

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-68W-08 MAE J 14-8HZ PAD
MAE J 8-8HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.060423/-105.028602
Survey Program: MWD+IFR

Standard Planning Report

02 November, 2018

Project: WELD-NAD83-UTMFT13N
Site: 1N-68W-08 MAE J 14-8HZ PAD
Well: MAE J 8-8HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Name	Size
1500.00	1526.50	9 5/8" Csg	9-5/8
7830.00	8653.93	Top of Production	5-1/2

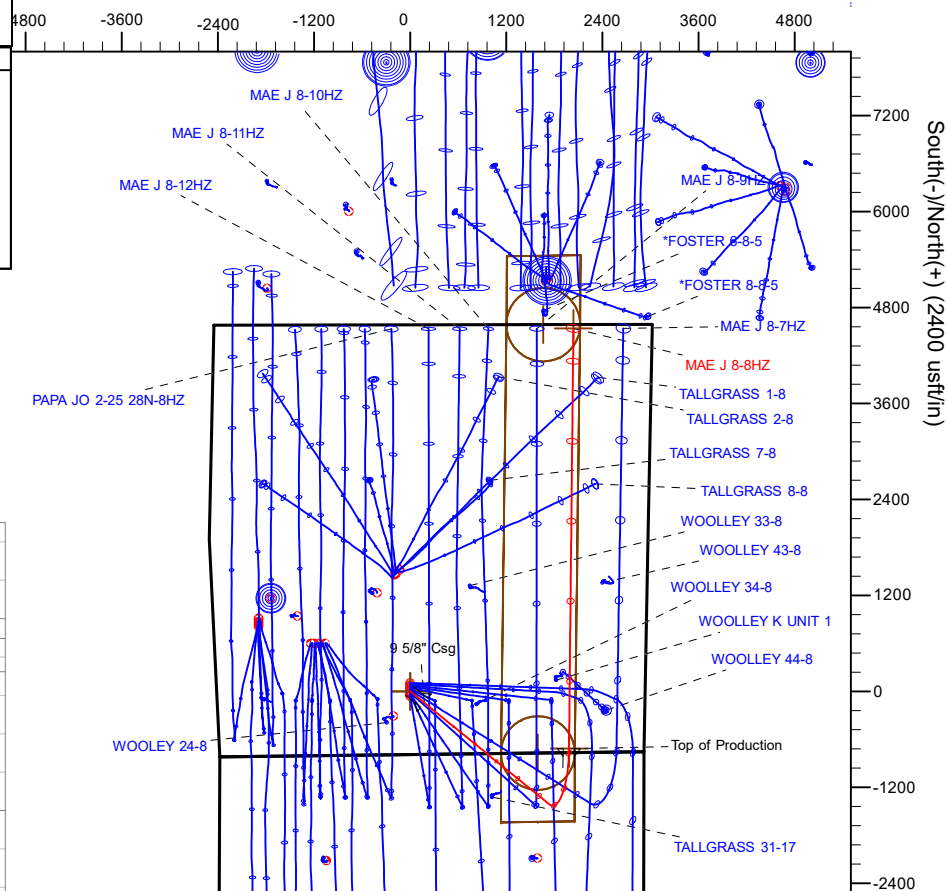
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1540.00	20.10	129.13	1512.68	-146.82	180.46	1.50	129.13	-144.92	
4	7376.63	20.10	129.13	6993.83	-1412.65	1736.41	0.00	0.00	-1394.39	
5	8653.93	89.81	0.60	7830.00	-717.81	1982.18	8.00	-126.85	-697.01	
6	13909.38	89.81	0.60	7847.00	4537.33	2036.83	0.00	0.00	4558.41	MAE J 8-8HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MAE J 8-8HZ_SHL	0.00	0.00	0.00	40.060423	-105.028602
MAE J 8-8HZ_BHL	7847.00	4537.33	2036.83	40.072883	-105.021321

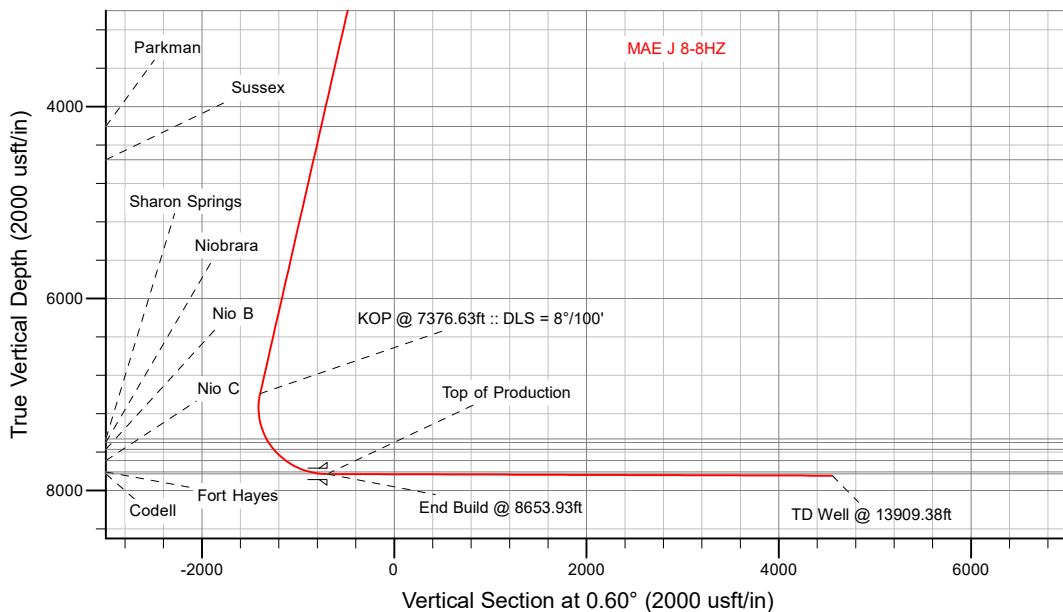
West(-)/East(+) (2400 usft/in)



SHL
791' FSL
2414' FWL

HEEL
50' FSL
932' FEL

BHL
50' FNL
984' FEL



WELL DETAILS: MAE J 8-8HZ

GL = 5083'

RKB = 17' @ 5100.00usft (Drilling Rig)

Plan: Permit Rev-1 (MAE J 8-8HZ/Plan A)

Date: 11/6/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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		1N-68W-08 MAE J 14-8HZ PAD			
Site Position:		Northing:	14,548,842.20 usft	Latitude:	40.060711
From:	Lat/Long	Easting:	1,632,414.30 usft	Longitude:	-105.028600
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.02 °

Well	MAE J 8-8HZ					
Well Position	+N/-S	-104.87 usft	Northing:	14,548,737.33 usft	Latitude:	40.060423
	+E/-W	-0.56 usft	Easting:	1,632,413.71 usft	Longitude:	-105.028602
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,083.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/31/2018	8.18	66.51	52,029.13876622

Design	Permit Rev-1			
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	0.60

Plan Survey Tool Program	Date	11/2/2018		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	1,500.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio
2	1,500.00	13,909.38	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio

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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,540.00	20.10	129.13	1,512.68	-146.82	180.46	1.50	1.50	0.00	129.13	
7,376.63	20.10	129.13	6,993.83	-1,412.65	1,736.41	0.00	0.00	0.00	0.00	
8,653.93	89.81	0.60	7,830.00	-717.81	1,982.18	8.00	5.46	-10.06	-126.85	
13,909.38	89.81	0.60	7,847.00	4,537.33	2,036.83	0.00	0.00	0.00	0.00	MAE J 8-8HZ_BHL

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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
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
Begin Nudge @ 200.00ft									
300.00	1.50	129.13	299.99	-0.83	1.02	-0.82	1.50	1.50	0.00
400.00	3.00	129.13	399.91	-3.30	4.06	-3.26	1.50	1.50	0.00
500.00	4.50	129.13	499.69	-7.43	9.13	-7.33	1.50	1.50	0.00
600.00	6.00	129.13	599.27	-13.21	16.23	-13.03	1.50	1.50	0.00
700.00	7.50	129.13	698.57	-20.62	25.35	-20.36	1.50	1.50	0.00
800.00	9.00	129.13	797.54	-29.68	36.48	-29.29	1.50	1.50	0.00
900.00	10.50	129.13	896.09	-40.36	49.62	-39.84	1.50	1.50	0.00
1,000.00	12.00	129.13	994.16	-52.68	64.75	-52.00	1.50	1.50	0.00
1,079.76	13.20	129.13	1,072.00	-63.65	78.24	-62.83	1.50	1.50	0.00
Fox Hills									
1,100.00	13.50	129.13	1,091.70	-66.60	81.87	-65.74	1.50	1.50	0.00
1,200.00	15.00	129.13	1,188.62	-82.14	100.96	-81.08	1.50	1.50	0.00
1,300.00	16.50	129.13	1,284.86	-99.27	122.02	-97.98	1.50	1.50	0.00
1,400.00	18.00	129.13	1,380.36	-117.98	145.02	-116.46	1.50	1.50	0.00
1,500.00	19.50	129.13	1,475.05	-138.27	169.95	-136.48	1.50	1.50	0.00
1,526.50	19.90	129.13	1,500.00	-143.90	176.88	-142.04	1.50	1.50	0.00
9 5/8" Csg									
1,540.00	20.10	129.13	1,512.68	-146.82	180.46	-144.92	1.50	1.50	0.00
Hold Tangent @ 1540.00ft									
1,600.00	20.10	129.13	1,569.03	-159.83	196.46	-157.76	0.00	0.00	0.00
1,700.00	20.10	129.13	1,662.94	-181.52	223.12	-179.17	0.00	0.00	0.00
1,800.00	20.10	129.13	1,756.85	-203.20	249.78	-200.58	0.00	0.00	0.00
1,900.00	20.10	129.13	1,850.76	-224.89	276.43	-221.99	0.00	0.00	0.00
2,000.00	20.10	129.13	1,944.67	-246.58	303.09	-243.39	0.00	0.00	0.00
2,100.00	20.10	129.13	2,038.58	-268.27	329.75	-264.80	0.00	0.00	0.00
2,200.00	20.10	129.13	2,132.49	-289.96	356.41	-286.21	0.00	0.00	0.00
2,300.00	20.10	129.13	2,226.40	-311.64	383.07	-307.62	0.00	0.00	0.00
2,400.00	20.10	129.13	2,320.30	-333.33	409.73	-329.02	0.00	0.00	0.00
2,500.00	20.10	129.13	2,414.21	-355.02	436.38	-350.43	0.00	0.00	0.00
2,600.00	20.10	129.13	2,508.12	-376.71	463.04	-371.84	0.00	0.00	0.00
2,700.00	20.10	129.13	2,602.03	-398.39	489.70	-393.24	0.00	0.00	0.00
2,800.00	20.10	129.13	2,695.94	-420.08	516.36	-414.65	0.00	0.00	0.00
2,900.00	20.10	129.13	2,789.85	-441.77	543.02	-436.06	0.00	0.00	0.00
3,000.00	20.10	129.13	2,883.76	-463.46	569.68	-457.47	0.00	0.00	0.00
3,100.00	20.10	129.13	2,977.67	-485.15	596.33	-478.87	0.00	0.00	0.00
3,200.00	20.10	129.13	3,071.58	-506.83	622.99	-500.28	0.00	0.00	0.00
3,300.00	20.10	129.13	3,165.49	-528.52	649.65	-521.69	0.00	0.00	0.00
3,400.00	20.10	129.13	3,259.40	-550.21	676.31	-543.10	0.00	0.00	0.00
3,500.00	20.10	129.13	3,353.31	-571.90	702.97	-564.50	0.00	0.00	0.00
3,600.00	20.10	129.13	3,447.22	-593.58	729.62	-585.91	0.00	0.00	0.00
3,700.00	20.10	129.13	3,541.13	-615.27	756.28	-607.32	0.00	0.00	0.00
3,800.00	20.10	129.13	3,635.04	-636.96	782.94	-628.73	0.00	0.00	0.00
3,900.00	20.10	129.13	3,728.95	-658.65	809.60	-650.13	0.00	0.00	0.00
4,000.00	20.10	129.13	3,822.86	-680.34	836.26	-671.54	0.00	0.00	0.00
4,100.00	20.10	129.13	3,916.76	-702.02	862.92	-692.95	0.00	0.00	0.00
4,200.00	20.10	129.13	4,010.67	-723.71	889.57	-714.36	0.00	0.00	0.00
4,300.00	20.10	129.13	4,104.58	-745.40	916.23	-735.76	0.00	0.00	0.00
4,400.00	20.10	129.13	4,198.49	-767.09	942.89	-757.17	0.00	0.00	0.00
4,409.06	20.10	129.13	4,207.00	-769.05	945.31	-759.11	0.00	0.00	0.00

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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									
4,500.00	20.10	129.13	4,292.40	-788.77	969.55	-778.58	0.00	0.00	0.00
4,600.00	20.10	129.13	4,386.31	-810.46	996.21	-799.99	0.00	0.00	0.00
4,700.00	20.10	129.13	4,480.22	-832.15	1,022.87	-821.39	0.00	0.00	0.00
4,779.63	20.10	129.13	4,555.00	-849.42	1,044.09	-838.44	0.00	0.00	0.00
Sussex									
4,800.00	20.10	129.13	4,574.13	-853.84	1,049.52	-842.80	0.00	0.00	0.00
4,900.00	20.10	129.13	4,668.04	-875.53	1,076.18	-864.21	0.00	0.00	0.00
5,000.00	20.10	129.13	4,761.95	-897.21	1,102.84	-885.61	0.00	0.00	0.00
5,100.00	20.10	129.13	4,855.86	-918.90	1,129.50	-907.02	0.00	0.00	0.00
5,200.00	20.10	129.13	4,949.77	-940.59	1,156.16	-928.43	0.00	0.00	0.00
5,300.00	20.10	129.13	5,043.68	-962.28	1,182.81	-949.84	0.00	0.00	0.00
5,400.00	20.10	129.13	5,137.59	-983.96	1,209.47	-971.24	0.00	0.00	0.00
5,500.00	20.10	129.13	5,231.50	-1,005.65	1,236.13	-992.65	0.00	0.00	0.00
5,600.00	20.10	129.13	5,325.41	-1,027.34	1,262.79	-1,014.06	0.00	0.00	0.00
5,700.00	20.10	129.13	5,419.32	-1,049.03	1,289.45	-1,035.47	0.00	0.00	0.00
5,800.00	20.10	129.13	5,513.22	-1,070.71	1,316.11	-1,056.87	0.00	0.00	0.00
5,900.00	20.10	129.13	5,607.13	-1,092.40	1,342.76	-1,078.28	0.00	0.00	0.00
6,000.00	20.10	129.13	5,701.04	-1,114.09	1,369.42	-1,099.69	0.00	0.00	0.00
6,100.00	20.10	129.13	5,794.95	-1,135.78	1,396.08	-1,121.10	0.00	0.00	0.00
6,200.00	20.10	129.13	5,888.86	-1,157.47	1,422.74	-1,142.50	0.00	0.00	0.00
6,300.00	20.10	129.13	5,982.77	-1,179.15	1,449.40	-1,163.91	0.00	0.00	0.00
6,400.00	20.10	129.13	6,076.68	-1,200.84	1,476.06	-1,185.32	0.00	0.00	0.00
6,500.00	20.10	129.13	6,170.59	-1,222.53	1,502.71	-1,206.73	0.00	0.00	0.00
6,600.00	20.10	129.13	6,264.50	-1,244.22	1,529.37	-1,228.13	0.00	0.00	0.00
6,700.00	20.10	129.13	6,358.41	-1,265.90	1,556.03	-1,249.54	0.00	0.00	0.00
6,800.00	20.10	129.13	6,452.32	-1,287.59	1,582.69	-1,270.95	0.00	0.00	0.00
6,900.00	20.10	129.13	6,546.23	-1,309.28	1,609.35	-1,292.36	0.00	0.00	0.00
7,000.00	20.10	129.13	6,640.14	-1,330.97	1,636.00	-1,313.76	0.00	0.00	0.00
7,100.00	20.10	129.13	6,734.05	-1,352.66	1,662.66	-1,335.17	0.00	0.00	0.00
7,200.00	20.10	129.13	6,827.96	-1,374.34	1,689.32	-1,356.58	0.00	0.00	0.00
7,300.00	20.10	129.13	6,921.87	-1,396.03	1,715.98	-1,377.99	0.00	0.00	0.00
7,376.63	20.10	129.13	6,993.83	-1,412.65	1,736.41	-1,394.39	0.00	0.00	0.00
KOP @ 7376.63ft :: DLS = 8°/100'									
7,400.00	19.04	124.54	7,015.85	-1,417.35	1,742.66	-1,399.02	8.00	-4.56	-19.65
7,500.00	16.15	99.59	7,111.30	-1,428.93	1,769.86	-1,410.32	8.00	-2.88	-24.95
7,600.00	16.86	71.27	7,207.33	-1,426.59	1,797.35	-1,407.69	8.00	0.70	-28.32
7,700.00	20.79	49.44	7,302.08	-1,410.36	1,824.61	-1,391.18	8.00	3.93	-21.83
7,800.00	26.54	35.47	7,393.70	-1,380.58	1,851.10	-1,361.12	8.00	5.76	-13.96
7,881.71	31.93	27.86	7,465.00	-1,346.57	1,871.82	-1,326.90	8.00	6.59	-9.32
Sharon Springs									
7,900.00	33.19	26.47	7,480.42	-1,337.81	1,876.31	-1,318.09	8.00	6.88	-7.60
7,923.63	34.84	24.81	7,500.00	-1,325.90	1,882.02	-1,306.12	8.00	6.97	-7.04
Niobrara									
8,000.00	40.29	20.27	7,560.53	-1,282.89	1,899.75	-1,262.93	8.00	7.13	-5.95
8,016.49	41.48	19.42	7,573.00	-1,272.74	1,903.41	-1,252.74	8.00	7.26	-5.14
Nio B									
8,100.00	47.63	15.67	7,632.49	-1,216.89	1,920.96	-1,196.71	8.00	7.36	-4.49
8,188.09	54.21	12.44	7,688.00	-1,150.59	1,937.46	-1,130.24	8.00	7.48	-3.66
Nio C									
8,200.00	55.11	12.05	7,694.89	-1,141.09	1,939.52	-1,120.72	8.00	7.53	-3.31
8,300.00	62.69	9.04	7,746.52	-1,056.97	1,955.09	-1,036.44	8.00	7.57	-3.01
8,400.00	70.32	6.42	7,786.36	-966.17	1,967.35	-945.52	8.00	7.63	-2.62

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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)	
8,466.69	75.43	4.81	7,806.00	-902.77	1,973.57	-882.05	8.00	7.66	-2.41	
Fort Hayes										
8,500.00	77.98	4.03	7,813.66	-870.45	1,976.06	-849.71	8.00	7.67	-2.32	
8,579.09	84.06	2.25	7,826.00	-792.48	1,980.33	-771.70	8.00	7.68	-2.26	
Codell										
8,600.00	85.67	1.78	7,827.87	-771.67	1,981.07	-750.88	8.00	7.69	-2.22	
8,653.93	89.81	0.60	7,830.00	-717.81	1,982.18	-697.01	8.00	7.69	-2.20	
End Build @ 8653.93ft - Top of Production										
8,700.00	89.81	0.60	7,830.15	-671.74	1,982.66	-650.94	0.00	0.00	0.00	
8,800.00	89.81	0.60	7,830.47	-571.75	1,983.70	-550.94	0.00	0.00	0.00	
8,900.00	89.81	0.60	7,830.79	-471.75	1,984.74	-450.94	0.00	0.00	0.00	
9,000.00	89.81	0.60	7,831.12	-371.76	1,985.78	-350.94	0.00	0.00	0.00	
9,100.00	89.81	0.60	7,831.44	-271.76	1,986.82	-250.94	0.00	0.00	0.00	
9,200.00	89.81	0.60	7,831.76	-171.77	1,987.86	-150.94	0.00	0.00	0.00	
9,300.00	89.81	0.60	7,832.09	-71.78	1,988.90	-50.94	0.00	0.00	0.00	
9,400.00	89.81	0.60	7,832.41	28.22	1,989.94	49.06	0.00	0.00	0.00	
9,500.00	89.81	0.60	7,832.73	128.21	1,990.98	149.05	0.00	0.00	0.00	
9,600.00	89.81	0.60	7,833.06	228.21	1,992.02	249.05	0.00	0.00	0.00	
9,700.00	89.81	0.60	7,833.38	328.20	1,993.06	349.05	0.00	0.00	0.00	
9,800.00	89.81	0.60	7,833.71	428.19	1,994.10	449.05	0.00	0.00	0.00	
9,900.00	89.81	0.60	7,834.03	528.19	1,995.14	549.05	0.00	0.00	0.00	
10,000.00	89.81	0.60	7,834.35	628.18	1,996.18	649.05	0.00	0.00	0.00	
10,100.00	89.81	0.60	7,834.68	728.18	1,997.22	749.05	0.00	0.00	0.00	
10,200.00	89.81	0.60	7,835.00	828.17	1,998.26	849.05	0.00	0.00	0.00	
10,300.00	89.81	0.60	7,835.32	928.17	1,999.30	949.05	0.00	0.00	0.00	
10,400.00	89.81	0.60	7,835.65	1,028.16	2,000.34	1,049.05	0.00	0.00	0.00	
10,500.00	89.81	0.60	7,835.97	1,128.15	2,001.38	1,149.05	0.00	0.00	0.00	
10,600.00	89.81	0.60	7,836.29	1,228.15	2,002.42	1,249.05	0.00	0.00	0.00	
10,700.00	89.81	0.60	7,836.62	1,328.14	2,003.46	1,349.05	0.00	0.00	0.00	
10,800.00	89.81	0.60	7,836.94	1,428.14	2,004.50	1,449.05	0.00	0.00	0.00	
10,900.00	89.81	0.60	7,837.26	1,528.13	2,005.54	1,549.05	0.00	0.00	0.00	
11,000.00	89.81	0.60	7,837.59	1,628.12	2,006.58	1,649.05	0.00	0.00	0.00	
11,100.00	89.81	0.60	7,837.91	1,728.12	2,007.62	1,749.05	0.00	0.00	0.00	
11,200.00	89.81	0.60	7,838.23	1,828.11	2,008.66	1,849.05	0.00	0.00	0.00	
11,300.00	89.81	0.60	7,838.56	1,928.11	2,009.70	1,949.05	0.00	0.00	0.00	
11,400.00	89.81	0.60	7,838.88	2,028.10	2,010.74	2,049.04	0.00	0.00	0.00	
11,500.00	89.81	0.60	7,839.21	2,128.09	2,011.78	2,149.04	0.00	0.00	0.00	
11,600.00	89.81	0.60	7,839.53	2,228.09	2,012.82	2,249.04	0.00	0.00	0.00	
11,700.00	89.81	0.60	7,839.85	2,328.08	2,013.86	2,349.04	0.00	0.00	0.00	
11,800.00	89.81	0.60	7,840.18	2,428.08	2,014.90	2,449.04	0.00	0.00	0.00	
11,900.00	89.81	0.60	7,840.50	2,528.07	2,015.94	2,549.04	0.00	0.00	0.00	
12,000.00	89.81	0.60	7,840.82	2,628.06	2,016.98	2,649.04	0.00	0.00	0.00	
12,100.00	89.81	0.60	7,841.15	2,728.06	2,018.02	2,749.04	0.00	0.00	0.00	
12,200.00	89.81	0.60	7,841.47	2,828.05	2,019.06	2,849.04	0.00	0.00	0.00	
12,300.00	89.81	0.60	7,841.79	2,928.05	2,020.10	2,949.04	0.00	0.00	0.00	
12,400.00	89.81	0.60	7,842.12	3,028.04	2,021.14	3,049.04	0.00	0.00	0.00	
12,500.00	89.81	0.60	7,842.44	3,128.03	2,022.18	3,149.04	0.00	0.00	0.00	
12,600.00	89.81	0.60	7,842.76	3,228.03	2,023.22	3,249.04	0.00	0.00	0.00	
12,700.00	89.81	0.60	7,843.09	3,328.02	2,024.25	3,349.04	0.00	0.00	0.00	
12,800.00	89.81	0.60	7,843.41	3,428.02	2,025.29	3,449.04	0.00	0.00	0.00	
12,900.00	89.81	0.60	7,843.73	3,528.01	2,026.33	3,549.04	0.00	0.00	0.00	
13,000.00	89.81	0.60	7,844.06	3,628.01	2,027.37	3,649.04	0.00	0.00	0.00	
13,100.00	89.81	0.60	7,844.38	3,728.00	2,028.41	3,749.04	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (Drilling Rig)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-8HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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)	
13,200.00	89.81	0.60	7,844.71	3,827.99	2,029.45	3,849.04	0.00	0.00	0.00	
13,300.00	89.81	0.60	7,845.03	3,927.99	2,030.49	3,949.03	0.00	0.00	0.00	
13,400.00	89.81	0.60	7,845.35	4,027.98	2,031.53	4,049.03	0.00	0.00	0.00	
13,500.00	89.81	0.60	7,845.68	4,127.98	2,032.57	4,149.03	0.00	0.00	0.00	
13,600.00	89.81	0.60	7,846.00	4,227.97	2,033.61	4,249.03	0.00	0.00	0.00	
13,700.00	89.81	0.60	7,846.32	4,327.96	2,034.65	4,349.03	0.00	0.00	0.00	
13,800.00	89.81	0.60	7,846.65	4,427.96	2,035.69	4,449.03	0.00	0.00	0.00	
13,900.00	89.81	0.60	7,846.97	4,527.95	2,036.73	4,549.03	0.00	0.00	0.00	
13,909.38	89.81	0.60	7,847.00	4,537.33	2,036.83	4,558.41	0.00	0.00	0.00	
TD Well @ 13909.38ft										

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,526.50	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
8,653.93	7,830.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,079.76	1,072.00	Fox Hills				
4,409.06	4,207.00	Parkman				
4,779.63	4,555.00	Sussex				
7,881.71	7,465.00	Sharon Springs				
7,923.63	7,500.00	Niobrara				
8,016.49	7,573.00	Nio B				
8,188.09	7,688.00	Nio C				
8,466.69	7,806.00	Fort Hayes				
8,579.09	7,826.00	Codell				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
200.00	200.00	0.00	0.00	Begin Nudge @ 200.00ft	
1,540.00	1,512.68	-146.82	180.46	Hold Tangent @ 1540.00ft	
7,376.63	6,993.83	-1,412.65	1,736.41	KOP @ 7376.63ft :: DLS = 8°/100'	
8,653.93	7,830.00	-717.81	1,982.18	End Build @ 8653.93ft	
13,909.38	7,847.00	4,537.33	2,036.83	TD Well @ 13909.38ft	