

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
4N-68W-13 SBJ 22-13HZ PAD  
SBJ 13-10HZ**

**Plan C**

**Plan: PERMIT REV-2**

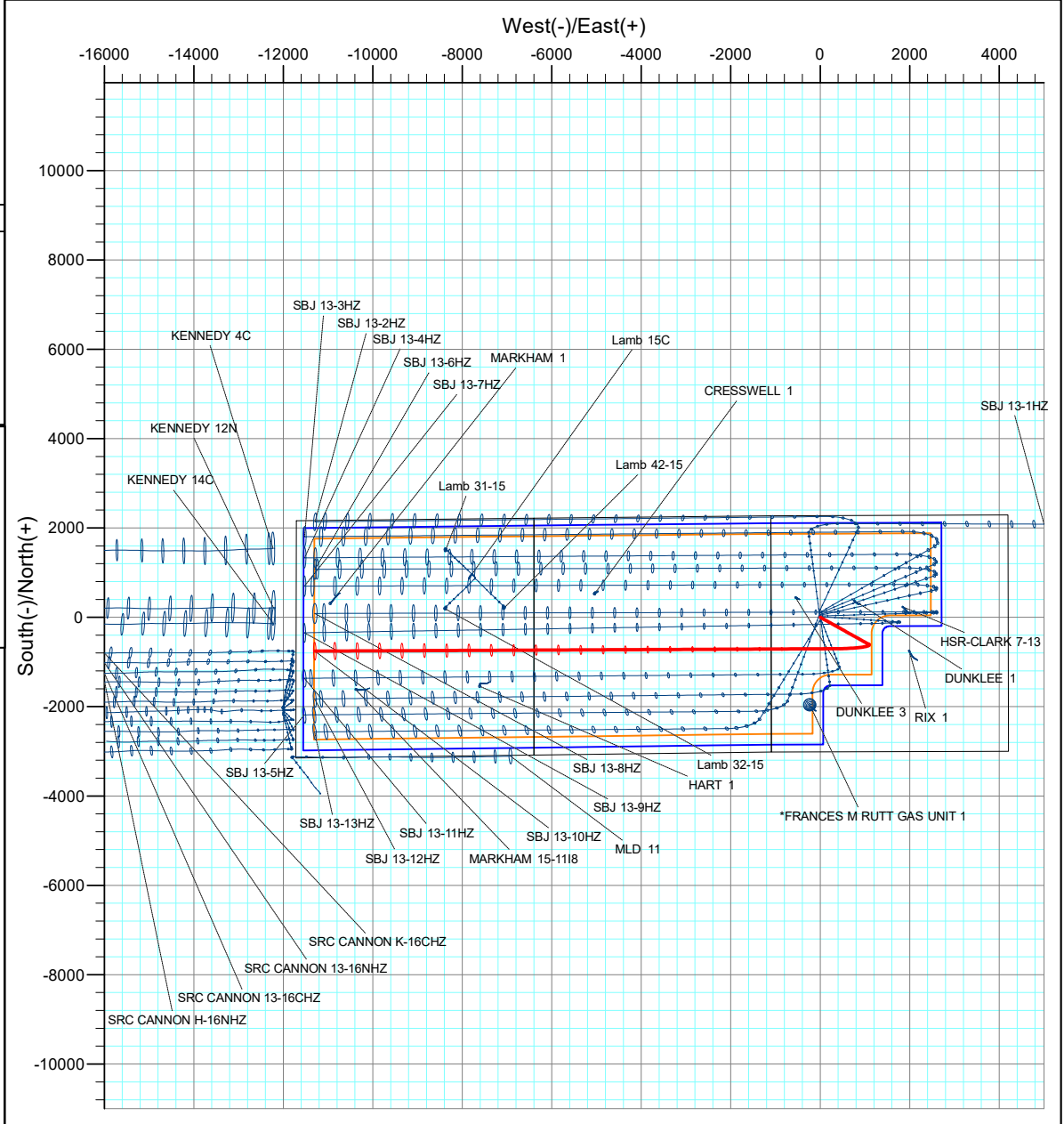
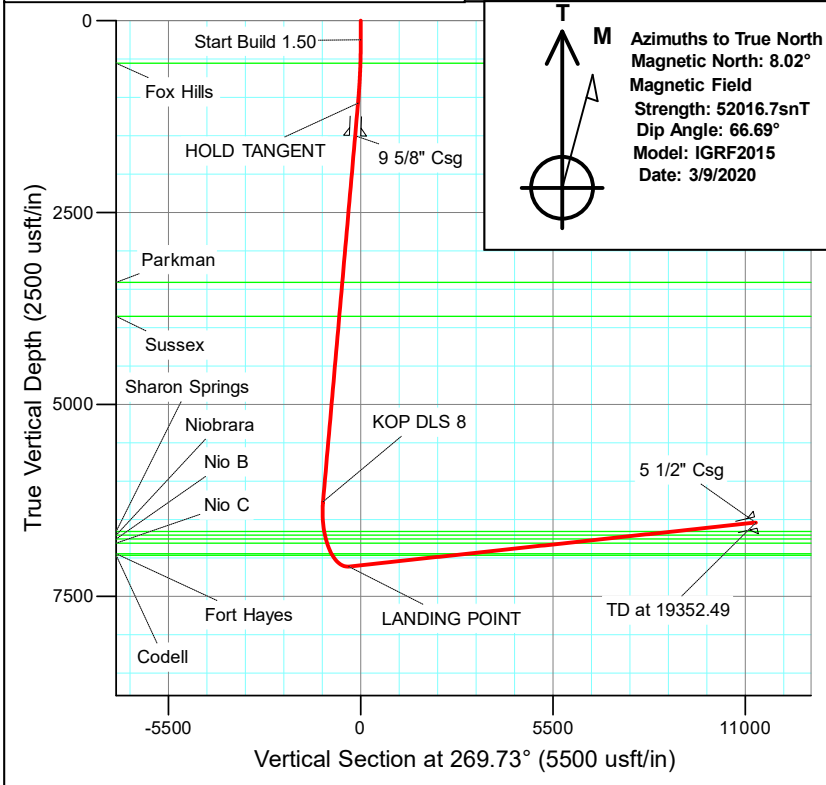
## **Standard Planning Report**

**04 May, 2021**

<b>Project:</b> WELD-NAD83-UTMFT13N <b>Site:</b> 4N-68W-13 SBJ 22-13HZ PAD <b>Well:</b> SBJ 13-10HZ <b>Wellbore:</b> Plan C <b>Design:</b> PERMIT REV-2	<b>ELEVATION</b>		<b>SURFACE HOLE LOCATION: SBJ 13-10HZ</b>							
	GROUND ELEVATION: 4859.00 RKB = 17' @ 4876ft		+N/-S 0.00	+E/-W 0.00	Northing 14641372.39	Easting 1652456.62	Latitude 40.314804	Longitude -104.956809		
	<b>CASING DETAILS</b>		<b>DESIGN TARGET DETAILS</b>							
	TVD 1500.00	MD 1516.84	Name 9 5/8" Csg	Size 9-5/8	Name					
	6540.00	19352.49	5 1/2" Csg	5-1/2	SBJ 13-10HZ BHL	TVD 6540.00	Northing 14640609.00	Easting 1641160.00	Latitude 40.312716	Longitude -104.997334
					SBJ 13-10HZ LP	7113.00	14640669.00	1652802.00	40.312872	-104.955571

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	1082.11	12.48	119.13	1075.55	-43.95	78.86	1.50	119.13	-78.65	
4	6400.56	12.48	119.13	6268.30	-603.47	1082.95	0.00	0.00	-1080.09	
5	7696.25	92.82	269.73	7113.00	-703.56	345.04	8.00	149.70	-341.72	SBJ 13-10HZ LP
6	19352.49	92.82	269.73	6540.00	-757.88	-11296.99	0.00	0.00	11300.44	SBJ 13-10HZ BHL

			FORMATION TOP DETAILS		
SHL	HEEL	TOE	TVDPath	MDPath	Formation
2276' FNL	2309' FSL	2385' FSL	556.00	556.33	Fox Hills
1091' FWL	1435' FWL	420' FWL	3411.00	3474.10	Parkman
Section 13	Section 13	Section 15	3854.00	3927.82	Sussex
SWNW	NESW	NWSW	6656.00	6797.16	Sharon Springs
			6703.00	6848.52	Niobrara
			6755.00	6907.44	Nio B
			6808.00	6970.51	Nio C
			6947.00	7160.33	Fort Hayes
			6967.00	7192.47	Codell



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SBJ 13-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<b>Design:</b>	PERMIT REV-2		

<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)		

<b>Site</b>	4N-68W-13 SBJ 22-13HZ PAD				
<b>Site Position:</b>		<b>Northing:</b>	14,641,145.55 usft	<b>Latitude:</b>	40.314181
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,652,517.50 usft	<b>Longitude:</b>	-104.956591
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.03 °

<b>Well</b>	SBJ 13-10HZ					
<b>Well Position</b>	<b>+N/-S</b>	226.87 usft	<b>Northing:</b>	14,641,372.39 usft	<b>Latitude:</b>	40.314804
	<b>+E/-W</b>	-60.77 usft	<b>Easting:</b>	1,652,456.62 usft	<b>Longitude:</b>	-104.956809
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	4,859.00 usft

<b>Wellbore</b>	Plan C				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	3/9/2020	8.02	66.69	52,016.72094597

<b>Design</b>	PERMIT REV-2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<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	269.73

<b>Plan Survey Tool Program</b>	Date	5/4/2021			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	2,000.00	PERMIT REV-2 (Plan C)	APC_ISCWSA REV 2 MWD Fixed:v2:standard declination	
2	2,000.00	19,352.49	PERMIT REV-2 (Plan C)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +	

<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	
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,082.11	12.48	119.13	1,075.55	-43.95	78.86	1.50	1.50	0.00	119.13	
6,400.56	12.48	119.13	6,268.30	-603.47	1,082.95	0.00	0.00	0.00	0.00	
7,696.25	92.82	269.73	7,113.00	-703.56	345.04	8.00	6.20	11.62	149.70	SBJ 13-10HZ LP
19,352.50	92.82	269.73	6,540.00	-757.88	-11,296.99	0.00	0.00	0.00	0.00	SBJ 13-10HZ BHL

## Corporate Planning Report

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<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SBJ 13-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<b>Design:</b>	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
<b>Start Build 1.50</b>									
300.00	0.75	119.13	300.00	-0.16	0.29	-0.29	1.50	1.50	0.00
400.00	2.25	119.13	399.96	-1.43	2.57	-2.57	1.50	1.50	0.00
500.00	3.75	119.13	499.82	-3.98	7.14	-7.13	1.50	1.50	0.00
556.33	4.59	119.13	556.00	-5.98	10.72	-10.70	1.50	1.50	0.00
<b>Fox Hills</b>									
600.00	5.25	119.13	599.51	-7.80	14.00	-13.96	1.50	1.50	0.00
700.00	6.75	119.13	698.96	-12.89	23.13	-23.07	1.50	1.50	0.00
800.00	8.25	119.13	798.10	-19.24	34.53	-34.44	1.50	1.50	0.00
900.00	9.75	119.13	896.87	-26.86	48.19	-48.07	1.50	1.50	0.00
1,000.00	11.25	119.13	995.19	-35.73	64.11	-63.94	1.50	1.50	0.00
1,082.11	12.48	119.13	1,075.55	-43.95	78.86	-78.65	1.50	1.50	0.00
<b>HOLD TANGENT</b>									
1,100.00	12.48	119.13	1,093.01	-45.83	82.24	-82.02	0.00	0.00	0.00
1,200.00	12.48	119.13	1,190.65	-56.35	101.12	-100.85	0.00	0.00	0.00
1,300.00	12.48	119.13	1,288.28	-66.87	120.00	-119.68	0.00	0.00	0.00
1,400.00	12.48	119.13	1,385.92	-77.39	138.88	-138.51	0.00	0.00	0.00
1,500.00	12.48	119.13	1,483.56	-87.91	157.76	-157.34	0.00	0.00	0.00
1,516.84	12.48	119.13	1,500.00	-89.68	160.93	-160.51	0.00	0.00	0.00
<b>9 5/8" Csg</b>									
1,600.00	12.48	119.13	1,581.19	-98.43	176.63	-176.17	0.00	0.00	0.00
1,700.00	12.48	119.13	1,678.83	-108.95	195.51	-195.00	0.00	0.00	0.00
1,800.00	12.48	119.13	1,776.47	-119.47	214.39	-213.83	0.00	0.00	0.00
1,900.00	12.48	119.13	1,874.10	-129.99	233.27	-232.66	0.00	0.00	0.00
2,000.00	12.48	119.13	1,971.74	-140.51	252.15	-251.49	0.00	0.00	0.00
2,100.00	12.48	119.13	2,069.38	-151.03	271.03	-270.32	0.00	0.00	0.00
2,200.00	12.48	119.13	2,167.01	-161.55	289.91	-289.15	0.00	0.00	0.00
2,300.00	12.48	119.13	2,264.65	-172.07	308.79	-307.98	0.00	0.00	0.00
2,400.00	12.48	119.13	2,362.29	-182.59	327.67	-326.81	0.00	0.00	0.00
2,500.00	12.48	119.13	2,459.92	-193.11	346.55	-345.64	0.00	0.00	0.00
2,600.00	12.48	119.13	2,557.56	-203.63	365.43	-364.46	0.00	0.00	0.00
2,700.00	12.48	119.13	2,655.20	-214.15	384.31	-383.29	0.00	0.00	0.00
2,800.00	12.48	119.13	2,752.83	-224.68	403.19	-402.12	0.00	0.00	0.00
2,900.00	12.48	119.13	2,850.47	-235.20	422.07	-420.95	0.00	0.00	0.00
3,000.00	12.48	119.13	2,948.11	-245.72	440.95	-439.78	0.00	0.00	0.00
3,100.00	12.48	119.13	3,045.74	-256.24	459.83	-458.61	0.00	0.00	0.00
3,200.00	12.48	119.13	3,143.38	-266.76	478.70	-477.44	0.00	0.00	0.00
3,300.00	12.48	119.13	3,241.01	-277.28	497.58	-496.27	0.00	0.00	0.00
3,400.00	12.48	119.13	3,338.65	-287.80	516.46	-515.10	0.00	0.00	0.00
3,474.10	12.48	119.13	3,411.00	-295.59	530.45	-529.05	0.00	0.00	0.00
<b>Parkman</b>									
3,500.00	12.48	119.13	3,436.29	-298.32	535.34	-533.93	0.00	0.00	0.00
3,600.00	12.48	119.13	3,533.92	-308.84	554.22	-552.76	0.00	0.00	0.00
3,700.00	12.48	119.13	3,631.56	-319.36	573.10	-571.59	0.00	0.00	0.00
3,800.00	12.48	119.13	3,729.20	-329.88	591.98	-590.42	0.00	0.00	0.00
3,900.00	12.48	119.13	3,826.83	-340.40	610.86	-609.25	0.00	0.00	0.00
3,927.82	12.48	119.13	3,854.00	-343.33	616.11	-614.49	0.00	0.00	0.00
<b>Sussex</b>									
4,000.00	12.48	119.13	3,924.47	-350.92	629.74	-628.08	0.00	0.00	0.00

**Corporate  
Planning Report**

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-10HZ
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<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SBJ 13-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<b>Design:</b>	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)
4,100.00	12.48	119.13	4,022.11	-361.44	648.62	-646.91	0.00	0.00	0.00
4,200.00	12.48	119.13	4,119.74	-371.96	667.50	-665.74	0.00	0.00	0.00
4,300.00	12.48	119.13	4,217.38	-382.48	686.38	-684.57	0.00	0.00	0.00
4,400.00	12.48	119.13	4,315.02	-393.00	705.26	-703.40	0.00	0.00	0.00
4,500.00	12.48	119.13	4,412.65	-403.52	724.14	-722.23	0.00	0.00	0.00
4,600.00	12.48	119.13	4,510.29	-414.04	743.02	-741.06	0.00	0.00	0.00
4,700.00	12.48	119.13	4,607.93	-424.56	761.89	-759.89	0.00	0.00	0.00
4,800.00	12.48	119.13	4,705.56	-435.09	780.77	-778.72	0.00	0.00	0.00
4,900.00	12.48	119.13	4,803.20	-445.61	799.65	-797.54	0.00	0.00	0.00
5,000.00	12.48	119.13	4,900.84	-456.13	818.53	-816.37	0.00	0.00	0.00
5,100.00	12.48	119.13	4,998.47	-466.65	837.41	-835.20	0.00	0.00	0.00
5,200.00	12.48	119.13	5,096.11	-477.17	856.29	-854.03	0.00	0.00	0.00
5,300.00	12.48	119.13	5,193.74	-487.69	875.17	-872.86	0.00	0.00	0.00
5,400.00	12.48	119.13	5,291.38	-498.21	894.05	-891.69	0.00	0.00	0.00
5,500.00	12.48	119.13	5,389.02	-508.73	912.93	-910.52	0.00	0.00	0.00
5,600.00	12.48	119.13	5,486.65	-519.25	931.81	-929.35	0.00	0.00	0.00
5,700.00	12.48	119.13	5,584.29	-529.77	950.69	-948.18	0.00	0.00	0.00
5,800.00	12.48	119.13	5,681.93	-540.29	969.57	-967.01	0.00	0.00	0.00
5,900.00	12.48	119.13	5,779.56	-550.81	988.45	-985.84	0.00	0.00	0.00
6,000.00	12.48	119.13	5,877.20	-561.33	1,007.33	-1,004.67	0.00	0.00	0.00
6,100.00	12.48	119.13	5,974.84	-571.85	1,026.21	-1,023.50	0.00	0.00	0.00
6,200.00	12.48	119.13	6,072.47	-582.37	1,045.09	-1,042.33	0.00	0.00	0.00
6,300.00	12.48	119.13	6,170.11	-592.89	1,063.96	-1,061.16	0.00	0.00	0.00
6,400.00	12.48	119.13	6,267.75	-603.41	1,082.84	-1,079.99	0.00	0.00	0.00
6,400.56	12.48	119.13	6,268.30	-603.47	1,082.95	-1,080.09	0.00	0.00	0.00
<b>KOP DLS 8</b>									
6,500.00	6.88	154.77	6,366.36	-614.11	1,094.90	-1,091.99	8.00	-5.63	35.84
6,600.00	8.09	218.92	6,465.66	-625.02	1,093.03	-1,090.07	8.00	1.21	64.15
6,700.00	14.53	244.38	6,563.72	-635.94	1,077.27	-1,074.26	8.00	6.44	25.46
6,797.16	21.78	253.49	6,656.00	-646.34	1,048.96	-1,045.90	8.00	7.47	9.38
<b>Sharon Springs</b>									
6,800.00	22.00	253.67	6,658.64	-646.64	1,047.94	-1,044.88	8.00	7.65	6.27
6,848.52	25.74	256.27	6,703.00	-651.70	1,028.98	-1,025.90	8.00	7.70	5.36
<b>Niobrara</b>									
6,900.00	29.74	258.35	6,748.56	-656.93	1,005.60	-1,002.50	8.00	7.78	4.05
6,907.44	30.32	258.61	6,755.00	-657.68	1,001.95	-998.84	8.00	7.81	3.48
<b>Nio B</b>									
6,970.51	35.26	260.50	6,808.00	-663.83	968.37	-965.23	8.00	7.84	2.99
<b>Nio C</b>									
7,000.00	37.58	261.23	6,831.73	-666.61	951.08	-947.93	8.00	7.86	2.48
7,100.00	45.47	263.23	6,906.54	-675.47	885.44	-882.24	8.00	7.89	2.00
7,160.33	50.25	264.19	6,947.00	-680.36	840.98	-837.77	8.00	7.91	1.59
<b>Fort Hayes</b>									
7,192.47	52.79	264.65	6,967.00	-682.81	815.94	-812.71	8.00	7.92	1.42
<b>Codell</b>									
7,200.00	53.39	264.75	6,971.52	-683.36	809.95	-806.72	8.00	7.93	1.36
7,300.00	61.32	265.98	7,025.42	-690.12	726.08	-722.82	8.00	7.93	1.23
7,400.00	69.26	267.04	7,067.18	-695.61	635.48	-632.19	8.00	7.94	1.06
7,500.00	77.21	268.00	7,096.00	-699.74	539.89	-536.59	8.00	7.95	0.95
7,600.00	85.16	268.89	7,111.31	-702.41	441.19	-437.88	8.00	7.95	0.89
7,696.25	92.82	269.73	7,113.00	-703.56	345.04	-341.72	8.00	7.95	0.87
<b>LANDING POINT</b>									
7,700.00	92.82	269.73	7,112.82	-703.58	341.29	-337.97	0.00	0.00	0.00

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SBJ 13-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<b>Design:</b>	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)
7,800.00	92.82	269.73	7,107.90	-704.05	241.41	-238.09	0.00	0.00	0.00
7,900.00	92.82	269.73	7,102.98	-704.51	141.53	-138.21	0.00	0.00	0.00
8,000.00	92.82	269.73	7,098.07	-704.98	41.66	-38.33	0.00	0.00	0.00
8,100.00	92.82	269.73	7,093.15	-705.44	-58.22	61.55	0.00	0.00	0.00
8,200.00	92.82	269.73	7,088.24	-705.91	-158.10	161.42	0.00	0.00	0.00
8,300.00	92.82	269.73	7,083.32	-706.38	-257.98	261.30	0.00	0.00	0.00
8,400.00	92.82	269.73	7,078.40	-706.84	-357.86	361.18	0.00	0.00	0.00
8,500.00	92.82	269.73	7,073.49	-707.31	-457.73	461.06	0.00	0.00	0.00
8,600.00	92.82	269.73	7,068.57	-707.77	-557.61	560.94	0.00	0.00	0.00
8,700.00	92.82	269.73	7,063.66	-708.24	-657.49	660.82	0.00	0.00	0.00
8,800.00	92.82	269.73	7,058.74	-708.71	-757.37	760.70	0.00	0.00	0.00
8,900.00	92.82	269.73	7,053.83	-709.17	-857.25	860.58	0.00	0.00	0.00
9,000.00	92.82	269.73	7,048.91	-709.64	-957.12	960.46	0.00	0.00	0.00
9,100.00	92.82	269.73	7,043.99	-710.10	-1,057.00	1,060.34	0.00	0.00	0.00
9,200.00	92.82	269.73	7,039.08	-710.57	-1,156.88	1,160.22	0.00	0.00	0.00
9,300.00	92.82	269.73	7,034.16	-711.04	-1,256.76	1,260.09	0.00	0.00	0.00
9,400.00	92.82	269.73	7,029.25	-711.50	-1,356.64	1,359.97	0.00	0.00	0.00
9,500.00	92.82	269.73	7,024.33	-711.97	-1,456.51	1,459.85	0.00	0.00	0.00
9,600.00	92.82	269.73	7,019.42	-712.43	-1,556.39	1,559.73	0.00	0.00	0.00
9,700.00	92.82	269.73	7,014.50	-712.90	-1,656.27	1,659.61	0.00	0.00	0.00
9,800.00	92.82	269.73	7,009.58	-713.37	-1,756.15	1,759.49	0.00	0.00	0.00
9,900.00	92.82	269.73	7,004.67	-713.83	-1,856.03	1,859.37	0.00	0.00	0.00
10,000.00	92.82	269.73	6,999.75	-714.30	-1,955.90	1,959.25	0.00	0.00	0.00
10,100.00	92.82	269.73	6,994.84	-714.76	-2,055.78	2,059.13	0.00	0.00	0.00
10,200.00	92.82	269.73	6,989.92	-715.23	-2,155.66	2,159.01	0.00	0.00	0.00
10,300.00	92.82	269.73	6,985.00	-715.70	-2,255.54	2,258.89	0.00	0.00	0.00
10,400.00	92.82	269.73	6,980.09	-716.16	-2,355.42	2,358.76	0.00	0.00	0.00
10,500.00	92.82	269.73	6,975.17	-716.63	-2,455.29	2,458.64	0.00	0.00	0.00
10,600.00	92.82	269.73	6,970.26	-717.09	-2,555.17	2,558.52	0.00	0.00	0.00
10,700.00	92.82	269.73	6,965.34	-717.56	-2,655.05	2,658.40	0.00	0.00	0.00
10,800.00	92.82	269.73	6,960.43	-718.03	-2,754.93	2,758.28	0.00	0.00	0.00
10,900.00	92.82	269.73	6,955.51	-718.49	-2,854.81	2,858.16	0.00	0.00	0.00
11,000.00	92.82	269.73	6,950.59	-718.96	-2,954.68	2,958.04	0.00	0.00	0.00
11,100.00	92.82	269.73	6,945.68	-719.42	-3,054.56	3,057.92	0.00	0.00	0.00
11,200.00	92.82	269.73	6,940.76	-719.89	-3,154.44	3,157.80	0.00	0.00	0.00
11,300.00	92.82	269.73	6,935.85	-720.36	-3,254.32	3,257.68	0.00	0.00	0.00
11,400.00	92.82	269.73	6,930.93	-720.82	-3,354.20	3,357.56	0.00	0.00	0.00
11,500.00	92.82	269.73	6,926.01	-721.29	-3,454.07	3,457.43	0.00	0.00	0.00
11,600.00	92.82	269.73	6,921.10	-721.75	-3,553.95	3,557.31	0.00	0.00	0.00
11,700.00	92.82	269.73	6,916.18	-722.22	-3,653.83	3,657.19	0.00	0.00	0.00
11,800.00	92.82	269.73	6,911.27	-722.69	-3,753.71	3,757.07	0.00	0.00	0.00
11,900.00	92.82	269.73	6,906.35	-723.15	-3,853.59	3,856.95	0.00	0.00	0.00
12,000.00	92.82	269.73	6,901.44	-723.62	-3,953.46	3,956.83	0.00	0.00	0.00
12,100.00	92.82	269.73	6,896.52	-724.08	-4,053.34	4,056.71	0.00	0.00	0.00
12,200.00	92.82	269.73	6,891.60	-724.55	-4,153.22	4,156.59	0.00	0.00	0.00
12,300.00	92.82	269.73	6,886.69	-725.02	-4,253.10	4,256.47	0.00	0.00	0.00
12,400.00	92.82	269.73	6,881.77	-725.48	-4,352.98	4,356.35	0.00	0.00	0.00
12,500.00	92.82	269.73	6,876.86	-725.95	-4,452.85	4,456.23	0.00	0.00	0.00
12,600.00	92.82	269.73	6,871.94	-726.41	-4,552.73	4,556.11	0.00	0.00	0.00
12,700.00	92.82	269.73	6,867.02	-726.88	-4,652.61	4,655.98	0.00	0.00	0.00
12,800.00	92.82	269.73	6,862.11	-727.35	-4,752.49	4,755.86	0.00	0.00	0.00
12,900.00	92.82	269.73	6,857.19	-727.81	-4,852.37	4,855.74	0.00	0.00	0.00
13,000.00	92.82	269.73	6,852.28	-728.28	-4,952.24	4,955.62	0.00	0.00	0.00
13,100.00	92.82	269.73	6,847.36	-728.74	-5,052.12	5,055.50	0.00	0.00	0.00

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SBJ 13-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<b>Design:</b>	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)	
13,200.00	92.82	269.73	6,842.45	-729.21	-5,152.00	5,155.38	0.00	0.00	0.00	
13,300.00	92.82	269.73	6,837.53	-729.68	-5,251.88	5,255.26	0.00	0.00	0.00	
13,400.00	92.82	269.73	6,832.61	-730.14	-5,351.76	5,355.14	0.00	0.00	0.00	
13,500.00	92.82	269.73	6,827.70	-730.61	-5,451.63	5,455.02	0.00	0.00	0.00	
13,600.00	92.82	269.73	6,822.78	-731.07	-5,551.51	5,554.90	0.00	0.00	0.00	
13,700.00	92.82	269.73	6,817.87	-731.54	-5,651.39	5,654.78	0.00	0.00	0.00	
13,800.00	92.82	269.73	6,812.95	-732.01	-5,751.27	5,754.65	0.00	0.00	0.00	
13,900.00	92.82	269.73	6,808.03	-732.47	-5,851.15	5,854.53	0.00	0.00	0.00	
14,000.00	92.82	269.73	6,803.12	-732.94	-5,951.02	5,954.41	0.00	0.00	0.00	
14,100.00	92.82	269.73	6,798.20	-733.40	-6,050.90	6,054.29	0.00	0.00	0.00	
14,200.00	92.82	269.73	6,793.29	-733.87	-6,150.78	6,154.17	0.00	0.00	0.00	
14,300.00	92.82	269.73	6,788.37	-734.34	-6,250.66	6,254.05	0.00	0.00	0.00	
14,400.00	92.82	269.73	6,783.46	-734.80	-6,350.54	6,353.93	0.00	0.00	0.00	
14,500.00	92.82	269.73	6,778.54	-735.27	-6,450.41	6,453.81	0.00	0.00	0.00	
14,600.00	92.82	269.73	6,773.62	-735.74	-6,550.29	6,553.69	0.00	0.00	0.00	
14,700.00	92.82	269.73	6,768.71	-736.20	-6,650.17	6,653.57	0.00	0.00	0.00	
14,800.00	92.82	269.73	6,763.79	-736.67	-6,750.05	6,753.45	0.00	0.00	0.00	
14,900.00	92.82	269.73	6,758.88	-737.13	-6,849.93	6,853.32	0.00	0.00	0.00	
15,000.00	92.82	269.73	6,753.96	-737.60	-6,949.80	6,953.20	0.00	0.00	0.00	
15,100.00	92.82	269.73	6,749.05	-738.07	-7,049.68	7,053.08	0.00	0.00	0.00	
15,200.00	92.82	269.73	6,744.13	-738.53	-7,149.56	7,152.96	0.00	0.00	0.00	
15,300.00	92.82	269.73	6,739.21	-739.00	-7,249.44	7,252.84	0.00	0.00	0.00	
15,400.00	92.82	269.73	6,734.30	-739.46	-7,349.32	7,352.72	0.00	0.00	0.00	
15,500.00	92.82	269.73	6,729.38	-739.93	-7,449.19	7,452.60	0.00	0.00	0.00	
15,600.00	92.82	269.73	6,724.47	-740.40	-7,549.07	7,552.48	0.00	0.00	0.00	
15,700.00	92.82	269.73	6,719.55	-740.86	-7,648.95	7,652.36	0.00	0.00	0.00	
15,800.00	92.82	269.73	6,714.63	-741.33	-7,748.83	7,752.24	0.00	0.00	0.00	
15,900.00	92.82	269.73	6,709.72	-741.79	-7,848.71	7,852.12	0.00	0.00	0.00	
16,000.00	92.82	269.73	6,704.80	-742.26	-7,948.58	7,951.99	0.00	0.00	0.00	
16,100.00	92.82	269.73	6,699.89	-742.73	-8,048.46	8,051.87	0.00	0.00	0.00	
16,200.00	92.82	269.73	6,694.97	-743.19	-8,148.34	8,151.75	0.00	0.00	0.00	
16,300.00	92.82	269.73	6,690.06	-743.66	-8,248.22	8,251.63	0.00	0.00	0.00	
16,400.00	92.82	269.73	6,685.14	-744.12	-8,348.10	8,351.51	0.00	0.00	0.00	
16,500.00	92.82	269.73	6,680.22	-744.59	-8,447.98	8,451.39	0.00	0.00	0.00	
16,600.00	92.82	269.73	6,675.31	-745.06	-8,547.85	8,551.27	0.00	0.00	0.00	
16,700.00	92.82	269.73	6,670.39	-745.52	-8,647.73	8,651.15	0.00	0.00	0.00	
16,800.00	92.82	269.73	6,665.48	-745.99	-8,747.61	8,751.03	0.00	0.00	0.00	
16,900.00	92.82	269.73	6,660.56	-746.45	-8,847.49	8,850.91	0.00	0.00	0.00	
17,000.00	92.82	269.73	6,655.64	-746.92	-8,947.37	8,950.79	0.00	0.00	0.00	
17,100.00	92.82	269.73	6,650.73	-747.39	-9,047.24	9,050.66	0.00	0.00	0.00	
17,200.00	92.82	269.73	6,645.81	-747.85	-9,147.12	9,150.54	0.00	0.00	0.00	
17,300.00	92.82	269.73	6,640.90	-748.32	-9,247.00	9,250.42	0.00	0.00	0.00	
17,400.00	92.82	269.73	6,635.98	-748.78	-9,346.88	9,350.30	0.00	0.00	0.00	
17,500.00	92.82	269.73	6,631.07	-749.25	-9,446.76	9,450.18	0.00	0.00	0.00	
17,600.00	92.82	269.73	6,626.15	-749.72	-9,546.63	9,550.06	0.00	0.00	0.00	
17,700.00	92.82	269.73	6,621.23	-750.18	-9,646.51	9,649.94	0.00	0.00	0.00	
17,800.00	92.82	269.73	6,616.32	-750.65	-9,746.39	9,749.82	0.00	0.00	0.00	
17,900.00	92.82	269.73	6,611.40	-751.11	-9,846.27	9,849.70	0.00	0.00	0.00	
18,000.00	92.82	269.73	6,606.49	-751.58	-9,946.15	9,949.58	0.00	0.00	0.00	
18,100.00	92.82	269.73	6,601.57	-752.05	-10,046.02	10,049.46	0.00	0.00	0.00	
18,200.00	92.82	269.73	6,596.65	-752.51	-10,145.90	10,149.33	0.00	0.00	0.00	
18,300.00	92.82	269.73	6,591.74	-752.98	-10,245.78	10,249.21	0.00	0.00	0.00	
18,400.00	92.82	269.73	6,586.82	-753.44	-10,345.66	10,349.09	0.00	0.00	0.00	
18,500.00	92.82	269.73	6,581.91	-753.91	-10,445.54	10,448.97	0.00	0.00	0.00	

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SBJ 13-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<b>Design:</b>	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)	
18,600.00	92.82	269.73	6,576.99	-754.38	-10,545.41	10,548.85	0.00	0.00	0.00	
18,700.00	92.82	269.73	6,572.08	-754.84	-10,645.29	10,648.73	0.00	0.00	0.00	
18,800.00	92.82	269.73	6,567.16	-755.31	-10,745.17	10,748.61	0.00	0.00	0.00	
18,900.00	92.82	269.73	6,562.24	-755.77	-10,845.05	10,848.49	0.00	0.00	0.00	
19,000.00	92.82	269.73	6,557.33	-756.24	-10,944.93	10,948.37	0.00	0.00	0.00	
19,100.00	92.82	269.73	6,552.41	-756.71	-11,044.80	11,048.25	0.00	0.00	0.00	
19,200.00	92.82	269.73	6,547.50	-757.17	-11,144.68	11,148.13	0.00	0.00	0.00	
19,300.00	92.82	269.73	6,542.58	-757.64	-11,244.56	11,248.00	0.00	0.00	0.00	
19,352.49	92.82	269.73	6,540.00	-757.88	-11,296.99	11,300.43	0.00	0.00	0.00	
<b>TD at 19352.49 - 5 1/2" Csg</b>										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SBJ 13-10HZ BHL - hit/miss target - Shape - Point	0.00	0.00	6,540.00	-757.88	-11,296.99	14,640,609.00	1,641,160.00	40.312716	-104.997334	
SBJ 13-10HZ LP - plan hits target center - Point	0.00	0.00	7,113.00	-703.56	345.04	14,640,669.00	1,652,802.00	40.312872	-104.955572	

Casing Points						
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")		
1,516.84	1,500.00	9 5/8" Csg	9-5/8	13-1/2		
19,352.49	6,540.00	5 1/2" Csg	5-1/2	7-7/8		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
556.33	556.00	Fox Hills				
3,474.10	3,411.00	Parkman				
3,927.82	3,854.00	Sussex				
6,797.16	6,656.00	Sharon Springs				
6,848.52	6,703.00	Niobrara				
6,907.44	6,755.00	Nio B				
6,970.51	6,808.00	Nio C				
7,160.33	6,947.00	Fort Hayes				
7,192.47	6,967.00	Codell				

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well SBJ 13-10HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4876.00usft (Drilling Rig)
<b>Site:</b>	4N-68W-13 SBJ 22-13HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	SBJ 13-10HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan C		
<b>Design:</b>	PERMIT REV-2		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
250.00	250.00	0.00	0.00	Start Build 1.50
1,082.11	1,075.55	-43.95	78.86	HOLD TANGENT
6,400.56	6,268.30	-603.47	1,082.95	KOP DLS 8
7,696.25	7,113.00	-703.56	345.04	LANDING POINT
19,352.50	6,540.00	-757.88	-11,296.99	TD at 19352.49