

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
2N-65W-13 Swartz 16-13HZ Pad
SWARTZ 26N-25HZ**

Plan B

Plan: Permit Rev-1

Standard Planning Report

08 December, 2016

Project: WELD-NAD83-UTMFT13N
 Site: 2N-65W-13 Swartz 16-13HZ Pad
 Well: SWARTZ 26N-25HZ
 Wellbore: Plan B
 Design: Permit Rev-1

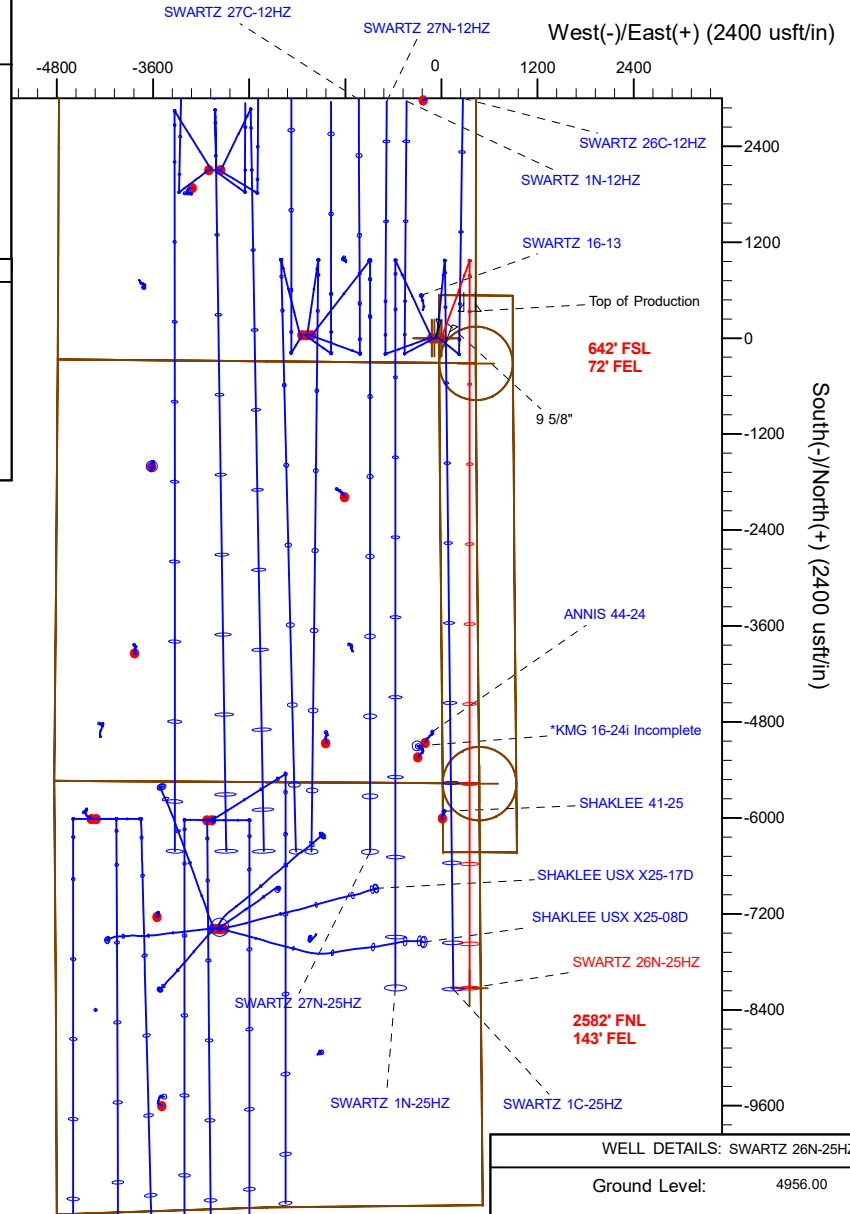
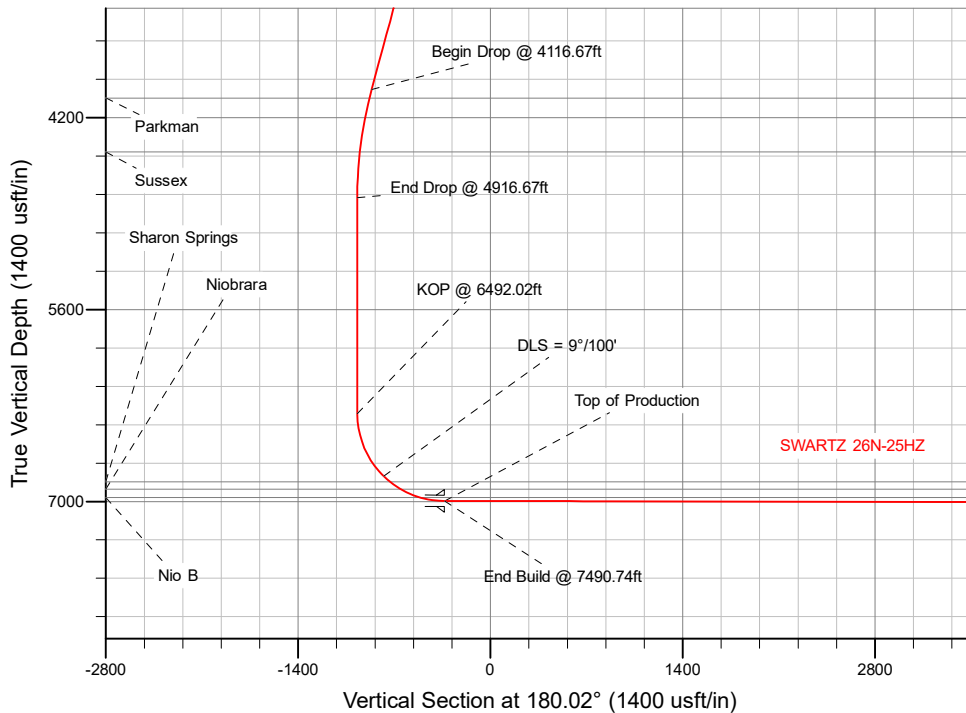
US ROCKIES WATTENBERG PLANNING

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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1316.67	16.00	20.00	1302.86	139.05	50.61	1.50	20.00	-139.06	
4	4116.67	16.00	20.00	3994.39	864.29	314.57	0.00	0.00	-864.40	
5	4916.67	0.00	0.00	4784.03	968.57	352.53	2.00	180.00	-968.69	
6	6492.02	0.00	0.00	6359.38	968.57	352.53	0.00	0.00	-968.69	
7	7490.74	89.88	180.02	6996.00	333.23	352.27	9.00	180.02	-333.35	
8	15953.39	89.88	180.02	7013.00	-8129.41	348.84	0.00	0.00	8129.29	SWARTZ 26N-25HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
SWARTZ 26N-25HZ_SHL	0.00	0.00	0.00	40.131976	-104.604473	Point
SWARTZ 26N-25HZ_BHL	7013.00	-8129.41	348.84	40.109652	-104.603225	Point



WELL DETAILS: SWARTZ 26N-25HZ	
Ground Level:	4956.00
RKB = 17' @ 4973.00usft (D Rig)	
Plan: Permit Rev-1 (SWARTZ 26N-25HZ/Plan B)	
Created By:	Date: 12/08/2016
Reviewed:	Date:

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 26N-25HZ
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 26N-25HZ	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 26N-25HZ					
Well Position	+N-S	-0.73 usft	Northing:	14,575,037.77 usft	Latitude:	40.131976
	+E-W	150.10 usft	Easting:	1,750,970.98 usft	Longitude:	-104.604473
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	52,572.26773227

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	180.02

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 declinatio	
2	1,500.00	15,953.39	Permit Rev-1 (Plan B)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declinatio	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 26N-25HZ
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 26N-25HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan B		
Design:	Permit Rev-1		

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	
1,316.67	16.00	20.00	1,302.86	139.05	50.61	1.50	1.50	0.00	20.00	
4,116.67	16.00	20.00	3,994.39	864.29	314.57	0.00	0.00	0.00	0.00	
4,916.67	0.00	0.00	4,784.03	968.57	352.53	2.00	-2.00	0.00	180.00	
6,492.02	0.00	0.00	6,359.38	968.57	352.53	0.00	0.00	0.00	0.00	
7,490.74	89.88	180.02	6,996.00	333.23	352.27	9.00	9.00	-18.02	180.02	
15,953.39	89.88	180.02	7,013.00	-8,129.41	348.84	0.00	0.00	0.00	0.00	SWARTZ 26N-25HZ_

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 26N-25HZ
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 26N-25HZ	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	0.00
100.00	0.00	0.00	100.00	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	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft										
300.00	0.75	20.00	300.00	0.31	0.11	-0.31	1.50	1.50	0.00	
400.00	2.25	20.00	399.96	2.77	1.01	-2.77	1.50	1.50	0.00	
500.00	3.75	20.00	499.82	7.69	2.80	-7.69	1.50	1.50	0.00	
600.00	5.25	20.00	599.51	15.06	5.48	-15.06	1.50	1.50	0.00	
700.00	6.75	20.00	698.96	24.88	9.06	-24.88	1.50	1.50	0.00	
800.00	8.25	20.00	798.10	37.14	13.52	-37.15	1.50	1.50	0.00	
900.00	9.75	20.00	896.87	51.84	18.87	-51.85	1.50	1.50	0.00	
1,000.00	11.25	20.00	995.19	68.97	25.10	-68.98	1.50	1.50	0.00	
1,100.00	12.75	20.00	1,093.00	88.51	32.21	-88.52	1.50	1.50	0.00	
1,200.00	14.25	20.00	1,190.24	110.44	40.20	-110.46	1.50	1.50	0.00	
1,300.00	15.75	20.00	1,286.83	134.76	49.05	-134.78	1.50	1.50	0.00	
1,316.67	16.00	20.00	1,302.86	139.05	50.61	-139.06	1.50	1.50	0.00	
End Nudge @ 1316.67ft										
1,388.60	16.00	20.00	1,372.00	157.68	57.39	-157.70	0.00	0.00	0.00	
Fox Hills Mkr										
1,400.00	16.00	20.00	1,382.96	160.63	58.46	-160.65	0.00	0.00	0.00	
1,500.00	16.00	20.00	1,479.09	186.53	67.89	-186.56	0.00	0.00	0.00	
1,521.75	16.00	20.00	1,500.00	192.17	69.94	-192.19	0.00	0.00	0.00	
9 5/8"										
1,600.00	16.00	20.00	1,575.21	212.43	77.32	-212.46	0.00	0.00	0.00	
1,700.00	16.00	20.00	1,671.34	238.33	86.75	-238.36	0.00	0.00	0.00	
1,800.00	16.00	20.00	1,767.47	264.24	96.17	-264.27	0.00	0.00	0.00	
1,900.00	16.00	20.00	1,863.59	290.14	105.60	-290.17	0.00	0.00	0.00	
2,000.00	16.00	20.00	1,959.72	316.04	115.03	-316.08	0.00	0.00	0.00	
2,100.00	16.00	20.00	2,055.85	341.94	124.46	-341.98	0.00	0.00	0.00	
2,200.00	16.00	20.00	2,151.97	367.84	133.88	-367.89	0.00	0.00	0.00	
2,300.00	16.00	20.00	2,248.10	393.74	143.31	-393.79	0.00	0.00	0.00	
2,400.00	16.00	20.00	2,344.22	419.64	152.74	-419.70	0.00	0.00	0.00	
2,500.00	16.00	20.00	2,440.35	445.55	162.17	-445.60	0.00	0.00	0.00	
2,600.00	16.00	20.00	2,536.48	471.45	171.59	-471.51	0.00	0.00	0.00	
2,700.00	16.00	20.00	2,632.60	497.35	181.02	-497.41	0.00	0.00	0.00	
2,800.00	16.00	20.00	2,728.73	523.25	190.45	-523.32	0.00	0.00	0.00	
2,900.00	16.00	20.00	2,824.85	549.15	199.87	-549.22	0.00	0.00	0.00	
3,000.00	16.00	20.00	2,920.98	575.05	209.30	-575.13	0.00	0.00	0.00	
3,100.00	16.00	20.00	3,017.11	600.95	218.73	-601.03	0.00	0.00	0.00	
3,200.00	16.00	20.00	3,113.23	626.86	228.16	-626.94	0.00	0.00	0.00	
3,300.00	16.00	20.00	3,209.36	652.76	237.58	-652.84	0.00	0.00	0.00	
3,400.00	16.00	20.00	3,305.49	678.66	247.01	-678.75	0.00	0.00	0.00	
3,500.00	16.00	20.00	3,401.61	704.56	256.44	-704.65	0.00	0.00	0.00	
3,600.00	16.00	20.00	3,497.74	730.46	265.87	-730.55	0.00	0.00	0.00	
3,700.00	16.00	20.00	3,593.86	756.36	275.29	-756.46	0.00	0.00	0.00	
3,800.00	16.00	20.00	3,689.99	782.26	284.72	-782.36	0.00	0.00	0.00	
3,900.00	16.00	20.00	3,786.12	808.17	294.15	-808.27	0.00	0.00	0.00	
4,000.00	16.00	20.00	3,882.24	834.07	303.58	-834.17	0.00	0.00	0.00	
4,100.00	16.00	20.00	3,978.37	859.97	313.00	-860.08	0.00	0.00	0.00	
4,116.67	16.00	20.00	3,994.39	864.29	314.57	-864.40	0.00	0.00	0.00	
Begin Drop @ 4116.67ft										
4,182.63	14.68	20.00	4,058.00	880.68	320.54	-880.80	2.00	-2.00	0.00	

Corporate Planning Report

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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 26N-25HZ	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)
Parkman									
4,200.00	14.33	20.00	4,074.82	884.77	322.03	-884.89	2.00	-2.00	0.00
4,300.00	12.33	20.00	4,172.12	906.44	329.92	-906.56	2.00	-2.00	0.00
4,400.00	10.33	20.00	4,270.16	924.91	336.64	-925.03	2.00	-2.00	0.00
4,500.00	8.33	20.00	4,368.83	940.15	342.19	-940.27	2.00	-2.00	0.00
4,580.87	6.72	20.00	4,449.00	950.10	345.81	-950.22	2.00	-2.00	0.00
Sussex									
4,600.00	6.33	20.00	4,468.01	952.14	346.55	-952.26	2.00	-2.00	0.00
4,700.00	4.33	20.00	4,567.57	960.87	349.73	-961.00	2.00	-2.00	0.00
4,800.00	2.33	20.00	4,667.40	966.34	351.72	-966.46	2.00	-2.00	0.00
4,900.00	0.33	20.00	4,767.37	968.52	352.51	-968.65	2.00	-2.00	0.00
4,916.67	0.00	0.00	4,784.04	968.57	352.53	-968.69	2.00	-2.00	0.00
End Drop @ 4916.67ft									
5,000.00	0.00	0.00	4,867.37	968.57	352.53	-968.69	0.00	0.00	0.00
5,100.00	0.00	0.00	4,967.37	968.57	352.53	-968.69	0.00	0.00	0.00
5,200.00	0.00	0.00	5,067.37	968.57	352.53	-968.69	0.00	0.00	0.00
5,300.00	0.00	0.00	5,167.37	968.57	352.53	-968.69	0.00	0.00	0.00
5,400.00	0.00	0.00	5,267.37	968.57	352.53	-968.69	0.00	0.00	0.00
5,500.00	0.00	0.00	5,367.37	968.57	352.53	-968.69	0.00	0.00	0.00
5,600.00	0.00	0.00	5,467.37	968.57	352.53	-968.69	0.00	0.00	0.00
5,700.00	0.00	0.00	5,567.37	968.57	352.53	-968.69	0.00	0.00	0.00
5,800.00	0.00	0.00	5,667.37	968.57	352.53	-968.69	0.00	0.00	0.00
5,900.00	0.00	0.00	5,767.37	968.57	352.53	-968.69	0.00	0.00	0.00
6,000.00	0.00	0.00	5,867.37	968.57	352.53	-968.69	0.00	0.00	0.00
6,100.00	0.00	0.00	5,967.37	968.57	352.53	-968.69	0.00	0.00	0.00
6,200.00	0.00	0.00	6,067.37	968.57	352.53	-968.69	0.00	0.00	0.00
6,300.00	0.00	0.00	6,167.37	968.57	352.53	-968.69	0.00	0.00	0.00
6,400.00	0.00	0.00	6,267.37	968.57	352.53	-968.69	0.00	0.00	0.00
6,492.02	0.00	0.00	6,359.39	968.57	352.53	-968.69	0.00	0.00	0.00
KOP @ 6492.02ft									
6,500.00	0.72	180.02	6,367.37	968.52	352.53	-968.64	9.00	9.00	0.00
6,600.00	9.72	180.02	6,466.85	959.43	352.53	-959.56	9.00	9.00	0.00
6,700.00	18.72	180.02	6,563.69	934.90	352.52	-935.02	9.00	9.00	0.00
6,800.00	27.72	180.02	6,655.49	895.51	352.50	-895.64	9.00	9.00	0.00
6,900.00	36.72	180.02	6,740.01	842.25	352.48	-842.38	9.00	9.00	0.00
7,000.00	45.72	180.02	6,815.15	776.43	352.45	-776.55	9.00	9.00	0.00
DLS = 9°/100'									
7,063.27	51.41	180.02	6,857.00	729.02	352.43	-729.14	9.00	9.00	0.00
Sharon Springs									
7,100.00	54.72	180.02	6,879.07	699.66	352.42	-699.78	9.00	9.00	0.00
7,155.28	59.69	180.02	6,909.00	653.21	352.40	-653.33	9.00	9.00	0.00
Niobrara									
7,200.00	63.72	180.02	6,930.19	613.83	352.39	-613.96	9.00	9.00	0.00
7,300.00	72.72	180.02	6,967.26	521.07	352.35	-521.19	9.00	9.00	0.00
7,309.44	73.57	180.02	6,970.00	512.04	352.35	-512.16	9.00	9.00	0.00
Nio B									
7,400.00	81.72	180.02	6,989.36	423.65	352.31	-423.77	9.00	9.00	0.00
7,490.74	89.88	180.02	6,996.00	333.23	352.27	-333.35	9.00	9.00	0.00
End Build @ 7490.74ft - Top of Production									
7,500.00	89.88	180.02	6,996.02	323.97	352.27	-324.09	0.00	0.00	0.00
7,600.00	89.88	180.02	6,996.22	223.97	352.23	-224.09	0.00	0.00	0.00
7,700.00	89.88	180.02	6,996.42	123.97	352.19	-124.09	0.00	0.00	0.00
7,800.00	89.88	180.02	6,996.62	23.97	352.15	-24.09	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 26N-25HZ
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 26N-25HZ	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)	
7,900.00	89.88	180.02	6,996.82	-76.03	352.11	75.91	0.00	0.00	0.00	
8,000.00	89.88	180.02	6,997.02	-176.03	352.07	175.91	0.00	0.00	0.00	
8,100.00	89.88	180.02	6,997.23	-276.03	352.03	275.91	0.00	0.00	0.00	
8,200.00	89.88	180.02	6,997.43	-376.03	351.99	375.91	0.00	0.00	0.00	
8,300.00	89.88	180.02	6,997.63	-476.03	351.95	475.91	0.00	0.00	0.00	
8,400.00	89.88	180.02	6,997.83	-576.03	351.90	575.91	0.00	0.00	0.00	
8,500.00	89.88	180.02	6,998.03	-676.03	351.86	675.91	0.00	0.00	0.00	
8,600.00	89.88	180.02	6,998.23	-776.03	351.82	775.91	0.00	0.00	0.00	
8,700.00	89.88	180.02	6,998.43	-876.03	351.78	875.91	0.00	0.00	0.00	
8,800.00	89.88	180.02	6,998.63	-976.03	351.74	975.91	0.00	0.00	0.00	
8,900.00	89.88	180.02	6,998.83	-1,076.03	351.70	1,075.91	0.00	0.00	0.00	
9,000.00	89.88	180.02	6,999.03	-1,176.03	351.66	1,175.91	0.00	0.00	0.00	
9,100.00	89.88	180.02	6,999.23	-1,276.03	351.62	1,275.91	0.00	0.00	0.00	
9,200.00	89.88	180.02	6,999.43	-1,376.03	351.58	1,375.91	0.00	0.00	0.00	
9,300.00	89.88	180.02	6,999.64	-1,476.03	351.54	1,475.91	0.00	0.00	0.00	
9,400.00	89.88	180.02	6,999.84	-1,576.03	351.50	1,575.91	0.00	0.00	0.00	
9,500.00	89.88	180.02	7,000.04	-1,676.03	351.46	1,675.91	0.00	0.00	0.00	
9,600.00	89.88	180.02	7,000.24	-1,776.03	351.42	1,775.91	0.00	0.00	0.00	
9,700.00	89.88	180.02	7,000.44	-1,876.03	351.38	1,875.91	0.00	0.00	0.00	
9,800.00	89.88	180.02	7,000.64	-1,976.03	351.34	1,975.91	0.00	0.00	0.00	
9,900.00	89.88	180.02	7,000.84	-2,076.03	351.30	2,075.90	0.00	0.00	0.00	
10,000.00	89.88	180.02	7,001.04	-2,176.03	351.26	2,175.90	0.00	0.00	0.00	
10,100.00	89.88	180.02	7,001.24	-2,276.03	351.22	2,275.90	0.00	0.00	0.00	
10,200.00	89.88	180.02	7,001.44	-2,376.03	351.18	2,375.90	0.00	0.00	0.00	
10,300.00	89.88	180.02	7,001.64	-2,476.03	351.13	2,475.90	0.00	0.00	0.00	
10,400.00	89.88	180.02	7,001.85	-2,576.03	351.09	2,575.90	0.00	0.00	0.00	
10,500.00	89.88	180.02	7,002.05	-2,676.03	351.05	2,675.90	0.00	0.00	0.00	
10,600.00	89.88	180.02	7,002.25	-2,776.03	351.01	2,775.90	0.00	0.00	0.00	
10,700.00	89.88	180.02	7,002.45	-2,876.03	350.97	2,875.90	0.00	0.00	0.00	
10,800.00	89.88	180.02	7,002.65	-2,976.03	350.93	2,975.90	0.00	0.00	0.00	
10,900.00	89.88	180.02	7,002.85	-3,076.03	350.89	3,075.90	0.00	0.00	0.00	
11,000.00	89.88	180.02	7,003.05	-3,176.03	350.85	3,175.90	0.00	0.00	0.00	
11,100.00	89.88	180.02	7,003.25	-3,276.03	350.81	3,275.90	0.00	0.00	0.00	
11,200.00	89.88	180.02	7,003.45	-3,376.02	350.77	3,375.90	0.00	0.00	0.00	
11,300.00	89.88	180.02	7,003.65	-3,476.02	350.73	3,475.90	0.00	0.00	0.00	
11,400.00	89.88	180.02	7,003.85	-3,576.02	350.69	3,575.90	0.00	0.00	0.00	
11,500.00	89.88	180.02	7,004.05	-3,676.02	350.65	3,675.90	0.00	0.00	0.00	
11,600.00	89.88	180.02	7,004.26	-3,776.02	350.61	3,775.90	0.00	0.00	0.00	
11,700.00	89.88	180.02	7,004.46	-3,876.02	350.57	3,875.90	0.00	0.00	0.00	
11,800.00	89.88	180.02	7,004.66	-3,976.02	350.53	3,975.90	0.00	0.00	0.00	
11,900.00	89.88	180.02	7,004.86	-4,076.02	350.49	4,075.90	0.00	0.00	0.00	
12,000.00	89.88	180.02	7,005.06	-4,176.02	350.45	4,175.90	0.00	0.00	0.00	
12,100.00	89.88	180.02	7,005.26	-4,276.02	350.41	4,275.90	0.00	0.00	0.00	
12,200.00	89.88	180.02	7,005.46	-4,376.02	350.37	4,375.90	0.00	0.00	0.00	
12,300.00	89.88	180.02	7,005.66	-4,476.02	350.32	4,475.90	0.00	0.00	0.00	
12,400.00	89.88	180.02	7,005.86	-4,576.02	350.28	4,575.90	0.00	0.00	0.00	
12,500.00	89.88	180.02	7,006.06	-4,676.02	350.24	4,675.90	0.00	0.00	0.00	
12,600.00	89.88	180.02	7,006.26	-4,776.02	350.20	4,775.90	0.00	0.00	0.00	
12,700.00	89.88	180.02	7,006.47	-4,876.02	350.16	4,875.90	0.00	0.00	0.00	
12,800.00	89.88	180.02	7,006.67	-4,976.02	350.12	4,975.90	0.00	0.00	0.00	
12,900.00	89.88	180.02	7,006.87	-5,076.02	350.08	5,075.90	0.00	0.00	0.00	
13,000.00	89.88	180.02	7,007.07	-5,176.02	350.04	5,175.90	0.00	0.00	0.00	
13,100.00	89.88	180.02	7,007.27	-5,276.02	350.00	5,275.90	0.00	0.00	0.00	
13,200.00	89.88	180.02	7,007.47	-5,376.02	349.96	5,375.90	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SWARTZ 26N-25HZ
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 26N-25HZ	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)	
13,300.00	89.88	180.02	7,007.67	-5,476.02	349.92	5,475.90	0.00	0.00	0.00	
13,400.00	89.88	180.02	7,007.87	-5,576.02	349.88	5,575.90	0.00	0.00	0.00	
13,500.00	89.88	180.02	7,008.07	-5,676.02	349.84	5,675.90	0.00	0.00	0.00	
13,600.00	89.88	180.02	7,008.27	-5,776.02	349.80	5,775.90	0.00	0.00	0.00	
13,700.00	89.88	180.02	7,008.47	-5,876.02	349.76	5,875.90	0.00	0.00	0.00	
13,800.00	89.88	180.02	7,008.67	-5,976.02	349.72	5,975.90	0.00	0.00	0.00	
13,900.00	89.88	180.02	7,008.88	-6,076.02	349.68	6,075.90	0.00	0.00	0.00	
14,000.00	89.88	180.02	7,009.08	-6,176.02	349.64	6,175.90	0.00	0.00	0.00	
14,100.00	89.88	180.02	7,009.28	-6,276.02	349.60	6,275.90	0.00	0.00	0.00	
14,200.00	89.88	180.02	7,009.48	-6,376.02	349.55	6,375.90	0.00	0.00	0.00	
14,300.00	89.88	180.02	7,009.68	-6,476.02	349.51	6,475.90	0.00	0.00	0.00	
14,400.00	89.88	180.02	7,009.88	-6,576.02	349.47	6,575.90	0.00	0.00	0.00	
14,500.00	89.88	180.02	7,010.08	-6,676.02	349.43	6,675.90	0.00	0.00	0.00	
14,600.00	89.88	180.02	7,010.28	-6,776.02	349.39	6,775.90	0.00	0.00	0.00	
14,700.00	89.88	180.02	7,010.48	-6,876.02	349.35	6,875.90	0.00	0.00	0.00	
14,800.00	89.88	180.02	7,010.68	-6,976.02	349.31	6,975.90	0.00	0.00	0.00	
14,900.00	89.88	180.02	7,010.88	-7,076.02	349.27	7,075.89	0.00	0.00	0.00	
15,000.00	89.88	180.02	7,011.09	-7,176.02	349.23	7,175.89	0.00	0.00	0.00	
15,100.00	89.88	180.02	7,011.29	-7,276.02	349.19	7,275.89	0.00	0.00	0.00	
15,200.00	89.88	180.02	7,011.49	-7,376.02	349.15	7,375.89	0.00	0.00	0.00	
15,300.00	89.88	180.02	7,011.69	-7,476.02	349.11	7,475.89	0.00	0.00	0.00	
15,400.00	89.88	180.02	7,011.89	-7,576.02	349.07	7,575.89	0.00	0.00	0.00	
15,500.00	89.88	180.02	7,012.09	-7,676.02	349.03	7,675.89	0.00	0.00	0.00	
15,600.00	89.88	180.02	7,012.29	-7,776.02	348.99	7,775.89	0.00	0.00	0.00	
15,700.00	89.88	180.02	7,012.49	-7,876.02	348.95	7,875.89	0.00	0.00	0.00	
15,800.00	89.88	180.02	7,012.69	-7,976.02	348.91	7,975.89	0.00	0.00	0.00	
15,900.00	89.88	180.02	7,012.89	-8,076.02	348.87	8,075.89	0.00	0.00	0.00	
15,953.39	89.88	180.02	7,013.00	-8,129.41	348.84	8,129.28	0.00	0.00	0.00	
TD Well @ 15953.39ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,521.75	1,500.00	9 5/8"	9-5/8	13-1/2	
7,490.74	6,996.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,388.60	1,372.00	Fox Hills Mkr				
4,182.63	4,058.00	Parkman				
4,580.87	4,449.00	Sussex				
7,063.27	6,857.00	Sharon Springs				
7,155.28	6,909.00	Niobrara				
7,309.44	6,970.00	Nio B				