

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-65W-13 Swartz 16-13HZ Pad
SWARTZ 27N-12HZ**

Plan B

Plan: Permit Rev-1

Standard Planning Report

08 December, 2016

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 27N-12HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Site:	2N-65W-13 Swartz 16-13HZ Pad	North Reference:	True
Well:	SWARTZ 27N-12HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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		2N-65W-13 Swartz 16-13HZ Pad			
Site Position:		Northing:	14,575,037.83 usft	Latitude:	40.131978
From:	Lat/Long	Easting:	1,750,820.88 usft	Longitude:	-104.605010
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.25 °

Well	SWARTZ 27N-12HZ					
Well Position	+N/-S	0.00 usft	Northing:	14,575,037.83 usft	Latitude:	40.131978
	+E/-W	0.00 usft	Easting:	1,750,820.88 usft	Longitude:	-104.605010
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,956.00 usft

Wellbore	Plan B				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/29/2015	8.20	66.72	52,572.21348885

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.67

Plan Survey Tool Program	Date	12/8/2016		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,500.00	Permit Rev-1 (Plan B)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declination
2	1,500.00	17,630.29	Permit Rev-1 (Plan B)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declination

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Wellbore:	Plan B		
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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	
866.67	10.00	250.00	863.29	-19.85	-54.53	1.50	1.50	0.00	250.00	
3,666.67	10.00	250.00	3,620.75	-186.14	-511.42	0.00	0.00	0.00	0.00	
4,166.67	0.00	0.00	4,118.21	-201.03	-552.32	2.00	-2.00	22.00	180.00	
6,475.84	0.00	0.00	6,427.38	-201.03	-552.32	0.00	0.00	0.00	0.00	
7,474.59	89.89	0.32	7,064.00	434.33	-548.74	9.00	9.00	0.03	0.32	
13,100.00	89.89	0.32	7,075.06	6,059.64	-517.08	0.00	0.00	0.00	0.00	SWARTZ 27N-12HZ_
13,141.81	89.89	1.16	7,075.14	6,101.45	-516.54	2.00	0.00	2.00	90.03	
17,630.29	89.89	1.16	7,084.00	10,589.00	-425.77	0.00	0.00	0.00	0.00	SWARTZ 27N-12HZ_

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Well:	SWARTZ 27N-12HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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
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	250.00	299.99	-0.45	-1.23	-0.46	1.50	1.50	0.00
400.00	3.00	250.00	399.91	-1.79	-4.92	-1.85	1.50	1.50	0.00
500.00	4.50	250.00	499.69	-4.03	-11.06	-4.16	1.50	1.50	0.00
600.00	6.00	250.00	599.27	-7.16	-19.66	-7.39	1.50	1.50	0.00
700.00	7.50	250.00	698.57	-11.18	-30.71	-11.53	1.50	1.50	0.00
800.00	9.00	250.00	797.54	-16.08	-44.19	-16.60	1.50	1.50	0.00
866.67	10.00	250.00	863.29	-19.85	-54.53	-20.48	1.50	1.50	0.00
End Nudge @ 866.67ft									
900.00	10.00	250.00	896.11	-21.83	-59.97	-22.53	0.00	0.00	0.00
1,000.00	10.00	250.00	994.59	-27.77	-76.29	-28.66	0.00	0.00	0.00
1,100.00	10.00	250.00	1,093.08	-33.71	-92.60	-34.79	0.00	0.00	0.00
1,200.00	10.00	250.00	1,191.56	-39.64	-108.92	-40.92	0.00	0.00	0.00
1,300.00	10.00	250.00	1,290.04	-45.58	-125.24	-47.05	0.00	0.00	0.00
1,383.23	10.00	250.00	1,372.00	-50.53	-138.82	-52.15	0.00	0.00	0.00
Fox Hills Mkr									
1,400.00	10.00	250.00	1,388.52	-51.52	-141.56	-53.17	0.00	0.00	0.00
1,500.00	10.00	250.00	1,487.00	-57.46	-157.88	-59.30	0.00	0.00	0.00
1,513.20	10.00	250.00	1,500.00	-58.25	-160.03	-60.11	0.00	0.00	0.00
9 5/8"									
1,600.00	10.00	250.00	1,585.48	-63.40	-174.19	-65.43	0.00	0.00	0.00
1,700.00	10.00	250.00	1,683.96	-69.34	-190.51	-71.56	0.00	0.00	0.00
1,800.00	10.00	250.00	1,782.44	-75.28	-206.83	-77.69	0.00	0.00	0.00
1,900.00	10.00	250.00	1,880.92	-81.22	-223.15	-83.82	0.00	0.00	0.00
2,000.00	10.00	250.00	1,979.40	-87.16	-239.46	-89.95	0.00	0.00	0.00
2,100.00	10.00	250.00	2,077.88	-93.10	-255.78	-96.08	0.00	0.00	0.00
2,200.00	10.00	250.00	2,176.36	-99.04	-272.10	-102.21	0.00	0.00	0.00
2,300.00	10.00	250.00	2,274.85	-104.97	-288.42	-108.34	0.00	0.00	0.00
2,400.00	10.00	250.00	2,373.33	-110.91	-304.73	-114.47	0.00	0.00	0.00
2,500.00	10.00	250.00	2,471.81	-116.85	-321.05	-120.60	0.00	0.00	0.00
2,600.00	10.00	250.00	2,570.29	-122.79	-337.37	-126.73	0.00	0.00	0.00
2,700.00	10.00	250.00	2,668.77	-128.73	-353.69	-132.86	0.00	0.00	0.00
2,800.00	10.00	250.00	2,767.25	-134.67	-370.00	-138.99	0.00	0.00	0.00
2,900.00	10.00	250.00	2,865.73	-140.61	-386.32	-145.12	0.00	0.00	0.00
3,000.00	10.00	250.00	2,964.21	-146.55	-402.64	-151.25	0.00	0.00	0.00
3,100.00	10.00	250.00	3,062.69	-152.49	-418.96	-157.38	0.00	0.00	0.00
3,200.00	10.00	250.00	3,161.17	-158.43	-435.27	-163.51	0.00	0.00	0.00
3,300.00	10.00	250.00	3,259.65	-164.37	-451.59	-169.64	0.00	0.00	0.00
3,400.00	10.00	250.00	3,358.13	-170.31	-467.91	-175.76	0.00	0.00	0.00
3,500.00	10.00	250.00	3,456.61	-176.24	-484.23	-181.89	0.00	0.00	0.00
3,600.00	10.00	250.00	3,555.10	-182.18	-500.54	-188.02	0.00	0.00	0.00
3,666.67	10.00	250.00	3,620.75	-186.14	-511.42	-192.11	0.00	0.00	0.00
Begin Drop @ 3666.67ft									
3,700.00	9.33	250.00	3,653.61	-188.06	-516.68	-194.09	2.00	-2.00	0.00
3,800.00	7.33	250.00	3,752.55	-193.01	-530.30	-199.20	2.00	-2.00	0.00
3,900.00	5.33	250.00	3,851.93	-196.79	-540.67	-203.10	2.00	-2.00	0.00
4,000.00	3.33	250.00	3,951.64	-199.37	-547.77	-205.76	2.00	-2.00	0.00
4,100.00	1.33	250.00	4,051.55	-200.76	-551.59	-207.20	2.00	-2.00	0.00
4,106.45	1.20	250.00	4,058.00	-200.81	-551.73	-207.25	2.00	-2.00	0.00
Parkman									

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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)	
4,166.67	0.00	0.00	4,118.22	-201.03	-552.32	-207.47	2.00	-2.00	182.66	
End Drop @ 4166.67ft										
4,200.00	0.00	0.00	4,151.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
4,300.00	0.00	0.00	4,251.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
4,400.00	0.00	0.00	4,351.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
4,497.45	0.00	0.00	4,449.00	-201.03	-552.32	-207.47	0.00	0.00	0.00	
Sussex										
4,500.00	0.00	0.00	4,451.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,551.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,651.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,751.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,851.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,951.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,051.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,151.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,251.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,351.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,451.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,551.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,651.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,751.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,851.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,951.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,051.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,151.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,251.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,351.55	-201.03	-552.32	-207.47	0.00	0.00	0.00	
6,475.84	0.00	0.00	6,427.39	-201.03	-552.32	-207.47	0.00	0.00	0.00	
KOP @ 6475.84ft										
6,500.00	2.17	0.32	6,451.54	-200.57	-552.32	-207.01	9.00	9.00	1.33	
6,600.00	11.17	0.32	6,550.76	-188.96	-552.25	-195.40	9.00	9.00	0.00	
6,700.00	20.17	0.32	6,646.94	-161.97	-552.10	-168.41	9.00	9.00	0.00	
6,800.00	29.17	0.32	6,737.72	-120.27	-551.87	-126.71	9.00	9.00	0.00	
6,900.00	38.17	0.32	6,820.85	-64.88	-551.55	-71.32	9.00	9.00	0.00	
6,916.90	39.70	0.32	6,834.00	-54.26	-551.49	-60.70	9.00	9.00	0.00	
Sharon Springs										
6,987.91	46.09	0.32	6,886.00	-5.95	-551.22	-12.40	9.00	9.00	0.00	
Niobrara										
7,000.00	47.17	0.32	6,894.30	2.84	-551.17	-3.61	9.00	9.00	0.00	
DLS = 9°/100'										
7,092.43	55.49	0.32	6,952.00	74.94	-550.77	68.50	9.00	9.00	0.00	
Nio B										
7,100.00	56.17	0.32	6,956.25	81.20	-550.73	74.76	9.00	9.00	0.00	
7,200.00	65.17	0.32	7,005.18	168.30	-550.24	161.85	9.00	9.00	0.00	
7,266.82	71.19	0.32	7,030.00	230.31	-549.89	223.86	9.00	9.00	0.00	
Nio C										
7,300.00	74.17	0.32	7,039.87	261.97	-549.71	255.53	9.00	9.00	0.00	
7,400.00	83.17	0.32	7,059.49	359.93	-549.16	353.48	9.00	9.00	0.00	
7,474.59	89.89	0.32	7,064.00	434.33	-548.74	427.89	9.00	9.00	0.00	
End Build @ 7474.59ft - Top of Production										
7,500.00	89.89	0.32	7,064.05	459.74	-548.60	453.30	0.00	0.00	0.00	
7,600.00	89.89	0.32	7,064.25	559.74	-548.04	553.30	0.00	0.00	0.00	
7,700.00	89.89	0.32	7,064.45	659.74	-547.48	653.29	0.00	0.00	0.00	

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4973.00usft (D Rig)
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Wellbore:	Plan B		
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)
7,800.00	89.89	0.32	7,064.64	759.74	-546.91	753.29	0.00	0.00	0.00
7,900.00	89.89	0.32	7,064.84	859.74	-546.35	853.29	0.00	0.00	0.00
8,000.00	89.89	0.32	7,065.04	959.74	-545.79	953.29	0.00	0.00	0.00
8,100.00	89.89	0.32	7,065.23	1,059.73	-545.22	1,053.29	0.00	0.00	0.00
8,200.00	89.89	0.32	7,065.43	1,159.73	-544.66	1,153.28	0.00	0.00	0.00
8,300.00	89.89	0.32	7,065.63	1,259.73	-544.10	1,253.28	0.00	0.00	0.00
8,400.00	89.89	0.32	7,065.82	1,359.73	-543.54	1,353.28	0.00	0.00	0.00
8,500.00	89.89	0.32	7,066.02	1,459.73	-542.97	1,453.28	0.00	0.00	0.00
8,600.00	89.89	0.32	7,066.22	1,559.72	-542.41	1,553.28	0.00	0.00	0.00
8,700.00	89.89	0.32	7,066.41	1,659.72	-541.85	1,653.27	0.00	0.00	0.00
8,800.00	89.89	0.32	7,066.61	1,759.72	-541.28	1,753.27	0.00	0.00	0.00
8,900.00	89.89	0.32	7,066.80	1,859.72	-540.72	1,853.27	0.00	0.00	0.00
9,000.00	89.89	0.32	7,067.00	1,959.72	-540.16	1,953.27	0.00	0.00	0.00
9,100.00	89.89	0.32	7,067.20	2,059.72	-539.60	2,053.27	0.00	0.00	0.00
9,200.00	89.89	0.32	7,067.39	2,159.71	-539.03	2,153.26	0.00	0.00	0.00
9,300.00	89.89	0.32	7,067.59	2,259.71	-538.47	2,253.26	0.00	0.00	0.00
9,400.00	89.89	0.32	7,067.79	2,359.71	-537.91	2,353.26	0.00	0.00	0.00
9,500.00	89.89	0.32	7,067.98	2,459.71	-537.34	2,453.26	0.00	0.00	0.00
9,600.00	89.89	0.32	7,068.18	2,559.71	-536.78	2,553.26	0.00	0.00	0.00
9,700.00	89.89	0.32	7,068.38	2,659.71	-536.22	2,653.25	0.00	0.00	0.00
9,800.00	89.89	0.32	7,068.57	2,759.70	-535.66	2,753.25	0.00	0.00	0.00
9,900.00	89.89	0.32	7,068.77	2,859.70	-535.09	2,853.25	0.00	0.00	0.00
10,000.00	89.89	0.32	7,068.97	2,959.70	-534.53	2,953.25	0.00	0.00	0.00
10,100.00	89.89	0.32	7,069.16	3,059.70	-533.97	3,053.25	0.00	0.00	0.00
10,200.00	89.89	0.32	7,069.36	3,159.70	-533.40	3,153.24	0.00	0.00	0.00
10,300.00	89.89	0.32	7,069.56	3,259.69	-532.84	3,253.24	0.00	0.00	0.00
10,400.00	89.89	0.32	7,069.75	3,359.69	-532.28	3,353.24	0.00	0.00	0.00
10,500.00	89.89	0.32	7,069.95	3,459.69	-531.71	3,453.24	0.00	0.00	0.00
10,600.00	89.89	0.32	7,070.15	3,559.69	-531.15	3,553.23	0.00	0.00	0.00
10,700.00	89.89	0.32	7,070.34	3,659.69	-530.59	3,653.23	0.00	0.00	0.00
10,800.00	89.89	0.32	7,070.54	3,759.69	-530.03	3,753.23	0.00	0.00	0.00
10,900.00	89.89	0.32	7,070.74	3,859.68	-529.46	3,853.23	0.00	0.00	0.00
11,000.00	89.89	0.32	7,070.93	3,959.68	-528.90	3,953.23	0.00	0.00	0.00
11,100.00	89.89	0.32	7,071.13	4,059.68	-528.34	4,053.22	0.00	0.00	0.00
11,200.00	89.89	0.32	7,071.33	4,159.68	-527.77	4,153.22	0.00	0.00	0.00
11,300.00	89.89	0.32	7,071.52	4,259.68	-527.21	4,253.22	0.00	0.00	0.00
11,400.00	89.89	0.32	7,071.72	4,359.68	-526.65	4,353.22	0.00	0.00	0.00
11,500.00	89.89	0.32	7,071.92	4,459.67	-526.09	4,453.22	0.00	0.00	0.00
11,600.00	89.89	0.32	7,072.11	4,559.67	-525.52	4,553.21	0.00	0.00	0.00
11,700.00	89.89	0.32	7,072.31	4,659.67	-524.96	4,653.21	0.00	0.00	0.00
11,800.00	89.89	0.32	7,072.50	4,759.67	-524.40	4,753.21	0.00	0.00	0.00
11,900.00	89.89	0.32	7,072.70	4,859.67	-523.83	4,853.21	0.00	0.00	0.00
12,000.00	89.89	0.32	7,072.90	4,959.66	-523.27	4,953.21	0.00	0.00	0.00
12,100.00	89.89	0.32	7,073.09	5,059.66	-522.71	5,053.20	0.00	0.00	0.00
12,200.00	89.89	0.32	7,073.29	5,159.66	-522.15	5,153.20	0.00	0.00	0.00
12,300.00	89.89	0.32	7,073.49	5,259.66	-521.58	5,253.20	0.00	0.00	0.00
12,400.00	89.89	0.32	7,073.68	5,359.66	-521.02	5,353.20	0.00	0.00	0.00
12,500.00	89.89	0.32	7,073.88	5,459.66	-520.46	5,453.20	0.00	0.00	0.00
12,600.00	89.89	0.32	7,074.08	5,559.65	-519.89	5,553.19	0.00	0.00	0.00
12,700.00	89.89	0.32	7,074.27	5,659.65	-519.33	5,653.19	0.00	0.00	0.00
12,800.00	89.89	0.32	7,074.47	5,759.65	-518.77	5,753.19	0.00	0.00	0.00
12,900.00	89.89	0.32	7,074.67	5,859.65	-518.21	5,853.19	0.00	0.00	0.00
13,000.00	89.89	0.32	7,074.86	5,959.65	-517.64	5,953.19	0.00	0.00	0.00
13,100.00	89.89	0.32	7,075.06	6,059.64	-517.08	6,053.18	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 27N-12HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Site:	2N-65W-13 Swartz 16-13HZ Pad	North Reference:	True
Well:	SWARTZ 27N-12HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
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)
Begin Turn to BHL @ 13100.00ft									
13,141.81	89.89	1.16	7,075.14	6,101.45	-516.54	6,094.99	2.00	0.00	2.00
End Turn @ 13141.81ft									
13,200.00	89.89	1.16	7,075.26	6,159.63	-515.36	6,153.18	0.00	0.00	0.00
13,300.00	89.89	1.16	7,075.45	6,259.61	-513.34	6,253.18	0.00	0.00	0.00
13,400.00	89.89	1.16	7,075.65	6,359.59	-511.32	6,353.17	0.00	0.00	0.00
13,500.00	89.89	1.16	7,075.85	6,459.57	-509.30	6,453.17	0.00	0.00	0.00
13,600.00	89.89	1.16	7,076.05	6,559.55	-507.27	6,553.17	0.00	0.00	0.00
13,700.00	89.89	1.16	7,076.24	6,659.53	-505.25	6,653.16	0.00	0.00	0.00
13,800.00	89.89	1.16	7,076.44	6,759.51	-503.23	6,753.16	0.00	0.00	0.00
13,900.00	89.89	1.16	7,076.64	6,859.48	-501.21	6,853.15	0.00	0.00	0.00
14,000.00	89.89	1.16	7,076.84	6,959.46	-499.18	6,953.15	0.00	0.00	0.00
14,100.00	89.89	1.16	7,077.03	7,059.44	-497.16	7,053.15	0.00	0.00	0.00
14,200.00	89.89	1.16	7,077.23	7,159.42	-495.14	7,153.14	0.00	0.00	0.00
14,300.00	89.89	1.16	7,077.43	7,259.40	-493.12	7,253.14	0.00	0.00	0.00
14,400.00	89.89	1.16	7,077.63	7,359.38	-491.10	7,353.14	0.00	0.00	0.00
14,500.00	89.89	1.16	7,077.82	7,459.36	-489.07	7,453.13	0.00	0.00	0.00
14,600.00	89.89	1.16	7,078.02	7,559.34	-487.05	7,553.13	0.00	0.00	0.00
14,700.00	89.89	1.16	7,078.22	7,659.32	-485.03	7,653.12	0.00	0.00	0.00
14,800.00	89.89	1.16	7,078.41	7,759.30	-483.01	7,753.12	0.00	0.00	0.00
14,900.00	89.89	1.16	7,078.61	7,859.28	-480.98	7,853.12	0.00	0.00	0.00
15,000.00	89.89	1.16	7,078.81	7,959.26	-478.96	7,953.11	0.00	0.00	0.00
15,100.00	89.89	1.16	7,079.01	8,059.24	-476.94	8,053.11	0.00	0.00	0.00
15,200.00	89.89	1.16	7,079.20	8,159.22	-474.92	8,153.10	0.00	0.00	0.00
15,300.00	89.89	1.16	7,079.40	8,259.20	-472.89	8,253.10	0.00	0.00	0.00
15,400.00	89.89	1.16	7,079.60	8,359.17	-470.87	8,353.10	0.00	0.00	0.00
15,500.00	89.89	1.16	7,079.80	8,459.15	-468.85	8,453.09	0.00	0.00	0.00
15,600.00	89.89	1.16	7,079.99	8,559.13	-466.83	8,553.09	0.00	0.00	0.00
15,700.00	89.89	1.16	7,080.19	8,659.11	-464.81	8,653.09	0.00	0.00	0.00
15,800.00	89.89	1.16	7,080.39	8,759.09	-462.78	8,753.08	0.00	0.00	0.00
15,900.00	89.89	1.16	7,080.59	8,859.07	-460.76	8,853.08	0.00	0.00	0.00
16,000.00	89.89	1.16	7,080.78	8,959.05	-458.74	8,953.07	0.00	0.00	0.00
16,100.00	89.89	1.16	7,080.98	9,059.03	-456.72	9,053.07	0.00	0.00	0.00
16,200.00	89.89	1.16	7,081.18	9,159.01	-454.69	9,153.07	0.00	0.00	0.00
16,300.00	89.89	1.16	7,081.37	9,258.99	-452.67	9,253.06	0.00	0.00	0.00
16,400.00	89.89	1.16	7,081.57	9,358.97	-450.65	9,353.06	0.00	0.00	0.00
16,500.00	89.89	1.16	7,081.77	9,458.95	-448.63	9,453.05	0.00	0.00	0.00
16,600.00	89.89	1.16	7,081.97	9,558.93	-446.61	9,553.05	0.00	0.00	0.00
16,700.00	89.89	1.16	7,082.16	9,658.91	-444.58	9,653.05	0.00	0.00	0.00
16,800.00	89.89	1.16	7,082.36	9,758.89	-442.56	9,753.04	0.00	0.00	0.00
16,900.00	89.89	1.16	7,082.56	9,858.87	-440.54	9,853.04	0.00	0.00	0.00
17,000.00	89.89	1.16	7,082.76	9,958.84	-438.52	9,953.04	0.00	0.00	0.00
17,100.00	89.89	1.16	7,082.95	10,058.82	-436.49	10,053.03	0.00	0.00	0.00
17,200.00	89.89	1.16	7,083.15	10,158.80	-434.47	10,153.03	0.00	0.00	0.00
17,300.00	89.89	1.16	7,083.35	10,258.78	-432.45	10,253.02	0.00	0.00	0.00
17,400.00	89.89	1.16	7,083.55	10,358.76	-430.43	10,353.02	0.00	0.00	0.00
17,500.00	89.89	1.16	7,083.74	10,458.74	-428.40	10,453.02	0.00	0.00	0.00
17,600.00	89.89	1.16	7,083.94	10,558.72	-426.38	10,553.01	0.00	0.00	0.00
17,630.29	89.89	1.16	7,084.00	10,589.00	-425.77	10,583.30	0.00	0.00	0.00
TD Well @ 17630.29ft									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 27N-12HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4973.00usft (D Rig)
Site:	2N-65W-13 Swartz 16-13HZ Pad	North Reference:	True
Well:	SWARTZ 27N-12HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-1		

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,513.20	1,500.00	9 5/8"	9-5/8	13-1/2	
7,474.59	7,064.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,383.23	1,372.00	Fox Hills Mkr				
4,106.45	4,058.00	Parkman				
4,497.45	4,449.00	Sussex				
6,916.90	6,834.00	Sharon Springs				
6,987.91	6,886.00	Niobrara				
7,092.43	6,952.00	Nio B				
7,266.82	7,030.00	Nio C				