

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-68W-08 MAE J 14-8HZ PAD
MAE J 8-12HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.060258/-105.028603
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 8-12HZ
 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
7728.00	8365.51	Top of Production	5-1/2

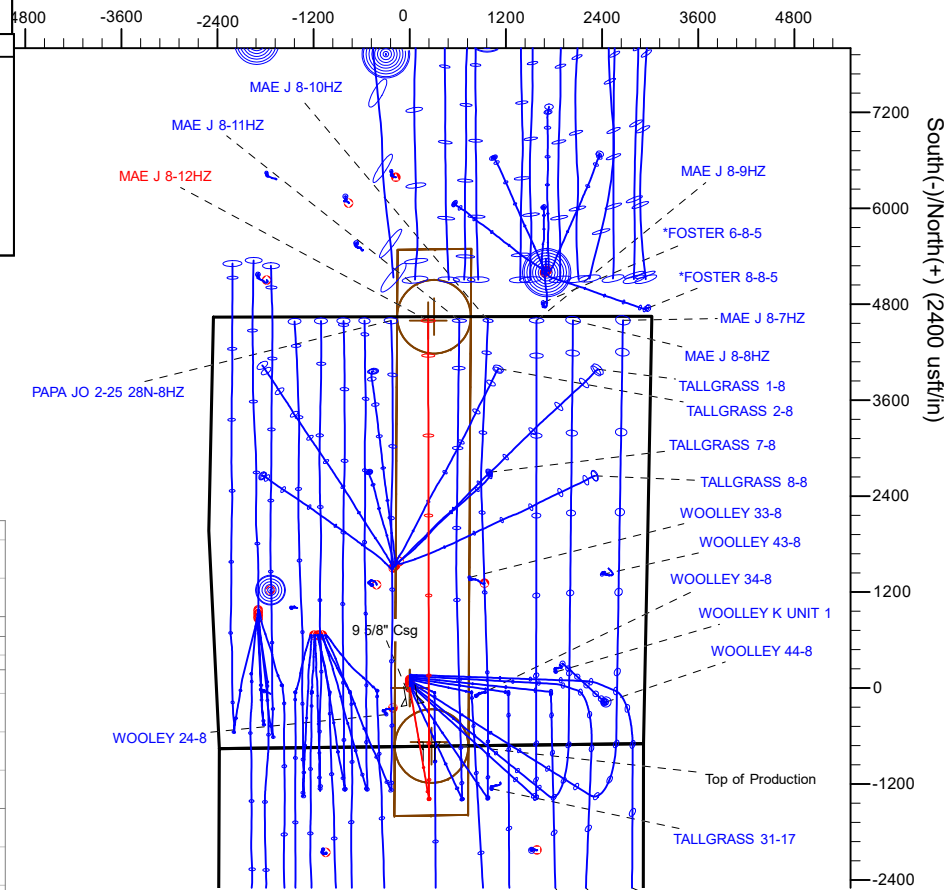
SECTION DETAILS

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	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1623.33	20.60	170.19	1593.94	-240.66	41.61	1.50	170.19	-240.74	
4	4423.33	20.60	170.19	4214.90	-1211.42	209.47	0.00	0.00	-1211.82	
5	5453.33	0.00	0.00	5222.85	-1391.91	240.68	2.00	180.00	-1392.37	
6	7242.28	0.00	0.00	7011.80	-1391.91	240.68	0.00	0.00	-1392.37	
7	8365.51	89.86	359.89	7728.00	-677.48	239.29	8.00	359.89	-677.94	
8	13635.85	89.86	359.89	7741.00	4592.83	229.11	0.00	0.00	4592.38	MAE J 8-12HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MAE J 8-12HZ_SHL	0.00	0.00	0.00	40.060258	-105.028603
MAE J 8-12HZ_BHL	7741.00	4592.83	229.11	40.072871	-105.027784

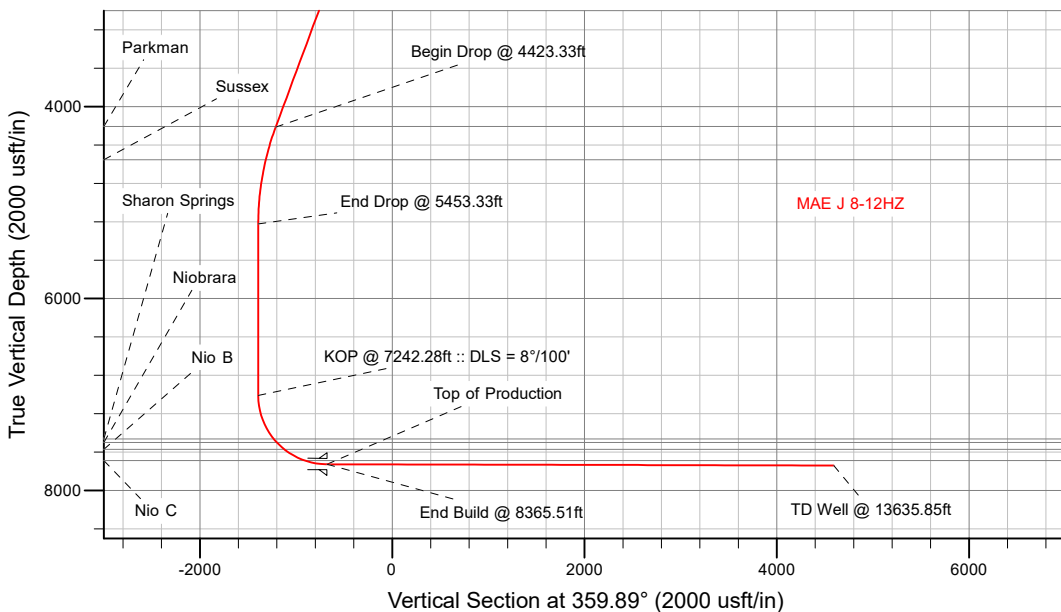
West(-)/East(+) (2400 usft/in)



SHL
731' FSL
2411' FWL

HEEL
50' FSL
2615' FWL

BHL
50' FNL
2682' FWL



WELL DETAILS: MAE J 8-12HZ

5083.00

RKB = 17' @ 5100.00usft (Drilling Rig)

Plan: Permit Rev-1 (MAE J 8-12HZ/Plan A)

Date: 11/6/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-12HZ
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 8-12HZ	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 8-12HZ					
Well Position	+N-S	-164.96 usft	Northing:	14,548,677.24 usft	Latitude:	40.060258
	+E-W	-0.84 usft	Easting:	1,632,413.41 usft	Longitude:	-105.028603
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	52,029.05243940

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	359.89

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	13,635.85	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	

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 8-12HZ	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	
1,623.33	20.60	170.19	1,593.94	-240.66	41.61	1.50	1.50	0.00	170.19	
4,423.33	20.60	170.19	4,214.90	-1,211.42	209.47	0.00	0.00	0.00	0.00	
5,453.33	0.00	0.00	5,222.85	-1,391.91	240.68	2.00	-2.00	0.00	180.00	
7,242.28	0.00	0.00	7,011.80	-1,391.91	240.68	0.00	0.00	0.00	0.00	
8,365.51	89.86	359.89	7,728.00	-677.48	239.29	8.00	8.00	-0.01	359.89	
13,635.85	89.86	359.89	7,741.00	4,592.83	229.11	0.00	0.00	0.00	0.00	MAE J 8-12HZ_BHL

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-12HZ
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 8-12HZ	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	170.19	300.00	-0.32	0.06	-0.32	1.50	1.50	0.00	
400.00	2.25	170.19	399.96	-2.90	0.50	-2.90	1.50	1.50	0.00	
500.00	3.75	170.19	499.82	-8.06	1.39	-8.06	1.50	1.50	0.00	
600.00	5.25	170.19	599.51	-15.79	2.73	-15.79	1.50	1.50	0.00	
700.00	6.75	170.19	698.96	-26.09	4.51	-26.10	1.50	1.50	0.00	
800.00	8.25	170.19	798.10	-38.95	6.73	-38.96	1.50	1.50	0.00	
900.00	9.75	170.19	896.87	-54.37	9.40	-54.38	1.50	1.50	0.00	
1,000.00	11.25	170.19	995.19	-72.32	12.51	-72.35	1.50	1.50	0.00	
1,078.48	12.43	170.19	1,072.00	-88.19	15.25	-88.22	1.50	1.50	0.00	
Fox Hills										
1,100.00	12.75	170.19	1,093.00	-92.81	16.05	-92.84	1.50	1.50	0.00	
1,200.00	14.25	170.19	1,190.24	-115.81	20.02	-115.85	1.50	1.50	0.00	
1,300.00	15.75	170.19	1,286.83	-141.31	24.43	-141.36	1.50	1.50	0.00	
1,400.00	17.25	170.19	1,382.71	-169.30	29.27	-169.35	1.50	1.50	0.00	
1,500.00	18.75	170.19	1,477.81	-199.75	34.54	-199.81	1.50	1.50	0.00	
1,523.46	19.10	170.19	1,500.00	-207.25	35.83	-207.31	1.50	1.50	0.00	
9 5/8" Csg										
1,600.00	20.25	170.19	1,572.07	-232.64	40.23	-232.72	1.50	1.50	0.00	
1,623.33	20.60	170.19	1,593.94	-240.66	41.61	-240.74	1.50	1.50	0.00	
Hold Tangent @ 1623.33ft										
1,700.00	20.60	170.19	1,665.70	-267.24	46.21	-267.33	0.00	0.00	0.00	
1,800.00	20.60	170.19	1,759.31	-301.91	52.20	-302.01	0.00	0.00	0.00	
1,900.00	20.60	170.19	1,852.91	-336.58	58.20	-336.69	0.00	0.00	0.00	
2,000.00	20.60	170.19	1,946.52	-371.25	64.19	-371.38	0.00	0.00	0.00	
2,100.00	20.60	170.19	2,040.12	-405.92	70.19	-406.06	0.00	0.00	0.00	
2,200.00	20.60	170.19	2,133.73	-440.59	76.18	-440.74	0.00	0.00	0.00	
2,300.00	20.60	170.19	2,227.34	-475.26	82.18	-475.42	0.00	0.00	0.00	
2,400.00	20.60	170.19	2,320.94	-509.93	88.17	-510.10	0.00	0.00	0.00	
2,500.00	20.60	170.19	2,414.55	-544.60	94.17	-544.78	0.00	0.00	0.00	
2,600.00	20.60	170.19	2,508.15	-579.27	100.16	-579.46	0.00	0.00	0.00	
2,700.00	20.60	170.19	2,601.76	-613.94	106.16	-614.14	0.00	0.00	0.00	
2,800.00	20.60	170.19	2,695.37	-648.61	112.15	-648.82	0.00	0.00	0.00	
2,900.00	20.60	170.19	2,788.97	-683.28	118.15	-683.51	0.00	0.00	0.00	
3,000.00	20.60	170.19	2,882.58	-717.95	124.14	-718.19	0.00	0.00	0.00	
3,100.00	20.60	170.19	2,976.18	-752.62	130.14	-752.87	0.00	0.00	0.00	
3,200.00	20.60	170.19	3,069.79	-787.29	136.13	-787.55	0.00	0.00	0.00	
3,300.00	20.60	170.19	3,163.40	-821.96	142.12	-822.23	0.00	0.00	0.00	
3,400.00	20.60	170.19	3,257.00	-856.63	148.12	-856.91	0.00	0.00	0.00	
3,500.00	20.60	170.19	3,350.61	-891.30	154.11	-891.59	0.00	0.00	0.00	
3,600.00	20.60	170.19	3,444.21	-925.97	160.11	-926.27	0.00	0.00	0.00	
3,700.00	20.60	170.19	3,537.82	-960.64	166.10	-960.95	0.00	0.00	0.00	
3,800.00	20.60	170.19	3,631.43	-995.31	172.10	-995.64	0.00	0.00	0.00	
3,900.00	20.60	170.19	3,725.03	-1,029.98	178.09	-1,030.32	0.00	0.00	0.00	
4,000.00	20.60	170.19	3,818.64	-1,064.65	184.09	-1,065.00	0.00	0.00	0.00	
4,100.00	20.60	170.19	3,912.24	-1,099.32	190.08	-1,099.68	0.00	0.00	0.00	
4,200.00	20.60	170.19	4,005.85	-1,133.99	196.08	-1,134.36	0.00	0.00	0.00	
4,300.00	20.60	170.19	4,099.46	-1,168.66	202.07	-1,169.04	0.00	0.00	0.00	
4,400.00	20.60	170.19	4,193.06	-1,203.33	208.07	-1,203.72	0.00	0.00	0.00	
4,414.89	20.60	170.19	4,207.00	-1,208.49	208.96	-1,208.89	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 8-12HZ	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									
4,423.33	20.60	170.19	4,214.90	-1,211.42	209.47	-1,211.82	0.00	0.00	0.00
Begin Drop @ 4423.33ft									
4,500.00	19.07	170.19	4,287.02	-1,237.05	213.90	-1,237.45	2.00	-2.00	0.00
4,600.00	17.07	170.19	4,382.08	-1,267.60	219.18	-1,268.02	2.00	-2.00	0.00
4,700.00	15.07	170.19	4,478.17	-1,294.87	223.90	-1,295.30	2.00	-2.00	0.00
4,779.28	13.48	170.19	4,555.00	-1,314.13	227.23	-1,314.57	2.00	-2.00	0.00
Sussex									
4,800.00	13.07	170.19	4,575.17	-1,318.82	228.04	-1,319.26	2.00	-2.00	0.00
4,900.00	11.07	170.19	4,672.96	-1,339.42	231.60	-1,339.86	2.00	-2.00	0.00
5,000.00	9.07	170.19	4,771.41	-1,356.64	234.58	-1,357.09	2.00	-2.00	0.00
5,100.00	7.07	170.19	4,870.42	-1,370.47	236.97	-1,370.92	2.00	-2.00	0.00
5,200.00	5.07	170.19	4,969.85	-1,380.88	238.77	-1,381.34	2.00	-2.00	0.00
5,300.00	3.07	170.19	5,069.59	-1,387.87	239.98	-1,388.33	2.00	-2.00	0.00
5,400.00	1.07	170.19	5,169.52	-1,391.42	240.59	-1,391.88	2.00	-2.00	0.00
5,453.33	0.00	0.00	5,222.85	-1,391.91	240.68	-1,392.37	2.00	-2.00	0.00
End Drop @ 5453.33ft									
5,500.00	0.00	0.00	5,269.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
5,600.00	0.00	0.00	5,369.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
5,700.00	0.00	0.00	5,469.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
5,800.00	0.00	0.00	5,569.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
5,900.00	0.00	0.00	5,669.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
6,000.00	0.00	0.00	5,769.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
6,100.00	0.00	0.00	5,869.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
6,200.00	0.00	0.00	5,969.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
6,300.00	0.00	0.00	6,069.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
6,400.00	0.00	0.00	6,169.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
6,500.00	0.00	0.00	6,269.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
6,600.00	0.00	0.00	6,369.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
6,700.00	0.00	0.00	6,469.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
6,800.00	0.00	0.00	6,569.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
6,900.00	0.00	0.00	6,669.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
7,000.00	0.00	0.00	6,769.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
7,100.00	0.00	0.00	6,869.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
7,200.00	0.00	0.00	6,969.52	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
7,242.28	0.00	0.00	7,011.80	-1,391.91	240.68	-1,392.37	0.00	0.00	0.00
KOP @ 7242.28ft :: DLS = 8°/100'									
7,300.00	4.62	359.89	7,069.46	-1,389.59	240.67	-1,390.05	8.00	8.00	0.00
7,400.00	12.62	359.89	7,168.25	-1,374.62	240.64	-1,375.08	8.00	8.00	0.00
7,500.00	20.62	359.89	7,264.00	-1,346.04	240.59	-1,346.50	8.00	8.00	0.00
7,600.00	28.62	359.89	7,354.83	-1,304.42	240.51	-1,304.88	8.00	8.00	0.00
7,700.00	36.62	359.89	7,438.99	-1,250.56	240.40	-1,251.02	8.00	8.00	0.00
7,732.98	39.26	359.89	7,465.00	-1,230.29	240.36	-1,230.75	8.00	8.00	0.00
Sharon Springs									
7,779.44	42.97	359.89	7,500.00	-1,199.74	240.30	-1,200.20	8.00	8.00	0.00
Niobrara									
7,800.00	44.62	359.89	7,514.84	-1,185.51	240.28	-1,185.97	8.00	8.00	0.00
7,887.15	51.59	359.89	7,573.00	-1,120.68	240.15	-1,121.14	8.00	8.00	0.00
Nio B									
7,900.00	52.62	359.89	7,580.89	-1,110.54	240.13	-1,111.00	8.00	8.00	0.00
8,000.00	60.62	359.89	7,635.87	-1,027.11	239.97	-1,027.57	8.00	8.00	0.00
8,100.00	68.62	359.89	7,678.70	-936.84	239.80	-937.29	8.00	8.00	0.00
8,126.79	70.76	359.89	7,688.00	-911.71	239.75	-912.17	8.00	8.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-12HZ
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 8-12HZ	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)
Nio C									
8,200.00	76.62	359.89	7,708.55	-841.48	239.61	-841.94	8.00	8.00	0.00
8,300.00	84.62	359.89	7,724.84	-742.90	239.42	-743.36	8.00	8.00	0.00
8,365.51	89.86	359.89	7,728.00	-677.49	239.29	-677.95	8.00	8.00	0.00
End Build @ 8365.51ft - Top of Production									
8,400.00	89.86	359.89	7,728.08	-643.00	239.23	-643.46	0.00	0.00	0.00
8,500.00	89.86	359.89	7,728.33	-543.00	239.03	-543.46	0.00	0.00	0.00
8,600.00	89.86	359.89	7,728.58	-443.00	238.84	-443.46	0.00	0.00	0.00
8,700.00	89.86	359.89	7,728.82	-343.00	238.65	-343.46	0.00	0.00	0.00
8,800.00	89.86	359.89	7,729.07	-243.00	238.45	-243.46	0.00	0.00	0.00
8,900.00	89.86	359.89	7,729.32	-143.00	238.26	-143.46	0.00	0.00	0.00
9,000.00	89.86	359.89	7,729.56	-43.00	238.07	-43.46	0.00	0.00	0.00
9,100.00	89.86	359.89	7,729.81	57.00	237.88	56.54	0.00	0.00	0.00
9,200.00	89.86	359.89	7,730.06	157.00	237.68	156.54	0.00	0.00	0.00
9,300.00	89.86	359.89	7,730.30	257.00	237.49	256.54	0.00	0.00	0.00
9,400.00	89.86	359.89	7,730.55	357.00	237.30	356.54	0.00	0.00	0.00
9,500.00	89.86	359.89	7,730.80	457.00	237.10	456.54	0.00	0.00	0.00
9,600.00	89.86	359.89	7,731.04	557.00	236.91	556.54	0.00	0.00	0.00
9,700.00	89.86	359.89	7,731.29	657.00	236.72	656.54	0.00	0.00	0.00
9,800.00	89.86	359.89	7,731.54	757.00	236.52	756.54	0.00	0.00	0.00
9,900.00	89.86	359.89	7,731.78	857.00	236.33	856.54	0.00	0.00	0.00
10,000.00	89.86	359.89	7,732.03	957.00	236.14	956.54	0.00	0.00	0.00
10,100.00	89.86	359.89	7,732.28	1,056.99	235.94	1,056.54	0.00	0.00	0.00
10,200.00	89.86	359.89	7,732.52	1,156.99	235.75	1,156.54	0.00	0.00	0.00
10,300.00	89.86	359.89	7,732.77	1,256.99	235.56	1,256.54	0.00	0.00	0.00
10,400.00	89.86	359.89	7,733.02	1,356.99	235.36	1,356.54	0.00	0.00	0.00
10,500.00	89.86	359.89	7,733.26	1,456.99	235.17	1,456.54	0.00	0.00	0.00
10,600.00	89.86	359.89	7,733.51	1,556.99	234.98	1,556.54	0.00	0.00	0.00
10,700.00	89.86	359.89	7,733.76	1,656.99	234.78	1,656.54	0.00	0.00	0.00
10,800.00	89.86	359.89	7,734.00	1,756.99	234.59	1,756.54	0.00	0.00	0.00
10,900.00	89.86	359.89	7,734.25	1,856.99	234.40	1,856.54	0.00	0.00	0.00
11,000.00	89.86	359.89	7,734.50	1,956.99	234.20	1,956.54	0.00	0.00	0.00
11,100.00	89.86	359.89	7,734.74	2,056.99	234.01	2,056.54	0.00	0.00	0.00
11,200.00	89.86	359.89	7,734.99	2,156.99	233.82	2,156.54	0.00	0.00	0.00
11,300.00	89.86	359.89	7,735.24	2,256.99	233.62	2,256.54	0.00	0.00	0.00
11,400.00	89.86	359.89	7,735.48	2,356.99	233.43	2,356.54	0.00	0.00	0.00
11,500.00	89.86	359.89	7,735.73	2,456.99	233.24	2,456.54	0.00	0.00	0.00
11,600.00	89.86	359.89	7,735.98	2,556.99	233.04	2,556.54	0.00	0.00	0.00
11,700.00	89.86	359.89	7,736.22	2,656.99	232.85	2,656.53	0.00	0.00	0.00
11,800.00	89.86	359.89	7,736.47	2,756.99	232.66	2,756.53	0.00	0.00	0.00
11,900.00	89.86	359.89	7,736.72	2,856.99	232.46	2,856.53	0.00	0.00	0.00
12,000.00	89.86	359.89	7,736.96	2,956.99	232.27	2,956.53	0.00	0.00	0.00
12,100.00	89.86	359.89	7,737.21	3,056.98	232.08	3,056.53	0.00	0.00	0.00
12,200.00	89.86	359.89	7,737.46	3,156.98	231.88	3,156.53	0.00	0.00	0.00
12,300.00	89.86	359.89	7,737.70	3,256.98	231.69	3,256.53	0.00	0.00	0.00
12,400.00	89.86	359.89	7,737.95	3,356.98	231.50	3,356.53	0.00	0.00	0.00
12,500.00	89.86	359.89	7,738.20	3,456.98	231.30	3,456.53	0.00	0.00	0.00
12,600.00	89.86	359.89	7,738.44	3,556.98	231.11	3,556.53	0.00	0.00	0.00
12,700.00	89.86	359.89	7,738.69	3,656.98	230.92	3,656.53	0.00	0.00	0.00
12,800.00	89.86	359.89	7,738.94	3,756.98	230.72	3,756.53	0.00	0.00	0.00
12,900.00	89.86	359.89	7,739.18	3,856.98	230.53	3,856.53	0.00	0.00	0.00
13,000.00	89.86	359.89	7,739.43	3,956.98	230.34	3,956.53	0.00	0.00	0.00
13,100.00	89.86	359.89	7,739.68	4,056.98	230.15	4,056.53	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-12HZ
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 8-12HZ	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	89.86	359.89	7,739.92	4,156.98	229.95	4,156.53	0.00	0.00	0.00
13,300.00	89.86	359.89	7,740.17	4,256.98	229.76	4,256.53	0.00	0.00	0.00
13,400.00	89.86	359.89	7,740.42	4,356.98	229.57	4,356.53	0.00	0.00	0.00
13,500.00	89.86	359.89	7,740.66	4,456.98	229.37	4,456.53	0.00	0.00	0.00
13,600.00	89.86	359.89	7,740.91	4,556.98	229.18	4,556.53	0.00	0.00	0.00
13,635.85	89.86	359.89	7,741.00	4,592.83	229.11	4,592.38	0.00	0.00	0.00
TD Well @ 13635.85ft									

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	
8,365.51	7,728.00	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				
4,414.89	4,207.00	Parkman				
4,779.28	4,555.00	Sussex				
7,732.98	7,465.00	Sharon Springs				
7,779.44	7,500.00	Niobrara				
7,887.15	7,573.00	Nio B				
8,126.79	7,688.00	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	Begin Nudge @ 250.00ft	
1,623.33	1,593.94	-240.66	41.61	Hold Tangent @ 1623.33ft	
4,423.33	4,214.90	-1,211.42	209.47	Begin Drop @ 4423.33ft	
5,453.33	5,222.85	-1,391.91	240.68	End Drop @ 5453.33ft	
7,242.28	7,011.80	-1,391.91	240.68	KOP @ 7242.28ft :: DLS = 8°/100'	
8,365.51	7,728.00	-677.48	239.29	End Build @ 8365.51ft	
13,635.85	7,741.00	4,592.83	229.11	TD Well @ 13635.85ft	