

# **US ROCKIES WATTENBERG PLANNING**

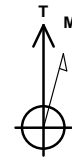
**WELD-NAD83-UTMFT13N  
2N-65W-13 Swartz 15-13HZ Pad  
SWARTZ 2N-25HZ**

**Plan A**

**Plan: Permit Rev-3**

## **Standard Planning Report**

**06 December, 2016**



Azimuths to True North  
Magnetic North: 8.20°

Magnetic Field  
Strength: 52572.0snT  
Dip Angle: 66.72°  
Date: 7/28/2015  
Model: IGRF2010

SITE: 2N-65W-13 Swartz 15-13HZ Pad

Well: SWARTZ 2N-25HZ  
Wellbore: Plan A  
Design: Permit Rev-3

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1294.00	1307.46	Fox Hills Mkr
3971.00	4099.77	Parkman
4362.00	4492.45	Sussex
6766.00	6938.11	Sharon Springs
6818.00	7012.58	Niobrara
6883.00	7123.34	Nio B
6958.00	7325.07	Nio C

#### WELL DETAILS: SWARTZ 2N-25HZ

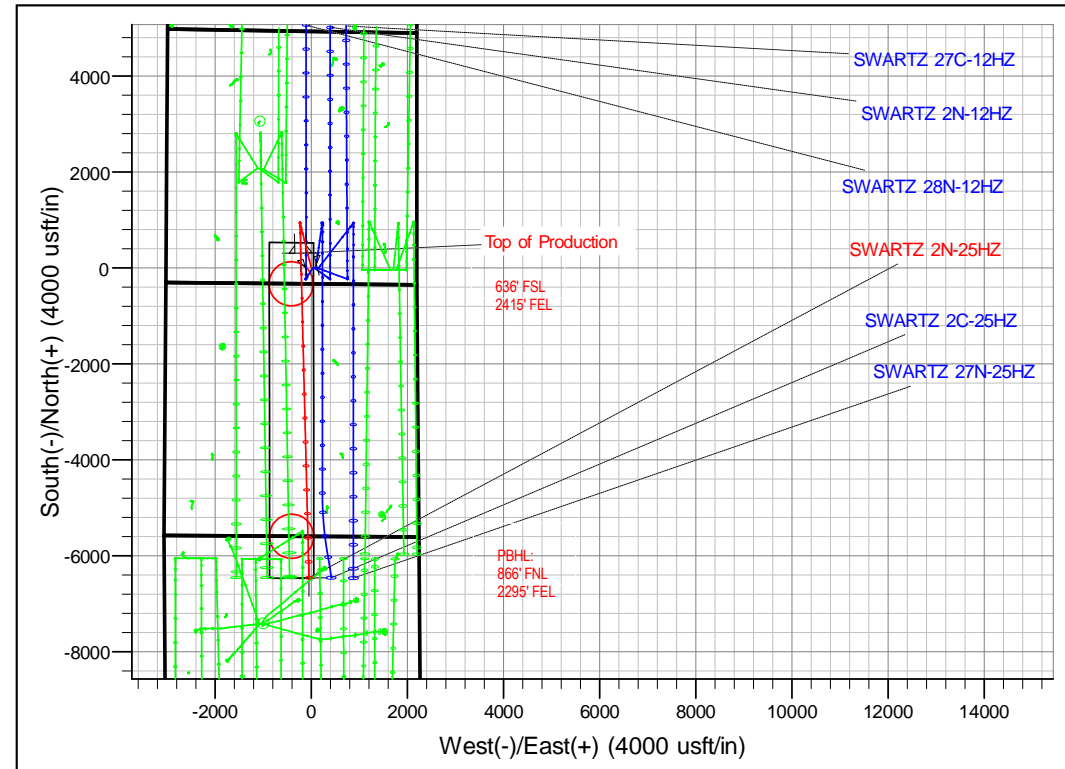
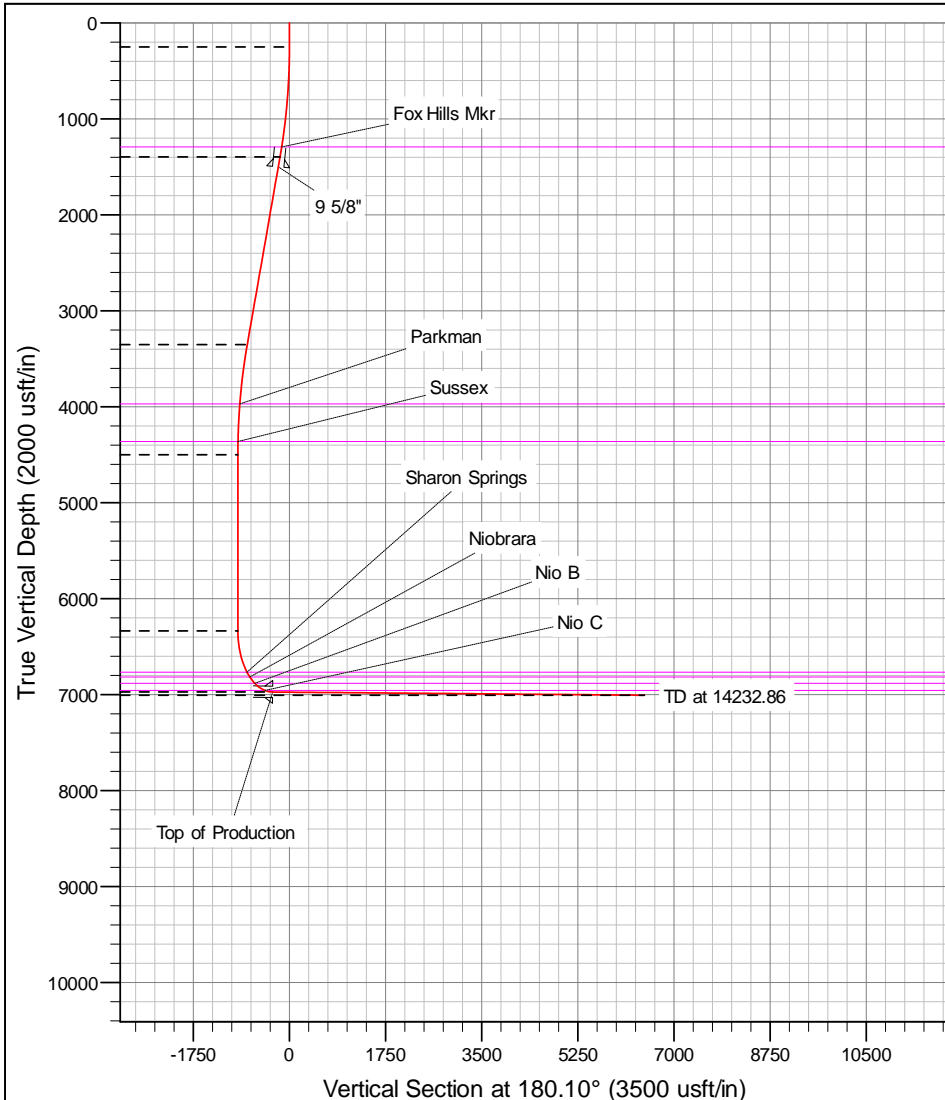
+N/-S	+E/-W	GL: 4878.00	RKB = 17' @ 4895.00usft (D Rig)	Longitude	Slot
0.00	0.00	Northing 14575070.40	Easting 1749204.01	Latitude 40.132087	-104.610794

#### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00
1414.31	17.46	345.95	1396.37	170.81	-42.75	1.50	-170.74
3466.17	17.46	345.95	3353.63	768.19	-192.25	0.00	-767.85
4630.48	0.00	0.00	4500.00	939.00	-235.00	1.50	-938.59
6467.79	0.00	0.00	6337.31	939.00	-235.00	0.00	-938.59
7464.68	89.72	178.55	6973.92	305.69	-219.02	9.00	-305.31
14232.86	89.72	178.55	7007.00	-6460.25	-48.30	0.00	6460.32

#### DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SWARTZ 2N-25HZ_PBHL	7007.00	-6460.25	-48.30	14568610.00	1749184.00	40.114347	-104.610967



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 2N-25HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz 15-13HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 2N-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-3		

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

Site						2N-65W-13 Swartz 15-13HZ Pad											
Site Position:						Northing:			14,575,070.39 usft			Latitude:			40.132087		
From:			Lat/Long			Easting:			1,749,204.01 usft			Longitude:			-104.610794		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.25		

Well	SWARTZ 2N-25HZ					
Well Position	+N-S	0.00 usft	Northing:	14,575,070.39 usft	Latitude:	40.132087
	+E-W	0.00 usft	Easting:	1,749,204.01 usft	Longitude:	-104.610794
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,878.00 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>
	IGRF2010	7/28/2015	8.20	66.72	52,571.96323690

<b>Design</b>	Permit Rev-3			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	180.10

<b>Plan Survey Tool Program</b>	<b>Date</b>	12/6/2016			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	250.00	Permit Rev-3 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:Rockies, crustal dex	
2	7,384.86	14,232.86	Permit Rev-3 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:Rockies, crustal dex	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 2N-25HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz 15-13HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 2N-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-3		

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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,414.31	17.46	345.95	1,396.37	170.81	-42.75	1.50	1.50	0.00	345.95	
3,466.17	17.46	345.95	3,353.63	768.19	-192.25	0.00	0.00	0.00	0.00	
4,630.48	0.00	0.00	4,500.00	939.00	-235.00	1.50	-1.50	0.00	180.00	
6,467.79	0.00	0.00	6,337.31	939.00	-235.00	0.00	0.00	0.00	0.00	
7,464.68	89.72	178.55	6,973.92	305.69	-219.02	9.00	9.00	0.00	178.55	
14,232.86	89.72	178.55	7,007.00	-6,460.25	-48.30	0.00	0.00	0.00	0.00	SWARTZ 2N-25HZ

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 2N-25HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz 15-13HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 2N-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-3		

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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.75	345.95	300.00	0.32	-0.08	-0.32	1.50	1.50	0.00
400.00	2.25	345.95	399.96	2.86	-0.71	-2.86	1.50	1.50	0.00
500.00	3.75	345.95	499.82	7.93	-1.99	-7.93	1.50	1.50	0.00
600.00	5.25	345.95	599.51	15.54	-3.89	-15.54	1.50	1.50	0.00
700.00	6.75	345.95	698.96	25.68	-6.43	-25.67	1.50	1.50	0.00
800.00	8.25	345.95	798.10	38.35	-9.60	-38.33	1.50	1.50	0.00
900.00	9.75	345.95	896.87	53.52	-13.39	-53.50	1.50	1.50	0.00
1,000.00	11.25	345.95	995.19	71.20	-17.82	-71.17	1.50	1.50	0.00
1,100.00	12.75	345.95	1,093.00	91.37	-22.87	-91.33	1.50	1.50	0.00
1,200.00	14.25	345.95	1,190.24	114.01	-28.53	-113.96	1.50	1.50	0.00
1,300.00	15.75	345.95	1,286.83	139.12	-34.82	-139.06	1.50	1.50	0.00
1,307.46	15.86	345.95	1,294.00	141.09	-35.31	-141.03	1.50	1.50	0.00
<b>Fox Hills Mkr</b>									
1,400.00	17.25	345.95	1,382.71	166.67	-41.71	-166.60	1.50	1.50	0.00
1,414.31	17.46	345.95	1,396.37	170.81	-42.75	-170.74	1.50	1.50	0.00
1,500.00	17.46	345.95	1,478.10	195.76	-48.99	-195.67	0.00	0.00	0.00
1,522.95	17.46	345.95	1,500.00	202.44	-50.66	-202.35	0.00	0.00	0.00
<b>9 5/8"</b>									
1,600.00	17.46	345.95	1,573.49	224.87	-56.28	-224.78	0.00	0.00	0.00
1,700.00	17.46	345.95	1,668.88	253.99	-63.56	-253.88	0.00	0.00	0.00
1,800.00	17.46	345.95	1,764.27	283.10	-70.85	-282.98	0.00	0.00	0.00
1,900.00	17.46	345.95	1,859.66	312.22	-78.14	-312.08	0.00	0.00	0.00
2,000.00	17.46	345.95	1,955.05	341.33	-85.42	-341.18	0.00	0.00	0.00
2,100.00	17.46	345.95	2,050.44	370.44	-92.71	-370.28	0.00	0.00	0.00
2,200.00	17.46	345.95	2,145.84	399.56	-100.00	-399.38	0.00	0.00	0.00
2,300.00	17.46	345.95	2,241.23	428.67	-107.28	-428.48	0.00	0.00	0.00
2,400.00	17.46	345.95	2,336.62	457.78	-114.57	-457.58	0.00	0.00	0.00
2,500.00	17.46	345.95	2,432.01	486.90	-121.85	-486.69	0.00	0.00	0.00
2,600.00	17.46	345.95	2,527.40	516.01	-129.14	-515.79	0.00	0.00	0.00
2,700.00	17.46	345.95	2,622.79	545.13	-136.43	-544.89	0.00	0.00	0.00
2,800.00	17.46	345.95	2,718.18	574.24	-143.71	-573.99	0.00	0.00	0.00
2,900.00	17.46	345.95	2,813.57	603.35	-151.00	-603.09	0.00	0.00	0.00
3,000.00	17.46	345.95	2,908.96	632.47	-158.29	-632.19	0.00	0.00	0.00
3,100.00	17.46	345.95	3,004.35	661.58	-165.57	-661.29	0.00	0.00	0.00
3,200.00	17.46	345.95	3,099.74	690.70	-172.86	-690.39	0.00	0.00	0.00
3,300.00	17.46	345.95	3,195.13	719.81	-180.14	-719.49	0.00	0.00	0.00
3,400.00	17.46	345.95	3,290.52	748.92	-187.43	-748.60	0.00	0.00	0.00
3,466.17	17.46	345.95	3,353.63	768.19	-192.25	-767.85	0.00	0.00	0.00
3,500.00	16.96	345.95	3,385.95	777.90	-194.68	-777.56	1.50	-1.50	0.00
3,600.00	15.46	345.95	3,481.98	804.97	-201.46	-804.62	1.50	-1.50	0.00
3,700.00	13.96	345.95	3,578.70	829.60	-207.62	-829.24	1.50	-1.50	0.00
3,800.00	12.46	345.95	3,676.05	851.76	-213.17	-851.39	1.50	-1.50	0.00
3,900.00	10.96	345.95	3,773.97	871.45	-218.09	-871.07	1.50	-1.50	0.00
4,000.00	9.46	345.95	3,872.38	888.64	-222.40	-888.25	1.50	-1.50	0.00
4,099.77	7.96	345.95	3,971.00	903.29	-226.06	-902.90	1.50	-1.50	0.00
<b>Parkman</b>									
4,100.00	7.96	345.95	3,971.22	903.32	-226.07	-902.93	1.50	-1.50	0.00
4,200.00	6.46	345.95	4,070.43	915.49	-229.12	-915.09	1.50	-1.50	0.00
4,300.00	4.96	345.95	4,169.93	925.14	-231.53	-924.73	1.50	-1.50	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 2N-25HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz 15-13HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 2N-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-3		

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)
4,400.00	3.46	345.95	4,269.66	932.26	-233.31	-931.85	1.50	-1.50	0.00
4,492.45	2.07	345.95	4,362.00	936.58	-234.39	-936.17	1.50	-1.50	0.00
<b>Sussex</b>									
4,500.00	1.96	345.95	4,369.55	936.84	-234.46	-936.43	1.50	-1.50	0.00
4,600.00	0.46	345.95	4,469.52	938.88	-234.97	-938.47	1.50	-1.50	0.00
4,630.48	0.00	0.00	4,500.00	939.00	-235.00	-938.59	1.50	-1.50	0.00
4,700.00	0.00	0.00	4,569.52	939.00	-235.00	-938.59	0.00	0.00	0.00
4,800.00	0.00	0.00	4,669.52	939.00	-235.00	-938.59	0.00	0.00	0.00
4,900.00	0.00	0.00	4,769.52	939.00	-235.00	-938.59	0.00	0.00	0.00
5,000.00	0.00	0.00	4,869.52	939.00	-235.00	-938.59	0.00	0.00	0.00
5,100.00	0.00	0.00	4,969.52	939.00	-235.00	-938.59	0.00	0.00	0.00
5,200.00	0.00	0.00	5,069.52	939.00	-235.00	-938.59	0.00	0.00	0.00
5,300.00	0.00	0.00	5,169.52	939.00	-235.00	-938.59	0.00	0.00	0.00
5,400.00	0.00	0.00	5,269.52	939.00	-235.00	-938.59	0.00	0.00	0.00
5,500.00	0.00	0.00	5,369.52	939.00	-235.00	-938.59	0.00	0.00	0.00
5,600.00	0.00	0.00	5,469.52	939.00	-235.00	-938.59	0.00	0.00	0.00
5,700.00	0.00	0.00	5,569.52	939.00	-235.00	-938.59	0.00	0.00	0.00
5,800.00	0.00	0.00	5,669.52	939.00	-235.00	-938.59	0.00	0.00	0.00
5,900.00	0.00	0.00	5,769.52	939.00	-235.00	-938.59	0.00	0.00	0.00
6,000.00	0.00	0.00	5,869.52	939.00	-235.00	-938.59	0.00	0.00	0.00
6,100.00	0.00	0.00	5,969.52	939.00	-235.00	-938.59	0.00	0.00	0.00
6,200.00	0.00	0.00	6,069.52	939.00	-235.00	-938.59	0.00	0.00	0.00
6,300.00	0.00	0.00	6,169.52	939.00	-235.00	-938.59	0.00	0.00	0.00
6,400.00	0.00	0.00	6,269.52	939.00	-235.00	-938.59	0.00	0.00	0.00
6,467.79	0.00	0.00	6,337.31	939.00	-235.00	-938.59	0.00	0.00	0.00
6,500.00	2.90	178.55	6,369.51	938.19	-234.98	-937.77	9.00	9.00	0.00
6,600.00	11.90	178.55	6,468.57	925.33	-234.65	-924.91	9.00	9.00	0.00
6,700.00	20.90	178.55	6,564.41	897.13	-233.94	-896.72	9.00	9.00	0.00
6,800.00	29.90	178.55	6,654.65	854.30	-232.86	-853.89	9.00	9.00	0.00
6,900.00	38.90	178.55	6,737.08	797.88	-231.44	-797.47	9.00	9.00	0.00
6,938.11	42.33	178.55	6,766.00	773.08	-230.81	-772.68	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,000.00	47.90	178.55	6,809.66	729.26	-229.71	-728.86	9.00	9.00	0.00
7,012.58	49.03	178.55	6,818.00	719.85	-229.47	-719.45	9.00	9.00	0.00
<b>Niobrara</b>									
7,100.00	56.90	178.55	6,870.61	650.14	-227.71	-649.74	9.00	9.00	0.00
7,123.34	59.00	178.55	6,883.00	630.37	-227.21	-629.97	9.00	9.00	0.00
<b>Nio B</b>									
7,200.00	65.90	178.55	6,918.44	562.46	-225.50	-562.07	9.00	9.00	0.00
7,300.00	74.90	178.55	6,951.95	468.39	-223.13	-468.00	9.00	9.00	0.00
7,325.07	77.15	178.55	6,958.00	444.07	-222.51	-443.68	9.00	9.00	0.00
<b>Nio C</b>									
7,400.00	83.90	178.55	6,970.33	370.22	-220.65	-369.84	9.00	9.00	0.00
7,464.68	89.72	178.55	6,973.92	305.69	-219.02	-305.31	9.00	9.00	0.00
<b>Top of Production - SWARTZ 2N-25HZ_PHL</b>									
7,500.00	89.72	178.55	6,974.10	270.38	-218.13	-270.00	0.00	0.00	0.00
7,600.00	89.72	178.55	6,974.59	170.42	-215.61	-170.04	0.00	0.00	0.00
7,700.00	89.72	178.55	6,975.07	70.45	-213.08	-70.08	0.00	0.00	0.00
7,800.00	89.72	178.55	6,975.56	-29.52	-210.56	29.88	0.00	0.00	0.00
7,900.00	89.72	178.55	6,976.05	-129.48	-208.04	129.85	0.00	0.00	0.00
8,000.00	89.72	178.55	6,976.54	-229.45	-205.52	229.81	0.00	0.00	0.00
8,100.00	89.72	178.55	6,977.03	-329.42	-202.99	329.77	0.00	0.00	0.00
8,200.00	89.72	178.55	6,977.52	-429.38	-200.47	429.73	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 2N-25HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz 15-13HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 2N-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,300.00	89.72	178.55	6,978.01	-529.35	-197.95	529.70	0.00	0.00	0.00
8,400.00	89.72	178.55	6,978.50	-629.32	-195.43	629.66	0.00	0.00	0.00
8,500.00	89.72	178.55	6,978.98	-729.29	-192.91	729.62	0.00	0.00	0.00
8,600.00	89.72	178.55	6,979.47	-829.25	-190.38	829.58	0.00	0.00	0.00
8,700.00	89.72	178.55	6,979.96	-929.22	-187.86	929.55	0.00	0.00	0.00
8,800.00	89.72	178.55	6,980.45	-1,029.19	-185.34	1,029.51	0.00	0.00	0.00
8,900.00	89.72	178.55	6,980.94	-1,129.15	-182.82	1,129.47	0.00	0.00	0.00
9,000.00	89.72	178.55	6,981.43	-1,229.12	-180.29	1,229.43	0.00	0.00	0.00
9,100.00	89.72	178.55	6,981.92	-1,329.09	-177.77	1,329.40	0.00	0.00	0.00
9,200.00	89.72	178.55	6,982.41	-1,429.05	-175.25	1,429.36	0.00	0.00	0.00
9,300.00	89.72	178.55	6,982.89	-1,529.02	-172.73	1,529.32	0.00	0.00	0.00
9,400.00	89.72	178.55	6,983.38	-1,628.99	-170.20	1,629.28	0.00	0.00	0.00
9,500.00	89.72	178.55	6,983.87	-1,728.96	-167.68	1,729.25	0.00	0.00	0.00
9,600.00	89.72	178.55	6,984.36	-1,828.92	-165.16	1,829.21	0.00	0.00	0.00
9,700.00	89.72	178.55	6,984.85	-1,928.89	-162.64	1,929.17	0.00	0.00	0.00
9,800.00	89.72	178.55	6,985.34	-2,028.86	-160.11	2,029.13	0.00	0.00	0.00
9,900.00	89.72	178.55	6,985.83	-2,128.82	-157.59	2,129.09	0.00	0.00	0.00
10,000.00	89.72	178.55	6,986.31	-2,228.79	-155.07	2,229.06	0.00	0.00	0.00
10,100.00	89.72	178.55	6,986.80	-2,328.76	-152.55	2,329.02	0.00	0.00	0.00
10,200.00	89.72	178.55	6,987.29	-2,428.72	-150.02	2,428.98	0.00	0.00	0.00
10,300.00	89.72	178.55	6,987.78	-2,528.69	-147.50	2,528.94	0.00	0.00	0.00
10,400.00	89.72	178.55	6,988.27	-2,628.66	-144.98	2,628.91	0.00	0.00	0.00
10,500.00	89.72	178.55	6,988.76	-2,728.63	-142.46	2,728.87	0.00	0.00	0.00
10,600.00	89.72	178.55	6,989.25	-2,828.59	-139.93	2,828.83	0.00	0.00	0.00
10,700.00	89.72	178.55	6,989.74	-2,928.56	-137.41	2,928.79	0.00	0.00	0.00
10,800.00	89.72	178.55	6,990.22	-3,028.53	-134.89	3,028.76	0.00	0.00	0.00
10,900.00	89.72	178.55	6,990.71	-3,128.49	-132.37	3,128.72	0.00	0.00	0.00
11,000.00	89.72	178.55	6,991.20	-3,228.46	-129.85	3,228.68	0.00	0.00	0.00
11,100.00	89.72	178.55	6,991.69	-3,328.43	-127.32	3,328.64	0.00	0.00	0.00
11,200.00	89.72	178.55	6,992.18	-3,428.39	-124.80	3,428.61	0.00	0.00	0.00
11,300.00	89.72	178.55	6,992.67	-3,528.36	-122.28	3,528.57	0.00	0.00	0.00
11,400.00	89.72	178.55	6,993.16	-3,628.33	-119.76	3,628.53	0.00	0.00	0.00
11,500.00	89.72	178.55	6,993.64	-3,728.29	-117.23	3,728.49	0.00	0.00	0.00
11,600.00	89.72	178.55	6,994.13	-3,828.26	-114.71	3,828.46	0.00	0.00	0.00
11,700.00	89.72	178.55	6,994.62	-3,928.23	-112.19	3,928.42	0.00	0.00	0.00
11,800.00	89.72	178.55	6,995.11	-4,028.20	-109.67	4,028.38	0.00	0.00	0.00
11,900.00	89.72	178.55	6,995.60	-4,128.16	-107.14	4,128.34	0.00	0.00	0.00
12,000.00	89.72	178.55	6,996.09	-4,228.13	-104.62	4,228.31	0.00	0.00	0.00
12,100.00	89.72	178.55	6,996.58	-4,328.10	-102.10	4,328.27	0.00	0.00	0.00
12,200.00	89.72	178.55	6,997.07	-4,428.06	-99.58	4,428.23	0.00	0.00	0.00
12,300.00	89.72	178.55	6,997.55	-4,528.03	-97.05	4,528.19	0.00	0.00	0.00
12,400.00	89.72	178.55	6,998.04	-4,628.00	-94.53	4,628.16	0.00	0.00	0.00
12,500.00	89.72	178.55	6,998.53	-4,727.96	-92.01	4,728.12	0.00	0.00	0.00
12,600.00	89.72	178.55	6,999.02	-4,827.93	-89.49	4,828.08	0.00	0.00	0.00
12,700.00	89.72	178.55	6,999.51	-4,927.90	-86.96	4,928.04	0.00	0.00	0.00
12,800.00	89.72	178.55	7,000.00	-5,027.87	-84.44	5,028.01	0.00	0.00	0.00
12,900.00	89.72	178.55	7,000.49	-5,127.83	-81.92	5,127.97	0.00	0.00	0.00
13,000.00	89.72	178.55	7,000.98	-5,227.80	-79.40	5,227.93	0.00	0.00	0.00
13,100.00	89.72	178.55	7,001.46	-5,327.77	-76.87	5,327.89	0.00	0.00	0.00
13,200.00	89.72	178.55	7,001.95	-5,427.73	-74.35	5,427.86	0.00	0.00	0.00
13,300.00	89.72	178.55	7,002.44	-5,527.70	-71.83	5,527.82	0.00	0.00	0.00
13,400.00	89.72	178.55	7,002.93	-5,627.67	-69.31	5,627.78	0.00	0.00	0.00
13,500.00	89.72	178.55	7,003.42	-5,727.63	-66.79	5,727.74	0.00	0.00	0.00
13,600.00	89.72	178.55	7,003.91	-5,827.60	-64.26	5,827.71	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 2N-25HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4895.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz 15-13HZ Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 2N-25HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-3		

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)
13,700.00	89.72	178.55	7,004.40	-5,927.57	-61.74	5,927.67	0.00	0.00	0.00
13,800.00	89.72	178.55	7,004.88	-6,027.54	-59.22	6,027.63	0.00	0.00	0.00
13,900.00	89.72	178.55	7,005.37	-6,127.50	-56.70	6,127.59	0.00	0.00	0.00
14,000.00	89.72	178.55	7,005.86	-6,227.47	-54.17	6,227.55	0.00	0.00	0.00
14,100.00	89.72	178.55	7,006.35	-6,327.44	-51.65	6,327.52	0.00	0.00	0.00
14,200.00	89.72	178.55	7,006.84	-6,427.40	-49.13	6,427.48	0.00	0.00	0.00
14,232.86	89.72	178.55	7,007.00	-6,460.25	-48.30	6,460.32	0.00	0.00	0.00
SWARTZ 2N-25HZ_PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SWARTZ 2N-25HZ_P	0.00	0.00	6,973.92	305.69	-219.02	14,575,375.12	1,748,983.65	40.132927	-104.611578
- plan hits target center									
- Point									
SWARTZ 2N-25HZ_P	0.00	0.00	7,007.00	-6,460.25	-48.30	14,568,610.00	1,749,184.00	40.114347	-104.610967
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,522.95	1,500.00	9 5/8"	9-5/8	13-1/2	
7,464.68	6,973.92	Top of Production	5-1/2	8-1/2	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,307.46	1,294.00	Fox Hills Mkr				
4,099.77	3,971.00	Parkman				
4,492.45	4,362.00	Sussex				
6,938.11	6,766.00	Sharon Springs				
7,012.58	6,818.00	Niobrara				
7,123.34	6,883.00	Nio B				
7,325.07	6,958.00	Nio C				