

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-68W-08 MAE J 14-8HZ PAD
MAE J 8-3HZ**

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.060629/-105.028600
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 8-3HZ
 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
7604.00	8352.58	Top of Production	5-1/2

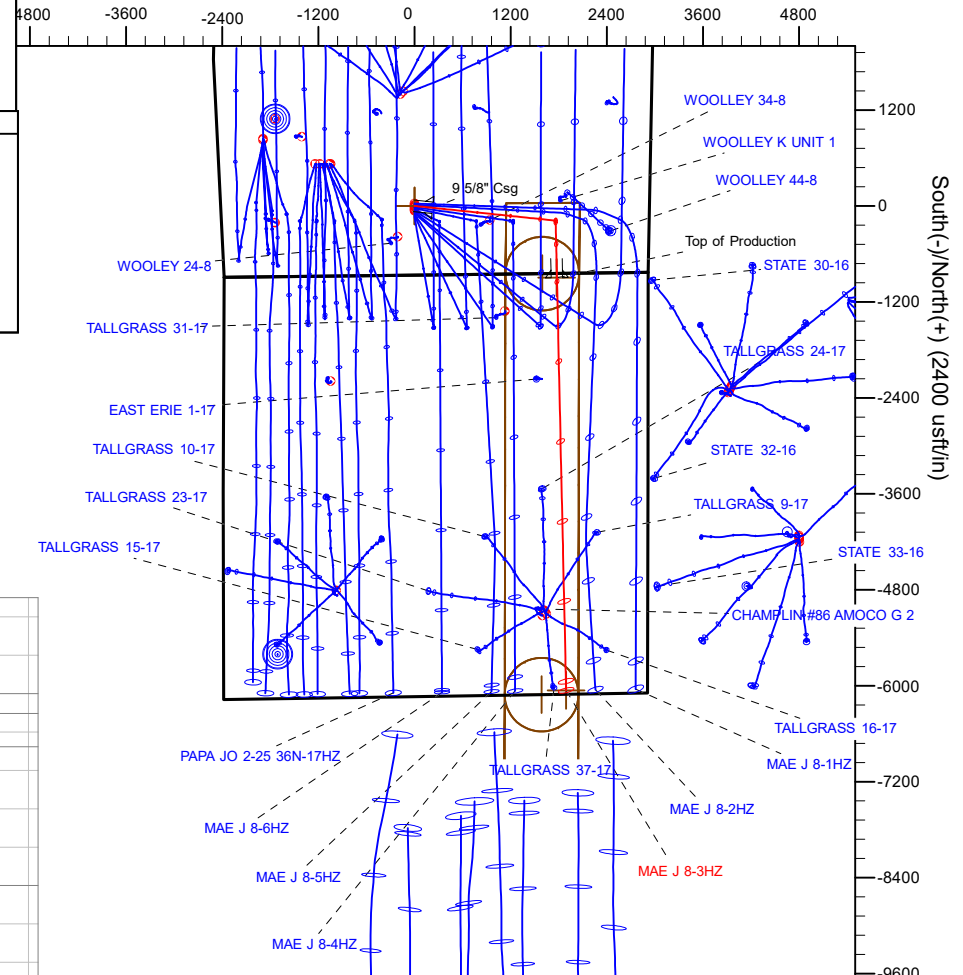
SECTION DETAILS

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	200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	
3	1838.67	24.58	95.95	1788.86	-35.88	344.27	1.50	95.95	43.56	
4	4638.64	24.58	95.95	4335.11	-156.61	1502.68	0.00	0.00	190.14	
5	5867.64	0.00	0.00	5526.75	-183.52	1760.89	2.00	180.00	222.81	
6	7228.69	0.00	0.00	6887.80	-183.52	1760.89	0.00	0.00	222.81	
7	8352.58	89.91	178.72	7604.00	-898.43	1776.80	8.00	178.72	937.90	
8	13513.20	89.91	178.72	7612.00	-6057.77	1891.65	0.00	0.00	6098.51	MAE J 8-3HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MAE J 8-3HZ_SHL	0.00	0.00	0.00	40.060629	-105.028600
MAE J 8-3HZ_BHL	7612.00	-6057.77	1891.65	40.043993	-105.021841

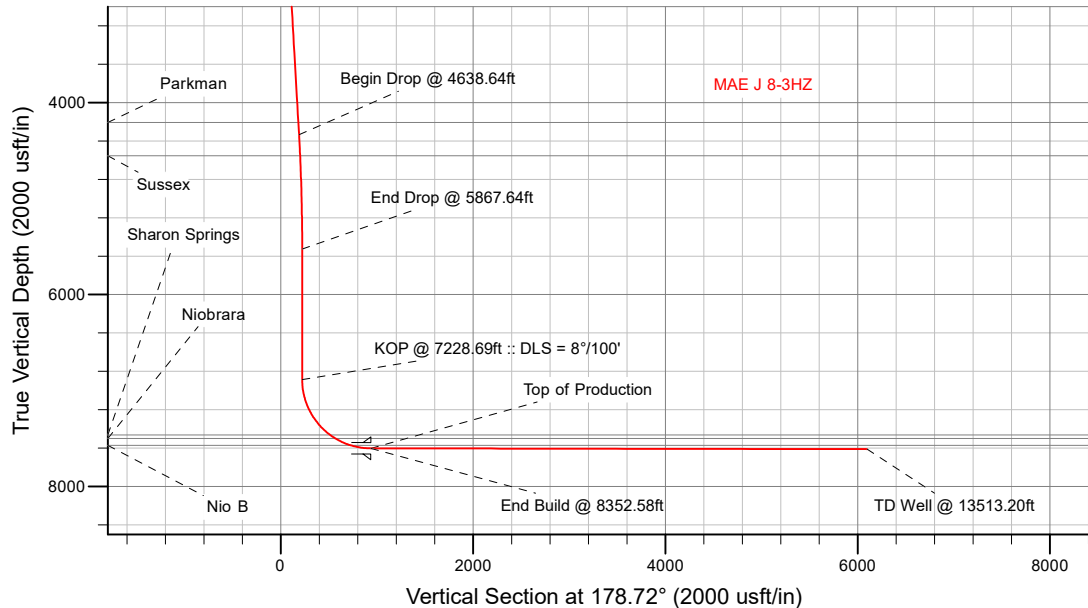
West(-)/East(+) (2400 usft/in)



SHL
 866' FSL
 2418' FWL

HEEL
 50' FNL
 1142' FEL

BHL
 49' FSL
 1017' FEL



WELL DETAILS: MAE J 8-3HZ

5083.00

RKB = 17' @ 5100.00usft (Drilling Rig)

Plan: Permit Rev-1 (MAE J 8-3HZ/Plan A)

Date: 11/6/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-3HZ
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 8-3HZ	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 8-3HZ					
Well Position	+N-S	-29.86 usft	Northing:	14,548,812.34 usft	Latitude:	40.060629
	+E-W	0.00 usft	Easting:	1,632,414.29 usft	Longitude:	-105.028600
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	52,029.24662389

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	178.72

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	13,513.20	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 8-3HZ
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 8-3HZ	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	
1,838.67	24.58	95.95	1,788.86	-35.88	344.27	1.50	1.50	0.00	95.95	
4,638.64	24.58	95.95	4,335.11	-156.61	1,502.68	0.00	0.00	0.00	0.00	
5,867.64	0.00	0.00	5,526.75	-183.52	1,760.89	2.00	-2.00	0.00	180.00	
7,228.69	0.00	0.00	6,887.80	-183.52	1,760.89	0.00	0.00	0.00	0.00	
8,352.58	89.91	178.72	7,604.00	-898.43	1,776.80	8.00	8.00	15.90	178.72	
13,513.20	89.91	178.72	7,612.00	-6,057.77	1,891.65	0.00	0.00	0.00	0.00	MAE J 8-3HZ_BHL

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-3HZ
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 8-3HZ	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	95.95	299.99	-0.14	1.30	0.16	1.50	1.50	0.00	0.00
400.00	3.00	95.95	399.91	-0.54	5.21	0.66	1.50	1.50	0.00	0.00
500.00	4.50	95.95	499.69	-1.22	11.71	1.48	1.50	1.50	0.00	0.00
600.00	6.00	95.95	599.27	-2.17	20.81	2.63	1.50	1.50	0.00	0.00
700.00	7.50	95.95	698.57	-3.39	32.50	4.11	1.50	1.50	0.00	0.00
800.00	9.00	95.95	797.54	-4.87	46.77	5.92	1.50	1.50	0.00	0.00
900.00	10.50	95.95	896.09	-6.63	63.62	8.05	1.50	1.50	0.00	0.00
1,000.00	12.00	95.95	994.16	-8.65	83.02	10.50	1.50	1.50	0.00	0.00
1,079.76	13.20	95.95	1,072.00	-10.46	100.32	12.69	1.50	1.50	0.00	0.00
Fox Hills										
1,100.00	13.50	95.95	1,091.70	-10.94	104.97	13.28	1.50	1.50	0.00	0.00
1,200.00	15.00	95.95	1,188.62	-13.49	129.45	16.38	1.50	1.50	0.00	0.00
1,300.00	16.50	95.95	1,284.86	-16.31	156.45	19.80	1.50	1.50	0.00	0.00
1,400.00	18.00	95.95	1,380.36	-19.38	185.94	23.53	1.50	1.50	0.00	0.00
1,500.00	19.50	95.95	1,475.05	-22.71	217.91	27.57	1.50	1.50	0.00	0.00
1,526.50	19.90	95.95	1,500.00	-23.64	226.80	28.70	1.50	1.50	0.00	0.00
9 5/8" Csg										
1,600.00	21.00	95.95	1,568.86	-26.30	252.34	31.93	1.50	1.50	0.00	0.00
1,700.00	22.50	95.95	1,661.74	-30.14	289.19	36.59	1.50	1.50	0.00	0.00
1,800.00	24.00	95.95	1,753.62	-34.23	328.45	41.56	1.50	1.50	0.00	0.00
1,838.67	24.58	95.95	1,788.86	-35.88	344.27	43.56	1.50	1.50	0.00	0.00
End Nudge @ 1838.67ft										
1,900.00	24.58	95.95	1,844.64	-38.53	369.65	46.77	0.00	0.00	0.00	0.00
2,000.00	24.58	95.95	1,935.58	-42.84	411.02	52.01	0.00	0.00	0.00	0.00
2,100.00	24.58	95.95	2,026.51	-47.15	452.39	57.24	0.00	0.00	0.00	0.00
2,200.00	24.58	95.95	2,117.45	-51.46	493.76	62.48	0.00	0.00	0.00	0.00
2,300.00	24.58	95.95	2,208.39	-55.77	535.14	67.71	0.00	0.00	0.00	0.00
2,400.00	24.58	95.95	2,299.33	-60.08	576.51	72.95	0.00	0.00	0.00	0.00
2,500.00	24.58	95.95	2,390.27	-64.40	617.88	78.18	0.00	0.00	0.00	0.00
2,600.00	24.58	95.95	2,481.21	-68.71	659.25	83.42	0.00	0.00	0.00	0.00
2,700.00	24.58	95.95	2,572.14	-73.02	700.63	88.65	0.00	0.00	0.00	0.00
2,800.00	24.58	95.95	2,663.08	-77.33	742.00	93.89	0.00	0.00	0.00	0.00
2,900.00	24.58	95.95	2,754.02	-81.64	783.37	99.12	0.00	0.00	0.00	0.00
3,000.00	24.58	95.95	2,844.96	-85.96	824.74	104.36	0.00	0.00	0.00	0.00
3,100.00	24.58	95.95	2,935.90	-90.27	866.11	109.59	0.00	0.00	0.00	0.00
3,200.00	24.58	95.95	3,026.83	-94.58	907.49	114.83	0.00	0.00	0.00	0.00
3,300.00	24.58	95.95	3,117.77	-98.89	948.86	120.06	0.00	0.00	0.00	0.00
3,400.00	24.58	95.95	3,208.71	-103.20	990.23	125.30	0.00	0.00	0.00	0.00
3,500.00	24.58	95.95	3,299.65	-107.52	1,031.60	130.53	0.00	0.00	0.00	0.00
3,600.00	24.58	95.95	3,390.59	-111.83	1,072.98	135.77	0.00	0.00	0.00	0.00
3,700.00	24.58	95.95	3,481.53	-116.14	1,114.35	141.00	0.00	0.00	0.00	0.00
3,800.00	24.58	95.95	3,572.46	-120.45	1,155.72	146.24	0.00	0.00	0.00	0.00
3,900.00	24.58	95.95	3,663.40	-124.76	1,197.09	151.47	0.00	0.00	0.00	0.00
4,000.00	24.58	95.95	3,754.34	-129.08	1,238.47	156.71	0.00	0.00	0.00	0.00
4,100.00	24.58	95.95	3,845.28	-133.39	1,279.84	161.94	0.00	0.00	0.00	0.00
4,200.00	24.58	95.95	3,936.22	-137.70	1,321.21	167.18	0.00	0.00	0.00	0.00
4,300.00	24.58	95.95	4,027.15	-142.01	1,362.58	172.41	0.00	0.00	0.00	0.00
4,400.00	24.58	95.95	4,118.09	-146.32	1,403.95	177.65	0.00	0.00	0.00	0.00
4,497.77	24.58	95.95	4,207.00	-150.54	1,444.40	182.77	0.00	0.00	0.00	0.00
Parkman										

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-3HZ
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 8-3HZ	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)
4,500.00	24.58	95.95	4,209.03	-150.63	1,445.33	182.88	0.00	0.00	0.00
4,600.00	24.58	95.95	4,299.97	-154.95	1,486.70	188.12	0.00	0.00	0.00
4,638.64	24.58	95.95	4,335.11	-156.61	1,502.68	190.14	0.00	0.00	0.00
Begin Drop @ 4638.64ft									
4,700.00	23.35	95.95	4,391.18	-159.20	1,527.47	193.28	2.00	-2.00	0.00
4,800.00	21.35	95.95	4,483.66	-163.14	1,565.30	198.06	2.00	-2.00	0.00
4,876.21	19.83	95.95	4,555.00	-165.92	1,591.96	201.44	2.00	-2.00	0.00
Sussex									
4,900.00	19.35	95.95	4,577.41	-166.74	1,599.89	202.44	2.00	-2.00	0.00
5,000.00	17.35	95.95	4,672.32	-170.01	1,631.21	206.40	2.00	-2.00	0.00
5,100.00	15.35	95.95	4,768.27	-172.93	1,659.21	209.95	2.00	-2.00	0.00
5,200.00	13.35	95.95	4,865.14	-175.50	1,683.86	213.07	2.00	-2.00	0.00
5,300.00	11.35	95.95	4,962.82	-177.71	1,705.14	215.76	2.00	-2.00	0.00
5,400.00	9.35	95.95	5,061.19	-179.58	1,723.01	218.02	2.00	-2.00	0.00
5,500.00	7.35	95.95	5,160.12	-181.08	1,737.46	219.85	2.00	-2.00	0.00
5,600.00	5.35	95.95	5,259.50	-182.23	1,748.46	221.24	2.00	-2.00	0.00
5,700.00	3.35	95.95	5,359.21	-183.02	1,756.01	222.20	2.00	-2.00	0.00
5,800.00	1.35	95.95	5,459.12	-183.44	1,760.10	222.71	2.00	-2.00	0.00
5,867.64	0.00	0.00	5,526.75	-183.52	1,760.89	222.81	2.00	-2.00	0.00
End Drop @ 5867.64ft									
5,900.00	0.00	0.00	5,559.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
6,000.00	0.00	0.00	5,659.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
6,100.00	0.00	0.00	5,759.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
6,200.00	0.00	0.00	5,859.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
6,300.00	0.00	0.00	5,959.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
6,400.00	0.00	0.00	6,059.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
6,500.00	0.00	0.00	6,159.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
6,600.00	0.00	0.00	6,259.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
6,700.00	0.00	0.00	6,359.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
6,800.00	0.00	0.00	6,459.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
6,900.00	0.00	0.00	6,559.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
7,000.00	0.00	0.00	6,659.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
7,100.00	0.00	0.00	6,759.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
7,200.00	0.00	0.00	6,859.11	-183.52	1,760.89	222.81	0.00	0.00	0.00
7,228.69	0.00	0.00	6,887.80	-183.52	1,760.89	222.81	0.00	0.00	0.00
KOP @ 7228.69ft :: DLS = 8°/100'									
7,300.00	5.70	178.72	6,959.00	-187.07	1,760.97	226.36	8.00	8.00	0.00
7,400.00	13.70	178.72	7,057.49	-203.91	1,761.34	243.20	8.00	8.00	0.00
7,500.00	21.70	178.72	7,152.67	-234.29	1,762.02	273.59	8.00	8.00	0.00
7,600.00	29.70	178.72	7,242.70	-277.62	1,762.98	316.93	8.00	8.00	0.00
7,700.00	37.70	178.72	7,325.83	-333.05	1,764.22	372.37	8.00	8.00	0.00
7,800.00	45.70	178.72	7,400.42	-399.51	1,765.70	438.85	8.00	8.00	0.00
7,899.93	53.70	178.72	7,465.00	-475.64	1,767.39	515.00	8.00	8.00	0.00
Sharon Springs									
7,900.00	53.70	178.72	7,465.04	-475.70	1,767.39	515.06	8.00	8.00	0.00
7,962.89	58.74	178.72	7,500.00	-527.94	1,768.56	567.32	8.00	8.00	0.00
Niobrara									
8,000.00	61.70	178.72	7,518.43	-560.14	1,769.27	599.52	8.00	8.00	0.00
8,100.00	69.70	178.72	7,559.54	-651.19	1,771.30	690.59	8.00	8.00	0.00
8,142.20	73.08	178.72	7,573.00	-691.16	1,772.19	730.58	8.00	8.00	0.00
Nio B									
8,200.00	77.70	178.72	7,587.57	-747.07	1,773.43	786.50	8.00	8.00	0.00
8,300.00	85.70	178.72	7,601.99	-845.92	1,775.63	885.37	8.00	8.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-3HZ
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 8-3HZ	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)
8,352.58	89.91	178.72	7,604.00	-898.43	1,776.80	937.90	8.00	8.00	0.00
End Build @ 8352.58ft - Top of Production									
8,400.00	89.91	178.72	7,604.07	-945.84	1,777.86	985.32	0.00	0.00	0.00
8,500.00	89.91	178.72	7,604.23	-1,045.82	1,780.08	1,085.32	0.00	0.00	0.00
8,600.00	89.91	178.72	7,604.38	-1,145.79	1,782.31	1,185.32	0.00	0.00	0.00
8,700.00	89.91	178.72	7,604.54	-1,245.77	1,784.54	1,285.32	0.00	0.00	0.00
8,800.00	89.91	178.72	7,604.69	-1,345.74	1,786.76	1,385.32	0.00	0.00	0.00
8,900.00	89.91	178.72	7,604.85	-1,445.72	1,788.99	1,485.32	0.00	0.00	0.00
9,000.00	89.91	178.72	7,605.00	-1,545.69	1,791.21	1,585.32	0.00	0.00	0.00
9,100.00	89.91	178.72	7,605.16	-1,645.67	1,793.44	1,685.32	0.00	0.00	0.00
9,200.00	89.91	178.72	7,605.31	-1,745.64	1,795.66	1,785.32	0.00	0.00	0.00
9,300.00	89.91	178.72	7,605.47	-1,845.62	1,797.89	1,885.32	0.00	0.00	0.00
9,400.00	89.91	178.72	7,605.62	-1,945.59	1,800.11	1,985.32	0.00	0.00	0.00
9,500.00	89.91	178.72	7,605.78	-2,045.57	1,802.34	2,085.32	0.00	0.00	0.00
9,600.00	89.91	178.72	7,605.93	-2,145.54	1,804.56	2,185.32	0.00	0.00	0.00
9,700.00	89.91	178.72	7,606.09	-2,245.52	1,806.79	2,285.32	0.00	0.00	0.00
9,800.00	89.91	178.72	7,606.24	-2,345.49	1,809.01	2,385.32	0.00	0.00	0.00
9,900.00	89.91	178.72	7,606.40	-2,445.47	1,811.24	2,485.32	0.00	0.00	0.00
10,000.00	89.91	178.72	7,606.55	-2,545.44	1,813.47	2,585.32	0.00	0.00	0.00
10,100.00	89.91	178.72	7,606.71	-2,645.42	1,815.69	2,685.32	0.00	0.00	0.00
10,200.00	89.91	178.72	7,606.86	-2,745.39	1,817.92	2,785.32	0.00	0.00	0.00
10,300.00	89.91	178.72	7,607.02	-2,845.37	1,820.14	2,885.32	0.00	0.00	0.00
10,400.00	89.91	178.72	7,607.17	-2,945.34	1,822.37	2,985.32	0.00	0.00	0.00
10,500.00	89.91	178.72	7,607.33	-3,045.32	1,824.59	3,085.32	0.00	0.00	0.00
10,600.00	89.91	178.72	7,607.48	-3,145.29	1,826.82	3,185.32	0.00	0.00	0.00
10,700.00	89.91	178.72	7,607.64	-3,245.27	1,829.04	3,285.32	0.00	0.00	0.00
10,800.00	89.91	178.72	7,607.79	-3,345.24	1,831.27	3,385.32	0.00	0.00	0.00
10,900.00	89.91	178.72	7,607.95	-3,445.22	1,833.49	3,485.32	0.00	0.00	0.00
11,000.00	89.91	178.72	7,608.10	-3,545.19	1,835.72	3,585.32	0.00	0.00	0.00
11,100.00	89.91	178.72	7,608.26	-3,645.17	1,837.95	3,685.32	0.00	0.00	0.00
11,200.00	89.91	178.72	7,608.41	-3,745.15	1,840.17	3,785.32	0.00	0.00	0.00
11,300.00	89.91	178.72	7,608.57	-3,845.12	1,842.40	3,885.32	0.00	0.00	0.00
11,400.00	89.91	178.72	7,608.72	-3,945.10	1,844.62	3,985.32	0.00	0.00	0.00
11,500.00	89.91	178.72	7,608.88	-4,045.07	1,846.85	4,085.32	0.00	0.00	0.00
11,600.00	89.91	178.72	7,609.03	-4,145.05	1,849.07	4,185.32	0.00	0.00	0.00
11,700.00	89.91	178.72	7,609.19	-4,245.02	1,851.30	4,285.32	0.00	0.00	0.00
11,800.00	89.91	178.72	7,609.34	-4,345.00	1,853.52	4,385.32	0.00	0.00	0.00
11,900.00	89.91	178.72	7,609.50	-4,444.97	1,855.75	4,485.32	0.00	0.00	0.00
12,000.00	89.91	178.72	7,609.65	-4,544.95	1,857.97	4,585.32	0.00	0.00	0.00
12,100.00	89.91	178.72	7,609.81	-4,644.92	1,860.20	4,685.32	0.00	0.00	0.00
12,200.00	89.91	178.72	7,609.96	-4,744.90	1,862.43	4,785.32	0.00	0.00	0.00
12,300.00	89.91	178.72	7,610.12	-4,844.87	1,864.65	4,885.32	0.00	0.00	0.00
12,400.00	89.91	178.72	7,610.27	-4,944.85	1,866.88	4,985.32	0.00	0.00	0.00
12,500.00	89.91	178.72	7,610.43	-5,044.82	1,869.10	5,085.32	0.00	0.00	0.00
12,600.00	89.91	178.72	7,610.58	-5,144.80	1,871.33	5,185.32	0.00	0.00	0.00
12,700.00	89.91	178.72	7,610.74	-5,244.77	1,873.55	5,285.32	0.00	0.00	0.00
12,800.00	89.91	178.72	7,610.89	-5,344.75	1,875.78	5,385.32	0.00	0.00	0.00
12,900.00	89.91	178.72	7,611.05	-5,444.72	1,878.00	5,485.31	0.00	0.00	0.00
13,000.00	89.91	178.72	7,611.20	-5,544.70	1,880.23	5,585.31	0.00	0.00	0.00
13,100.00	89.91	178.72	7,611.36	-5,644.67	1,882.45	5,685.31	0.00	0.00	0.00
13,200.00	89.91	178.72	7,611.51	-5,744.65	1,884.68	5,785.31	0.00	0.00	0.00
13,300.00	89.91	178.72	7,611.67	-5,844.62	1,886.91	5,885.31	0.00	0.00	0.00
13,400.00	89.91	178.72	7,611.82	-5,944.60	1,889.13	5,985.31	0.00	0.00	0.00
13,500.00	89.91	178.72	7,611.98	-6,044.57	1,891.36	6,085.31	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well MAE J 8-3HZ
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 8-3HZ	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)
13,513.20	89.91	178.72	7,612.00	-6,057.77	1,891.65	6,098.51	0.00	0.00	0.00
TD Well @ 13513.20ft									

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	
8,352.58	7,604.00	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			
4,497.77	4,207.00	Parkman			
4,876.21	4,555.00	Sussex			
7,899.93	7,465.00	Sharon Springs			
7,962.89	7,500.00	Niobrara			
8,142.20	7,573.00	Nio B			

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	
1,838.67	1,788.86	-35.88	344.27	End Nudge @ 1838.67ft	
4,638.64	4,335.11	-156.61	1,502.68	Begin Drop @ 4638.64ft	
5,867.64	5,526.75	-183.52	1,760.89	End Drop @ 5867.64ft	
7,228.69	6,887.80	-183.52	1,760.89	KOP @ 7228.69ft :: DLS = 8°/100'	
8,352.58	7,604.00	-898.43	1,776.80	End Build @ 8352.58ft	
13,513.20	7,612.00	-6,057.77	1,891.65	TD Well @ 13513.20ft	