

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N**

**3N-66W-23 FARLEY 34-23HZ PAD**

**FARLEY 23-4HZ**

## **Plan A**

### **Plan: Permit Rev-2**

SHL Lat/Long: 40.205316/-104.752062

Survey Program: MWD+IFR

## **Standard Planning Report**

**01 August, 2019**

Project: WELD-NAD83-UTMFT13N  
Site: 3N-66W-23 FARLEY 34-23HZ PAD  
Well: FARLEY 23-4HZ  
Wellbore: Plan A  
Design: Permit Rev-2

# US ROCKIES WATTENBERG PLANNING

## CASING DETAILS

TVD	MD	Name	Size
1500.00	1516.14	9 5/8" Csg	9-5/8
7186.00	7693.95	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	350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	
3	1280.67	13.96	67.35	1271.49	43.45	104.12	1.50	67.35	-45.74	
4	4080.67	13.96	67.35	3988.79	303.58	727.50	0.00	0.00	-319.63	
5	4778.67	0.00	0.00	4679.90	336.16	805.59	2.00	-180.00	-353.93	
6	6568.57	0.00	0.00	6469.80	336.16	805.59	0.00	0.00	-353.93	
7	7693.95	90.03	181.27	7186.00	-380.24	789.74	8.00	181.27	362.64	
8	11488.97	90.03	181.27	7184.00	-4174.33	705.77	0.00	0.00	4157.67	FARLEY 23-4HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
FARLEY 23-4HZ_SHL	0.00	0.00	0.00	40.205316	-104.752062
FARLEY 23-4HZ_BHL	7184.00	-4174.33	705.77	40.193853	-104.749535

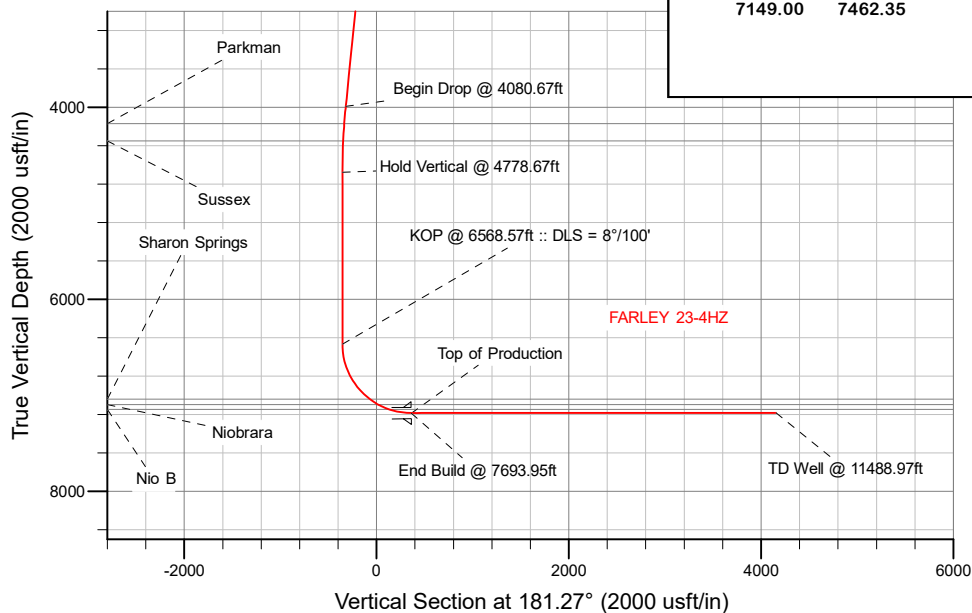
## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1171.00	1177.46	Fox Hills
4171.00	4267.05	Parkman
4349.00	4447.03	Sussex
7040.00	7228.11	Sharon Springs
7097.00	7332.72	Niobrara
7149.00	7462.35	Nio B

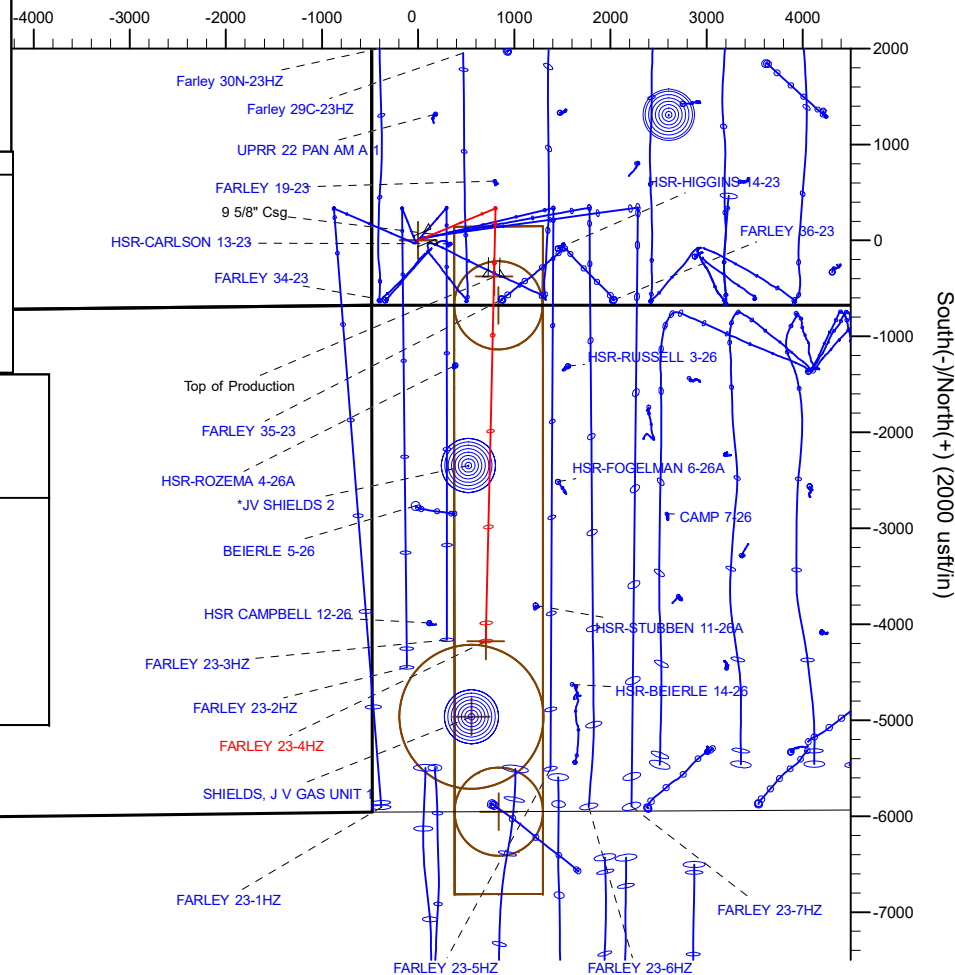
**SHL**  
**676' FSL**  
**481' FWL**

**HEEL**  
**300' FSL**  
**1272' FWL**

**BHL**  
**1778' FSL**  
**1183' FWL**



## West(-)/East(+) (2000 usft/in)



## WELL DETAILS: FARLEY 23-4HZ

GL = 4939'

RKB = 17' @ 4956.00usft (Drilling Rig)

Plan: Permit Rev-2 (FARLEY 23-4HZ/Plan A)

Date: 8/1/2019

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well FARLEY 23-4HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4956.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4956.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-23 FARLEY 34-23HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	FARLEY 23-4HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

Site		3N-66W-23 FARLEY 34-23HZ PAD			
Site Position:		Northing:	14,601,565.02 usft	Latitude:	40.205233
From:	Lat/Long	Easting:	1,709,610.42 usft	Longitude:	-104.752181
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.16 °

Well		FARLEY 23-4HZ				
Well Position	+N/-S	30.22 usft	Northing:	14,601,595.34 usft	Latitude:	40.205316
	+E/-W	33.23 usft	Easting:	1,709,643.57 usft	Longitude:	-104.752062
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,939.00 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	9/25/2018	8.05	66.67	52,146.34775075

<b>Design</b>	Permit Rev-2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	181.27

<b>Plan Survey Tool Program</b>	<b>Date</b>	8/1/2019		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	1,500.00	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declinatio
2	1,500.00	11,488.97	Permit Rev-2 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:crustal field declinatio

Corporate  
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FARLEY 23-4HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4956.00usft (Drilling Rig)
Site:	3N-66W-23 FARLEY 34-23HZ PAD	North Reference:	True
Well:	FARLEY 23-4HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-2		

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	
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,280.67	13.96	67.35	1,271.49	43.45	104.12	1.50	1.50	0.00	67.35	
4,080.67	13.96	67.35	3,988.79	303.58	727.50	0.00	0.00	0.00	0.00	
4,778.67	0.00	0.00	4,679.90	336.16	805.59	2.00	-2.00	-9.65	-180.00	
6,568.57	0.00	0.00	6,469.80	336.16	805.59	0.00	0.00	0.00	0.00	
7,693.95	90.03	181.27	7,186.00	-380.24	789.74	8.00	8.00	-15.88	181.27	
11,488.97	90.03	181.27	7,184.00	-4,174.33	705.77	0.00	0.00	0.00	0.00	FARLEY 23-4HZ_BHI

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well FARLEY 23-4HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4956.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4956.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-23 FARLEY 34-23HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	FARLEY 23-4HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
350.00	0.00	0.00	350.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 350.00ft									
400.00	0.75	67.35	400.00	0.13	0.30	-0.13	1.50	1.50	0.00
500.00	2.25	67.35	499.96	1.13	2.72	-1.19	1.50	1.50	0.00
600.00	3.75	67.35	599.82	3.15	7.55	-3.32	1.50	1.50	0.00
700.00	5.25	67.35	699.51	6.17	14.79	-6.50	1.50	1.50	0.00
800.00	6.75	67.35	798.96	10.20	24.43	-10.74	1.50	1.50	0.00
900.00	8.25	67.35	898.10	15.22	36.48	-16.03	1.50	1.50	0.00
1,000.00	9.75	67.35	996.87	21.25	50.92	-22.37	1.50	1.50	0.00
1,100.00	11.25	67.35	1,095.19	28.26	67.73	-29.76	1.50	1.50	0.00
1,177.46	12.41	67.35	1,171.00	34.38	82.39	-36.20	1.50	1.50	0.00
Fox Hills									
1,200.00	12.75	67.35	1,193.00	36.27	86.92	-38.19	1.50	1.50	0.00
1,280.67	13.96	67.35	1,271.49	43.45	104.12	-45.74	1.50	1.50	0.00
Hold Tangent @ 1280.67ft									
1,300.00	13.96	67.35	1,290.25	45.24	108.42	-47.63	0.00	0.00	0.00
1,400.00	13.96	67.35	1,387.29	54.53	130.68	-57.42	0.00	0.00	0.00
1,500.00	13.96	67.35	1,484.34	63.82	152.95	-67.20	0.00	0.00	0.00
1,516.14	13.96	67.35	1,500.00	65.32	156.54	-68.78	0.00	0.00	0.00
9 5/8" Csg									
1,600.00	13.96	67.35	1,581.39	73.11	175.21	-76.98	0.00	0.00	0.00
1,700.00	13.96	67.35	1,678.43	82.40	197.48	-86.76	0.00	0.00	0.00
1,800.00	13.96	67.35	1,775.48	91.69	219.74	-96.54	0.00	0.00	0.00
1,900.00	13.96	67.35	1,872.53	100.98	242.00	-106.32	0.00	0.00	0.00
2,000.00	13.96	67.35	1,969.57	110.27	264.27	-116.10	0.00	0.00	0.00
2,100.00	13.96	67.35	2,066.62	119.57	286.53	-125.89	0.00	0.00	0.00
2,200.00	13.96	67.35	2,163.67	128.86	308.80	-135.67	0.00	0.00	0.00
2,300.00	13.96	67.35	2,260.71	138.15	331.06	-145.45	0.00	0.00	0.00
2,400.00	13.96	67.35	2,357.76	147.44	353.32	-155.23	0.00	0.00	0.00
2,500.00	13.96	67.35	2,454.81	156.73	375.59	-165.01	0.00	0.00	0.00
2,600.00	13.96	67.35	2,551.85	166.02	397.85	-174.79	0.00	0.00	0.00
2,700.00	13.96	67.35	2,648.90	175.31	420.11	-184.58	0.00	0.00	0.00
2,800.00	13.96	67.35	2,745.94	184.60	442.38	-194.36	0.00	0.00	0.00
2,900.00	13.96	67.35	2,842.99	193.89	464.64	-204.14	0.00	0.00	0.00
3,000.00	13.96	67.35	2,940.04	203.18	486.91	-213.92	0.00	0.00	0.00
3,100.00	13.96	67.35	3,037.08	212.47	509.17	-223.70	0.00	0.00	0.00
3,200.00	13.96	67.35	3,134.13	221.76	531.43	-233.48	0.00	0.00	0.00
3,300.00	13.96	67.35	3,231.18	231.05	553.70	-243.26	0.00	0.00	0.00
3,400.00	13.96	67.35	3,328.22	240.34	575.96	-253.05	0.00	0.00	0.00
3,500.00	13.96	67.35	3,425.27	249.63	598.23	-262.83	0.00	0.00	0.00
3,600.00	13.96	67.35	3,522.32	258.92	620.49	-272.61	0.00	0.00	0.00
3,700.00	13.96	67.35	3,619.36	268.21	642.75	-282.39	0.00	0.00	0.00
3,800.00	13.96	67.35	3,716.41	277.50	665.02	-292.17	0.00	0.00	0.00
3,900.00	13.96	67.35	3,813.46	286.79	687.28	-301.95	0.00	0.00	0.00
4,000.00	13.96	67.35	3,910.50	296.08	709.54	-311.74	0.00	0.00	0.00
4,080.67	13.96	67.35	3,988.79	303.58	727.50	-319.63	0.00	0.00	0.00
Begin Drop @ 4080.67ft									
4,100.00	13.57	67.35	4,007.56	305.35	731.75	-321.49	2.00	-2.00	0.00
4,200.00	11.57	67.35	4,105.16	313.73	751.84	-330.32	2.00	-2.00	0.00
4,267.05	10.23	67.35	4,171.00	318.61	763.54	-335.46	2.00	-2.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well FARLEY 23-4HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4956.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4956.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-23 FARLEY 34-23HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	FARLEY 23-4HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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)
<b>Parkman</b>									
4,300.00	9.57	67.35	4,203.46	320.80	768.77	-337.76	2.00	-2.00	0.00
4,400.00	7.57	67.35	4,302.34	326.54	782.53	-343.80	2.00	-2.00	0.00
4,447.03	6.63	67.35	4,349.00	328.78	787.90	-346.16	2.00	-2.00	0.00
<b>Sussex</b>									
4,500.00	5.57	67.35	4,401.67	330.95	793.09	-348.44	2.00	-2.00	0.00
4,600.00	3.57	67.35	4,501.35	334.02	800.45	-351.67	2.00	-2.00	0.00
4,700.00	1.57	67.35	4,601.24	335.74	804.59	-353.50	2.00	-2.00	0.00
4,778.67	0.00	0.00	4,679.90	336.16	805.59	-353.93	2.00	-2.00	-85.61
<b>Hold Vertical @ 4778.67ft</b>									
4,800.00	0.00	0.00	4,701.23	336.16	805.59	-353.93	0.00	0.00	0.00
4,900.00	0.00	0.00	4,801.23	336.16	805.59	-353.93	0.00	0.00	0.00
5,000.00	0.00	0.00	4,901.23	336.16	805.59	-353.93	0.00	0.00	0.00
5,100.00	0.00	0.00	5,001.23	336.16	805.59	-353.93	0.00	0.00	0.00
5,200.00	0.00	0.00	5,101.23	336.16	805.59	-353.93	0.00	0.00	0.00
5,300.00	0.00	0.00	5,201.23	336.16	805.59	-353.93	0.00	0.00	0.00
5,400.00	0.00	0.00	5,301.23	336.16	805.59	-353.93	0.00	0.00	0.00
5,500.00	0.00	0.00	5,401.23	336.16	805.59	-353.93	0.00	0.00	0.00
5,600.00	0.00	0.00	5,501.23	336.16	805.59	-353.93	0.00	0.00	0.00
5,700.00	0.00	0.00	5,601.23	336.16	805.59	-353.93	0.00	0.00	0.00
5,800.00	0.00	0.00	5,701.23	336.16	805.59	-353.93	0.00	0.00	0.00
5,900.00	0.00	0.00	5,801.23	336.16	805.59	-353.93	0.00	0.00	0.00
6,000.00	0.00	0.00	5,901.23	336.16	805.59	-353.93	0.00	0.00	0.00
6,100.00	0.00	0.00	6,001.23	336.16	805.59	-353.93	0.00	0.00	0.00
6,200.00	0.00	0.00	6,101.23	336.16	805.59	-353.93	0.00	0.00	0.00
6,300.00	0.00	0.00	6,201.23	336.16	805.59	-353.93	0.00	0.00	0.00
6,400.00	0.00	0.00	6,301.23	336.16	805.59	-353.93	0.00	0.00	0.00
6,500.00	0.00	0.00	6,401.23	336.16	805.59	-353.93	0.00	0.00	0.00
6,568.57	0.00	0.00	6,469.80	336.16	805.59	-353.93	0.00	0.00	0.00
<b>KOP @ 6568.57ft :: DLS = 8°/100'</b>									
6,600.00	2.51	181.27	6,501.22	335.47	805.58	-353.24	8.00	8.00	-568.67
6,700.00	10.51	181.27	6,600.50	324.14	805.33	-341.91	8.00	8.00	0.00
6,800.00	18.51	181.27	6,697.23	299.10	804.77	-316.87	8.00	8.00	0.00
6,900.00	26.51	181.27	6,789.53	260.85	803.92	-278.60	8.00	8.00	0.00
7,000.00	34.51	181.27	6,875.61	210.13	802.80	-227.87	8.00	8.00	0.00
7,100.00	42.51	181.27	6,953.79	147.92	801.43	-165.65	8.00	8.00	0.00
7,200.00	50.51	181.27	7,022.55	75.45	799.82	-93.15	8.00	8.00	0.00
7,228.11	52.76	181.27	7,040.00	53.41	799.33	-71.11	8.00	8.00	0.00
<b>Sharon Springs</b>									
7,300.00	58.51	181.27	7,080.56	-5.89	798.02	-11.79	8.00	8.00	0.00
7,332.72	61.13	181.27	7,097.00	-34.17	797.40	16.48	8.00	8.00	0.00
<b>Niobrara</b>									
7,400.00	66.51	181.27	7,126.67	-94.51	796.06	76.85	8.00	8.00	0.00
7,462.35	71.50	181.27	7,149.00	-152.69	794.77	135.04	8.00	8.00	0.00
<b>Nio B</b>									
7,500.00	74.51	181.27	7,160.00	-188.69	793.98	171.04	8.00	8.00	0.00
7,600.00	82.51	181.27	7,179.90	-286.58	791.81	268.96	8.00	8.00	0.00
7,693.95	90.03	181.27	7,186.00	-380.24	789.74	362.64	8.00	8.00	0.00
<b>End Build @ 7693.95ft - Top of Production</b>									
7,700.00	90.03	181.27	7,186.00	-386.29	789.60	368.69	0.00	0.00	0.00
7,800.00	90.03	181.27	7,185.95	-486.27	787.39	468.69	0.00	0.00	0.00
7,900.00	90.03	181.27	7,185.89	-586.24	785.18	568.69	0.00	0.00	0.00
8,000.00	90.03	181.27	7,185.84	-686.22	782.97	668.69	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well FARLEY 23-4HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 4956.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4956.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-23 FARLEY 34-23HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	FARLEY 23-4HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

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)
8,100.00	90.03	181.27	7,185.79	-786.19	780.75	768.69	0.00	0.00	0.00
8,200.00	90.03	181.27	7,185.73	-886.17	778.54	868.69	0.00	0.00	0.00
8,300.00	90.03	181.27	7,185.68	-986.14	776.33	968.69	0.00	0.00	0.00
8,400.00	90.03	181.27	7,185.63	-1,086.12	774.12	1,068.69	0.00	0.00	0.00
8,500.00	90.03	181.27	7,185.58	-1,186.09	771.90	1,168.69	0.00	0.00	0.00
8,600.00	90.03	181.27	7,185.52	-1,286.07	769.69	1,268.69	0.00	0.00	0.00
8,700.00	90.03	181.27	7,185.47	-1,386.04	767.48	1,368.69	0.00	0.00	0.00
8,800.00	90.03	181.27	7,185.42	-1,486.02	765.27	1,468.69	0.00	0.00	0.00
8,900.00	90.03	181.27	7,185.37	-1,586.00	763.05	1,568.69	0.00	0.00	0.00
9,000.00	90.03	181.27	7,185.31	-1,685.97	760.84	1,668.69	0.00	0.00	0.00
9,100.00	90.03	181.27	7,185.26	-1,785.95	758.63	1,768.69	0.00	0.00	0.00
9,200.00	90.03	181.27	7,185.21	-1,885.92	756.42	1,868.69	0.00	0.00	0.00
9,300.00	90.03	181.27	7,185.15	-1,985.90	754.20	1,968.69	0.00	0.00	0.00
9,400.00	90.03	181.27	7,185.10	-2,085.87	751.99	2,068.69	0.00	0.00	0.00
9,500.00	90.03	181.27	7,185.05	-2,185.85	749.78	2,168.69	0.00	0.00	0.00
9,600.00	90.03	181.27	7,185.00	-2,285.82	747.57	2,268.69	0.00	0.00	0.00
9,700.00	90.03	181.27	7,184.94	-2,385.80	745.35	2,368.69	0.00	0.00	0.00
9,800.00	90.03	181.27	7,184.89	-2,485.78	743.14	2,468.69	0.00	0.00	0.00
9,900.00	90.03	181.27	7,184.84	-2,585.75	740.93	2,568.69	0.00	0.00	0.00
10,000.00	90.03	181.27	7,184.79	-2,685.73	738.72	2,668.69	0.00	0.00	0.00
10,100.00	90.03	181.27	7,184.73	-2,785.70	736.50	2,768.69	0.00	0.00	0.00
10,200.00	90.03	181.27	7,184.68	-2,885.68	734.29	2,868.69	0.00	0.00	0.00
10,300.00	90.03	181.27	7,184.63	-2,985.65	732.08	2,968.69	0.00	0.00	0.00
10,400.00	90.03	181.27	7,184.57	-3,085.63	729.87	3,068.69	0.00	0.00	0.00
10,500.00	90.03	181.27	7,184.52	-3,185.60	727.65	3,168.69	0.00	0.00	0.00
10,600.00	90.03	181.27	7,184.47	-3,285.58	725.44	3,268.69	0.00	0.00	0.00
10,700.00	90.03	181.27	7,184.42	-3,385.56	723.23	3,368.69	0.00	0.00	0.00
10,800.00	90.03	181.27	7,184.36	-3,485.53	721.02	3,468.69	0.00	0.00	0.00
10,900.00	90.03	181.27	7,184.31	-3,585.51	718.80	3,568.69	0.00	0.00	0.00
11,000.00	90.03	181.27	7,184.26	-3,685.48	716.59	3,668.69	0.00	0.00	0.00
11,100.00	90.03	181.27	7,184.21	-3,785.46	714.38	3,768.69	0.00	0.00	0.00
11,200.00	90.03	181.27	7,184.15	-3,885.43	712.17	3,868.69	0.00	0.00	0.00
11,300.00	90.03	181.27	7,184.10	-3,985.41	709.95	3,968.69	0.00	0.00	0.00
11,400.00	90.03	181.27	7,184.05	-4,085.38	707.74	4,068.69	0.00	0.00	0.00
11,488.97	90.03	181.27	7,184.00	-4,174.33	705.77	4,157.67	0.00	0.00	0.00
TD Well @ 11488.97ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,516.14	1,500.00	9 5/8" Csg	9-5/8	13-1/2	
7,693.95	7,186.00	Top of Production	5-1/2	7-7/8	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well FARLEY 23-4HZ
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<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 4956.00usft (Drilling Rig)
<b>Site:</b>	3N-66W-23 FARLEY 34-23HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	FARLEY 23-4HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-2		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,177.46	1,171.00	Fox Hills				
4,267.05	4,171.00	Parkman				
4,447.03	4,349.00	Sussex				
7,228.11	7,040.00	Sharon Springs				
7,332.72	7,097.00	Niobrara				
7,462.35	7,149.00	Nio B				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
350.00	350.00	0.00	0.00	Begin Nudge @ 350.00ft	
1,280.67	1,271.49	43.45	104.12	Hold Tangent @ 1280.67ft	
4,080.67	3,988.79	303.58	727.50	Begin Drop @ 4080.67ft	
4,778.67	4,679.90	336.16	805.59	Hold Vertical @ 4778.67ft	
6,568.57	6,469.80	336.16	805.59	KOP @ 6568.57ft :: DLS = 8°/100'	
7,693.95	7,186.00	-380.24	789.74	End Build @ 7693.95ft	
11,488.97	7,184.00	-4,174.33	705.77	TD Well @ 11488.97ft	