

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
2N-65W-13 Swartz No2 Pad  
SWARTZ 27N-12HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**30 July, 2015**

Project: WELD-NAD83-UTMFT13N

Site: 2N-65W-13 Swartz No2 Pad

Well: SWARTZ 27N-12HZ

Wellbore: Plan A

Design: Permit Rev-1

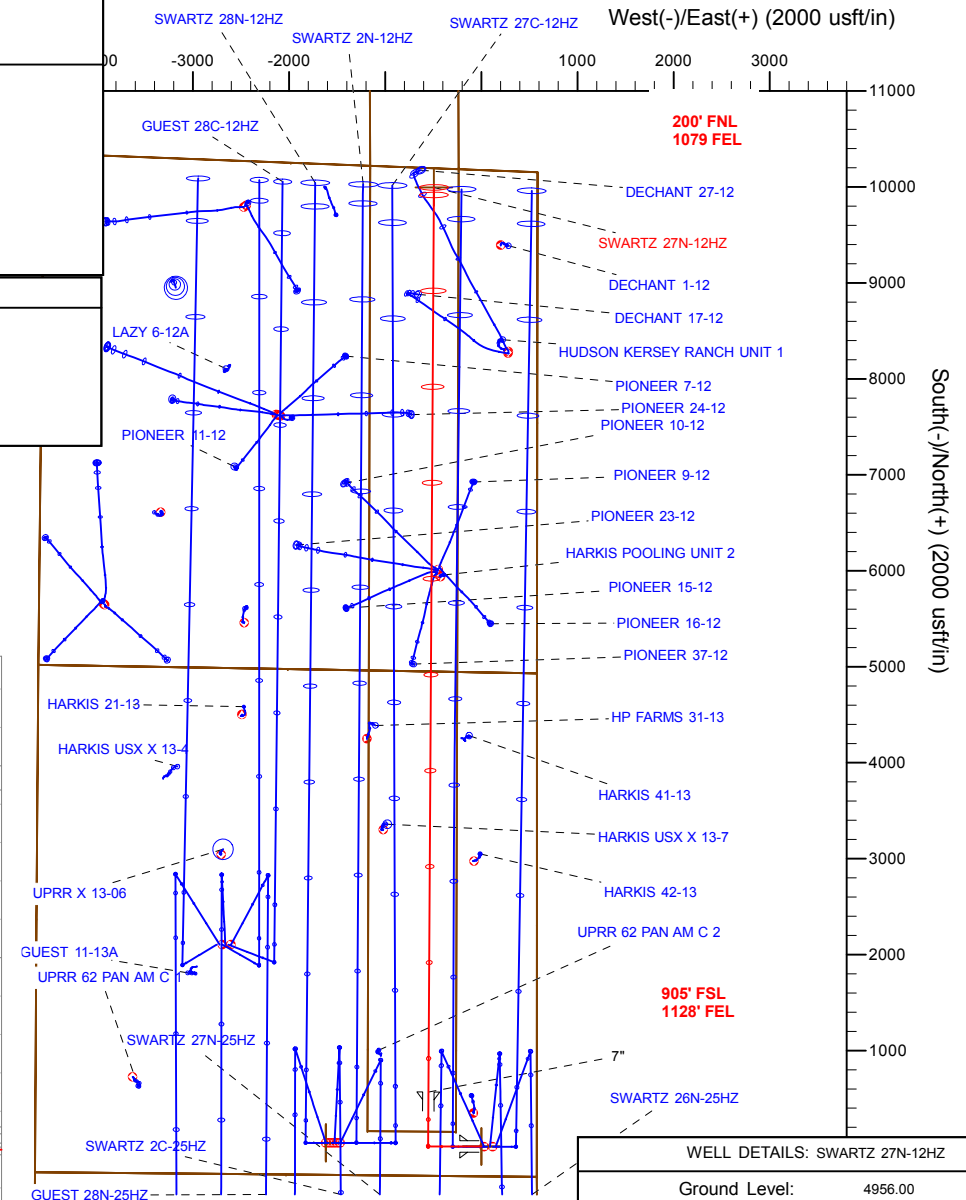
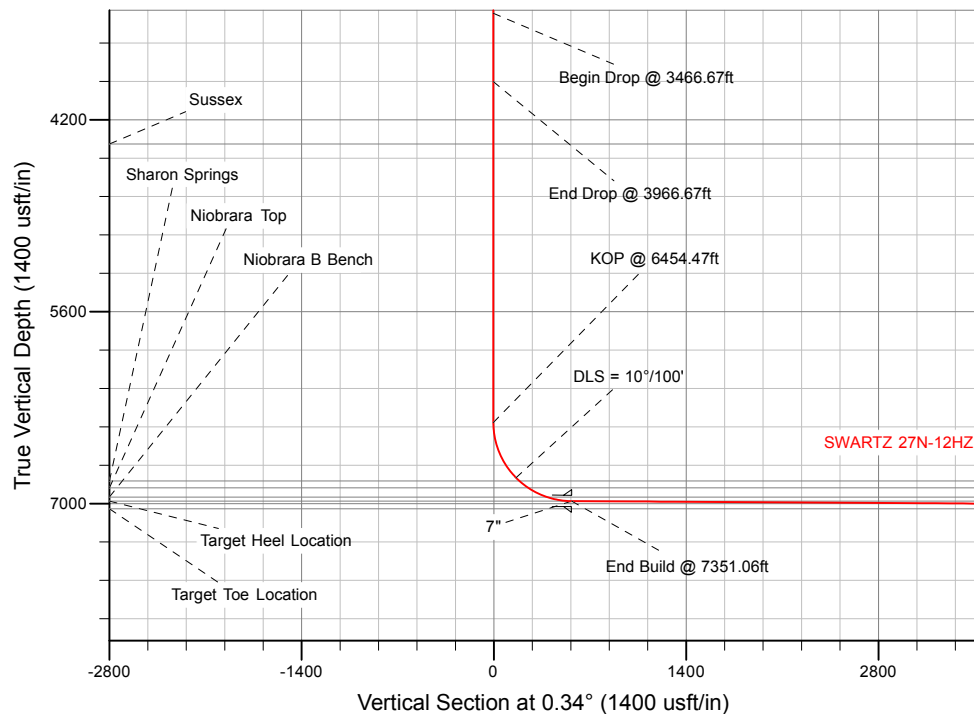
# US ROCKIES WATTENBERG PLANNING

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	866.67	10.00	270.00	863.29	0.00	-58.03	1.50	270.00	-0.34	
4	3466.67	10.00	270.00	3423.79	0.00	-509.52	0.00	0.00	-3.02	
5	3966.67	0.00	0.00	3921.25	0.00	-553.04	2.00	180.00	-3.28	
6	6454.47	0.00	0.00	6409.05	0.00	-553.04	0.00	0.00	-3.28	
7	7351.06	89.66	0.34	6982.00	569.54	-549.61	10.00	0.34	566.27	
8	16778.27	89.66	0.34	7038.00	9996.41	-492.88	0.00	0.00	9993.31	SWARTZ 27N-12HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
SWARTZ 27N-12HZ_SHL	0.00	0.00	0.00	40.131978	-104.605010	Point
SWARTZ 27N-12HZ_BHL	7038.00	9996.41	-492.88	40.159429	-104.606774	Point



## WELL DETAILS: SWARTZ 27N-12HZ

Ground Level: 4956.00

RKB = 17' @ 4973.00usft (D Rig)

Plan: Permit Rev-1 (SWARTZ 27N-12HZ/Plan A)

Created By: Clint Eshelman

Date: 7/30/2015

Reviewed: \_\_\_\_\_

Date: \_\_\_\_\_

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 27N-12HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz No2 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 27N-12HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

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

Site		2N-65W-13 Swartz No2 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

<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	7/29/2015	8.20	66.72	52,572

<b>Design</b>	Permit Rev-1			
<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	0.34

<b>Plan Sections</b>										
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	270.00	863.29	0.00	-58.03	1.50	1.50	0.00	270.00	
3,466.67	10.00	270.00	3,423.79	0.00	-509.52	0.00	0.00	0.00	0.00	
3,966.67	0.00	0.00	3,921.25	0.00	-553.04	2.00	-2.00	0.00	180.00	
6,454.47	0.00	0.00	6,409.05	0.00	-553.04	0.00	0.00	0.00	0.00	
7,351.06	89.66	0.34	6,982.00	569.54	-549.61	10.00	10.00	0.04	0.34	
16,778.27	89.66	0.34	7,038.00	9,996.41	-492.88	0.00	0.00	0.00	0.00	SWARTZ 27N-12HZ_

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 27N-12HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz No2 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 27N-12HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>SWARTZ 27N-12HZ_Drilling Window - 2N-R65W-Sec. 25_Section lines - 2N-R65W-Sec. 13_Section lines - 2N-R65W-Sec. 12_Section lines</b>									
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
<b>Begin Nudge @ 200.00ft</b>									
300.00	1.50	270.00	299.99	0.00	-1.31	-0.01	1.50	1.50	0.00
400.00	3.00	270.00	399.91	0.00	-5.23	-0.03	1.50	1.50	0.00
500.00	4.50	270.00	499.69	0.00	-11.77	-0.07	1.50	1.50	0.00
600.00	6.00	270.00	599.27	0.00	-20.92	-0.12	1.50	1.50	0.00
700.00	7.50	270.00	698.57	0.00	-32.68	-0.19	1.50	1.50	0.00
800.00	9.00	270.00	797.54	0.00	-47.03	-0.28	1.50	1.50	0.00
866.67	10.00	270.00	863.29	0.00	-58.03	-0.34	1.50	1.50	0.00
<b>End Nudge @ 866.67ft</b>									
900.00	10.00	270.00	896.11	0.00	-63.82	-0.38	0.00	0.00	0.00
1,000.00	10.00	270.00	994.59	0.00	-81.18	-0.48	0.00	0.00	0.00
1,100.00	10.00	270.00	1,093.08	0.00	-98.55	-0.58	0.00	0.00	0.00
1,200.00	10.00	270.00	1,191.56	0.00	-115.91	-0.69	0.00	0.00	0.00
1,300.00	10.00	270.00	1,290.04	0.00	-133.28	-0.79	0.00	0.00	0.00
1,383.23	10.00	270.00	1,372.00	0.00	-147.73	-0.88	0.00	0.00	0.00
<b>Fox Hills</b>									
1,400.00	10.00	270.00	1,388.52	0.00	-150.64	-0.89	0.00	0.00	0.00
1,500.00	10.00	270.00	1,487.00	0.00	-168.01	-1.00	0.00	0.00	0.00
1,600.00	10.00	270.00	1,585.48	0.00	-185.37	-1.10	0.00	0.00	0.00
1,700.00	10.00	270.00	1,683.96	0.00	-202.74	-1.20	0.00	0.00	0.00
1,800.00	10.00	270.00	1,782.44	0.00	-220.10	-1.31	0.00	0.00	0.00
1,817.83	10.00	270.00	1,800.00	0.00	-223.20	-1.32	0.00	0.00	0.00
<b>9 5/8"</b>									
1,900.00	10.00	270.00	1,880.92	0.00	-237.47	-1.41	0.00	0.00	0.00
2,000.00	10.00	270.00	1,979.40	0.00	-254.83	-1.51	0.00	0.00	0.00
2,100.00	10.00	270.00	2,077.88	0.00	-272.20	-1.62	0.00	0.00	0.00
2,200.00	10.00	270.00	2,176.36	0.00	-289.56	-1.72	0.00	0.00	0.00
2,300.00	10.00	270.00	2,274.85	0.00	-306.93	-1.82	0.00	0.00	0.00
2,400.00	10.00	270.00	2,373.33	0.00	-324.29	-1.92	0.00	0.00	0.00
2,500.00	10.00	270.00	2,471.81	0.00	-341.66	-2.03	0.00	0.00	0.00
2,600.00	10.00	270.00	2,570.29	0.00	-359.02	-2.13	0.00	0.00	0.00
2,700.00	10.00	270.00	2,668.77	0.00	-376.39	-2.23	0.00	0.00	0.00
2,800.00	10.00	270.00	2,767.25	0.00	-393.75	-2.34	0.00	0.00	0.00
2,900.00	10.00	270.00	2,865.73	0.00	-411.11	-2.44	0.00	0.00	0.00
3,000.00	10.00	270.00	2,964.21	0.00	-428.48	-2.54	0.00	0.00	0.00
3,100.00	10.00	270.00	3,062.69	0.00	-445.84	-2.65	0.00	0.00	0.00
3,200.00	10.00	270.00	3,161.17	0.00	-463.21	-2.75	0.00	0.00	0.00
3,300.00	10.00	270.00	3,259.65	0.00	-480.57	-2.85	0.00	0.00	0.00
3,400.00	10.00	270.00	3,358.13	0.00	-497.94	-2.95	0.00	0.00	0.00
3,466.67	10.00	270.00	3,423.79	0.00	-509.52	-3.02	0.00	0.00	0.00
<b>Begin Drop @ 3466.67ft</b>									
3,500.00	9.33	270.00	3,456.65	0.00	-515.11	-3.06	2.00	-2.00	0.00
3,600.00	7.33	270.00	3,555.59	0.00	-529.60	-3.14	2.00	-2.00	0.00
3,700.00	5.33	270.00	3,654.97	0.00	-540.64	-3.21	2.00	-2.00	0.00
3,800.00	3.33	270.00	3,754.68	0.00	-548.19	-3.25	2.00	-2.00	0.00
3,900.00	1.33	270.00	3,854.59	0.00	-552.26	-3.28	2.00	-2.00	0.00
3,966.67	0.00	0.00	3,921.26	0.00	-553.04	-3.28	2.00	-2.00	0.00
<b>End Drop @ 3966.67ft</b>									
4,000.00	0.00	0.00	3,954.59	0.00	-553.04	-3.28	0.00	0.00	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 27N-12HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz No2 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 27N-12HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,100.00	0.00	0.00	4,054.59	0.00	-553.04	-3.28	0.00	0.00	0.00
4,200.00	0.00	0.00	4,154.59	0.00	-553.04	-3.28	0.00	0.00	0.00
4,300.00	0.00	0.00	4,254.59	0.00	-553.04	-3.28	0.00	0.00	0.00
4,400.00	0.00	0.00	4,354.59	0.00	-553.04	-3.28	0.00	0.00	0.00
4,421.41	0.00	0.00	4,376.00	0.00	-553.04	-3.28	0.00	0.00	0.00
<b>Sussex</b>									
4,500.00	0.00	0.00	4,454.59	0.00	-553.04	-3.28	0.00	0.00	0.00
4,600.00	0.00	0.00	4,554.59	0.00	-553.04	-3.28	0.00	0.00	0.00
4,700.00	0.00	0.00	4,654.59	0.00	-553.04	-3.28	0.00	0.00	0.00
4,800.00	0.00	0.00	4,754.59	0.00	-553.04	-3.28	0.00	0.00	0.00
4,900.00	0.00	0.00	4,854.59	0.00	-553.04	-3.28	0.00	0.00	0.00
5,000.00	0.00	0.00	4,954.59	0.00	-553.04	-3.28	0.00	0.00	0.00
5,100.00	0.00	0.00	5,054.59	0.00	-553.04	-3.28	0.00	0.00	0.00
5,200.00	0.00	0.00	5,154.59	0.00	-553.04	-3.28	0.00	0.00	0.00
5,300.00	0.00	0.00	5,254.59	0.00	-553.04	-3.28	0.00	0.00	0.00
5,400.00	0.00	0.00	5,354.59	0.00	-553.04	-3.28	0.00	0.00	0.00
5,500.00	0.00	0.00	5,454.59	0.00	-553.04	-3.28	0.00	0.00	0.00
5,600.00	0.00	0.00	5,554.59	0.00	-553.04	-3.28	0.00	0.00	0.00
5,700.00	0.00	0.00	5,654.59	0.00	-553.04	-3.28	0.00	0.00	0.00
5,800.00	0.00	0.00	5,754.59	0.00	-553.04	-3.28	0.00	0.00	0.00
5,900.00	0.00	0.00	5,854.59	0.00	-553.04	-3.28	0.00	0.00	0.00
6,000.00	0.00	0.00	5,954.59	0.00	-553.04	-3.28	0.00	0.00	0.00
6,100.00	0.00	0.00	6,054.59	0.00	-553.04	-3.28	0.00	0.00	0.00
6,200.00	0.00	0.00	6,154.59	0.00	-553.04	-3.28	0.00	0.00	0.00
6,300.00	0.00	0.00	6,254.59	0.00	-553.04	-3.28	0.00	0.00	0.00
6,400.00	0.00	0.00	6,354.59	0.00	-553.04	-3.28	0.00	0.00	0.00
6,454.47	0.00	0.00	6,409.06	0.00	-553.04	-3.28	0.00	0.00	0.00
<b>KOP @ 6454.47ft</b>									
6,500.00	4.55	0.34	6,454.54	1.81	-553.03	-1.47	10.00	10.00	0.00
6,600.00	14.55	0.34	6,553.03	18.38	-552.93	15.10	10.00	10.00	0.00
6,700.00	24.55	0.34	6,647.14	51.81	-552.73	48.53	10.00	10.00	0.00
6,800.00	34.55	0.34	6,734.02	101.07	-552.43	97.79	10.00	10.00	0.00
6,900.00	44.55	0.34	6,811.02	164.67	-552.05	161.39	10.00	10.00	0.00
<b>DLS = 10°/100'</b>									
6,934.31	47.98	0.34	6,834.74	189.46	-551.90	186.18	10.00	10.00	0.00
<b>Sharon Springs</b>									
7,000.00	54.55	0.34	6,875.82	240.67	-551.59	237.39	10.00	10.00	0.00
7,015.69	56.12	0.34	6,884.74	253.57	-551.51	250.30	10.00	10.00	0.00
<b>Niobrara Top</b>									
7,100.00	64.55	0.34	6,926.43	326.77	-551.07	323.49	10.00	10.00	0.00
7,167.99	71.35	0.34	6,951.93	389.74	-550.69	386.47	10.00	10.00	0.00
<b>Niobrara B Bench</b>									
7,200.00	74.55	0.34	6,961.31	420.35	-550.51	417.07	10.00	10.00	0.00
7,300.00	84.55	0.34	6,979.42	518.56	-549.92	515.29	10.00	10.00	0.00
7,351.06	89.66	0.34	6,982.00	569.54	-549.61	566.26	10.00	10.00	0.00
<b>End Build @ 7351.06ft - Target Heel Location - 7"</b>									
7,400.00	89.66	0.34	6,982.29	618.48	-549.32	615.21	0.00	0.00	0.00
7,500.00	89.66	0.34	6,982.89	718.48	-548.71	715.21	0.00	0.00	0.00
7,600.00	89.66	0.34	6,983.48	818.47	-548.11	815.20	0.00	0.00	0.00
7,700.00	89.66	0.34	6,984.07	918.47	-547.51	915.20	0.00	0.00	0.00
7,800.00	89.66	0.34	6,984.67	1,018.46	-546.91	1,015.20	0.00	0.00	0.00
7,900.00	89.66	0.34	6,985.26	1,118.46	-546.31	1,115.20	0.00	0.00	0.00
8,000.00	89.66	0.34	6,985.86	1,218.46	-545.70	1,215.20	0.00	0.00	0.00

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 27N-12HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz No2 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 27N-12HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
8,100.00	89.66	0.34	6,986.45	1,318.45	-545.10	1,315.20	0.00	0.00	0.00	
8,200.00	89.66	0.34	6,987.04	1,418.45	-544.50	1,415.19	0.00	0.00	0.00	
8,300.00	89.66	0.34	6,987.64	1,518.45	-543.90	1,515.19	0.00	0.00	0.00	
8,400.00	89.66	0.34	6,988.23	1,618.44	-543.30	1,615.19	0.00	0.00	0.00	
8,500.00	89.66	0.34	6,988.83	1,718.44	-542.70	1,715.19	0.00	0.00	0.00	
8,600.00	89.66	0.34	6,989.42	1,818.44	-542.09	1,815.19	0.00	0.00	0.00	
8,700.00	89.66	0.34	6,990.01	1,918.43	-541.49	1,915.19	0.00	0.00	0.00	
8,800.00	89.66	0.34	6,990.61	2,018.43	-540.89	2,015.18	0.00	0.00	0.00	
8,900.00	89.66	0.34	6,991.20	2,118.43	-540.29	2,115.18	0.00	0.00	0.00	
9,000.00	89.66	0.34	6,991.80	2,218.42	-539.69	2,215.18	0.00	0.00	0.00	
9,100.00	89.66	0.34	6,992.39	2,318.42	-539.08	2,315.18	0.00	0.00	0.00	
9,200.00	89.66	0.34	6,992.98	2,418.41	-538.48	2,415.18	0.00	0.00	0.00	
9,300.00	89.66	0.34	6,993.58	2,518.41	-537.88	2,515.18	0.00	0.00	0.00	
9,400.00	89.66	0.34	6,994.17	2,618.41	-537.28	2,615.17	0.00	0.00	0.00	
9,500.00	89.66	0.34	6,994.77	2,718.40	-536.68	2,715.17	0.00	0.00	0.00	
9,600.00	89.66	0.34	6,995.36	2,818.40	-536.08	2,815.17	0.00	0.00	0.00	
9,700.00	89.66	0.34	6,995.95	2,918.40	-535.47	2,915.17	0.00	0.00	0.00	
9,800.00	89.66	0.34	6,996.55	3,018.39	-534.87	3,015.17	0.00	0.00	0.00	
9,900.00	89.66	0.34	6,997.14	3,118.39	-534.27	3,115.16	0.00	0.00	0.00	
10,000.00	89.66	0.34	6,997.74	3,218.39	-533.67	3,215.16	0.00	0.00	0.00	
10,100.00	89.66	0.34	6,998.33	3,318.38	-533.07	3,315.16	0.00	0.00	0.00	
10,200.00	89.66	0.34	6,998.92	3,418.38	-532.46	3,415.16	0.00	0.00	0.00	
10,300.00	89.66	0.34	6,999.52	3,518.38	-531.86	3,515.16	0.00	0.00	0.00	
10,400.00	89.66	0.34	7,000.11	3,618.37	-531.26	3,615.16	0.00	0.00	0.00	
10,500.00	89.66	0.34	7,000.71	3,718.37	-530.66	3,715.15	0.00	0.00	0.00	
10,600.00	89.66	0.34	7,001.30	3,818.36	-530.06	3,815.15	0.00	0.00	0.00	
10,700.00	89.66	0.34	7,001.89	3,918.36	-529.46	3,915.15	0.00	0.00	0.00	
10,800.00	89.66	0.34	7,002.49	4,018.36	-528.85	4,015.15	0.00	0.00	0.00	
10,900.00	89.66	0.34	7,003.08	4,118.35	-528.25	4,115.15	0.00	0.00	0.00	
11,000.00	89.66	0.34	7,003.68	4,218.35	-527.65	4,215.15	0.00	0.00	0.00	
11,100.00	89.66	0.34	7,004.27	4,318.35	-527.05	4,315.14	0.00	0.00	0.00	
11,200.00	89.66	0.34	7,004.86	4,418.34	-526.45	4,415.14	0.00	0.00	0.00	
11,300.00	89.66	0.34	7,005.46	4,518.34	-525.84	4,515.14	0.00	0.00	0.00	
11,400.00	89.66	0.34	7,006.05	4,618.34	-525.24	4,615.14	0.00	0.00	0.00	
11,500.00	89.66	0.34	7,006.65	4,718.33	-524.64	4,715.14	0.00	0.00	0.00	
11,600.00	89.66	0.34	7,007.24	4,818.33	-524.04	4,815.13	0.00	0.00	0.00	
11,700.00	89.66	0.34	7,007.83	4,918.33	-523.44	4,915.13	0.00	0.00	0.00	
11,800.00	89.66	0.34	7,008.43	5,018.32	-522.84	5,015.13	0.00	0.00	0.00	
11,900.00	89.66	0.34	7,009.02	5,118.32	-522.23	5,115.13	0.00	0.00	0.00	
12,000.00	89.66	0.34	7,009.62	5,218.31	-521.63	5,215.13	0.00	0.00	0.00	
12,100.00	89.66	0.34	7,010.21	5,318.31	-521.03	5,315.13	0.00	0.00	0.00	
12,200.00	89.66	0.34	7,010.80	5,418.31	-520.43	5,415.12	0.00	0.00	0.00	
12,300.00	89.66	0.34	7,011.40	5,518.30	-519.83	5,515.12	0.00	0.00	0.00	
12,400.00	89.66	0.34	7,011.99	5,618.30	-519.22	5,615.12	0.00	0.00	0.00	
12,500.00	89.66	0.34	7,012.59	5,718.30	-518.62	5,715.12	0.00	0.00	0.00	
12,600.00	89.66	0.34	7,013.18	5,818.29	-518.02	5,815.12	0.00	0.00	0.00	
12,700.00	89.66	0.34	7,013.77	5,918.29	-517.42	5,915.12	0.00	0.00	0.00	
12,800.00	89.66	0.34	7,014.37	6,018.29	-516.82	6,015.11	0.00	0.00	0.00	
12,900.00	89.66	0.34	7,014.96	6,118.28	-516.22	6,115.11	0.00	0.00	0.00	
13,000.00	89.66	0.34	7,015.56	6,218.28	-515.61	6,215.11	0.00	0.00	0.00	
13,100.00	89.66	0.34	7,016.15	6,318.28	-515.01	6,315.11	0.00	0.00	0.00	
13,200.00	89.66	0.34	7,016.74	6,418.27	-514.41	6,415.11	0.00	0.00	0.00	
13,300.00	89.66	0.34	7,017.34	6,518.27	-513.81	6,515.10	0.00	0.00	0.00	
13,400.00	89.66	0.34	7,017.93	6,618.26	-513.21	6,615.10	0.00	0.00	0.00	

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 27N-12HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz No2 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 27N-12HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,500.00	89.66	0.34	7,018.53	6,718.26	-512.61	6,715.10	0.00	0.00	0.00
13,600.00	89.66	0.34	7,019.12	6,818.26	-512.00	6,815.10	0.00	0.00	0.00
13,700.00	89.66	0.34	7,019.71	6,918.25	-511.40	6,915.10	0.00	0.00	0.00
13,800.00	89.66	0.34	7,020.31	7,018.25	-510.80	7,015.10	0.00	0.00	0.00
13,900.00	89.66	0.34	7,020.90	7,118.25	-510.20	7,115.09	0.00	0.00	0.00
14,000.00	89.66	0.34	7,021.50	7,218.24	-509.60	7,215.09	0.00	0.00	0.00
14,100.00	89.66	0.34	7,022.09	7,318.24	-508.99	7,315.09	0.00	0.00	0.00
14,200.00	89.66	0.34	7,022.68	7,418.24	-508.39	7,415.09	0.00	0.00	0.00
14,300.00	89.66	0.34	7,023.28	7,518.23	-507.79	7,515.09	0.00	0.00	0.00
14,400.00	89.66	0.34	7,023.87	7,618.23	-507.19	7,615.09	0.00	0.00	0.00
14,500.00	89.66	0.34	7,024.47	7,718.23	-506.59	7,715.08	0.00	0.00	0.00
14,600.00	89.66	0.34	7,025.06	7,818.22	-505.99	7,815.08	0.00	0.00	0.00
14,700.00	89.66	0.34	7,025.65	7,918.22	-505.38	7,915.08	0.00	0.00	0.00
14,800.00	89.66	0.34	7,026.25	8,018.21	-504.78	8,015.08	0.00	0.00	0.00
14,900.00	89.66	0.34	7,026.84	8,118.21	-504.18	8,115.08	0.00	0.00	0.00
15,000.00	89.66	0.34	7,027.44	8,218.21	-503.58	8,215.07	0.00	0.00	0.00
15,100.00	89.66	0.34	7,028.03	8,318.20	-502.98	8,315.07	0.00	0.00	0.00
15,200.00	89.66	0.34	7,028.62	8,418.20	-502.37	8,415.07	0.00	0.00	0.00
15,300.00	89.66	0.34	7,029.22	8,518.20	-501.77	8,515.07	0.00	0.00	0.00
15,400.00	89.66	0.34	7,029.81	8,618.19	-501.17	8,615.07	0.00	0.00	0.00
15,500.00	89.66	0.34	7,030.41	8,718.19	-500.57	8,715.07	0.00	0.00	0.00
15,600.00	89.66	0.34	7,031.00	8,818.19	-499.97	8,815.06	0.00	0.00	0.00
15,700.00	89.66	0.34	7,031.60	8,918.18	-499.37	8,915.06	0.00	0.00	0.00
15,800.00	89.66	0.34	7,032.19	9,018.18	-498.76	9,015.06	0.00	0.00	0.00
15,900.00	89.66	0.34	7,032.78	9,118.18	-498.16	9,115.06	0.00	0.00	0.00
16,000.00	89.66	0.34	7,033.38	9,218.17	-497.56	9,215.06	0.00	0.00	0.00
16,100.00	89.66	0.34	7,033.97	9,318.17	-496.96	9,315.06	0.00	0.00	0.00
16,200.00	89.66	0.34	7,034.57	9,418.16	-496.36	9,415.05	0.00	0.00	0.00
16,300.00	89.66	0.34	7,035.16	9,518.16	-495.75	9,515.05	0.00	0.00	0.00
16,400.00	89.66	0.34	7,035.75	9,618.16	-495.15	9,615.05	0.00	0.00	0.00
16,500.00	89.66	0.34	7,036.35	9,718.15	-494.55	9,715.05	0.00	0.00	0.00
16,600.00	89.66	0.34	7,036.94	9,818.15	-493.95	9,815.05	0.00	0.00	0.00
16,700.00	89.66	0.34	7,037.54	9,918.15	-493.35	9,915.04	0.00	0.00	0.00
16,778.26	89.66	0.34	7,038.00	9,996.40	-492.88	9,993.30	0.00	0.00	0.00
Target Toe Location									
16,778.27	89.66	0.34	7,038.00	9,996.41	-492.88	9,993.31	0.01	0.00	0.00
TD Well @ 16778.27ft - SWARTZ 27N-12HZ_BHL									

# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 27N-12HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz No2 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 27N-12HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
SWARTZ 27N-12HZ_Dri	0.00	0.00	0.00	0.00	0.00	14,575,037.83	1,750,820.88	40.131978	-104.605010
- plan hits target center									
- Polygon									
Point 1			0.00	152.20	-262.99	14,575,188.86	1,750,557.22		
Point 2			0.00	160.99	-1,183.00	14,575,193.56	1,749,637.18		
Point 3			0.00	1,015.20	-1,181.40	14,576,047.77	1,749,634.98		
Point 4			0.00	8,904.71	-1,159.62	14,583,937.30	1,749,621.70		
Point 5			0.00	10,199.39	-1,154.80	14,585,231.99	1,749,620.77		
Point 6			0.00	11,074.26	-1,159.75	14,586,106.83	1,749,611.93		
Point 7			0.00	11,041.62	-239.55	14,586,078.28	1,750,532.27		
Point 8			0.00	10,204.58	-234.82	14,585,241.27	1,750,540.72		
Point 9			0.00	8,874.58	-239.72	14,583,911.26	1,750,541.73		
Point 10			0.00	1,004.46	-261.42	14,576,041.12	1,750,555.00		
Point 11			0.00	152.20	-262.99	14,575,188.86	1,750,557.22		
2N-R65W-Sec. 25_Secti	0.00	0.00	0.00	39.75	-1,616.71	14,575,070.39	1,749,204.01	40.132087	-104.610794
- plan misses target center by 1617.20usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	-5,575.96	-3,064.67	14,569,480.87	1,746,164.15		
Point 2			0.00	-5,592.14	-413.46	14,569,476.47	1,748,815.40		
Point 3			0.00	-5,609.35	2,238.63	14,569,471.05	1,751,467.55		
Point 4			0.00	-8,247.40	2,259.94	14,566,833.12	1,751,500.58		
Point 5			0.00	-10,884.05	2,281.32	14,564,196.59	1,751,533.67		
Point 6			0.00	-10,912.19	-413.54	14,564,156.47	1,748,838.97		
Point 7			0.00	-11,002.15	-3,033.15	14,564,054.87	1,746,219.78		
Point 8			0.00	-8,271.55	-3,044.64	14,566,785.40	1,746,196.16		
2N-R65W-Sec. 13_Secti	0.00	0.00	0.00	39.75	-1,616.71	14,575,070.39	1,749,204.01	40.132087	-104.610794
- plan misses target center by 1617.20usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	4,980.35	-2,990.78	14,580,037.40	1,746,191.13		
Point 2			0.00	4,936.75	-397.15	14,580,005.33	1,748,784.93		
Point 3			0.00	4,893.27	2,196.04	14,579,973.37	1,751,378.28		
Point 4			0.00	2,269.18	2,195.68	14,577,349.31	1,751,389.59		
Point 5			0.00	-354.07	2,193.83	14,574,726.08	1,751,399.39		
Point 6			0.00	-330.09	-414.94	14,574,738.46	1,748,790.54		
Point 7			0.00	-306.12	-3,023.71	14,574,750.84	1,746,181.69		
Point 8			0.00	2,332.94	-3,010.80	14,577,389.93	1,746,182.87		
2N-R65W-Sec. 12_Secti	0.00	0.00	0.00	39.75	-1,616.71	14,575,070.39	1,749,204.01	40.132087	-104.610794
- plan misses target center by 1617.20usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	10,311.40	-2,932.44	14,585,368.66	1,746,225.78		
Point 2			0.00	10,213.49	-365.25	14,585,282.16	1,748,793.38		
Point 3			0.00	10,115.80	2,202.09	14,585,195.88	1,751,361.13		
Point 4			0.00	7,504.68	2,199.03	14,582,584.77	1,751,369.67		
Point 5			0.00	4,893.27	2,196.04	14,579,973.37	1,751,378.28		
Point 6			0.00	4,936.75	-397.15	14,580,005.33	1,748,784.93		
Point 7			0.00	4,980.35	-2,990.78	14,580,037.40	1,746,191.13		
Point 8			0.00	7,645.87	-2,961.54	14,582,703.03	1,746,208.52		
SWARTZ 27N-12HZ_SH	0.00	0.00	0.00	0.00	0.00	14,575,037.83	1,750,820.88	40.131978	-104.605010
- plan hits target center									
- Point									
2N-R65W-Sec. 24_Secti	0.00	0.00	0.00	39.75	-1,616.71	14,575,070.39	1,749,204.01	40.132087	-104.610794
- plan misses target center by 1617.20usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			0.00	-306.12	-3,023.71	14,574,750.84	1,746,181.69		
Point 2			0.00	-330.09	-414.94	14,574,738.46	1,748,790.54		



# Anadarko

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SWARTZ 27N-12HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4973.00usft (D Rig)
<b>Site:</b>	2N-65W-13 Swartz No2 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SWARTZ 27N-12HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

Point 3	0.00	-354.07	2,193.83	14,574,726.08	1,751,399.39			
Point 4	0.00	-2,981.13	2,216.36	14,572,099.14	1,751,433.60			
Point 5	0.00	-5,609.35	2,238.63	14,569,471.05	1,751,467.55			
Point 6	0.00	-5,592.14	-413.46	14,569,476.47	1,748,815.40			
Point 7	0.00	-5,575.96	-3,064.67	14,569,480.87	1,746,164.15			
Point 8	0.00	-2,941.37	-3,043.57	14,572,115.53	1,746,173.54			
SWARTZ 27N-12HZ_BH-	0.00	0.00	7,038.00	9,996.41	-492.88	14,585,031.96	1,750,283.59	40.159429 -104.606774
- plan hits target center								
- Point								

Casing Points								
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")			
1,817.83	1,800.00	9 5/8"		9-5/8	13-1/2			
7,351.06	6,982.00	7"		7	8-3/4			

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,383.23	1,372.00	Fox Hills		0.00		
4,421.41	4,376.00	Sussex		0.00		
6,934.31	6,834.74	Sharon Springs		0.00		
7,015.69	6,884.74	Niobrara Top		0.00		
7,167.99	6,951.93	Niobrara B Bench		0.00		
7,351.06	6,982.00	Target Heel Location		0.00		
16,778.26	7,038.00	Target Toe Location		0.00		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200.00	200.00	0.00	0.00	Begin Nudge @ 200.00ft	
866.67	863.29	0.00	-58.03	End Nudge @ 866.67ft	
3,466.67	3,423.79	0.00	-509.52	Begin Drop @ 3466.67ft	
3,966.67	3,921.26	0.00	-553.04	End Drop @ 3966.67ft	
6,454.47	6,409.06	0.00	-553.04	KOP @ 6454.47ft	
6,900.00	6,811.02	164.67	-552.05	DLS = 10°/100'	
7,351.06	6,982.00	569.54	-549.61	End Build @ 7351.06ft	
16,778.27	7,038.00	9,996.41	-492.88	TD Well @ 16778.27ft	