

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-68W-08 MAE J 14-8HZ PAD
MAE J 8-10HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.060340/-105.028602
Survey Program: MWD+IFR+MSA

Standard Planning Report

02 November, 2018

Project: WELD-NAD83-UTMFT13N
 Site: 1N-68W-08 MAE J 14-8HZ PAD
 Well: MAE J 8-10HZ
 Wellbore: Plan A
 Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Name	Size
1500.00	1523.46	9 5/8" Csg	9-5/8
7605.15	8333.72	Top of Production	5-1/2

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	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	1850.00	24.00	145.40	1803.62	-271.83	187.52	1.50	145.40	-271.20	
4	4650.00	24.00	145.40	4361.55	-1209.27	834.22	0.00	0.00	-1206.49	
5	5850.00	0.00	0.00	5526.76	-1413.13	974.86	2.00	-180.00	-1409.89	
6	7212.20	0.00	0.00	6888.96	-1413.13	974.86	0.00	0.00	-1409.89	
7	8333.72	89.72	0.01	7605.15	-700.42	974.94	8.00	0.01	-697.18	
8	8899.85	89.72	0.01	7607.90	-134.29	975.00	0.00	0.00	-131.06	MAE J 8-10HZ_target
9	9025.05	89.72	358.13	7608.51	-9.12	972.96	1.50	-90.07	-5.89	
10	11501.40	89.72	358.13	7620.63	2465.88	892.09	0.00	0.00	2468.82	MAE J 8-10HZ_target2
11	11801.71	89.72	2.63	7622.11	2766.11	894.09	1.50	90.04	2769.06	
12	13602.77	89.72	2.63	7631.00	4565.25	976.83	0.00	0.00	4568.46	MAE J 8-10HZ_BHL

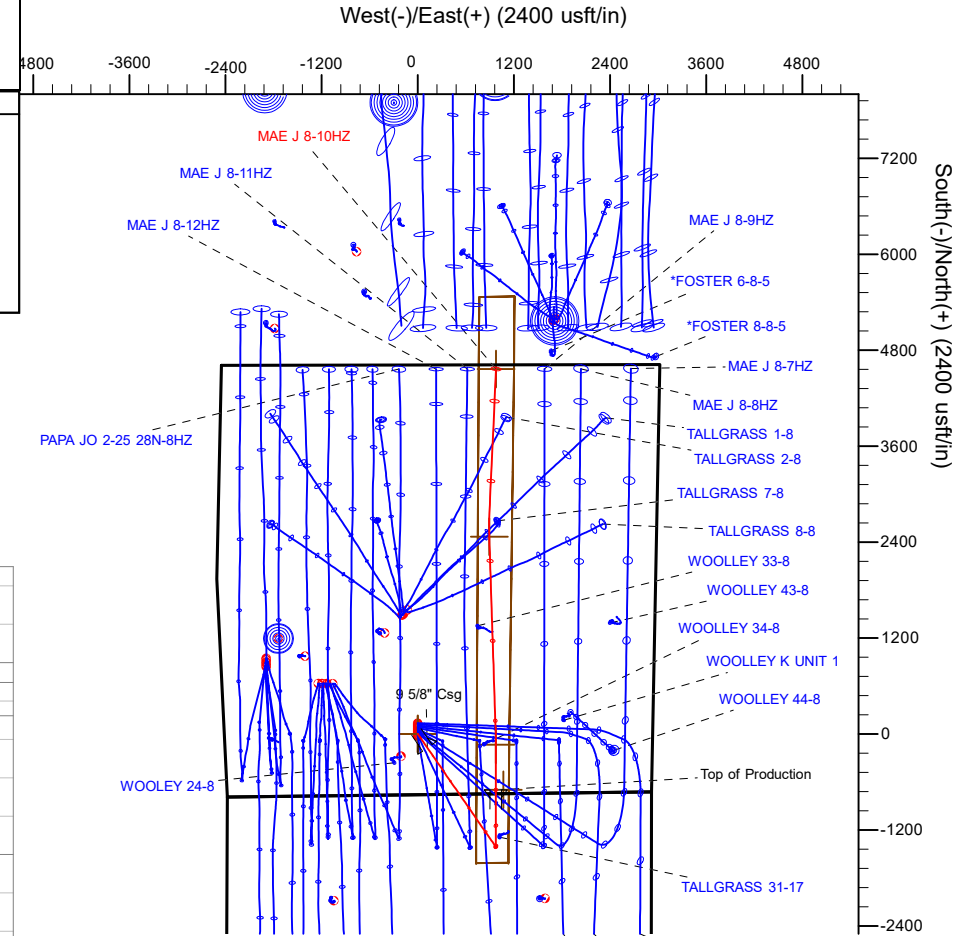
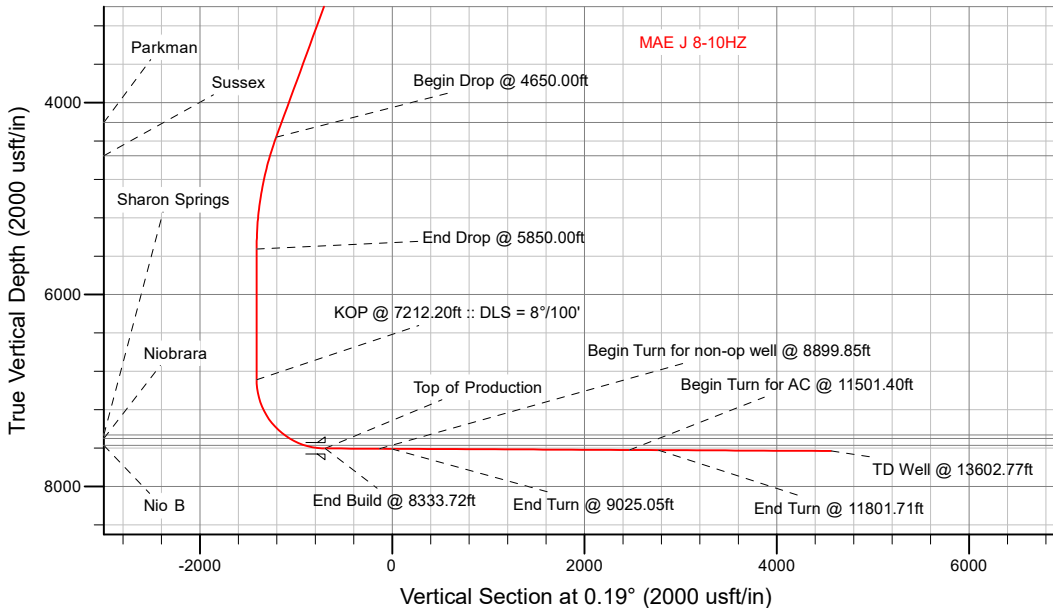
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MAE J 8-10HZ_SHL	0.00	0.00	0.00	40.060340	-105.028602
MAE J 8-10HZ_BHL	7631.00	4565.25	976.83	40.072877	-105.025110

SHL
761' FSL
2413' FWL

HEEL
50' FSL
1944' FEL

BHL
50' FNL
2044' FEL



WELL DETAILS: MAE J 8-10HZ

GL = 5083'

RKB = 17' @ 5100.00usft (RIG)

Plan: Permit Rev-1 (MAE J 8-10HZ/Plan A)

Date: 11/6/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-10HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (RIG)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-10HZ	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 8-10HZ					
Well Position	+N-S	-135.10 usft	Northing:	14,548,707.10 usft	Latitude:	40.060340
	+E-W	-0.56 usft	Easting:	1,632,413.70 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	52,029.09539509

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	0.19

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	13,602.77	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +	

Corporate Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (RIG)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-10HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
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	
1,850.00	24.00	145.40	1,803.62	-271.83	187.52	1.50	1.50	0.00	145.40	
4,650.00	24.00	145.40	4,361.55	-1,209.27	834.22	0.00	0.00	0.00	0.00	
5,850.00	0.00	0.00	5,526.76	-1,413.13	974.86	2.00	-2.00	-12.12	-180.00	
7,212.20	0.00	0.00	6,888.96	-1,413.13	974.86	0.00	0.00	0.00	0.00	
8,333.72	89.72	0.01	7,605.15	-700.42	974.94	8.00	8.00	0.00	0.01	
8,899.85	89.72	0.01	7,607.90	-134.29	975.00	0.00	0.00	0.00	0.00	MAE J 8-10HZ_target
9,025.05	89.72	358.13	7,608.51	-9.12	972.96	1.50	0.00	-1.50	-90.07	
11,501.40	89.72	358.13	7,620.63	2,465.88	892.09	0.00	0.00	0.00	0.00	MAE J 8-10HZ_target
11,801.71	89.72	2.63	7,622.11	2,766.11	894.09	1.50	0.00	1.50	90.04	
13,602.78	89.72	2.63	7,631.00	4,565.25	976.83	0.00	0.00	0.00	0.00	MAE J 8-10HZ_BHL

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-10HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (RIG)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-10HZ	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	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	145.40	300.00	-0.27	0.19	-0.27	1.50	1.50	0.00	
400.00	2.25	145.40	399.96	-2.42	1.67	-2.42	1.50	1.50	0.00	
500.00	3.75	145.40	499.82	-6.73	4.64	-6.72	1.50	1.50	0.00	
600.00	5.25	145.40	599.51	-13.19	9.10	-13.16	1.50	1.50	0.00	
700.00	6.75	145.40	698.96	-21.79	15.03	-21.74	1.50	1.50	0.00	
800.00	8.25	145.40	798.10	-32.54	22.45	-32.46	1.50	1.50	0.00	
900.00	9.75	145.40	896.87	-45.41	31.33	-45.31	1.50	1.50	0.00	
1,000.00	11.25	145.40	995.19	-60.41	41.68	-60.28	1.50	1.50	0.00	
1,078.48	12.43	145.40	1,072.00	-73.67	50.82	-73.50	1.50	1.50	0.00	
Fox Hills										
1,100.00	12.75	145.40	1,093.00	-77.53	53.48	-77.35	1.50	1.50	0.00	
1,200.00	14.25	145.40	1,190.24	-96.74	66.74	-96.52	1.50	1.50	0.00	
1,300.00	15.75	145.40	1,286.83	-118.05	81.43	-117.78	1.50	1.50	0.00	
1,400.00	17.25	145.40	1,382.71	-141.42	97.56	-141.10	1.50	1.50	0.00	
1,500.00	18.75	145.40	1,477.81	-166.86	115.11	-166.48	1.50	1.50	0.00	
1,523.46	19.10	145.40	1,500.00	-173.12	119.43	-172.73	1.50	1.50	0.00	
9 5/8" Csg										
1,600.00	20.25	145.40	1,572.07	-194.34	134.06	-193.89	1.50	1.50	0.00	
1,700.00	21.75	145.40	1,665.43	-223.83	154.41	-223.32	1.50	1.50	0.00	
1,800.00	23.25	145.40	1,757.81	-255.33	176.14	-254.75	1.50	1.50	0.00	
1,850.00	24.00	145.40	1,803.62	-271.83	187.52	-271.20	1.50	1.50	0.00	
Hold Tangent @ 1850.00ft										
1,900.00	24.00	145.40	1,849.30	-288.57	199.07	-287.90	0.00	0.00	0.00	
2,000.00	24.00	145.40	1,940.65	-322.05	222.16	-321.31	0.00	0.00	0.00	
2,100.00	24.00	145.40	2,032.01	-355.53	245.26	-354.71	0.00	0.00	0.00	
2,200.00	24.00	145.40	2,123.36	-389.01	268.36	-388.11	0.00	0.00	0.00	
2,300.00	24.00	145.40	2,214.72	-422.49	291.45	-421.52	0.00	0.00	0.00	
2,400.00	24.00	145.40	2,306.07	-455.97	314.55	-454.92	0.00	0.00	0.00	
2,500.00	24.00	145.40	2,397.42	-489.45	337.65	-488.32	0.00	0.00	0.00	
2,600.00	24.00	145.40	2,488.78	-522.93	360.74	-521.73	0.00	0.00	0.00	
2,700.00	24.00	145.40	2,580.13	-556.41	383.84	-555.13	0.00	0.00	0.00	
2,800.00	24.00	145.40	2,671.49	-589.89	406.93	-588.53	0.00	0.00	0.00	
2,900.00	24.00	145.40	2,762.84	-623.37	430.03	-621.94	0.00	0.00	0.00	
3,000.00	24.00	145.40	2,854.20	-656.85	453.13	-655.34	0.00	0.00	0.00	
3,100.00	24.00	145.40	2,945.55	-690.33	476.22	-688.74	0.00	0.00	0.00	
3,200.00	24.00	145.40	3,036.91	-723.81	499.32	-722.15	0.00	0.00	0.00	
3,300.00	24.00	145.40	3,128.26	-757.29	522.42	-755.55	0.00	0.00	0.00	
3,400.00	24.00	145.40	3,219.62	-790.77	545.51	-788.95	0.00	0.00	0.00	
3,500.00	24.00	145.40	3,310.97	-824.25	568.61	-822.36	0.00	0.00	0.00	
3,600.00	24.00	145.40	3,402.32	-857.73	591.71	-855.76	0.00	0.00	0.00	
3,700.00	24.00	145.40	3,493.68	-891.21	614.80	-889.16	0.00	0.00	0.00	
3,800.00	24.00	145.40	3,585.03	-924.69	637.90	-922.57	0.00	0.00	0.00	
3,900.00	24.00	145.40	3,676.39	-958.17	660.99	-955.97	0.00	0.00	0.00	
4,000.00	24.00	145.40	3,767.74	-991.65	684.09	-989.37	0.00	0.00	0.00	
4,100.00	24.00	145.40	3,859.10	-1,025.13	707.19	-1,022.77	0.00	0.00	0.00	
4,200.00	24.00	145.40	3,950.45	-1,058.61	730.28	-1,056.18	0.00	0.00	0.00	
4,300.00	24.00	145.40	4,041.81	-1,092.09	753.38	-1,089.58	0.00	0.00	0.00	
4,400.00	24.00	145.40	4,133.16	-1,125.57	776.48	-1,122.98	0.00	0.00	0.00	
4,480.83	24.00	145.40	4,207.00	-1,152.63	795.14	-1,149.98	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-10HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (RIG)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-10HZ	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	24.00	145.40	4,224.52	-1,159.05	799.57	-1,156.39	0.00	0.00	0.00
4,600.00	24.00	145.40	4,315.87	-1,192.53	822.67	-1,189.79	0.00	0.00	0.00
4,650.00	24.00	145.40	4,361.55	-1,209.27	834.22	-1,206.49	0.00	0.00	0.00
Begin Drop @ 4650.00ft									
4,700.00	23.00	145.40	4,407.40	-1,225.68	845.54	-1,222.87	2.00	-2.00	0.00
4,800.00	21.00	145.40	4,500.11	-1,256.51	866.81	-1,253.63	2.00	-2.00	0.00
4,858.57	19.83	145.40	4,555.00	-1,273.32	878.41	-1,270.41	2.00	-2.00	0.00
Sussex									
4,900.00	19.00	145.40	4,594.08	-1,284.66	886.23	-1,281.72	2.00	-2.00	0.00
5,000.00	17.00	145.40	4,689.18	-1,310.10	903.78	-1,307.09	2.00	-2.00	0.00
5,100.00	15.00	145.40	4,785.30	-1,332.78	919.43	-1,329.73	2.00	-2.00	0.00
5,200.00	13.00	145.40	4,882.32	-1,352.70	933.16	-1,349.59	2.00	-2.00	0.00
5,300.00	11.00	145.40	4,980.13	-1,369.81	944.97	-1,366.67	2.00	-2.00	0.00
5,400.00	9.00	145.40	5,078.61	-1,384.10	954.83	-1,380.93	2.00	-2.00	0.00
5,500.00	7.00	145.40	5,177.63	-1,395.56	962.73	-1,392.36	2.00	-2.00	0.00
5,600.00	5.00	145.40	5,277.08	-1,404.16	968.67	-1,400.94	2.00	-2.00	0.00
5,700.00	3.00	145.40	5,376.83	-1,409.90	972.63	-1,406.67	2.00	-2.00	0.00
5,800.00	1.00	145.40	5,476.76	-1,412.78	974.61	-1,409.54	2.00	-2.00	0.00
5,850.00	0.00	0.00	5,526.76	-1,413.13	974.86	-1,409.89	2.00	-2.00	-290.80
End Drop @ 5850.00ft									
5,900.00	0.00	0.00	5,576.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
6,000.00	0.00	0.00	5,676.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
6,100.00	0.00	0.00	5,776.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
6,200.00	0.00	0.00	5,876.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
6,300.00	0.00	0.00	5,976.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
6,400.00	0.00	0.00	6,076.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
6,500.00	0.00	0.00	6,176.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
6,600.00	0.00	0.00	6,276.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
6,700.00	0.00	0.00	6,376.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
6,800.00	0.00	0.00	6,476.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
6,900.00	0.00	0.00	6,576.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
7,000.00	0.00	0.00	6,676.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
7,100.00	0.00	0.00	6,776.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
7,200.00	0.00	0.00	6,876.76	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
7,212.20	0.00	0.00	6,888.96	-1,413.13	974.86	-1,409.89	0.00	0.00	0.00
KOP @ 7212.20ft :: DLS = 8°/100'									
7,300.00	7.02	0.01	6,976.54	-1,407.76	974.86	-1,404.52	8.00	8.00	0.01
7,400.00	15.02	0.01	7,074.62	-1,388.65	974.86	-1,385.41	8.00	8.00	0.00
7,500.00	23.02	0.01	7,169.08	-1,356.08	974.86	-1,352.84	8.00	8.00	0.00
7,600.00	31.02	0.01	7,258.09	-1,310.68	974.87	-1,307.44	8.00	8.00	0.00
7,700.00	39.02	0.01	7,339.91	-1,253.34	974.87	-1,250.10	8.00	8.00	0.00
7,800.00	47.02	0.01	7,412.96	-1,185.16	974.88	-1,181.92	8.00	8.00	0.00
7,881.49	53.54	0.01	7,465.00	-1,122.52	974.89	-1,119.28	8.00	8.00	0.00
Sharon Springs									
7,900.00	55.02	0.01	7,475.81	-1,107.49	974.89	-1,104.25	8.00	8.00	0.00
7,944.18	58.56	0.01	7,500.00	-1,070.53	974.89	-1,067.29	8.00	8.00	0.00
Niobrara									
8,000.00	63.02	0.01	7,527.23	-1,021.82	974.90	-1,018.58	8.00	8.00	0.00
8,100.00	71.02	0.01	7,566.24	-929.82	974.91	-926.59	8.00	8.00	0.00
8,121.76	72.77	0.01	7,573.00	-909.14	974.91	-905.90	8.00	8.00	0.00
Nio B									
8,200.00	79.02	0.01	7,592.06	-833.30	974.92	-830.06	8.00	8.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-10HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (RIG)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-10HZ	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)
8,300.00	87.02	0.01	7,604.19	-734.12	974.93	-730.88	8.00	8.00	0.00
8,333.72	89.72	0.01	7,605.15	-700.42	974.94	-697.18	8.00	8.00	0.00
End Build @ 8333.72ft - Top of Production									
8,400.00	89.72	0.01	7,605.47	-634.14	974.94	-630.90	0.00	0.00	0.00
8,500.00	89.72	0.01	7,605.96	-534.14	974.96	-530.90	0.00	0.00	0.00
8,600.00	89.72	0.01	7,606.44	-434.14	974.97	-430.91	0.00	0.00	0.00
8,700.00	89.72	0.01	7,606.93	-334.14	974.98	-330.91	0.00	0.00	0.00
8,800.00	89.72	0.01	7,607.42	-234.14	974.99	-230.91	0.00	0.00	0.00
8,899.85	89.72	0.01	7,607.90	-134.29	975.00	-131.06	0.00	0.00	0.00
Begin Turn for non-op well @ 8899.85ft									
8,900.00	89.72	0.01	7,607.90	-134.14	975.00	-130.91	0.00	0.00	0.00
9,000.00	89.72	358.50	7,608.39	-34.16	973.70	-30.93	1.50	0.00	-1.50
9,025.05	89.72	358.13	7,608.51	-9.12	972.96	-5.89	1.50	0.00	-1.50
End Turn @ 9025.05ft									
9,100.00	89.72	358.13	7,608.88	65.79	970.51	69.01	0.00	0.00	0.00
9,200.00	89.72	358.13	7,609.37	165.74	967.25	168.94	0.00	0.00	0.00
9,300.00	89.72	358.13	7,609.86	265.68	963.98	268.88	0.00	0.00	0.00
9,400.00	89.72	358.13	7,610.35	365.63	960.72	368.81	0.00	0.00	0.00
9,500.00	89.72	358.13	7,610.84	465.57	957.45	468.75	0.00	0.00	0.00
9,600.00	89.72	358.13	7,611.32	565.52	954.19	568.68	0.00	0.00	0.00
9,700.00	89.72	358.13	7,611.81	665.46	950.92	668.61	0.00	0.00	0.00
9,800.00	89.72	358.13	7,612.30	765.41	947.65	768.55	0.00	0.00	0.00
9,900.00	89.72	358.13	7,612.79	865.36	944.39	868.48	0.00	0.00	0.00
10,000.00	89.72	358.13	7,613.28	965.30	941.12	968.42	0.00	0.00	0.00
10,100.00	89.72	358.13	7,613.77	1,065.25	937.86	1,068.35	0.00	0.00	0.00
10,200.00	89.72	358.13	7,614.26	1,165.19	934.59	1,168.28	0.00	0.00	0.00
10,300.00	89.72	358.13	7,614.75	1,265.14	931.33	1,268.22	0.00	0.00	0.00
10,400.00	89.72	358.13	7,615.24	1,365.08	928.06	1,368.15	0.00	0.00	0.00
10,500.00	89.72	358.13	7,615.73	1,465.03	924.79	1,468.09	0.00	0.00	0.00
10,600.00	89.72	358.13	7,616.22	1,564.97	921.53	1,568.02	0.00	0.00	0.00
10,700.00	89.72	358.13	7,616.71	1,664.92	918.26	1,667.95	0.00	0.00	0.00
10,800.00	89.72	358.13	7,617.20	1,764.86	915.00	1,767.89	0.00	0.00	0.00
10,900.00	89.72	358.13	7,617.69	1,864.81	911.73	1,867.82	0.00	0.00	0.00
11,000.00	89.72	358.13	7,618.18	1,964.76	908.46	1,967.76	0.00	0.00	0.00
11,100.00	89.72	358.13	7,618.67	2,064.70	905.20	2,067.69	0.00	0.00	0.00
11,200.00	89.72	358.13	7,619.16	2,164.65	901.93	2,167.63	0.00	0.00	0.00
11,300.00	89.72	358.13	7,619.64	2,264.59	898.67	2,267.56	0.00	0.00	0.00
11,400.00	89.72	358.13	7,620.13	2,364.54	895.40	2,367.49	0.00	0.00	0.00
11,500.00	89.72	358.13	7,620.62	2,464.48	892.14	2,467.43	0.00	0.00	0.00
11,501.40	89.72	358.13	7,620.63	2,465.88	892.09	2,468.82	0.00	0.00	0.00
Begin Turn for AC @ 11501.40ft									
11,600.00	89.72	359.61	7,621.11	2,564.46	890.14	2,567.40	1.50	0.00	1.50
11,700.00	89.72	1.11	7,621.61	2,664.45	890.77	2,667.39	1.50	0.00	1.50
11,800.00	89.72	2.61	7,622.10	2,764.40	894.01	2,767.35	1.50	0.00	1.50
11,801.71	89.72	2.63	7,622.11	2,766.11	894.09	2,769.06	1.50	0.00	1.50
End Turn @ 11801.71ft									
11,900.00	89.72	2.63	7,622.59	2,864.29	898.60	2,867.25	0.00	0.00	0.00
12,000.00	89.72	2.63	7,623.09	2,964.18	903.20	2,967.16	0.00	0.00	0.00
12,100.00	89.72	2.63	7,623.58	3,064.08	907.79	3,067.07	0.00	0.00	0.00
12,200.00	89.72	2.63	7,624.07	3,163.97	912.38	3,166.98	0.00	0.00	0.00
12,300.00	89.72	2.63	7,624.57	3,263.86	916.98	3,266.88	0.00	0.00	0.00
12,400.00	89.72	2.63	7,625.06	3,363.76	921.57	3,366.79	0.00	0.00	0.00
12,500.00	89.72	2.63	7,625.56	3,463.65	926.17	3,466.70	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-10HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5100.00usft (RIG)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5100.00usft (RIG)
Site:	1N-68W-08 MAE J 14-8HZ PAD	North Reference:	True
Well:	MAE J 8-10HZ	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)	
12,600.00	89.72	2.63	7,626.05	3,563.54	930.76	3,566.61	0.00	0.00	0.00	
12,700.00	89.72	2.63	7,626.54	3,663.43	935.35	3,666.52	0.00	0.00	0.00	
12,800.00	89.72	2.63	7,627.04	3,763.33	939.95	3,766.42	0.00	0.00	0.00	
12,900.00	89.72	2.63	7,627.53	3,863.22	944.54	3,866.33	0.00	0.00	0.00	
13,000.00	89.72	2.63	7,628.02	3,963.11	949.14	3,966.24	0.00	0.00	0.00	
13,100.00	89.72	2.63	7,628.52	4,063.01	953.73	4,066.15	0.00	0.00	0.00	
13,200.00	89.72	2.63	7,629.01	4,162.90	958.33	4,166.06	0.00	0.00	0.00	
13,300.00	89.72	2.63	7,629.51	4,262.79	962.92	4,265.96	0.00	0.00	0.00	
13,400.00	89.72	2.63	7,630.00	4,362.69	967.51	4,365.87	0.00	0.00	0.00	
13,500.00	89.72	2.63	7,630.49	4,462.58	972.11	4,465.78	0.00	0.00	0.00	
13,600.00	89.72	2.63	7,630.99	4,562.47	976.70	4,565.69	0.00	0.00	0.00	
13,602.78	89.72	2.63	7,631.00	4,565.25	976.83	4,568.46	0.00	0.00	0.00	
TD Well @ 13602.77ft										

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	
8,333.72	7,605.15	Top of Production	5-1/2	7-7/8	

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,078.48	1,072.00	Fox Hills			
4,480.83	4,207.00	Parkman			
4,858.57	4,555.00	Sussex			
7,881.49	7,465.00	Sharon Springs			
7,944.18	7,500.00	Niobrara			
8,121.76	7,573.00	Nio B			

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	Begin Nudge @ 250.00ft	
1,850.00	1,803.62	-271.83	187.52	Hold Tangent @ 1850.00ft	
4,650.00	4,361.55	-1,209.27	834.22	Begin Drop @ 4650.00ft	
5,850.00	5,526.76	-1,413.13	974.86	End Drop @ 5850.00ft	
7,212.20	6,888.96	-1,413.13	974.86	KOP @ 7212.20ft :: DLS = 8°/100'	
8,333.72	7,605.15	-700.42	974.94	End Build @ 8333.72ft	
8,899.85	7,607.90	-134.29	975.00	Begin Turn for non-op well @ 8899.85ft	
9,025.05	7,608.51	-9.12	972.96	End Turn @ 9025.05ft	
11,501.40	7,620.63	2,465.88	892.09	Begin Turn for AC @ 11501.40ft	
11,801.71	7,622.11	2,766.11	894.09	End Turn @ 11801.71ft	
13,602.78	7,631.00	4,565.25	976.83	TD Well @ 13602.77ft	