89.43	91.31	7,216.66	112.32	4,547.00	4,542.78	0.00	0.00	0.00
12,200.00	89.43	91.31	7,217.66	110.04	4,646.97	4,642.77	0.00	0.00	0.00
12,300.00	89.43	91.31	7,218.66	107.76	4,746.94	4,742.77	0.00	0.00	0.00
12,400.00	89.43	91.31	7,219.66	105.48	4,846.90	4,842.76	0.00	0.00	0.00
12,500.00	89.43	91.31	7,220.66	103.20	4,946.87	4,942.76	0.00	0.00	0.00
12,600.00	89.43	91.31	7,221.66	100.91	5,046.84	5,042.75	0.00	0.00	0.00
12,700.00	89.43	91.31	7,222.66	98.63	5,146.81	5,142.75	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-6HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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)
12,800.00	89.43	91.31	7,223.66	96.35	5,246.78	5,242.74	0.00	0.00	0.00
12,900.00	89.43	91.31	7,224.67	94.07	5,346.75	5,342.74	0.00	0.00	0.00
13,000.00	89.43	91.31	7,225.67	91.79	5,446.72	5,442.73	0.00	0.00	0.00
13,100.00	89.43	91.31	7,226.67	89.51	5,546.69	5,542.73	0.00	0.00	0.00
13,200.00	89.43	91.31	7,227.67	87.22	5,646.66	5,642.72	0.00	0.00	0.00
13,300.00	89.43	91.31	7,228.67	84.94	5,746.63	5,742.72	0.00	0.00	0.00
13,400.00	89.43	91.31	7,229.67	82.66	5,846.59	5,842.71	0.00	0.00	0.00
13,500.00	89.43	91.31	7,230.67	80.38	5,946.56	5,942.71	0.00	0.00	0.00
13,600.00	89.43	91.31	7,231.67	78.10	6,046.53	6,042.70	0.00	0.00	0.00
13,700.00	89.43	91.31	7,232.67	75.81	6,146.50	6,142.70	0.00	0.00	0.00
13,800.00	89.43	91.31	7,233.67	73.53	6,246.47	6,242.69	0.00	0.00	0.00
13,900.00	89.43	91.31	7,234.67	71.25	6,346.44	6,342.68	0.00	0.00	0.00
14,000.00	89.43	91.31	7,235.67	68.97	6,446.41	6,442.68	0.00	0.00	0.00
14,100.00	89.43	91.31	7,236.67	66.69	6,546.38	6,542.67	0.00	0.00	0.00
14,200.00	89.43	91.31	7,237.67	64.40	6,646.35	6,642.67	0.00	0.00	0.00
14,300.00	89.43	91.31	7,238.67	62.12	6,746.32	6,742.66	0.00	0.00	0.00
14,400.00	89.43	91.31	7,239.67	59.84	6,846.28	6,842.66	0.00	0.00	0.00
14,500.00	89.43	91.31	7,240.67	57.56	6,946.25	6,942.65	0.00	0.00	0.00
14,600.00	89.43	91.31	7,241.67	55.28	7,046.22	7,042.65	0.00	0.00	0.00
14,700.00	89.43	91.31	7,242.67	53.00	7,146.19	7,142.64	0.00	0.00	0.00
14,800.00	89.43	91.31	7,243.67	50.71	7,246.16	7,242.64	0.00	0.00	0.00
14,900.00	89.43	91.31	7,244.67	48.43	7,346.13	7,342.63	0.00	0.00	0.00
15,000.00	89.43	91.31	7,245.67	46.15	7,446.10	7,442.63	0.00	0.00	0.00
15,100.00	89.43	91.31	7,246.67	43.87	7,546.07	7,542.62	0.00	0.00	0.00
15,200.00	89.43	91.31	7,247.67	41.59	7,646.04	7,642.62	0.00	0.00	0.00
15,300.00	89.43	91.31	7,248.67	39.30	7,746.00	7,742.61	0.00	0.00	0.00
15,400.00	89.43	91.31	7,249.67	37.02	7,845.97	7,842.61	0.00	0.00	0.00
15,500.00	89.43	91.31	7,250.68	34.74	7,945.94	7,942.60	0.00	0.00	0.00
15,600.00	89.43	91.31	7,251.68	32.46	8,045.91	8,042.60	0.00	0.00	0.00
15,700.00	89.43	91.31	7,252.68	30.18	8,145.88	8,142.59	0.00	0.00	0.00
15,800.00	89.43	91.31	7,253.68	27.89	8,245.85	8,242.59	0.00	0.00	0.00
15,900.00	89.43	91.31	7,254.68	25.61	8,345.82	8,342.58	0.00	0.00	0.00
16,000.00	89.43	91.31	7,255.68	23.33	8,445.79	8,442.57	0.00	0.00	0.00
16,100.00	89.43	91.31	7,256.68	21.05	8,545.76	8,542.57	0.00	0.00	0.00
16,200.00	89.43	91.31	7,257.68	18.77	8,645.73	8,642.56	0.00	0.00	0.00
16,300.00	89.43	91.31	7,258.68	16.49	8,745.69	8,742.56	0.00	0.00	0.00
16,400.00	89.43	91.31	7,259.68	14.20	8,845.66	8,842.55	0.00	0.00	0.00
16,500.00	89.43	91.31	7,260.68	11.92	8,945.63	8,942.55	0.00	0.00	0.00
16,600.00	89.43	91.31	7,261.68	9.64	9,045.60	9,042.54	0.00	0.00	0.00
16,700.00	89.43	91.31	7,262.68	7.36	9,145.57	9,142.54	0.00	0.00	0.00
16,800.00	89.43	91.31	7,263.68	5.08	9,245.54	9,242.53	0.00	0.00	0.00
16,900.00	89.43	91.31	7,264.68	2.79	9,345.51	9,342.53	0.00	0.00	0.00
17,000.00	89.43	91.31	7,265.68	0.51	9,445.48	9,442.52	0.00	0.00	0.00
17,100.00	89.43	91.31	7,266.68	-1.77	9,545.45	9,542.52	0.00	0.00	0.00
17,200.00	89.43	91.31	7,267.68	-4.05	9,645.41	9,642.51	0.00	0.00	0.00
17,300.00	89.43	91.31	7,268.68	-6.33	9,745.38	9,742.51	0.00	0.00	0.00
17,400.00	89.43	91.31	7,269.68	-8.62	9,845.35	9,842.50	0.00	0.00	0.00
17,500.00	89.43	91.31	7,270.68	-10.90	9,945.32	9,942.50	0.00	0.00	0.00
17,600.00	89.43	91.31	7,271.68	-13.18	10,045.29	10,042.49	0.00	0.00	0.00
17,700.00	89.43	91.31	7,272.68	-15.46	10,145.26	10,142.49	0.00	0.00	0.00
17,800.00	89.43	91.31	7,273.68	-17.74	10,245.23	10,242.48	0.00	0.00	0.00
17,900.00	89.43	91.31	7,274.68	-20.02	10,345.20	10,342.48	0.00	0.00	0.00
18,000.00	89.43	91.31	7,275.69	-22.31	10,445.17	10,442.47	0.00	0.00	0.00
18,100.00	89.43	91.31	7,276.69	-24.59	10,545.14	10,542.47	0.00	0.00	0.00



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-6HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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)
18,200.00	89.43	91.31	7,277.69	-26.87	10,645.10	10,642.46	0.00	0.00	0.00
18,300.00	89.43	91.31	7,278.69	-29.15	10,745.07	10,742.45	0.00	0.00	0.00
18,400.00	89.43	91.31	7,279.69	-31.43	10,845.04	10,842.45	0.00	0.00	0.00
18,500.00	89.43	91.31	7,280.69	-33.72	10,945.01	10,942.44	0.00	0.00	0.00
18,600.00	89.43	91.31	7,281.69	-36.00	11,044.98	11,042.44	0.00	0.00	0.00
18,700.00	89.43	91.31	7,282.69	-38.28	11,144.95	11,142.43	0.00	0.00	0.00
18,800.00	89.43	91.31	7,283.69	-40.56	11,244.92	11,242.43	0.00	0.00	0.00
18,900.00	89.43	91.31	7,284.69	-42.84	11,344.89	11,342.42	0.00	0.00	0.00
19,000.00	89.43	91.31	7,285.69	-45.12	11,444.86	11,442.42	0.00	0.00	0.00
19,100.00	89.43	91.31	7,286.69	-47.41	11,544.83	11,542.41	0.00	0.00	0.00
19,200.00	89.43	91.31	7,287.69	-49.69	11,644.79	11,642.41	0.00	0.00	0.00
19,300.00	89.43	91.31	7,288.69	-51.97	11,744.76	11,742.40	0.00	0.00	0.00
19,400.00	89.43	91.31	7,289.69	-54.25	11,844.73	11,842.40	0.00	0.00	0.00
19,500.00	89.43	91.31	7,290.69	-56.53	11,944.70	11,942.39	0.00	0.00	0.00
19,600.00	89.43	91.31	7,291.69	-58.82	12,044.67	12,042.39	0.00	0.00	0.00
19,700.00	89.43	91.31	7,292.69	-61.10	12,144.64	12,142.38	0.00	0.00	0.00
19,800.00	89.43	91.31	7,293.69	-63.38	12,244.61	12,242.38	0.00	0.00	0.00
19,900.00	89.43	91.31	7,294.69	-65.66	12,344.58	12,342.37	0.00	0.00	0.00
20,000.00	89.43	91.31	7,295.69	-67.94	12,444.55	12,442.37	0.00	0.00	0.00
20,100.00	89.43	91.31	7,296.69	-70.23	12,544.51	12,542.36	0.00	0.00	0.00
20,200.00	89.43	91.31	7,297.69	-72.51	12,644.48	12,642.36	0.00	0.00	0.00
20,300.00	89.43	91.31	7,298.69	-74.79	12,744.45	12,742.35	0.00	0.00	0.00
20,400.00	89.43	91.31	7,299.69	-77.07	12,844.42	12,842.34	0.00	0.00	0.00
20,500.00	89.43	91.31	7,300.69	-79.35	12,944.39	12,942.34	0.00	0.00	0.00
20,600.00	89.43	91.31	7,301.70	-81.63	13,044.36	13,042.33	0.00	0.00	0.00
20,700.00	89.43	91.31	7,302.70	-83.92	13,144.33	13,142.33	0.00	0.00	0.00
20,800.00	89.43	91.31	7,303.70	-86.20	13,244.30	13,242.32	0.00	0.00	0.00
20,900.00	89.43	91.31	7,304.70	-88.48	13,344.27	13,342.32	0.00	0.00	0.00
21,000.00	89.43	91.31	7,305.70	-90.76	13,444.24	13,442.31	0.00	0.00	0.00
21,100.00	89.43	91.31	7,306.70	-93.04	13,544.20	13,542.31	0.00	0.00	0.00
21,200.00	89.43	91.31	7,307.70	-95.33	13,644.17	13,642.30	0.00	0.00	0.00
21,300.00	89.43	91.31	7,308.70	-97.61	13,744.14	13,742.30	0.00	0.00	0.00
21,400.00	89.43	91.31	7,309.70	-99.89	13,844.11	13,842.29	0.00	0.00	0.00
21,500.00	89.43	91.31	7,310.70	-102.17	13,944.08	13,942.29	0.00	0.00	0.00
21,600.00	89.43	91.31	7,311.70	-104.45	14,044.05	14,042.28	0.00	0.00	0.00
21,700.00	89.43	91.31	7,312.70	-106.74	14,144.02	14,142.28	0.00	0.00	0.00
21,730.07	89.43	91.31	7,313.00	-107.42	14,174.08	14,172.35	0.00	0.00	0.00
TD Well @ 21730.07ft - 5.5" CSG									

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 4-6HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4842.00usft (RIG)
<b>Site:</b>	3N-67W-04 SWARTZ 2-4HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 4-6HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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
SWARTZ 4-6HZ KOP - plan hits target center - Point	0.00	0.00	6,454.83	230.40	-625.87	14,621,770.72	1,670,032.65	40.260936	-104.893843
SWARTZ 4-6HZ LP - plan hits target center - Point	0.00	0.00	7,171.99	214.22	82.97	14,621,755.41	1,670,741.51	40.260892	-104.891302
SWARTZ 4-6HZ ADJ BH - plan hits target center - Point	0.00	0.00	7,313.00	-107.42	14,174.08	14,621,451.00	1,684,833.00	40.259997	-104.840794

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,507.78	1,500.00	9 5/8"	9-5/8	13-1/2	
21,730.07	7,313.00	5.5" CSG	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
707.01	707.00	Fox Hills				
3,646.07	3,598.00	Parkman				
4,137.33	4,080.00	Sussex				
6,923.43	6,841.00	Sharon Springs				
6,959.62	6,871.00	Niobrara				
7,171.33	7,023.00	Nio B				
7,226.55	7,055.00	Nio C				
7,494.79	7,157.00	Fort Hayes				
8,235.29	7,178.00	Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
600.00	600.00	0.00	0.00	Begin Nudge @ 600.00ft	
1,342.67	1,338.00	24.86	-67.54	Hold Tangent @ 1342.67ft	
4,142.67	4,085.24	211.75	-575.21	Begin Drop @ 4142.67ft	
4,699.67	4,638.74	230.40	-625.87	Hold Vertical @ 4699.67ft	
6,516.76	6,455.83	230.40	-625.87	KOP @ 6516.76ft :: DLS = 8°/100'	
7,635.21	7,172.00	214.20	83.59	End Build @ 7635.21ft	
21,730.07	7,313.00	-107.42	14,174.08	TD Well @ 21730.07ft	