

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-65W-13 Swartz 15-13HZ Pad
SWARTZ 27N-25HZ**

Plan A

Plan: Permit Rev-2

Standard Planning Report

21 October, 2015

Project: WELD-NAD83-UTMFT13N

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

Well: SWARTZ 27N-25HZ

Wellbore: Plan A

Design: Permit Rev-2

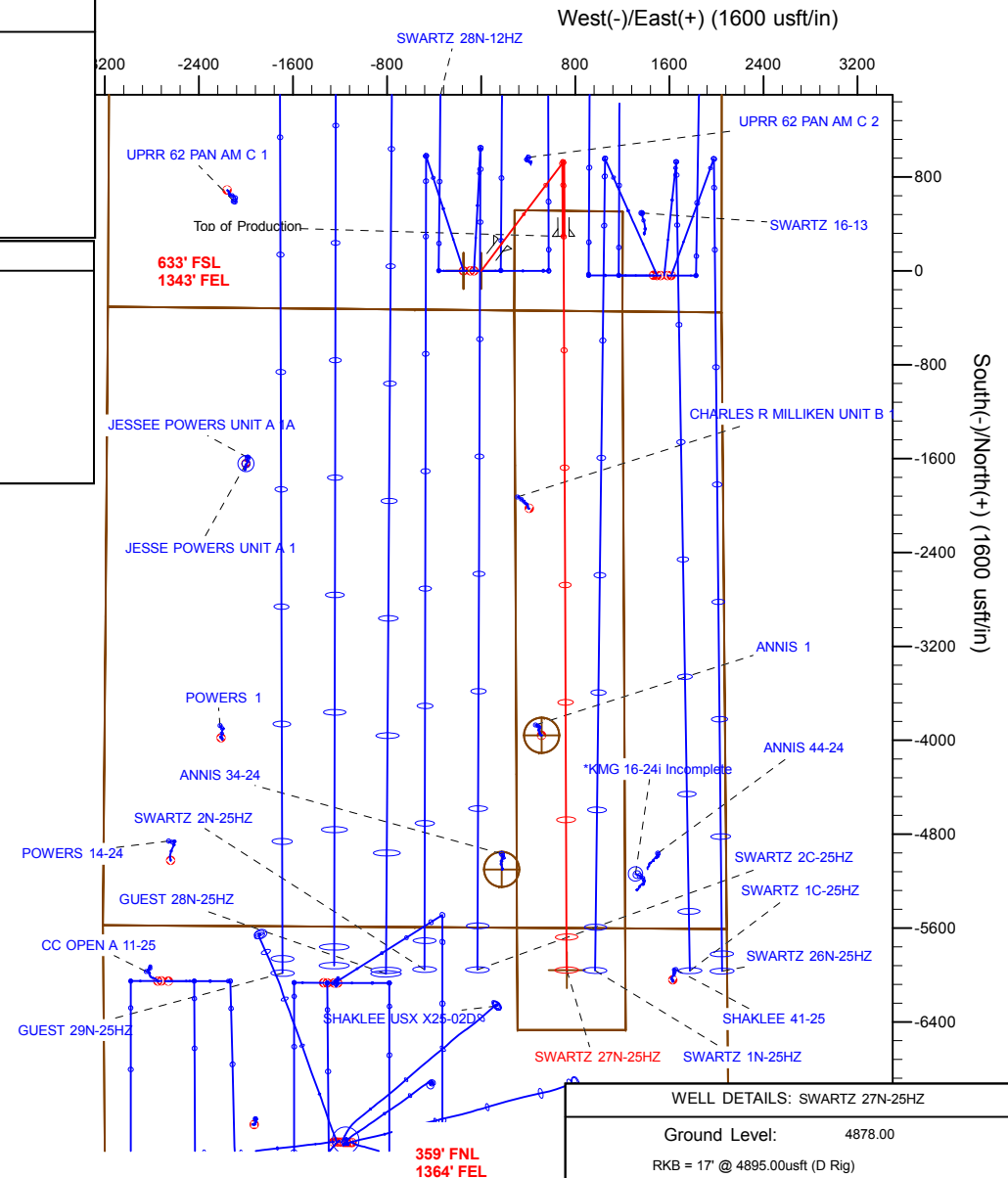
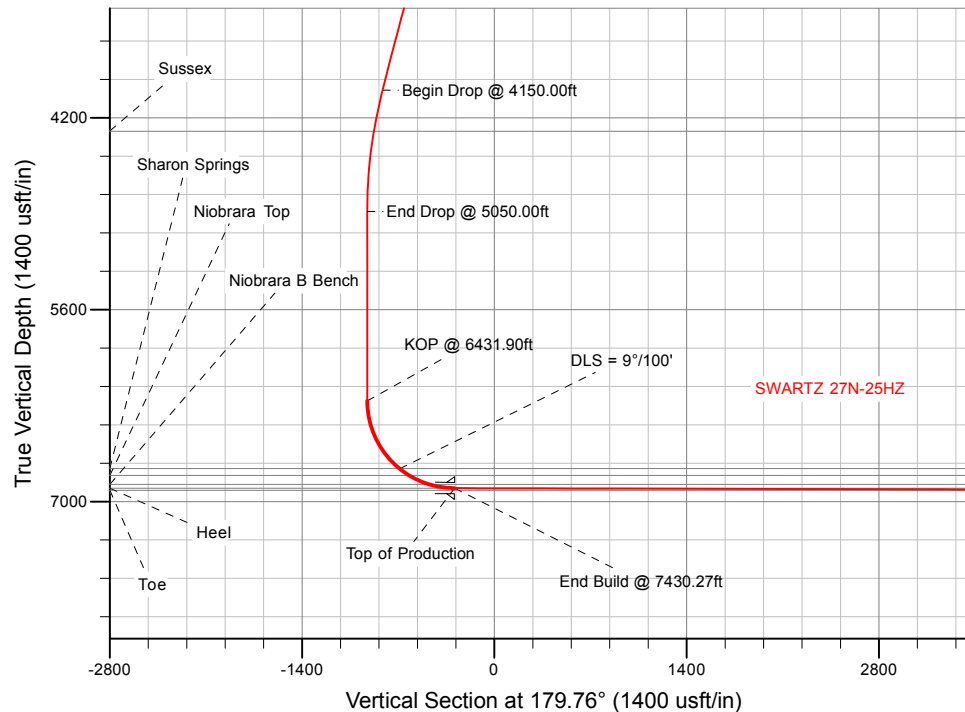
US ROCKIES WATTENBERG PLANNING

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1450.00	18.00	37.00	1430.36	149.31	112.51	1.50	37.00	-148.83	
4	4150.00	18.00	37.00	3998.21	815.64	614.63	0.00	0.00	-813.06	
5	5050.00	0.00	0.00	4883.48	927.62	699.01	2.00	180.00	-924.69	
6	6431.90	0.00	0.00	6265.38	927.62	699.01	0.00	0.00	-924.69	
7	7430.27	89.85	179.76	6902.00	292.64	701.70	9.00	179.76	-289.70	
8	13681.25	89.85	179.76	6918.00	-5958.27	728.20	0.00	0.00	5961.27	SWARTZ 27N-25HZ_TOE

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
SWARTZ 27N-25HZ_SHL	0.00	0.00	0.00	40.132085	-104.610258	Point
SWARTZ 27N-25HZ_TOE	6918.00	-5958.27	728.20	40.115723	-104.607653	Point



WELL DETAILS: SWARTZ 27N-25HZ

Ground Level: 4878.00

RKB = 17' @ 4895.00usft (D Rig)

Plan: Permit Rev-2 (SWARTZ 27N-25HZ/Plan A)

Created By: Clint Eshelman Date: 10/21/2015
Reviewed: _____ Date: _____

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 27N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-13 Swartz 15-13HZ Pad	North Reference:	True
Well:	SWARTZ 27N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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 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 27N-25HZ					
Well Position	+N/-S	-0.73 usft	Northing:	14,575,070.32 usft	Latitude:	40.132085
	+E/-W	149.82 usft	Easting:	1,749,353.83 usft	Longitude:	-104.610258
Position Uncertainty		3.28 usft	Wellhead Elevation:	0.00 usft	Ground Level:	4,878.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/29/2015	8.20	66.72	52,572

Design	Permit Rev-2			
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	179.76

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	
1,450.00	18.00	37.00	1,430.36	149.31	112.51	1.50	1.50	0.00	37.00	
4,150.00	18.00	37.00	3,998.21	815.64	614.63	0.00	0.00	0.00	0.00	
5,050.00	0.00	0.00	4,883.48	927.62	699.01	2.00	-2.00	0.00	180.00	
6,431.90	0.00	0.00	6,265.38	927.62	699.01	0.00	0.00	0.00	0.00	
7,430.27	89.85	179.76	6,902.00	292.64	701.71	9.00	9.00	18.01	179.76	
13,681.26	89.85	179.76	6,918.00	-5,958.27	728.20	0.00	0.00	0.00	0.00	SWARTZ 27N-25HZ_

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 27N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-13 Swartz 15-13HZ Pad	North Reference:	True
Well:	SWARTZ 27N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft									
300.00	0.75	37.00	300.00	0.26	0.20	-0.26	1.50	1.50	0.00
400.00	2.25	37.00	399.96	2.35	1.77	-2.34	1.50	1.50	0.00
500.00	3.75	37.00	499.82	6.53	4.92	-6.51	1.50	1.50	0.00
600.00	5.25	37.00	599.51	12.80	9.64	-12.76	1.50	1.50	0.00
700.00	6.75	37.00	698.96	21.15	15.93	-21.08	1.50	1.50	0.00
800.00	8.25	37.00	798.10	31.57	23.79	-31.47	1.50	1.50	0.00
900.00	9.75	37.00	896.87	44.06	33.20	-43.92	1.50	1.50	0.00
1,000.00	11.25	37.00	995.19	58.62	44.17	-58.43	1.50	1.50	0.00
1,100.00	12.75	37.00	1,093.00	75.22	56.68	-74.98	1.50	1.50	0.00
1,200.00	14.25	37.00	1,190.24	93.86	70.73	-93.57	1.50	1.50	0.00
1,300.00	15.75	37.00	1,286.83	114.53	86.31	-114.17	1.50	1.50	0.00
1,307.46	15.86	37.00	1,294.00	116.15	87.53	-115.79	1.50	1.50	0.00
Fox Hills									
1,400.00	17.25	37.00	1,382.71	137.21	103.40	-136.78	1.50	1.50	0.00
1,450.00	18.00	37.00	1,430.36	149.31	112.51	-148.83	1.50	1.50	0.00
End Nudge @ 1450.00ft									
1,500.00	18.00	37.00	1,477.91	161.64	121.81	-161.13	0.00	0.00	0.00
1,600.00	18.00	37.00	1,573.02	186.32	140.41	-185.73	0.00	0.00	0.00
1,700.00	18.00	37.00	1,668.12	211.00	159.00	-210.34	0.00	0.00	0.00
1,800.00	18.00	37.00	1,763.23	235.68	177.60	-234.94	0.00	0.00	0.00
1,838.66	18.00	37.00	1,800.00	245.22	184.79	-244.45	0.00	0.00	0.00
9 5/8"									
1,900.00	18.00	37.00	1,858.33	260.36	196.20	-259.54	0.00	0.00	0.00
2,000.00	18.00	37.00	1,953.44	285.04	214.79	-284.14	0.00	0.00	0.00
2,100.00	18.00	37.00	2,048.54	309.72	233.39	-308.74	0.00	0.00	0.00
2,200.00	18.00	37.00	2,143.65	334.40	251.99	-333.34	0.00	0.00	0.00
2,300.00	18.00	37.00	2,238.76	359.08	270.58	-357.94	0.00	0.00	0.00
2,400.00	18.00	37.00	2,333.86	383.76	289.18	-382.54	0.00	0.00	0.00
2,500.00	18.00	37.00	2,428.97	408.44	307.78	-407.14	0.00	0.00	0.00
2,600.00	18.00	37.00	2,524.07	433.12	326.38	-431.75	0.00	0.00	0.00
2,700.00	18.00	37.00	2,619.18	457.80	344.97	-456.35	0.00	0.00	0.00
2,800.00	18.00	37.00	2,714.28	482.47	363.57	-480.95	0.00	0.00	0.00
2,900.00	18.00	37.00	2,809.39	507.15	382.17	-505.55	0.00	0.00	0.00
3,000.00	18.00	37.00	2,904.50	531.83	400.76	-530.15	0.00	0.00	0.00
3,100.00	18.00	37.00	2,999.60	556.51	419.36	-554.75	0.00	0.00	0.00
3,200.00	18.00	37.00	3,094.71	581.19	437.96	-579.35	0.00	0.00	0.00
3,300.00	18.00	37.00	3,189.81	605.87	456.56	-603.95	0.00	0.00	0.00
3,400.00	18.00	37.00	3,284.92	630.55	475.15	-628.55	0.00	0.00	0.00
3,500.00	18.00	37.00	3,380.02	655.23	493.75	-653.15	0.00	0.00	0.00
3,600.00	18.00	37.00	3,475.13	679.91	512.35	-677.76	0.00	0.00	0.00
3,700.00	18.00	37.00	3,570.24	704.59	530.94	-702.36	0.00	0.00	0.00
3,800.00	18.00	37.00	3,665.34	729.27	549.54	-726.96	0.00	0.00	0.00
3,900.00	18.00	37.00	3,760.45	753.95	568.14	-751.56	0.00	0.00	0.00
4,000.00	18.00	37.00	3,855.55	778.62	586.74	-776.16	0.00	0.00	0.00
4,100.00	18.00	37.00	3,950.66	803.30	605.33	-800.76	0.00	0.00	0.00
4,150.00	18.00	37.00	3,998.21	815.64	614.63	-813.06	0.00	0.00	0.00
Begin Drop @ 4150.00ft									
4,200.00	17.00	37.00	4,045.90	827.65	623.68	-825.03	2.00	-2.00	0.00
4,300.00	15.00	37.00	4,142.02	849.66	640.27	-846.97	2.00	-2.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 27N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-13 Swartz 15-13HZ Pad	North Reference:	True
Well:	SWARTZ 27N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
4,400.00	13.00	37.00	4,239.04	868.98	654.83	-866.23	2.00	-2.00	0.00
4,460.37	11.79	37.00	4,298.00	879.33	662.62	-876.55	2.00	-2.00	0.00
Sussex									
4,500.00	11.00	37.00	4,336.85	885.59	667.34	-882.78	2.00	-2.00	0.00
4,600.00	9.00	37.00	4,435.33	899.45	677.79	-896.61	2.00	-2.00	0.00
4,700.00	7.00	37.00	4,534.35	910.57	686.16	-907.69	2.00	-2.00	0.00
4,800.00	5.00	37.00	4,633.80	918.92	692.45	-916.01	2.00	-2.00	0.00
4,900.00	3.00	37.00	4,733.55	924.49	696.65	-921.56	2.00	-2.00	0.00
5,000.00	1.00	37.00	4,833.48	927.27	698.75	-924.34	2.00	-2.00	0.00
5,050.00	0.00	0.00	4,883.48	927.62	699.01	-924.69	2.00	-2.00	0.00
End Drop @ 5050.00ft									
5,100.00	0.00	0.00	4,933.48	927.62	699.01	-924.69	0.00	0.00	0.00
5,200.00	0.00	0.00	5,033.48	927.62	699.01	-924.69	0.00	0.00	0.00
5,300.00	0.00	0.00	5,133.48	927.62	699.01	-924.69	0.00	0.00	0.00
5,400.00	0.00	0.00	5,233.48	927.62	699.01	-924.69	0.00	0.00	0.00
5,500.00	0.00	0.00	5,333.48	927.62	699.01	-924.69	0.00	0.00	0.00
5,600.00	0.00	0.00	5,433.48	927.62	699.01	-924.69	0.00	0.00	0.00
5,700.00	0.00	0.00	5,533.48	927.62	699.01	-924.69	0.00	0.00	0.00
5,800.00	0.00	0.00	5,633.48	927.62	699.01	-924.69	0.00	0.00	0.00
5,900.00	0.00	0.00	5,733.48	927.62	699.01	-924.69	0.00	0.00	0.00
6,000.00	0.00	0.00	5,833.48	927.62	699.01	-924.69	0.00	0.00	0.00
6,100.00	0.00	0.00	5,933.48	927.62	699.01	-924.69	0.00	0.00	0.00
6,200.00	0.00	0.00	6,033.48	927.62	699.01	-924.69	0.00	0.00	0.00
6,300.00	0.00	0.00	6,133.48	927.62	699.01	-924.69	0.00	0.00	0.00
6,400.00	0.00	0.00	6,233.48	927.62	699.01	-924.69	0.00	0.00	0.00
6,431.90	0.00	0.00	6,265.38	927.62	699.01	-924.69	0.00	0.00	0.00
KOP @ 6431.90ft									
6,500.00	6.13	179.76	6,333.35	923.98	699.03	-921.05	9.00	9.00	0.00
6,600.00	15.13	179.76	6,431.53	905.56	699.11	-902.62	9.00	9.00	0.00
6,700.00	24.13	179.76	6,525.62	872.00	699.25	-869.06	9.00	9.00	0.00
6,800.00	33.13	179.76	6,613.31	824.14	699.45	-821.20	9.00	9.00	0.00
6,900.00	42.13	179.76	6,692.43	763.14	699.71	-760.21	9.00	9.00	0.00
6,997.65	50.92	179.76	6,759.55	692.36	700.01	-689.42	9.00	9.00	0.00
Sharon Springs									
7,000.00	51.13	179.76	6,761.03	690.53	700.02	-687.59	9.00	9.00	0.00
DLS = 9°/100'									
7,084.51	58.74	179.76	6,809.55	621.41	700.31	-618.47	9.00	9.00	0.00
Niobrara Top									
7,100.00	60.13	179.76	6,817.42	608.07	700.37	-605.13	9.00	9.00	0.00
7,200.00	69.13	179.76	6,860.23	517.81	700.75	-514.87	9.00	9.00	0.00
7,245.03	73.18	179.76	6,874.77	475.20	700.93	-472.26	9.00	9.00	0.00
Niobrara B Bench									
7,300.00	78.13	179.76	6,888.38	421.97	701.16	-419.02	9.00	9.00	0.00
7,400.00	87.13	179.76	6,901.20	322.89	701.58	-319.95	9.00	9.00	0.00
7,430.27	89.85	179.76	6,902.00	292.64	701.71	-289.70	9.00	9.00	0.00
End Build @ 7430.27ft - Heel - Top of Production									
7,500.00	89.85	179.76	6,902.18	222.91	702.00	-219.97	0.00	0.00	0.00
7,600.00	89.85	179.76	6,902.43	122.91	702.42	-119.97	0.00	0.00	0.00
7,700.00	89.85	179.76	6,902.69	22.91	702.85	-19.97	0.00	0.00	0.00
7,800.00	89.85	179.76	6,902.94	-77.09	703.27	80.03	0.00	0.00	0.00
7,900.00	89.85	179.76	6,903.20	-177.09	703.70	180.03	0.00	0.00	0.00
8,000.00	89.85	179.76	6,903.46	-277.08	704.12	280.03	0.00	0.00	0.00
8,100.00	89.85	179.76	6,903.71	-377.08	704.54	380.03	0.00	0.00	0.00

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 27N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-13 Swartz 15-13HZ Pad	North Reference:	True
Well:	SWARTZ 27N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
8,200.00	89.85	179.76	6,903.97	-477.08	704.97	480.03	0.00	0.00	0.00
8,300.00	89.85	179.76	6,904.22	-577.08	705.39	580.03	0.00	0.00	0.00
8,400.00	89.85	179.76	6,904.48	-677.08	705.82	680.03	0.00	0.00	0.00
8,500.00	89.85	179.76	6,904.74	-777.08	706.24	780.03	0.00	0.00	0.00
8,600.00	89.85	179.76	6,904.99	-877.08	706.66	880.03	0.00	0.00	0.00
8,700.00	89.85	179.76	6,905.25	-977.08	707.09	980.03	0.00	0.00	0.00
8,800.00	89.85	179.76	6,905.50	-1,077.07	707.51	1,080.03	0.00	0.00	0.00
8,900.00	89.85	179.76	6,905.76	-1,177.07	707.93	1,180.03	0.00	0.00	0.00
9,000.00	89.85	179.76	6,906.02	-1,277.07	708.36	1,280.03	0.00	0.00	0.00
9,100.00	89.85	179.76	6,906.27	-1,377.07	708.78	1,380.03	0.00	0.00	0.00
9,200.00	89.85	179.76	6,906.53	-1,477.07	709.21	1,480.03	0.00	0.00	0.00
9,300.00	89.85	179.76	6,906.78	-1,577.07	709.63	1,580.03	0.00	0.00	0.00
9,400.00	89.85	179.76	6,907.04	-1,677.07	710.05	1,680.03	0.00	0.00	0.00
9,500.00	89.85	179.76	6,907.30	-1,777.07	710.48	1,780.03	0.00	0.00	0.00
9,600.00	89.85	179.76	6,907.55	-1,877.07	710.90	1,880.03	0.00	0.00	0.00
9,700.00	89.85	179.76	6,907.81	-1,977.06	711.33	1,980.03	0.00	0.00	0.00
9,800.00	89.85	179.76	6,908.06	-2,077.06	711.75	2,080.03	0.00	0.00	0.00
9,900.00	89.85	179.76	6,908.32	-2,177.06	712.17	2,180.03	0.00	0.00	0.00
10,000.00	89.85	179.76	6,908.58	-2,277.06	712.60	2,280.03	0.00	0.00	0.00
10,100.00	89.85	179.76	6,908.83	-2,377.06	713.02	2,380.02	0.00	0.00	0.00
10,200.00	89.85	179.76	6,909.09	-2,477.06	713.44	2,480.02	0.00	0.00	0.00
10,300.00	89.85	179.76	6,909.34	-2,577.06	713.87	2,580.02	0.00	0.00	0.00
10,400.00	89.85	179.76	6,909.60	-2,677.06	714.29	2,680.02	0.00	0.00	0.00
10,500.00	89.85	179.76	6,909.86	-2,777.05	714.72	2,780.02	0.00	0.00	0.00
10,600.00	89.85	179.76	6,910.11	-2,877.05	715.14	2,880.02	0.00	0.00	0.00
10,700.00	89.85	179.76	6,910.37	-2,977.05	715.56	2,980.02	0.00	0.00	0.00
10,800.00	89.85	179.76	6,910.62	-3,077.05	715.99	3,080.02	0.00	0.00	0.00
10,900.00	89.85	179.76	6,910.88	-3,177.05	716.41	3,180.02	0.00	0.00	0.00
11,000.00	89.85	179.76	6,911.14	-3,277.05	716.84	3,280.02	0.00	0.00	0.00
11,100.00	89.85	179.76	6,911.39	-3,377.05	717.26	3,380.02	0.00	0.00	0.00
11,200.00	89.85	179.76	6,911.65	-3,477.05	717.68	3,480.02	0.00	0.00	0.00
11,300.00	89.85	179.76	6,911.90	-3,577.04	718.11	3,580.02	0.00	0.00	0.00
11,400.00	89.85	179.76	6,912.16	-3,677.04	718.53	3,680.02	0.00	0.00	0.00
11,500.00	89.85	179.76	6,912.42	-3,777.04	718.95	3,780.02	0.00	0.00	0.00
11,600.00	89.85	179.76	6,912.67	-3,877.04	719.38	3,880.02	0.00	0.00	0.00
11,700.00	89.85	179.76	6,912.93	-3,977.04	719.80	3,980.02	0.00	0.00	0.00
11,800.00	89.85	179.76	6,913.18	-4,077.04	720.23	4,080.02	0.00	0.00	0.00
11,900.00	89.85	179.76	6,913.44	-4,177.04	720.65	4,180.02	0.00	0.00	0.00
12,000.00	89.85	179.76	6,913.70	-4,277.04	721.07	4,280.02	0.00	0.00	0.00
12,100.00	89.85	179.76	6,913.95	-4,377.03	721.50	4,380.02	0.00	0.00	0.00
12,200.00	89.85	179.76	6,914.21	-4,477.03	721.92	4,480.02	0.00	0.00	0.00
12,300.00	89.85	179.76	6,914.46	-4,577.03	722.35	4,580.02	0.00	0.00	0.00
12,400.00	89.85	179.76	6,914.72	-4,677.03	722.77	4,680.02	0.00	0.00	0.00
12,500.00	89.85	179.76	6,914.98	-4,777.03	723.19	4,780.02	0.00	0.00	0.00
12,600.00	89.85	179.76	6,915.23	-4,877.03	723.62	4,880.02	0.00	0.00	0.00
12,700.00	89.85	179.76	6,915.49	-4,977.03	724.04	4,980.02	0.00	0.00	0.00
12,800.00	89.85	179.76	6,915.74	-5,077.03	724.46	5,080.02	0.00	0.00	0.00
12,900.00	89.85	179.76	6,916.00	-5,177.02	724.89	5,180.02	0.00	0.00	0.00
13,000.00	89.85	179.76	6,916.26	-5,277.02	725.31	5,280.02	0.00	0.00	0.00
13,100.00	89.85	179.76	6,916.51	-5,377.02	725.74	5,380.02	0.00	0.00	0.00
13,200.00	89.85	179.76	6,916.77	-5,477.02	726.16	5,480.01	0.00	0.00	0.00
13,300.00	89.85	179.76	6,917.02	-5,577.02	726.58	5,580.01	0.00	0.00	0.00
13,400.00	89.85	179.76	6,917.28	-5,677.02	727.01	5,680.01	0.00	0.00	0.00
13,500.00	89.85	179.76	6,917.54	-5,777.02	727.43	5,780.01	0.00	0.00	0.00

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Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 27N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-13 Swartz 15-13HZ Pad	North Reference:	True
Well:	SWARTZ 27N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	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)
13,600.00	89.85	179.76	6,917.79	-5,877.02	727.86	5,880.01	0.00	0.00	0.00
13,681.25	89.85	179.76	6,918.00	-5,958.27	728.20	5,961.26	0.00	0.00	0.00
TD Well @ 13681.25ft - Toe									

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 27N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-13 Swartz 15-13HZ Pad	North Reference:	True
Well:	SWARTZ 27N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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-25HZ_Dri	0.00	0.00	0.00	0.00	0.00	14,575,070.32	1,749,353.83	40.132085	-104.610258
- plan hits target center									
- Polygon									
Point 1			0.00	505.51	1,204.58	14,575,581.11	1,750,556.18		
Point 2			0.00	-342.46	1,203.05	14,574,733.14	1,750,558.37		
Point 3			0.00	-1,661.87	1,208.48	14,573,413.77	1,750,569.59		
Point 4			0.00	-4,290.66	1,220.60	14,570,785.05	1,750,593.23		
Point 5			0.00	-5,604.91	1,225.41	14,569,470.84	1,750,603.81		
Point 6			0.00	-6,468.98	1,228.90	14,568,606.79	1,750,611.09		
Point 7			0.00	-6,468.13	308.90	14,568,603.61	1,749,691.09		
Point 8			0.00	-5,598.93	305.38	14,569,472.78	1,749,683.76		
Point 9			0.00	-4,284.18	300.56	14,570,787.50	1,749,673.17		
Point 10			0.00	-1,653.74	288.44	14,573,417.86	1,749,649.52		
Point 11			0.00	-338.20	283.06	14,574,733.37	1,749,638.37		
Point 12			0.00	516.19	284.60	14,575,587.75	1,749,636.17		
Point 13			0.00	505.51	1,204.58	14,575,581.11	1,750,556.18		
Annis 1_150' Circle	0.00	0.00	0.00	-3,957.61	514.67	14,571,115.00	1,749,885.85	40.121217	-104.608417
- plan misses target center by 3990.94usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 150.00)									
Annis 34-24_150' Circle	0.00	0.00	0.00	-5,100.33	174.73	14,569,970.81	1,749,550.92	40.118079	-104.609633
- plan misses target center by 5103.32usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 150.00)									
SWARTZ 27N-25HZ_SF-	0.00	0.00	0.00	0.00	0.00	14,575,070.32	1,749,353.83	40.132085	-104.610258
- plan hits target center									
- Point									
2N-R65W-Sec. 25_Secti	0.00	0.00	-78.00	0.73	-149.82	14,575,070.39	1,749,204.01	40.132087	-104.610794
- plan misses target center by 168.91usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			-78.00	-5,575.96	-3,064.67	14,569,481.05	1,746,163.82		
Point 2			-78.00	-5,592.14	-413.46	14,569,476.49	1,748,815.07		
Point 3			-78.00	-5,609.35	2,238.63	14,569,470.91	1,751,467.21		
Point 4			-78.00	-8,247.40	2,259.94	14,566,832.98	1,751,500.09		
Point 5			-78.00	-10,884.05	2,281.32	14,564,196.45	1,751,533.03		
Point 6			-78.00	-10,912.19	-413.54	14,564,156.50	1,748,838.32		
Point 7			-78.00	-11,002.15	-3,033.15	14,564,055.05	1,746,219.13		
Point 8			-78.00	-8,271.55	-3,044.64	14,566,785.57	1,746,195.67		
2N-R65W-Sec. 13_Secti	0.00	0.00	-78.00	0.73	-149.82	14,575,070.39	1,749,204.01	40.132087	-104.610794
- plan misses target center by 168.91usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			-78.00	4,980.35	-2,990.78	14,580,037.58	1,746,191.42		
Point 2			-78.00	4,936.75	-397.15	14,580,005.35	1,748,785.22		
Point 3			-78.00	4,893.27	2,196.04	14,579,973.25	1,751,378.57		
Point 4			-78.00	2,269.18	2,195.68	14,577,349.18	1,751,389.72		
Point 5			-78.00	-354.07	2,193.83	14,574,725.95	1,751,399.37		
Point 6			-78.00	-330.09	-414.94	14,574,738.49	1,748,790.52		
Point 7			-78.00	-306.12	-3,023.71	14,574,751.02	1,746,181.67		
Point 8			-78.00	2,332.94	-3,010.80	14,577,390.11	1,746,183.01		
2N-R65W-Sec. 12_Secti	0.00	0.00	-78.00	0.73	-149.82	14,575,070.39	1,749,204.01	40.132087	-104.610794
- plan misses target center by 168.91usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			-78.00	10,311.40	-2,932.44	14,585,368.84	1,746,226.39		
Point 2			-78.00	10,213.49	-365.25	14,585,282.18	1,748,793.98		
Point 3			-78.00	10,115.80	2,202.09	14,585,195.75	1,751,361.72		
Point 4			-78.00	7,504.68	2,199.03	14,582,584.64	1,751,370.11		
Point 5			-78.00	4,893.27	2,196.04	14,579,973.25	1,751,378.57		

Anadarko

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 27N-25HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4895.00usft (D Rig)
Site:	2N-65W-13 Swartz 15-13HZ Pad	North Reference:	True
Well:	SWARTZ 27N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

Point 6			-78.00	4,936.75	-397.15	14,580,005.35	1,748,785.22		
Point 7			-78.00	4,980.35	-2,990.78	14,580,037.58	1,746,191.42		
Point 8			-78.00	7,645.87	-2,961.54	14,582,703.20	1,746,208.97		
2N-R65W-Sec. 24_Secti	0.00	0.00	-78.00	0.73	-149.82	14,575,070.39	1,749,204.01	40.132087	-104.610794
- plan misses target center by 168.91usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Polygon									
Point 1			-78.00	-306.12	-3,023.71	14,574,751.02	1,746,181.67		
Point 2			-78.00	-330.09	-414.94	14,574,738.49	1,748,790.52		
Point 3			-78.00	-354.07	2,193.83	14,574,725.95	1,751,399.37		
Point 4			-78.00	-2,981.13	2,216.36	14,572,099.01	1,751,433.42		
Point 5			-78.00	-5,609.35	2,238.63	14,569,470.91	1,751,467.21		
Point 6			-78.00	-5,592.14	-413.46	14,569,476.49	1,748,815.07		
Point 7			-78.00	-5,575.96	-3,064.67	14,569,481.05	1,746,163.82		
Point 8			-78.00	-2,941.37	-3,043.57	14,572,115.71	1,746,173.37		
SWARTZ 27N-25HZ_TC	0.00	0.00	6,918.00	-5,958.27	728.20	14,569,115.30	1,750,108.15	40.115723	-104.607654
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,838.66	1,800.00	9 5/8"	9-5/8	13-1/2	
7,430.27	6,902.00	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,307.46	1,294.00	Fox Hills		0.00	
4,460.37	4,298.00	Sussex		0.00	
6,997.65	6,759.55	Sharon Springs		0.00	
7,084.51	6,809.55	Niobrara Top		0.00	
7,245.03	6,874.77	Niobrara B Bench		0.00	
7,430.27	6,902.00	Heel		0.00	
13,681.25	6,918.00	Toe		0.00	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft	
1,450.00	1,430.36	149.31	112.51	End Nudge @ 1450.00ft	
4,150.00	3,998.21	815.64	614.63	Begin Drop @ 4150.00ft	
5,050.00	4,883.48	927.62	699.01	End Drop @ 5050.00ft	
6,431.90	6,265.38	927.62	699.01	KOP @ 6431.90ft	
7,000.00	6,761.03	690.53	700.02	DLS = 9°/100'	
7,430.27	6,902.00	292.64	701.71	End Build @ 7430.27ft	
13,681.25	6,918.00	-5,958.27	728.20	TD Well @ 13681.25ft	