

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-68W-08 MAE J 14-8HZ PAD
MAE J 8-9HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.060382/-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 8-9HZ
 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
7709.00	8579.59	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	2090.00	28.35	132.05	2013.82	-306.84	340.19	1.50	132.05	-306.43	
4	4868.33	28.35	132.05	4458.93	-1190.49	1319.85	0.00	0.00	-1188.87	
5	6285.83	0.00	0.00	5819.29	-1420.62	1574.99	2.00	-180.00	-1418.69	
6	7459.36	0.00	0.00	6992.82	-1420.62	1574.99	0.00	0.00	-1418.69	
7	8579.59	89.62	0.07	7709.00	-709.19	1575.81	8.00	0.07	-707.26	
8	13840.01	89.62	0.07	7744.00	4551.11	1581.83	0.00	0.00	4553.04	MAE J 8-9HZ_BHL

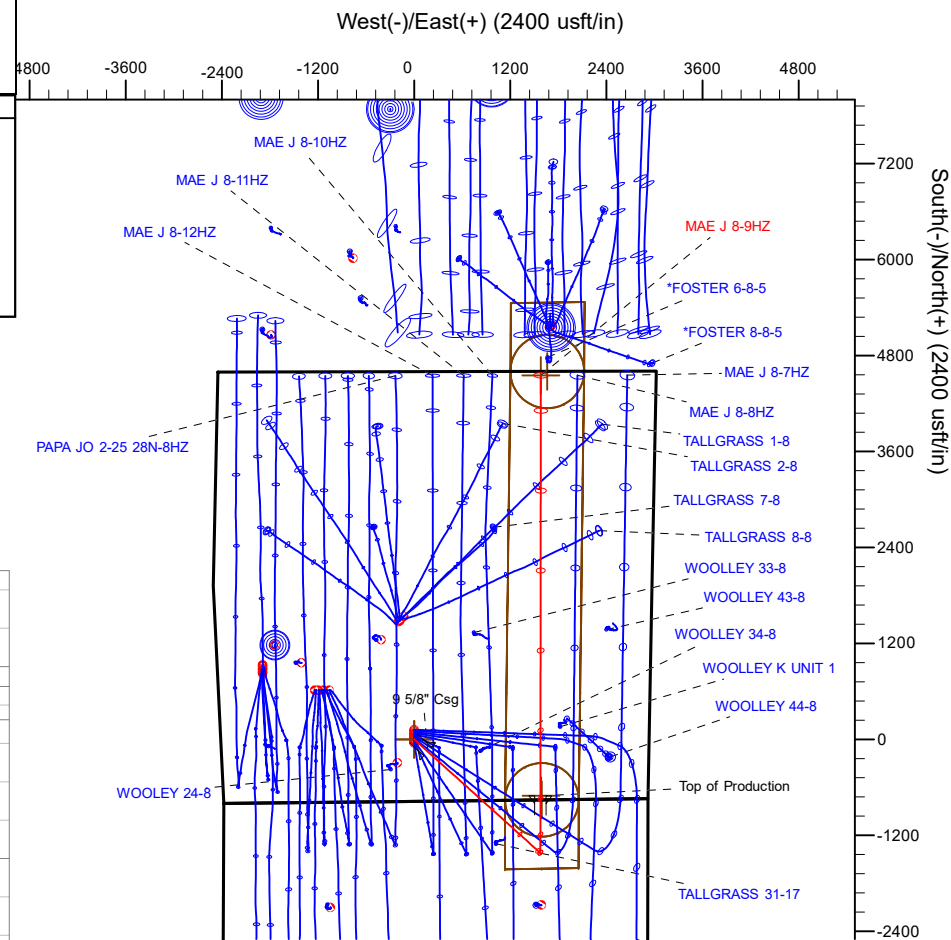
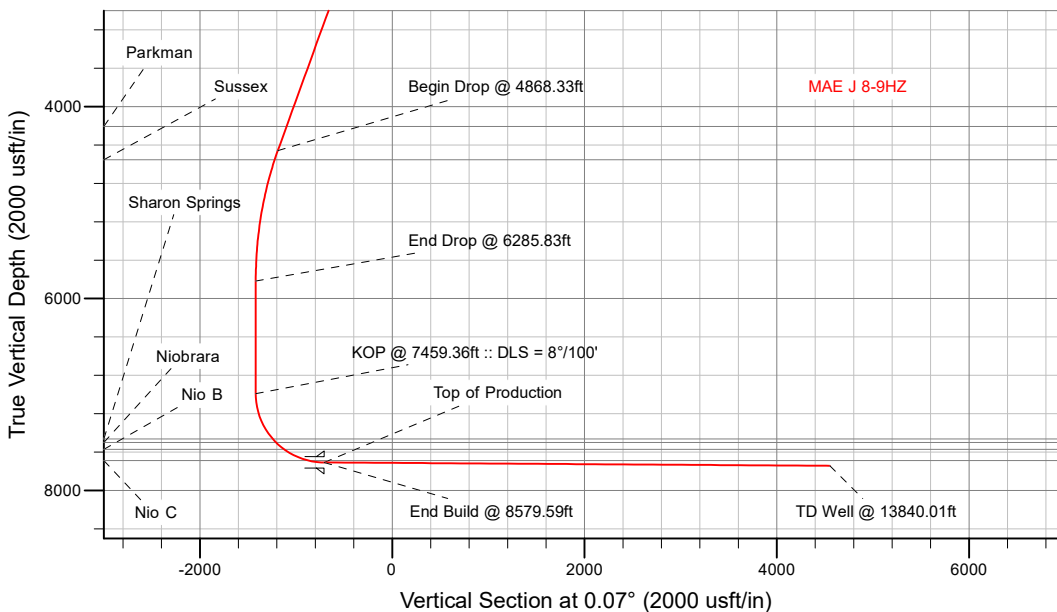
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MAE J 8-9HZ_SHL	0.00	0.00	0.00	40.060382	-105.028602
MAE J 8-9HZ_BHL	7744.00	4551.11	1581.83	40.072880	-105.022948

SHL
776' FSL
2413' FWL

HEEL
50' FSL
1341' FEL

BHL
50' FNL
1439' FEL



WELL DETAILS: MAE J 8-9HZ

GL = 5083'

RKB = 17' @ 5100.00usft (Drilling Rig)

Plan: Permit Rev-1 (MAE J 8-9HZ/Plan A)

Date: 11/6/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-9HZ
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 8-9HZ	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 8-9HZ					
Well Position	+N-S	-119.80 usft	Northing:	14,548,722.40 usft	Latitude:	40.060382
	+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	52,029.11734194

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	0.07

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	13,840.01	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-9HZ
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 8-9HZ	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	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,090.00	28.35	132.05	2,013.82	-306.84	340.19	1.50	1.50	0.00	132.05	
4,868.33	28.35	132.05	4,458.93	-1,190.49	1,319.85	0.00	0.00	0.00	0.00	
6,285.83	0.00	0.00	5,819.29	-1,420.62	1,574.99	2.00	-2.00	-9.32	-180.00	
7,459.36	0.00	0.00	6,992.82	-1,420.62	1,574.99	0.00	0.00	0.00	0.00	
8,579.59	89.62	0.07	7,709.00	-709.19	1,575.81	8.00	8.00	0.01	0.07	
13,840.01	89.62	0.07	7,744.00	4,551.11	1,581.83	0.00	0.00	0.00	0.00	MAE J 8-9HZ_BHL

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-9HZ
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 8-9HZ	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
Begin Nudge @ 200.00ft										
300.00	1.50	132.05	299.99	-0.88	0.97	-0.88	1.50	1.50	0.00	0.00
400.00	3.00	132.05	399.91	-3.51	3.89	-3.50	1.50	1.50	0.00	0.00
500.00	4.50	132.05	499.69	-7.89	8.74	-7.88	1.50	1.50	0.00	0.00
600.00	6.00	132.05	599.27	-14.02	15.54	-14.00	1.50	1.50	0.00	0.00
700.00	7.50	132.05	698.57	-21.89	24.27	-21.86	1.50	1.50	0.00	0.00
800.00	9.00	132.05	797.54	-31.50	34.92	-31.46	1.50	1.50	0.00	0.00
900.00	10.50	132.05	896.09	-42.84	47.50	-42.78	1.50	1.50	0.00	0.00
1,000.00	12.00	132.05	994.16	-55.91	61.98	-55.83	1.50	1.50	0.00	0.00
1,079.76	13.20	132.05	1,072.00	-67.56	74.90	-67.47	1.50	1.50	0.00	0.00
Fox Hills										
1,100.00	13.50	132.05	1,091.70	-70.69	78.37	-70.59	1.50	1.50	0.00	0.00
1,200.00	15.00	132.05	1,188.62	-87.17	96.65	-87.06	1.50	1.50	0.00	0.00
1,300.00	16.50	132.05	1,284.86	-105.35	116.80	-105.21	1.50	1.50	0.00	0.00
1,400.00	18.00	132.05	1,380.36	-125.22	138.82	-125.05	1.50	1.50	0.00	0.00
1,500.00	19.50	132.05	1,475.05	-146.74	162.69	-146.55	1.50	1.50	0.00	0.00
1,526.50	19.90	132.05	1,500.00	-152.73	169.32	-152.52	1.50	1.50	0.00	0.00
9 5/8" Csg										
1,600.00	21.00	132.05	1,568.86	-169.93	188.39	-169.70	1.50	1.50	0.00	0.00
1,700.00	22.50	132.05	1,661.74	-194.74	215.91	-194.48	1.50	1.50	0.00	0.00
1,800.00	24.00	132.05	1,753.62	-221.18	245.22	-220.88	1.50	1.50	0.00	0.00
1,900.00	25.50	132.05	1,844.43	-249.22	276.30	-248.88	1.50	1.50	0.00	0.00
2,000.00	27.00	132.05	1,934.12	-278.85	309.15	-278.47	1.50	1.50	0.00	0.00
2,090.00	28.35	132.05	2,013.82	-306.84	340.19	-306.43	1.50	1.50	0.00	0.00
Hold Tangent @ 2090.00ft										
2,100.00	28.35	132.05	2,022.62	-310.02	343.71	-309.60	0.00	0.00	0.00	0.00
2,200.00	28.35	132.05	2,110.62	-341.83	378.97	-341.36	0.00	0.00	0.00	0.00
2,300.00	28.35	132.05	2,198.63	-373.63	414.23	-373.13	0.00	0.00	0.00	0.00
2,400.00	28.35	132.05	2,286.64	-405.44	449.49	-404.89	0.00	0.00	0.00	0.00
2,500.00	28.35	132.05	2,374.64	-437.24	484.76	-436.65	0.00	0.00	0.00	0.00
2,600.00	28.35	132.05	2,462.65	-469.05	520.02	-468.41	0.00	0.00	0.00	0.00
2,700.00	28.35	132.05	2,550.66	-500.85	555.28	-500.17	0.00	0.00	0.00	0.00
2,800.00	28.35	132.05	2,638.66	-532.66	590.54	-531.93	0.00	0.00	0.00	0.00
2,900.00	28.35	132.05	2,726.67	-564.46	625.80	-563.70	0.00	0.00	0.00	0.00
3,000.00	28.35	132.05	2,814.68	-596.27	661.06	-595.46	0.00	0.00	0.00	0.00
3,100.00	28.35	132.05	2,902.68	-628.07	696.32	-627.22	0.00	0.00	0.00	0.00
3,200.00	28.35	132.05	2,990.69	-659.88	731.58	-658.98	0.00	0.00	0.00	0.00
3,300.00	28.35	132.05	3,078.69	-691.68	766.84	-690.74	0.00	0.00	0.00	0.00
3,400.00	28.35	132.05	3,166.70	-723.49	802.10	-722.51	0.00	0.00	0.00	0.00
3,500.00	28.35	132.05	3,254.71	-755.29	837.36	-754.27	0.00	0.00	0.00	0.00
3,600.00	28.35	132.05	3,342.71	-787.10	872.63	-786.03	0.00	0.00	0.00	0.00
3,700.00	28.35	132.05	3,430.72	-818.90	907.89	-817.79	0.00	0.00	0.00	0.00
3,800.00	28.35	132.05	3,518.73	-850.71	943.15	-849.55	0.00	0.00	0.00	0.00
3,900.00	28.35	132.05	3,606.73	-882.51	978.41	-881.31	0.00	0.00	0.00	0.00
4,000.00	28.35	132.05	3,694.74	-914.32	1,013.67	-913.08	0.00	0.00	0.00	0.00
4,100.00	28.35	132.05	3,782.75	-946.12	1,048.93	-944.84	0.00	0.00	0.00	0.00
4,200.00	28.35	132.05	3,870.75	-977.93	1,084.19	-976.60	0.00	0.00	0.00	0.00
4,300.00	28.35	132.05	3,958.76	-1,009.73	1,119.45	-1,008.36	0.00	0.00	0.00	0.00
4,400.00	28.35	132.05	4,046.76	-1,041.53	1,154.71	-1,040.12	0.00	0.00	0.00	0.00
4,500.00	28.35	132.05	4,134.77	-1,073.34	1,189.97	-1,071.89	0.00	0.00	0.00	0.00
4,582.07	28.35	132.05	4,207.00	-1,099.44	1,218.91	-1,097.95	0.00	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-9HZ
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 8-9HZ	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										
4,600.00	28.35	132.05	4,222.78	-1,105.14	1,225.24	-1,103.65	0.00	0.00	0.00	
4,700.00	28.35	132.05	4,310.78	-1,136.95	1,260.50	-1,135.41	0.00	0.00	0.00	
4,800.00	28.35	132.05	4,398.79	-1,168.75	1,295.76	-1,167.17	0.00	0.00	0.00	
4,868.33	28.35	132.05	4,458.93	-1,190.49	1,319.85	-1,188.87	0.00	0.00	0.00	
Begin Drop @ 4868.33ft										
4,900.00	27.72	132.05	4,486.88	-1,200.46	1,330.90	-1,198.83	2.00	-2.00	0.00	
4,976.42	26.19	132.05	4,555.00	-1,223.66	1,356.62	-1,222.00	2.00	-2.00	0.00	
Sussex										
5,000.00	25.72	132.05	4,576.20	-1,230.57	1,364.29	-1,228.90	2.00	-2.00	0.00	
5,100.00	23.72	132.05	4,667.03	-1,258.57	1,395.33	-1,256.86	2.00	-2.00	0.00	
5,200.00	21.72	132.05	4,759.27	-1,284.43	1,424.01	-1,282.69	2.00	-2.00	0.00	
5,300.00	19.72	132.05	4,852.80	-1,308.13	1,450.27	-1,306.35	2.00	-2.00	0.00	
5,400.00	17.72	132.05	4,947.51	-1,329.62	1,474.10	-1,327.82	2.00	-2.00	0.00	
5,500.00	15.72	132.05	5,043.28	-1,348.88	1,495.46	-1,347.05	2.00	-2.00	0.00	
5,600.00	13.72	132.05	5,139.99	-1,365.90	1,514.32	-1,364.04	2.00	-2.00	0.00	
5,700.00	11.72	132.05	5,237.53	-1,380.64	1,530.67	-1,378.77	2.00	-2.00	0.00	
5,800.00	9.72	132.05	5,335.78	-1,393.09	1,544.47	-1,391.21	2.00	-2.00	0.00	
5,900.00	7.72	132.05	5,434.62	-1,403.24	1,555.73	-1,401.34	2.00	-2.00	0.00	
6,000.00	5.72	132.05	5,533.93	-1,411.08	1,564.41	-1,409.16	2.00	-2.00	0.00	
6,100.00	3.72	132.05	5,633.59	-1,416.58	1,570.52	-1,414.66	2.00	-2.00	0.00	
6,200.00	1.72	132.05	5,733.47	-1,419.76	1,574.04	-1,417.83	2.00	-2.00	0.00	
6,285.83	0.00	0.00	5,819.29	-1,420.62	1,574.99	-1,418.69	2.00	-2.00	-153.84	
End Drop @ 6285.83ft										
6,300.00	0.00	0.00	5,833.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
6,400.00	0.00	0.00	5,933.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,033.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,133.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,233.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,333.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,433.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,533.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
7,100.00	0.00	0.00	6,633.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
7,200.00	0.00	0.00	6,733.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
7,300.00	0.00	0.00	6,833.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
7,400.00	0.00	0.00	6,933.46	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
7,459.36	0.00	0.00	6,992.82	-1,420.62	1,574.99	-1,418.69	0.00	0.00	0.00	
KOP @ 7459.36ft :: DLS = 8°/100'										
7,500.00	3.25	0.07	7,033.44	-1,419.47	1,574.99	-1,417.54	8.00	8.00	0.16	
7,600.00	11.25	0.07	7,132.56	-1,406.85	1,575.01	-1,404.93	8.00	8.00	0.00	
7,700.00	19.25	0.07	7,228.95	-1,380.57	1,575.04	-1,378.65	8.00	8.00	0.00	
7,800.00	27.25	0.07	7,320.76	-1,341.13	1,575.08	-1,339.20	8.00	8.00	0.00	
7,900.00	35.25	0.07	7,406.18	-1,289.29	1,575.14	-1,287.36	8.00	8.00	0.00	
7,974.93	41.25	0.07	7,465.00	-1,242.92	1,575.19	-1,241.00	8.00	8.00	0.00	
Sharon Springs										
8,000.00	43.25	0.07	7,483.55	-1,226.07	1,575.21	-1,224.14	8.00	8.00	0.00	
8,022.93	45.09	0.07	7,500.00	-1,210.09	1,575.23	-1,208.17	8.00	8.00	0.00	
Niobrara										
8,100.00	51.25	0.07	7,551.38	-1,152.70	1,575.30	-1,150.77	8.00	8.00	0.00	
8,135.67	54.10	0.07	7,573.00	-1,124.33	1,575.33	-1,122.41	8.00	8.00	0.00	
Nio B										
8,200.00	59.25	0.07	7,608.33	-1,070.60	1,575.39	-1,068.67	8.00	8.00	0.00	
8,300.00	67.25	0.07	7,653.30	-981.37	1,575.49	-979.44	8.00	8.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-9HZ
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 8-9HZ	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)
8,400.00	75.25	0.07	7,685.42	-886.75	1,575.60	-884.83	8.00	8.00	0.00
8,410.44	76.09	0.07	7,688.00	-876.64	1,575.61	-874.71	8.00	8.00	0.00
Nio C									
8,500.00	83.25	0.07	7,704.05	-788.59	1,575.71	-786.66	8.00	8.00	0.00
8,579.59	89.62	0.07	7,709.00	-709.19	1,575.81	-707.27	8.00	8.00	0.00
End Build @ 8579.59ft - Top of Production									
8,600.00	89.62	0.07	7,709.13	-688.78	1,575.83	-686.86	0.00	0.00	0.00
8,700.00	89.62	0.07	7,709.80	-588.79	1,575.94	-586.86	0.00	0.00	0.00
8,800.00	89.62	0.07	7,710.47	-488.79	1,576.06	-486.86	0.00	0.00	0.00
8,900.00	89.62	0.07	7,711.13	-388.79	1,576.17	-386.86	0.00	0.00	0.00
9,000.00	89.62	0.07	7,711.80	-288.79	1,576.29	-286.87	0.00	0.00	0.00
9,100.00	89.62	0.07	7,712.46	-188.79	1,576.40	-186.87	0.00	0.00	0.00
9,200.00	89.62	0.07	7,713.13	-88.80	1,576.52	-86.87	0.00	0.00	0.00
9,300.00	89.62	0.07	7,713.79	11.20	1,576.63	13.13	0.00	0.00	0.00
9,400.00	89.62	0.07	7,714.46	111.20	1,576.75	113.13	0.00	0.00	0.00
9,500.00	89.62	0.07	7,715.12	211.20	1,576.86	213.12	0.00	0.00	0.00
9,600.00	89.62	0.07	7,715.79	311.19	1,576.97	313.12	0.00	0.00	0.00
9,700.00	89.62	0.07	7,716.45	411.19	1,577.09	413.12	0.00	0.00	0.00
9,800.00	89.62	0.07	7,717.12	511.19	1,577.20	513.12	0.00	0.00	0.00
9,900.00	89.62	0.07	7,717.78	611.19	1,577.32	613.11	0.00	0.00	0.00
10,000.00	89.62	0.07	7,718.45	711.19	1,577.43	713.11	0.00	0.00	0.00
10,100.00	89.62	0.07	7,719.11	811.18	1,577.55	813.11	0.00	0.00	0.00
10,200.00	89.62	0.07	7,719.78	911.18	1,577.66	913.11	0.00	0.00	0.00
10,300.00	89.62	0.07	7,720.45	1,011.18	1,577.78	1,013.11	0.00	0.00	0.00
10,400.00	89.62	0.07	7,721.11	1,111.18	1,577.89	1,113.10	0.00	0.00	0.00
10,500.00	89.62	0.07	7,721.78	1,211.17	1,578.00	1,213.10	0.00	0.00	0.00
10,600.00	89.62	0.07	7,722.44	1,311.17	1,578.12	1,313.10	0.00	0.00	0.00
10,700.00	89.62	0.07	7,723.11	1,411.17	1,578.23	1,413.10	0.00	0.00	0.00
10,800.00	89.62	0.07	7,723.77	1,511.17	1,578.35	1,513.09	0.00	0.00	0.00
10,900.00	89.62	0.07	7,724.44	1,611.16	1,578.46	1,613.09	0.00	0.00	0.00
11,000.00	89.62	0.07	7,725.10	1,711.16	1,578.58	1,713.09	0.00	0.00	0.00
11,100.00	89.62	0.07	7,725.77	1,811.16	1,578.69	1,813.09	0.00	0.00	0.00
11,200.00	89.62	0.07	7,726.43	1,911.16	1,578.81	1,913.09	0.00	0.00	0.00
11,300.00	89.62	0.07	7,727.10	2,011.16	1,578.92	2,013.08	0.00	0.00	0.00
11,400.00	89.62	0.07	7,727.76	2,111.15	1,579.04	2,113.08	0.00	0.00	0.00
11,500.00	89.62	0.07	7,728.43	2,211.15	1,579.15	2,213.08	0.00	0.00	0.00
11,600.00	89.62	0.07	7,729.10	2,311.15	1,579.26	2,313.08	0.00	0.00	0.00
11,700.00	89.62	0.07	7,729.76	2,411.15	1,579.38	2,413.07	0.00	0.00	0.00
11,800.00	89.62	0.07	7,730.43	2,511.14	1,579.49	2,513.07	0.00	0.00	0.00
11,900.00	89.62	0.07	7,731.09	2,611.14	1,579.61	2,613.07	0.00	0.00	0.00
12,000.00	89.62	0.07	7,731.76	2,711.14	1,579.72	2,713.07	0.00	0.00	0.00
12,100.00	89.62	0.07	7,732.42	2,811.14	1,579.84	2,813.07	0.00	0.00	0.00
12,200.00	89.62	0.07	7,733.09	2,911.14	1,579.95	2,913.06	0.00	0.00	0.00
12,300.00	89.62	0.07	7,733.75	3,011.13	1,580.07	3,013.06	0.00	0.00	0.00
12,400.00	89.62	0.07	7,734.42	3,111.13	1,580.18	3,113.06	0.00	0.00	0.00
12,500.00	89.62	0.07	7,735.08	3,211.13	1,580.29	3,213.06	0.00	0.00	0.00
12,600.00	89.62	0.07	7,735.75	3,311.13	1,580.41	3,313.05	0.00	0.00	0.00
12,700.00	89.62	0.07	7,736.41	3,411.12	1,580.52	3,413.05	0.00	0.00	0.00
12,800.00	89.62	0.07	7,737.08	3,511.12	1,580.64	3,513.05	0.00	0.00	0.00
12,900.00	89.62	0.07	7,737.75	3,611.12	1,580.75	3,613.05	0.00	0.00	0.00
13,000.00	89.62	0.07	7,738.41	3,711.12	1,580.87	3,713.05	0.00	0.00	0.00
13,100.00	89.62	0.07	7,739.08	3,811.11	1,580.98	3,813.04	0.00	0.00	0.00
13,200.00	89.62	0.07	7,739.74	3,911.11	1,581.10	3,913.04	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-9HZ
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 8-9HZ	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)	
13,300.00	89.62	0.07	7,740.41	4,011.11	1,581.21	4,013.04	0.00	0.00	0.00	
13,400.00	89.62	0.07	7,741.07	4,111.11	1,581.32	4,113.04	0.00	0.00	0.00	
13,500.00	89.62	0.07	7,741.74	4,211.11	1,581.44	4,213.03	0.00	0.00	0.00	
13,600.00	89.62	0.07	7,742.40	4,311.10	1,581.55	4,313.03	0.00	0.00	0.00	
13,700.00	89.62	0.07	7,743.07	4,411.10	1,581.67	4,413.03	0.00	0.00	0.00	
13,800.00	89.62	0.07	7,743.73	4,511.10	1,581.78	4,513.03	0.00	0.00	0.00	
13,840.01	89.62	0.07	7,744.00	4,551.11	1,581.83	4,553.04	0.00	0.00	0.00	
TD Well @ 13840.01ft										

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	
8,579.59	7,709.00	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				
4,582.07	4,207.00	Parkman				
4,976.42	4,555.00	Sussex				
7,974.93	7,465.00	Sharon Springs				
8,022.93	7,500.00	Niobrara				
8,135.67	7,573.00	Nio B				
8,410.44	7,688.00	Nio C				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
200.00	200.00	0.00	0.00	Begin Nudge @ 200.00ft	
2,090.00	2,013.82	-306.84	340.19	Hold Tangent @ 2090.00ft	
4,868.33	4,458.93	-1,190.49	1,319.85	Begin Drop @ 4868.33ft	
6,285.83	5,819.29	-1,420.62	1,574.99	End Drop @ 6285.83ft	
7,459.36	6,992.82	-1,420.62	1,574.99	KOP @ 7459.36ft :: DLS = 8°/100'	
8,579.59	7,709.00	-709.19	1,575.81	End Build @ 8579.59ft	
13,840.01	7,744.00	4,551.11	1,581.83	TD Well @ 13840.01ft	