

US ROCKIES WATTENBERG PLANNING

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

Plan C

Plan: PERMIT REV-2

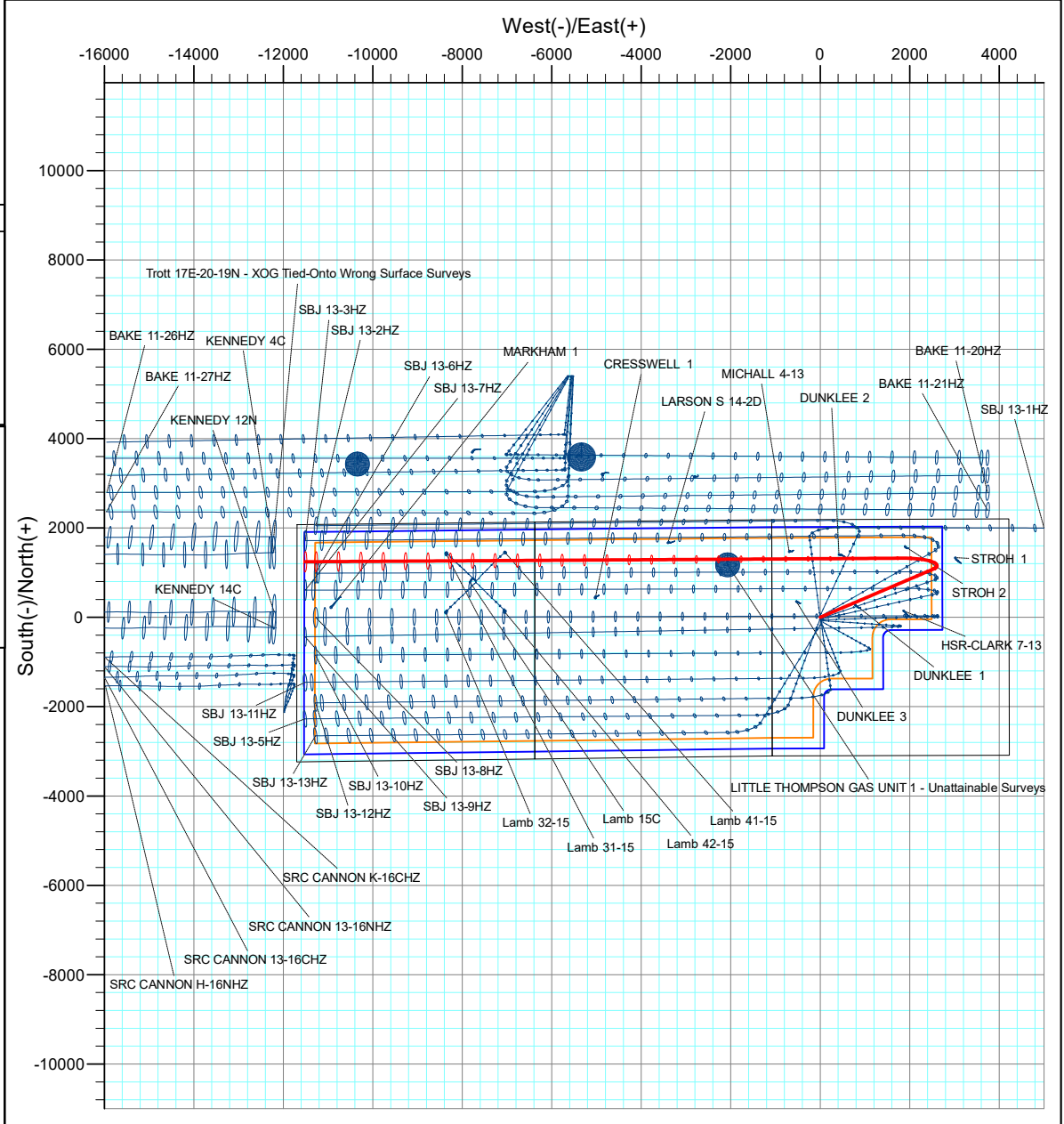
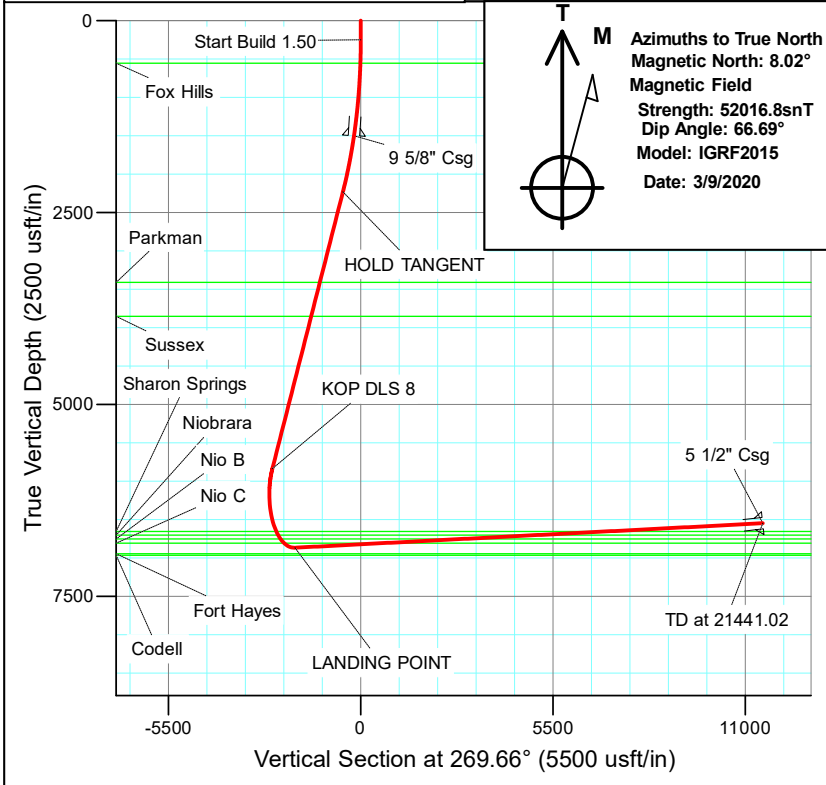
Standard Planning Report

04 May, 2021

Project: WELD-NAD83-UTMFT13N Site: 4N-68W-13 SBJ 22-13HZ PAD Well: SBJ 13-4HZ Wellbore: Plan C Design: PERMIT REV-2	ELEVATION		SURFACE HOLE LOCATION: SBJ 13-4HZ						
	GROUND ELEVATION: 4859.00 RKB = 17' @ 4876ft		+N/-S 0.00	+E/-W 0.00	Northing 14641460.51	Easting 1652438.74	Latitude 40.315046	Longitude -104.956873	
	CASING DETAILS		DESIGN TARGET DETAILS						
	TVD 1500.00	MD 1523.46	Name 9 5/8" Csg	Size 9-5/8	Name SBJ 13-4HZ BHL	TVD 6549.00	Northing 14642698.00	Easting 1640929.00	Latitude 40.318452
6549.00	21441.02	5 1/2" Csg	5-1/2	SBJ 13-4HZ LP	6868.00	14642784.00	1654314.00	40.318678	-104.950143

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	2333.45	31.25	66.87	2231.66	217.71	509.70	1.50	66.87	-510.99	
4	6553.15	31.25	66.87	5839.08	1077.63	2522.92	0.00	0.00	-2529.27	
5	8051.94	91.37	269.66	6868.00	1322.58	1875.91	8.00	-153.47	-1883.72	SBJ 13-4HZ LP
6	21441.02	91.37	269.66	6549.00	1243.09	-11509.13	0.00	0.00	11501.55	SBJ 13-4HZ BHL

SHL			HEEL			TOE			FORMATION TOP DETAILS		
2188' FNL	872' FNL	831' FNL	2188' FNL	872' FNL	831' FNL	556.00	556.33	Fox Hills	3411.00	3712.95	Parkman
1073' FWL	2341' FEL	185' FWL	1073' FWL	2341' FEL	185' FWL	3854.00	4231.14	Sussex	6656.00	7460.14	Sharon Springs
Section 13	Section 13	Section 15	Section 13	Section 13	Section 15	6703.00	7530.87	Niobrara	6755.00	7620.37	Nio B
SWNW	NWNE	NWNW	SWNW	NWNE	NWNW	6808.00	7734.46	Nio C			



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SBJ 13-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Site:	4N-68W-13 SBJ 22-13HZ PAD	North Reference:	True
Well:	SBJ 13-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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	4N-68W-13 SBJ 22-13HZ PAD				
Site Position:		Northing:	14,641,145.55 usft	Latitude:	40.314181
From:	Lat/Long	Easting:	1,652,517.50 usft	Longitude:	-104.956591
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.03 °

Well	SBJ 13-4HZ					
Well Position	+N/-S	315.00 usft	Northing:	14,641,460.51 usft	Latitude:	40.315046
	+E/-W	-78.61 usft	Easting:	1,652,438.73 usft	Longitude:	-104.956873
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,859.00 usft

Wellbore	Plan C				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/9/2020	8.02	66.69	52,016.83945113

Design	PERMIT REV-2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	269.66

Plan Survey Tool Program	Date	5/4/2021			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	2,000.00	PERMIT REV-2 (Plan C)	APC_ISCWSA REV 2 MWD Fixed:v2:standard declination	
2	2,000.00	21,441.02	PERMIT REV-2 (Plan C)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +	

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	
2,333.45	31.25	66.87	2,231.66	217.71	509.70	1.50	1.50	0.00	66.87	
6,553.15	31.25	66.87	5,839.08	1,077.63	2,522.92	0.00	0.00	0.00	0.00	
8,051.94	91.37	269.66	6,868.00	1,322.58	1,875.91	8.00	4.01	-10.49	-153.47	SBJ 13-4HZ LP
21,441.02	91.37	269.66	6,549.00	1,243.09	-11,509.13	0.00	0.00	0.00	0.00	SBJ 13-4HZ BHL

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Site:	4N-68W-13 SBJ 22-13HZ PAD	North Reference:	True
Well:	SBJ 13-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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
Start Build 1.50									
300.00	0.75	66.87	300.00	0.13	0.30	-0.30	1.50	1.50	0.00
400.00	2.25	66.87	399.96	1.16	2.71	-2.71	1.50	1.50	0.00
500.00	3.75	66.87	499.82	3.21	7.52	-7.54	1.50	1.50	0.00
556.33	4.59	66.87	556.00	4.82	11.29	-11.32	1.50	1.50	0.00
Fox Hills									
600.00	5.25	66.87	599.51	6.29	14.74	-14.77	1.50	1.50	0.00
700.00	6.75	66.87	698.96	10.40	24.35	-24.41	1.50	1.50	0.00
800.00	8.25	66.87	798.10	15.53	36.35	-36.44	1.50	1.50	0.00
900.00	9.75	66.87	896.87	21.67	50.74	-50.86	1.50	1.50	0.00
1,000.00	11.25	66.87	995.19	28.83	67.50	-67.67	1.50	1.50	0.00
1,100.00	12.75	66.87	1,093.00	37.00	86.62	-86.83	1.50	1.50	0.00
1,200.00	14.25	66.87	1,190.24	46.17	108.08	-108.35	1.50	1.50	0.00
1,300.00	15.75	66.87	1,286.83	56.33	131.88	-132.22	1.50	1.50	0.00
1,400.00	17.25	66.87	1,382.71	67.49	158.00	-158.40	1.50	1.50	0.00
1,500.00	18.75	66.87	1,477.81	79.63	186.42	-186.89	1.50	1.50	0.00
1,523.46	19.10	66.87	1,500.00	82.61	193.42	-193.90	1.50	1.50	0.00
9 5/8" Csg									
1,600.00	20.25	66.87	1,572.07	92.74	217.12	-217.66	1.50	1.50	0.00
1,700.00	21.75	66.87	1,665.43	106.81	250.07	-250.70	1.50	1.50	0.00
1,800.00	23.25	66.87	1,757.81	121.85	285.26	-285.98	1.50	1.50	0.00
1,900.00	24.75	66.87	1,849.16	137.82	322.67	-323.48	1.50	1.50	0.00
2,000.00	26.25	66.87	1,939.42	154.73	362.26	-363.17	1.50	1.50	0.00
2,100.00	27.75	66.87	2,028.52	172.56	404.00	-405.02	1.50	1.50	0.00
2,200.00	29.25	66.87	2,116.40	191.31	447.88	-449.01	1.50	1.50	0.00
2,300.00	30.75	66.87	2,203.00	210.95	493.86	-495.11	1.50	1.50	0.00
2,333.45	31.25	66.87	2,231.66	217.71	509.70	-510.99	1.50	1.50	0.00
HOLD TANGENT									
2,400.00	31.25	66.87	2,288.56	231.27	541.46	-542.82	0.00	0.00	0.00
2,500.00	31.25	66.87	2,374.05	251.65	589.17	-590.65	0.00	0.00	0.00
2,600.00	31.25	66.87	2,459.54	272.03	636.88	-638.48	0.00	0.00	0.00
2,700.00	31.25	66.87	2,545.03	292.41	684.59	-686.31	0.00	0.00	0.00
2,800.00	31.25	66.87	2,630.52	312.79	732.30	-734.14	0.00	0.00	0.00
2,900.00	31.25	66.87	2,716.01	333.17	780.01	-781.97	0.00	0.00	0.00
3,000.00	31.25	66.87	2,801.50	353.55	827.72	-829.80	0.00	0.00	0.00
3,100.00	31.25	66.87	2,886.99	373.92	875.43	-877.63	0.00	0.00	0.00
3,200.00	31.25	66.87	2,972.48	394.30	923.14	-925.46	0.00	0.00	0.00
3,300.00	31.25	66.87	3,057.97	414.68	970.85	-973.29	0.00	0.00	0.00
3,400.00	31.25	66.87	3,143.46	435.06	1,018.56	-1,021.12	0.00	0.00	0.00
3,500.00	31.25	66.87	3,228.95	455.44	1,066.27	-1,068.95	0.00	0.00	0.00
3,600.00	31.25	66.87	3,314.44	475.82	1,113.98	-1,116.78	0.00	0.00	0.00
3,700.00	31.25	66.87	3,399.93	496.20	1,161.69	-1,164.61	0.00	0.00	0.00
3,712.95	31.25	66.87	3,411.00	498.83	1,167.87	-1,170.81	0.00	0.00	0.00
Parkman									
3,800.00	31.25	66.87	3,485.42	516.57	1,209.40	-1,212.44	0.00	0.00	0.00
3,900.00	31.25	66.87	3,570.91	536.95	1,257.11	-1,260.27	0.00	0.00	0.00
4,000.00	31.25	66.87	3,656.40	557.33	1,304.82	-1,308.10	0.00	0.00	0.00
4,100.00	31.25	66.87	3,741.89	577.71	1,352.53	-1,355.93	0.00	0.00	0.00
4,200.00	31.25	66.87	3,827.37	598.09	1,400.24	-1,403.76	0.00	0.00	0.00

Corporate Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Site:	4N-68W-13 SBJ 22-13HZ PAD	North Reference:	True
Well:	SBJ 13-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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)	
4,231.14	31.25	66.87	3,854.00	604.43	1,415.10	-1,418.66	0.00	0.00	0.00	
Sussex										
4,300.00	31.25	66.87	3,912.86	618.47	1,447.95	-1,451.59	0.00	0.00	0.00	
4,400.00	31.25	66.87	3,998.35	638.84	1,495.66	-1,499.42	0.00	0.00	0.00	
4,500.00	31.25	66.87	4,083.84	659.22	1,543.37	-1,547.25	0.00	0.00	0.00	
4,600.00	31.25	66.87	4,169.33	679.60	1,591.08	-1,595.08	0.00	0.00	0.00	
4,700.00	31.25	66.87	4,254.82	699.98	1,638.79	-1,642.91	0.00	0.00	0.00	
4,800.00	31.25	66.87	4,340.31	720.36	1,686.50	-1,690.74	0.00	0.00	0.00	
4,900.00	31.25	66.87	4,425.80	740.74	1,734.21	-1,738.57	0.00	0.00	0.00	
5,000.00	31.25	66.87	4,511.29	761.12	1,781.92	-1,786.40	0.00	0.00	0.00	
5,100.00	31.25	66.87	4,596.78	781.49	1,829.63	-1,834.23	0.00	0.00	0.00	
5,200.00	31.25	66.87	4,682.27	801.87	1,877.34	-1,882.06	0.00	0.00	0.00	
5,300.00	31.25	66.87	4,767.76	822.25	1,925.05	-1,929.89	0.00	0.00	0.00	
5,400.00	31.25	66.87	4,853.25	842.63	1,972.76	-1,977.72	0.00	0.00	0.00	
5,500.00	31.25	66.87	4,938.74	863.01	2,020.47	-2,025.55	0.00	0.00	0.00	
5,600.00	31.25	66.87	5,024.23	883.39	2,068.17	-2,073.38	0.00	0.00	0.00	
5,700.00	31.25	66.87	5,109.72	903.77	2,115.88	-2,121.21	0.00	0.00	0.00	
5,800.00	31.25	66.87	5,195.21	924.14	2,163.59	-2,169.04	0.00	0.00	0.00	
5,900.00	31.25	66.87	5,280.70	944.52	2,211.30	-2,216.87	0.00	0.00	0.00	
6,000.00	31.25	66.87	5,366.19	964.90	2,259.01	-2,264.70	0.00	0.00	0.00	
6,100.00	31.25	66.87	5,451.68	985.28	2,306.72	-2,312.53	0.00	0.00	0.00	
6,200.00	31.25	66.87	5,537.17	1,005.66	2,354.43	-2,360.36	0.00	0.00	0.00	
6,300.00	31.25	66.87	5,622.66	1,026.04	2,402.14	-2,408.19	0.00	0.00	0.00	
6,400.00	31.25	66.87	5,708.15	1,046.41	2,449.85	-2,456.02	0.00	0.00	0.00	
6,500.00	31.25	66.87	5,793.64	1,066.79	2,497.56	-2,503.85	0.00	0.00	0.00	
6,553.15	31.25	66.87	5,839.08	1,077.63	2,522.92	-2,529.27	0.00	0.00	0.00	
KOP DLS 8										
6,600.00	27.94	63.30	5,879.81	1,087.33	2,543.91	-2,550.32	8.00	-7.06	-7.63	
6,700.00	21.33	52.39	5,970.70	1,109.00	2,579.31	-2,585.85	8.00	-6.61	-10.91	
6,800.00	15.96	33.58	6,065.50	1,131.59	2,601.36	-2,608.03	8.00	-5.37	-18.81	
6,900.00	13.42	3.23	6,162.37	1,154.66	2,609.63	-2,616.44	8.00	-2.54	-30.36	
7,000.00	15.20	331.23	6,259.41	1,177.78	2,603.96	-2,610.91	8.00	1.78	-32.00	
7,100.00	20.19	310.35	6,354.74	1,200.49	2,584.47	-2,591.54	8.00	4.99	-20.87	
7,200.00	26.65	298.33	6,446.51	1,222.34	2,551.52	-2,558.73	8.00	6.45	-12.02	
7,300.00	33.73	290.89	6,532.92	1,242.91	2,505.77	-2,513.10	8.00	7.08	-7.44	
7,400.00	41.12	285.82	6,612.30	1,261.81	2,448.10	-2,455.54	8.00	7.39	-5.07	
7,460.14	45.65	283.45	6,656.00	1,272.21	2,408.13	-2,415.64	8.00	7.53	-3.94	
Sharon Springs										
7,500.00	48.67	282.08	6,683.10	1,278.66	2,379.63	-2,387.18	8.00	7.59	-3.45	
7,530.87	51.03	281.10	6,703.00	1,283.39	2,356.52	-2,364.09	8.00	7.62	-3.17	
Niobrara										
7,600.00	56.32	279.12	6,743.94	1,293.13	2,301.71	-2,309.34	8.00	7.66	-2.86	
7,620.37	57.89	278.58	6,755.00	1,295.76	2,284.81	-2,292.46	8.00	7.69	-2.63	
Nio B										
7,700.00	64.03	276.65	6,793.64	1,304.95	2,215.83	-2,223.54	8.00	7.71	-2.43	
7,734.46	66.70	275.87	6,808.00	1,308.36	2,184.70	-2,192.43	8.00	7.74	-2.24	
Nio C										
7,800.00	71.78	274.48	6,831.23	1,313.88	2,123.69	-2,131.45	8.00	7.75	-2.12	
7,900.00	79.54	272.50	6,855.98	1,319.75	2,027.06	-2,034.86	8.00	7.77	-1.98	
8,000.00	87.32	270.62	6,867.41	1,322.45	1,927.83	-1,935.65	8.00	7.78	-1.88	
8,051.94	91.37	269.66	6,868.00	1,322.58	1,875.91	-1,883.72	8.00	7.78	-1.85	
LANDING POINT										
8,100.00	91.37	269.66	6,866.86	1,322.29	1,827.86	-1,835.68	0.00	0.00	0.00	

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Well:	SBJ 13-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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	91.37	269.66	6,864.47	1,321.70	1,727.89	-1,735.71	0.00	0.00	0.00
8,300.00	91.37	269.66	6,862.09	1,321.10	1,627.92	-1,635.73	0.00	0.00	0.00
8,400.00	91.37	269.66	6,859.71	1,320.51	1,527.95	-1,535.76	0.00	0.00	0.00
8,500.00	91.37	269.66	6,857.32	1,319.92	1,427.98	-1,435.79	0.00	0.00	0.00
8,600.00	91.37	269.66	6,854.94	1,319.32	1,328.01	-1,335.82	0.00	0.00	0.00
8,700.00	91.37	269.66	6,852.56	1,318.73	1,228.04	-1,235.85	0.00	0.00	0.00
8,800.00	91.37	269.66	6,850.18	1,318.13	1,128.07	-1,135.88	0.00	0.00	0.00
8,900.00	91.37	269.66	6,847.79	1,317.54	1,028.10	-1,035.91	0.00	0.00	0.00
9,000.00	91.37	269.66	6,845.41	1,316.95	928.14	-935.93	0.00	0.00	0.00
9,100.00	91.37	269.66	6,843.03	1,316.35	828.17	-835.96	0.00	0.00	0.00
9,200.00	91.37	269.66	6,840.65	1,315.76	728.20	-735.99	0.00	0.00	0.00
9,300.00	91.37	269.66	6,838.26	1,315.17	628.23	-636.02	0.00	0.00	0.00
9,400.00	91.37	269.66	6,835.88	1,314.57	528.26	-536.05	0.00	0.00	0.00
9,500.00	91.37	269.66	6,833.50	1,313.98	428.29	-436.08	0.00	0.00	0.00
9,600.00	91.37	269.66	6,831.12	1,313.39	328.32	-336.10	0.00	0.00	0.00
9,700.00	91.37	269.66	6,828.73	1,312.79	228.35	-236.13	0.00	0.00	0.00
9,800.00	91.37	269.66	6,826.35	1,312.20	128.38	-136.16	0.00	0.00	0.00
9,900.00	91.37	269.66	6,823.97	1,311.60	28.41	-36.19	0.00	0.00	0.00
10,000.00	91.37	269.66	6,821.59	1,311.01	-71.56	63.78	0.00	0.00	0.00
10,100.00	91.37	269.66	6,819.20	1,310.42	-171.53	163.75	0.00	0.00	0.00
10,200.00	91.37	269.66	6,816.82	1,309.82	-271.50	263.73	0.00	0.00	0.00
10,300.00	91.37	269.66	6,814.44	1,309.23	-371.47	363.70	0.00	0.00	0.00
10,400.00	91.37	269.66	6,812.06	1,308.64	-471.44	463.67	0.00	0.00	0.00
10,500.00	91.37	269.66	6,809.67	1,308.04	-571.41	563.64	0.00	0.00	0.00
10,600.00	91.37	269.66	6,807.29	1,307.45	-671.38	663.61	0.00	0.00	0.00
10,700.00	91.37	269.66	6,804.91	1,306.86	-771.35	763.58	0.00	0.00	0.00
10,800.00	91.37	269.66	6,802.53	1,306.26	-871.32	863.56	0.00	0.00	0.00
10,900.00	91.37	269.66	6,800.14	1,305.67	-971.29	963.53	0.00	0.00	0.00
11,000.00	91.37	269.66	6,797.76	1,305.07	-1,071.26	1,063.50	0.00	0.00	0.00
11,100.00	91.37	269.66	6,795.38	1,304.48	-1,171.23	1,163.47	0.00	0.00	0.00
11,200.00	91.37	269.66	6,793.00	1,303.89	-1,271.20	1,263.44	0.00	0.00	0.00
11,300.00	91.37	269.66	6,790.61	1,303.29	-1,371.17	1,363.41	0.00	0.00	0.00
11,400.00	91.37	269.66	6,788.23	1,302.70	-1,471.14	1,463.39	0.00	0.00	0.00
11,500.00	91.37	269.66	6,785.85	1,302.11	-1,571.11	1,563.36	0.00	0.00	0.00
11,600.00	91.37	269.66	6,783.47	1,301.51	-1,671.08	1,663.33	0.00	0.00	0.00
11,700.00	91.37	269.66	6,781.08	1,300.92	-1,771.05	1,763.30	0.00	0.00	0.00
11,800.00	91.37	269.66	6,778.70	1,300.33	-1,871.02	1,863.27	0.00	0.00	0.00
11,900.00	91.37	269.66	6,776.32	1,299.73	-1,970.99	1,963.24	0.00	0.00	0.00
12,000.00	91.37	269.66	6,773.94	1,299.14	-2,070.96	2,063.21	0.00	0.00	0.00
12,100.00	91.37	269.66	6,771.55	1,298.54	-2,170.93	2,163.19	0.00	0.00	0.00
12,200.00	91.37	269.66	6,769.17	1,297.95	-2,270.90	2,263.16	0.00	0.00	0.00
12,300.00	91.37	269.66	6,766.79	1,297.36	-2,370.87	2,363.13	0.00	0.00	0.00
12,400.00	91.37	269.66	6,764.41	1,296.76	-2,470.84	2,463.10	0.00	0.00	0.00
12,500.00	91.37	269.66	6,762.02	1,296.17	-2,570.81	2,563.07	0.00	0.00	0.00
12,600.00	91.37	269.66	6,759.64	1,295.58	-2,670.78	2,663.04	0.00	0.00	0.00
12,700.00	91.37	269.66	6,757.26	1,294.98	-2,770.75	2,763.02	0.00	0.00	0.00
12,800.00	91.37	269.66	6,754.88	1,294.39	-2,870.72	2,862.99	0.00	0.00	0.00
12,900.00	91.37	269.66	6,752.49	1,293.80	-2,970.69	2,962.96	0.00	0.00	0.00
13,000.00	91.37	269.66	6,750.11	1,293.20	-3,070.66	3,062.93	0.00	0.00	0.00
13,100.00	91.37	269.66	6,747.73	1,292.61	-3,170.63	3,162.90	0.00	0.00	0.00
13,200.00	91.37	269.66	6,745.35	1,292.02	-3,270.60	3,262.87	0.00	0.00	0.00
13,300.00	91.37	269.66	6,742.96	1,291.42	-3,370.57	3,362.85	0.00	0.00	0.00
13,400.00	91.37	269.66	6,740.58	1,290.83	-3,470.54	3,462.82	0.00	0.00	0.00
13,500.00	91.37	269.66	6,738.20	1,290.23	-3,570.51	3,562.79	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SBJ 13-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Site:	4N-68W-13 SBJ 22-13HZ PAD	North Reference:	True
Well:	SBJ 13-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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	91.37	269.66	6,735.82	1,289.64	-3,670.48	3,662.76	0.00	0.00	0.00
13,700.00	91.37	269.66	6,733.43	1,289.05	-3,770.45	3,762.73	0.00	0.00	0.00
13,800.00	91.37	269.66	6,731.05	1,288.45	-3,870.42	3,862.70	0.00	0.00	0.00
13,900.00	91.37	269.66	6,728.67	1,287.86	-3,970.39	3,962.68	0.00	0.00	0.00
14,000.00	91.37	269.66	6,726.29	1,287.27	-4,070.36	4,062.65	0.00	0.00	0.00
14,100.00	91.37	269.66	6,723.90	1,286.67	-4,170.33	4,162.62	0.00	0.00	0.00
14,200.00	91.37	269.66	6,721.52	1,286.08	-4,270.30	4,262.59	0.00	0.00	0.00
14,300.00	91.37	269.66	6,719.14	1,285.49	-4,370.27	4,362.56	0.00	0.00	0.00
14,400.00	91.37	269.66	6,716.76	1,284.89	-4,470.24	4,462.53	0.00	0.00	0.00
14,500.00	91.37	269.66	6,714.37	1,284.30	-4,570.21	4,562.51	0.00	0.00	0.00
14,600.00	91.37	269.66	6,711.99	1,283.70	-4,670.18	4,662.48	0.00	0.00	0.00
14,700.00	91.37	269.66	6,709.61	1,283.11	-4,770.15	4,762.45	0.00	0.00	0.00
14,800.00	91.37	269.66	6,707.22	1,282.52	-4,870.12	4,862.42	0.00	0.00	0.00
14,900.00	91.37	269.66	6,704.84	1,281.92	-4,970.09	4,962.39	0.00	0.00	0.00
15,000.00	91.37	269.66	6,702.46	1,281.33	-5,070.06	5,062.36	0.00	0.00	0.00
15,100.00	91.37	269.66	6,700.08	1,280.74	-5,170.03	5,162.33	0.00	0.00	0.00
15,200.00	91.37	269.66	6,697.69	1,280.14	-5,270.00	5,262.31	0.00	0.00	0.00
15,300.00	91.37	269.66	6,695.31	1,279.55	-5,369.97	5,362.28	0.00	0.00	0.00
15,400.00	91.37	269.66	6,692.93	1,278.96	-5,469.94	5,462.25	0.00	0.00	0.00
15,500.00	91.37	269.66	6,690.55	1,278.36	-5,569.91	5,562.22	0.00	0.00	0.00
15,600.00	91.37	269.66	6,688.16	1,277.77	-5,669.88	5,662.19	0.00	0.00	0.00
15,700.00	91.37	269.66	6,685.78	1,277.17	-5,769.85	5,762.16	0.00	0.00	0.00
15,800.00	91.37	269.66	6,683.40	1,276.58	-5,869.81	5,862.14	0.00	0.00	0.00
15,900.00	91.37	269.66	6,681.02	1,275.99	-5,969.78	5,962.11	0.00	0.00	0.00
16,000.00	91.37	269.66	6,678.63	1,275.39	-6,069.75	6,062.08	0.00	0.00	0.00
16,100.00	91.37	269.66	6,676.25	1,274.80	-6,169.72	6,162.05	0.00	0.00	0.00
16,200.00	91.37	269.66	6,673.87	1,274.21	-6,269.69	6,262.02	0.00	0.00	0.00
16,300.00	91.37	269.66	6,671.49	1,273.61	-6,369.66	6,361.99	0.00	0.00	0.00
16,400.00	91.37	269.66	6,669.10	1,273.02	-6,469.63	6,461.97	0.00	0.00	0.00
16,500.00	91.37	269.66	6,666.72	1,272.43	-6,569.60	6,561.94	0.00	0.00	0.00
16,600.00	91.37	269.66	6,664.34	1,271.83	-6,669.57	6,661.91	0.00	0.00	0.00
16,700.00	91.37	269.66	6,661.96	1,271.24	-6,769.54	6,761.88	0.00	0.00	0.00
16,800.00	91.37	269.66	6,659.57	1,270.64	-6,869.51	6,861.85	0.00	0.00	0.00
16,900.00	91.37	269.66	6,657.19	1,270.05	-6,969.48	6,961.82	0.00	0.00	0.00
17,000.00	91.37	269.66	6,654.81	1,269.46	-7,069.45	7,061.80	0.00	0.00	0.00
17,100.00	91.37	269.66	6,652.43	1,268.86	-7,169.42	7,161.77	0.00	0.00	0.00
17,200.00	91.37	269.66	6,650.04	1,268.27	-7,269.39	7,261.74	0.00	0.00	0.00
17,300.00	91.37	269.66	6,647.66	1,267.68	-7,369.36	7,361.71	0.00	0.00	0.00
17,400.00	91.37	269.66	6,645.28	1,267.08	-7,469.33	7,461.68	0.00	0.00	0.00
17,500.00	91.37	269.66	6,642.90	1,266.49	-7,569.30	7,561.65	0.00	0.00	0.00
17,600.00	91.37	269.66	6,640.51	1,265.90	-7,669.27	7,661.63	0.00	0.00	0.00
17,700.00	91.37	269.66	6,638.13	1,265.30	-7,769.24	7,761.60	0.00	0.00	0.00
17,800.00	91.37	269.66	6,635.75	1,264.71	-7,869.21	7,861.57	0.00	0.00	0.00
17,900.00	91.37	269.66	6,633.37	1,264.11	-7,969.18	7,961.54	0.00	0.00	0.00
18,000.00	91.37	269.66	6,630.98	1,263.52	-8,069.15	8,061.51	0.00	0.00	0.00
18,100.00	91.37	269.66	6,628.60	1,262.93	-8,169.12	8,161.48	0.00	0.00	0.00
18,200.00	91.37	269.66	6,626.22	1,262.33	-8,269.09	8,261.46	0.00	0.00	0.00
18,300.00	91.37	269.66	6,623.84	1,261.74	-8,369.06	8,361.43	0.00	0.00	0.00
18,400.00	91.37	269.66	6,621.45	1,261.15	-8,469.03	8,461.40	0.00	0.00	0.00
18,500.00	91.37	269.66	6,619.07	1,260.55	-8,569.00	8,561.37	0.00	0.00	0.00
18,600.00	91.37	269.66	6,616.69	1,259.96	-8,668.97	8,661.34	0.00	0.00	0.00
18,700.00	91.37	269.66	6,614.31	1,259.37	-8,768.94	8,761.31	0.00	0.00	0.00
18,800.00	91.37	269.66	6,611.92	1,258.77	-8,868.91	8,861.28	0.00	0.00	0.00
18,900.00	91.37	269.66	6,609.54	1,258.18	-8,968.88	8,961.26	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well SBJ 13-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4876.00usft (Drilling Rig)
Site:	4N-68W-13 SBJ 22-13HZ PAD	North Reference:	True
Well:	SBJ 13-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan C		
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)	
19,000.00	91.37	269.66	6,607.16	1,257.58	-9,068.85	9,061.23	0.00	0.00	0.00	
19,100.00	91.37	269.66	6,604.78	1,256.99	-9,168.82	9,161.20	0.00	0.00	0.00	
19,200.00	91.37	269.66	6,602.39	1,256.40	-9,268.79	9,261.17	0.00	0.00	0.00	
19,300.00	91.37	269.66	6,600.01	1,255.80	-9,368.76	9,361.14	0.00	0.00	0.00	
19,400.00	91.37	269.66	6,597.63	1,255.21	-9,468.73	9,461.11	0.00	0.00	0.00	
19,500.00	91.37	269.66	6,595.25	1,254.62	-9,568.70	9,561.09	0.00	0.00	0.00	
19,600.00	91.37	269.66	6,592.86	1,254.02	-9,668.67	9,661.06	0.00	0.00	0.00	
19,700.00	91.37	269.66	6,590.48	1,253.43	-9,768.64	9,761.03	0.00	0.00	0.00	
19,800.00	91.37	269.66	6,588.10	1,252.84	-9,868.61	9,861.00	0.00	0.00	0.00	
19,900.00	91.37	269.66	6,585.72	1,252.24	-9,968.58	9,960.97	0.00	0.00	0.00	
20,000.00	91.37	269.66	6,583.33	1,251.65	-10,068.55	10,060.94	0.00	0.00	0.00	
20,100.00	91.37	269.66	6,580.95	1,251.05	-10,168.52	10,160.92	0.00	0.00	0.00	
20,200.00	91.37	269.66	6,578.57	1,250.46	-10,268.49	10,260.89	0.00	0.00	0.00	
20,300.00	91.37	269.66	6,576.19	1,249.87	-10,368.46	10,360.86	0.00	0.00	0.00	
20,400.00	91.37	269.66	6,573.80	1,249.27	-10,468.43	10,460.83	0.00	0.00	0.00	
20,500.00	91.37	269.66	6,571.42	1,248.68	-10,568.40	10,560.80	0.00	0.00	0.00	
20,600.00	91.37	269.66	6,569.04	1,248.09	-10,668.37	10,660.77	0.00	0.00	0.00	
20,700.00	91.37	269.66	6,566.66	1,247.49	-10,768.34	10,760.75	0.00	0.00	0.00	
20,800.00	91.37	269.66	6,564.27	1,246.90	-10,868.31	10,860.72	0.00	0.00	0.00	
20,900.00	91.37	269.66	6,561.89	1,246.31	-10,968.28	10,960.69	0.00	0.00	0.00	
21,000.00	91.37	269.66	6,559.51	1,245.71	-11,068.25	11,060.66	0.00	0.00	0.00	
21,100.00	91.37	269.66	6,557.13	1,245.12	-11,168.22	11,160.63	0.00	0.00	0.00	
21,200.00	91.37	269.66	6,554.74	1,244.52	-11,268.19	11,260.60	0.00	0.00	0.00	
21,300.00	91.37	269.66	6,552.36	1,243.93	-11,368.16	11,360.58	0.00	0.00	0.00	
21,400.00	91.37	269.66	6,549.98	1,243.34	-11,468.13	11,460.55	0.00	0.00	0.00	
21,441.02	91.37	269.66	6,549.00	1,243.09	-11,509.13	11,501.55	0.00	0.00	0.00	
TD at 21441.02										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SBJ 13-4HZ BHL - hit/miss target - Shape - Point	0.00	0.00	6,549.00	1,243.09	-11,509.13	14,642,698.00	1,640,929.00	40.318452	-104.998162
SBJ 13-4HZ LP - plan hits target center - Point	0.00	0.00	6,868.00	1,322.58	1,875.91	14,642,784.00	1,654,314.00	40.318678	-104.950143

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,523.46	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
21,441.02	6,549.00	5 1/2" Csg	5-1/2	7-7/8	

Corporate Planning Report

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

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
556.33	556.00	Fox Hills			
3,712.95	3,411.00	Parkman			
4,231.14	3,854.00	Sussex			
7,460.14	6,656.00	Sharon Springs			
7,530.87	6,703.00	Niobrara			
7,620.37	6,755.00	Nio B			
7,734.46	6,808.00	Nio C			

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
2,333.45	2,231.66	217.71	509.70		HOLD TANGENT
6,553.15	5,839.08	1,077.63	2,522.92		KOP DLS 8
8,051.94	6,868.00	1,322.58	1,875.91		LANDING POINT
21,441.02	6,549.00	1,243.09	-11,509.13		TD at 21441.02