

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

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

FARLEY 23-3HZ

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.205288/-104.752102

Survey Program: MWD+IFR+MSA

Standard Planning Report

02 October, 2018

Project: WELD-NAD83-UTMFT13N
Site: 3N-66W-23 FARLEY 34-23HZ PAD
Well: FARLEY 23-3HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS		
TVD	MD	Size
1500.00	1507.60	9-5/8
7256.00	7699.29	5-1/2

WELL DETAILS: FARLEY 23-3HZ
GL = 4939.00
RKB = 17' @ 4956.00usft (Drilling Rig)

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	400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	
3	946.67	8.20	41.00	944.80	29.47	25.62	1.50	41.00	-29.44	
4	3746.66	8.20	41.00	3716.17	330.87	287.62	0.00	0.00	-330.47	
5	4156.66	0.00	0.00	4124.77	352.98	306.84	2.00	180.00	-352.55	
6	6571.70	0.00	0.00	6539.81	352.98	306.84	0.00	0.00	-352.55	
7	7699.29	90.21	179.92	7256.00	-365.81	307.79	8.00	179.92	366.24	
8	13227.66	90.21	179.92	7236.00	-5894.13	315.11	0.00	0.00	5894.57	FARLEY 23-3HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
FARLEY 23-3HZ_SHL	0.00	0.00	0.00	40.205288	-104.752102
FARLEY 23-3HZ_BHL	7236.00	-5894.13	315.11	40.189102	-104.750974

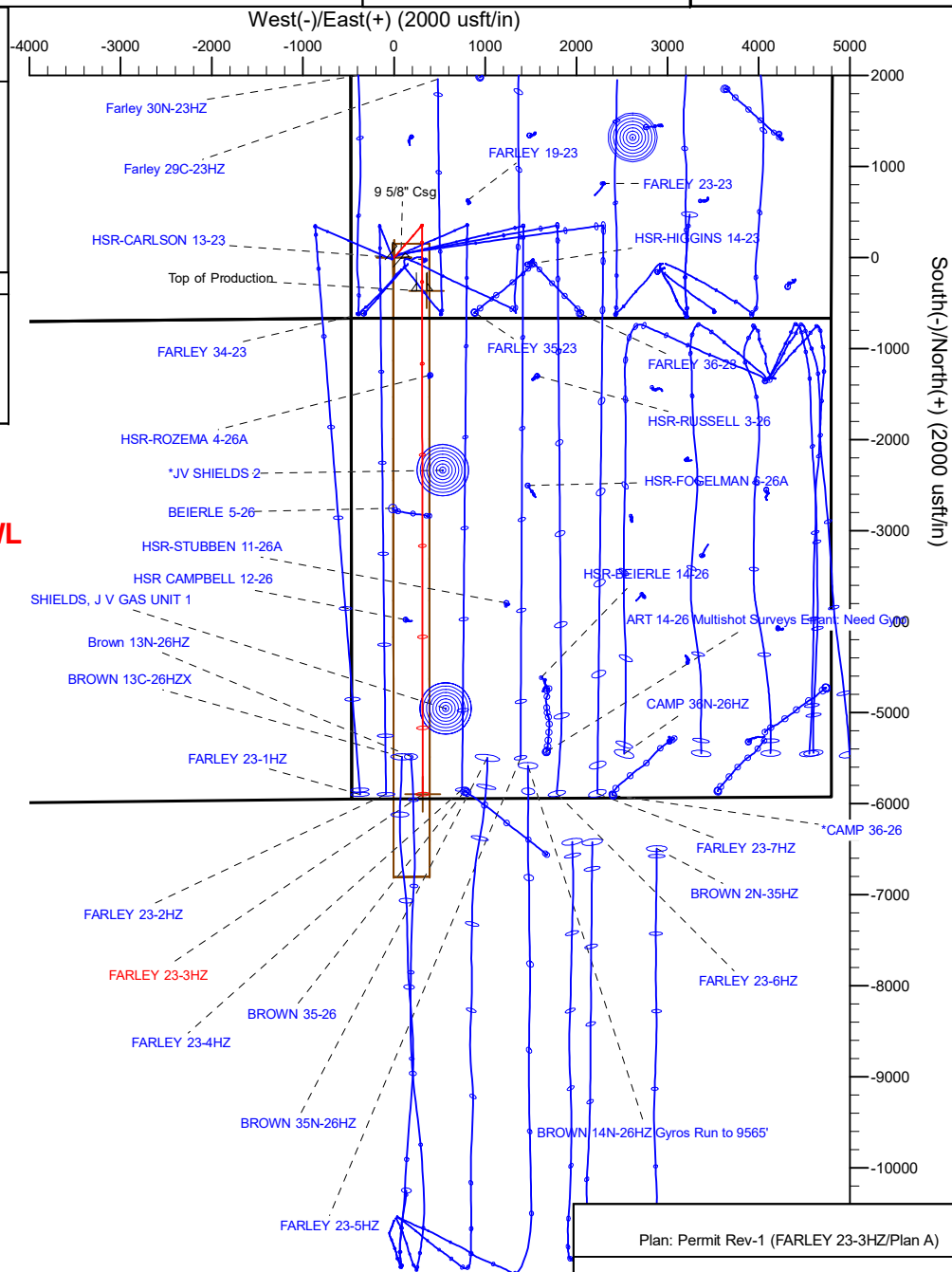
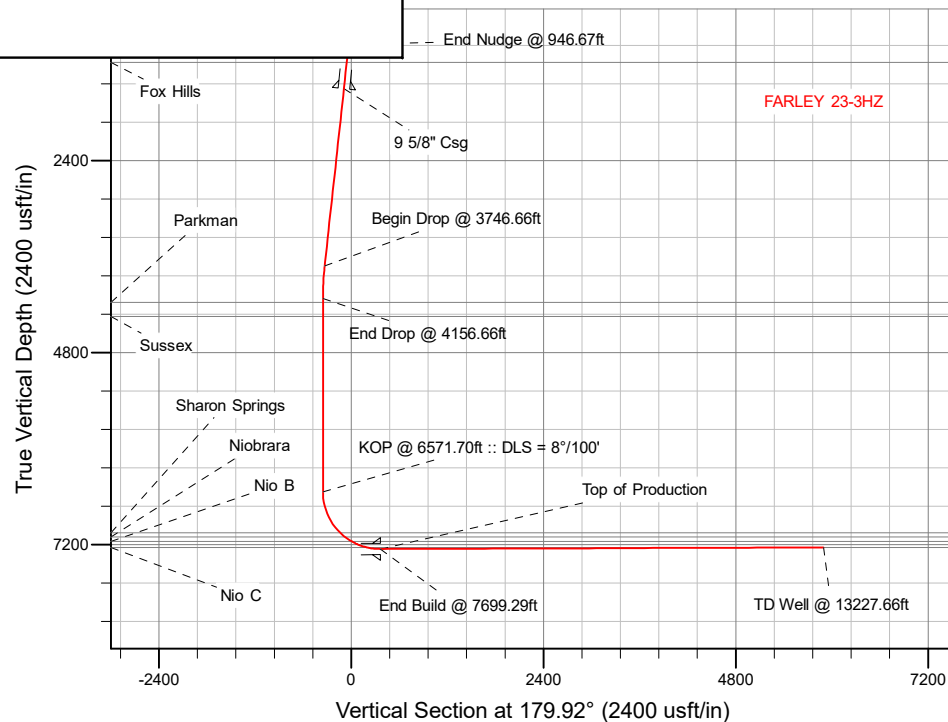
FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1171.00	1175.20	Fox Hills
4171.00	4202.89	Parkman
4349.00	4380.89	Sussex
7050.00	7139.54	Sharon Springs
7107.00	7226.30	Niobrara
7161.00	7323.59	Nio B
7236.00	7527.01	Nio C

SHL
666' FSL
470' FWL

HEEL
300' FSL
778' FWL

TOE
50' FSL
780' FWL



Plan: Permit Rev-1 (FARLEY 23-3HZ/Plan A)

Date: 10/02/2018

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FARLEY 23-3HZ
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 23-3HZ	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		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 23-3HZ					
Well Position	+N-S	20.03 usft	Northing:	14,601,585.12 usft	Latitude:	40.205288
	+E-W	22.06 usft	Easting:	1,709,632.43 usft	Longitude:	-104.752102
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,939.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	9/25/2018	8.05	66.67	52,146.32899115

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	179.92	

Plan Survey Tool Program	Date	10/2/2018			
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+II Fixed:v2:crustal field declinatio	
2	1,500.00	13,227.66	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +	

Corporate
Planning Report

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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 23-3HZ	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	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
946.67	8.20	41.00	944.80	29.47	25.62	1.50	1.50	0.00	41.00	
3,746.66	8.20	41.00	3,716.17	330.87	287.62	0.00	0.00	0.00	0.00	
4,156.66	0.00	0.00	4,124.77	352.98	306.84	2.00	-2.00	0.00	180.00	
6,571.70	0.00	0.00	6,539.81	352.98	306.84	0.00	0.00	0.00	0.00	
7,699.29	90.21	179.92	7,256.00	-365.81	307.79	8.00	8.00	15.96	179.92	
13,227.66	90.21	179.92	7,236.00	-5,894.13	315.11	0.00	0.00	0.00	0.00	FARLEY 23-3HZ_BHI

Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FARLEY 23-3HZ
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 23-3HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Planned Survey

Measured			Vertical			Vertical	Dogleg	Build	Turn
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Section	Rate	Rate	Rate
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/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
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 400.00ft									
500.00	1.50	41.00	499.99	0.99	0.86	-0.99	1.50	1.50	0.00
600.00	3.00	41.00	599.91	3.95	3.43	-3.95	1.50	1.50	0.00
700.00	4.50	41.00	699.69	8.89	7.73	-8.88	1.50	1.50	0.00
800.00	6.00	41.00	799.27	15.79	13.73	-15.77	1.50	1.50	0.00
900.00	7.50	41.00	898.57	24.66	21.44	-24.63	1.50	1.50	0.00
946.67	8.20	41.00	944.80	29.47	25.62	-29.44	1.50	1.50	0.00
End Nudge @ 946.67ft									
1,000.00	8.20	41.00	997.59	35.21	30.61	-35.17	0.00	0.00	0.00
1,100.00	8.20	41.00	1,096.57	45.98	39.97	-45.92	0.00	0.00	0.00
1,175.20	8.20	41.00	1,171.00	54.07	47.00	-54.01	0.00	0.00	0.00
Fox Hills									
1,200.00	8.20	41.00	1,195.55	56.74	49.33	-56.67	0.00	0.00	0.00
1,300.00	8.20	41.00	1,294.52	67.51	58.68	-67.42	0.00	0.00	0.00
1,400.00	8.20	41.00	1,393.50	78.27	68.04	-78.18	0.00	0.00	0.00
1,500.00	8.20	41.00	1,492.48	89.04	77.40	-88.93	0.00	0.00	0.00
1,507.60	8.20	41.00	1,500.00	89.85	78.11	-89.74	0.00	0.00	0.00
9 5/8" Csg									
1,600.00	8.20	41.00	1,591.46	99.80	86.75	-99.68	0.00	0.00	0.00
1,700.00	8.20	41.00	1,690.43	110.56	96.11	-110.43	0.00	0.00	0.00
1,800.00	8.20	41.00	1,789.41	121.33	105.47	-121.18	0.00	0.00	0.00
1,900.00	8.20	41.00	1,888.39	132.09	114.83	-131.93	0.00	0.00	0.00
2,000.00	8.20	41.00	1,987.37	142.86	124.18	-142.68	0.00	0.00	0.00
2,100.00	8.20	41.00	2,086.34	153.62	133.54	-153.44	0.00	0.00	0.00
2,200.00	8.20	41.00	2,185.32	164.39	142.90	-164.19	0.00	0.00	0.00
2,300.00	8.20	41.00	2,284.30	175.15	152.26	-174.94	0.00	0.00	0.00
2,400.00	8.20	41.00	2,383.28	185.91	161.61	-185.69	0.00	0.00	0.00
2,500.00	8.20	41.00	2,482.25	196.68	170.97	-196.44	0.00	0.00	0.00
2,600.00	8.20	41.00	2,581.23	207.44	180.33	-207.19	0.00	0.00	0.00
2,700.00	8.20	41.00	2,680.21	218.21	189.69	-217.94	0.00	0.00	0.00
2,800.00	8.20	41.00	2,779.19	228.97	199.04	-228.69	0.00	0.00	0.00
2,900.00	8.20	41.00	2,878.17	239.74	208.40	-239.45	0.00	0.00	0.00
3,000.00	8.20	41.00	2,977.14	250.50	217.76	-250.20	0.00	0.00	0.00
3,100.00	8.20	41.00	3,076.12	261.27	227.11	-260.95	0.00	0.00	0.00
3,200.00	8.20	41.00	3,175.10	272.03	236.47	-271.70	0.00	0.00	0.00
3,300.00	8.20	41.00	3,274.08	282.79	245.83	-282.45	0.00	0.00	0.00
3,400.00	8.20	41.00	3,373.05	293.56	255.19	-293.20	0.00	0.00	0.00
3,500.00	8.20	41.00	3,472.03	304.32	264.54	-303.95	0.00	0.00	0.00
3,600.00	8.20	41.00	3,571.01	315.09	273.90	-314.70	0.00	0.00	0.00
3,700.00	8.20	41.00	3,669.99	325.85	283.26	-325.46	0.00	0.00	0.00
3,746.66	8.20	41.00	3,716.17	330.87	287.62	-330.47	0.00	0.00	0.00
Begin Drop @ 3746.66ft									
3,800.00	7.13	41.00	3,769.03	336.24	292.29	-335.84	2.00	-2.00	0.00
3,900.00	5.13	41.00	3,868.45	344.31	299.30	-343.89	2.00	-2.00	0.00
4,000.00	3.13	41.00	3,968.19	349.75	304.03	-349.32	2.00	-2.00	0.00
4,100.00	1.13	41.00	4,068.11	352.56	306.47	-352.13	2.00	-2.00	0.00
4,156.66	0.00	0.00	4,124.77	352.98	306.84	-352.55	2.00	-2.00	0.00
End Drop @ 4156.66ft									

Corporate
Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FARLEY 23-3HZ
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 23-3HZ	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)
4,200.00	0.00	0.00	4,168.11	352.98	306.84	-352.55	0.00	0.00	0.00
4,202.89	0.00	0.00	4,171.00	352.98	306.84	-352.55	0.00	0.00	0.00
Parkman									
4,300.00	0.00	0.00	4,268.11	352.98	306.84	-352.55	0.00	0.00	0.00
4,380.89	0.00	0.00	4,349.00	352.98	306.84	-352.55	0.00	0.00	0.00
Sussex									
4,400.00	0.00	0.00	4,368.11	352.98	306.84	-352.55	0.00	0.00	0.00
4,500.00	0.00	0.00	4,468.11	352.98	306.84	-352.55	0.00	0.00	0.00
4,600.00	0.00	0.00	4,568.11	352.98	306.84	-352.55	0.00	0.00	0.00
4,700.00	0.00	0.00	4,668.11	352.98	306.84	-352.55	0.00	0.00	0.00
4,800.00	0.00	0.00	4,768.11	352.98	306.84	-352.55	0.00	0.00	0.00
4,900.00	0.00	0.00	4,868.11	352.98	306.84	-352.55	0.00	0.00	0.00
5,000.00	0.00	0.00	4,968.11	352.98	306.84	-352.55	0.00	0.00	0.00
5,100.00	0.00	0.00	5,068.11	352.98	306.84	-352.55	0.00	0.00	0.00
5,200.00	0.00	0.00	5,168.11	352.98	306.84	-352.55	0.00	0.00	0.00
5,300.00	0.00	0.00	5,268.11	352.98	306.84	-352.55	0.00	0.00	0.00
5,400.00	0.00	0.00	5,368.11	352.98	306.84	-352.55	0.00	0.00	0.00
5,500.00	0.00	0.00	5,468.11	352.98	306.84	-352.55	0.00	0.00	0.00
5,600.00	0.00	0.00	5,568.11	352.98	306.84	-352.55	0.00	0.00	0.00
5,700.00	0.00	0.00	5,668.11	352.98	306.84	-352.55	0.00	0.00	0.00
5,800.00	0.00	0.00	5,768.11	352.98	306.84	-352.55	0.00	0.00	0.00
5,900.00	0.00	0.00	5,868.11	352.98	306.84	-352.55	0.00	0.00	0.00
6,000.00	0.00	0.00	5,968.11	352.98	306.84	-352.55	0.00	0.00	0.00
6,100.00	0.00	0.00	6,068.11	352.98	306.84	-352.55	0.00	0.00	0.00
6,200.00	0.00	0.00	6,168.11	352.98	306.84	-352.55	0.00	0.00	0.00
6,300.00	0.00	0.00	6,268.11	352.98	306.84	-352.55	0.00	0.00	0.00
6,400.00	0.00	0.00	6,368.11	352.98	306.84	-352.55	0.00	0.00	0.00
6,500.00	0.00	0.00	6,468.11	352.98	306.84	-352.55	0.00	0.00	0.00
6,571.70	0.00	0.00	6,539.81	352.98	306.84	-352.55	0.00	0.00	0.00
KOP @ 6571.70ft :: DLS = 8°/100'									
6,600.00	2.26	179.92	6,568.10	352.42	306.84	-351.99	8.00	8.00	0.00
6,700.00	10.26	179.92	6,667.43	341.52	306.85	-341.09	8.00	8.00	0.00
6,800.00	18.26	179.92	6,764.26	316.90	306.89	-316.47	8.00	8.00	0.00
6,900.00	26.26	179.92	6,856.73	279.04	306.94	-278.61	8.00	8.00	0.00
7,000.00	34.26	179.92	6,943.04	228.68	307.00	-228.26	8.00	8.00	0.00
7,100.00	42.26	179.92	7,021.49	166.81	307.09	-166.38	8.00	8.00	0.00
7,139.54	45.43	179.92	7,050.00	139.42	307.12	-138.99	8.00	8.00	0.00
Sharon Springs									
7,200.00	50.26	179.92	7,090.57	94.61	307.18	-94.18	8.00	8.00	0.00
7,226.30	52.37	179.92	7,107.00	74.09	307.21	-73.66	8.00	8.00	0.00
Niobrara									
7,300.00	58.26	179.92	7,148.92	13.51	307.29	-13.08	8.00	8.00	0.00
7,323.59	60.15	179.92	7,161.00	-6.76	307.32	7.19	8.00	8.00	0.00
Nio B									
7,400.00	66.26	179.92	7,195.43	-74.93	307.41	75.36	8.00	8.00	0.00
7,500.00	74.26	179.92	7,229.17	-168.98	307.53	169.41	8.00	8.00	0.00
7,527.01	76.42	179.92	7,236.00	-195.11	307.57	195.54	8.00	8.00	0.00
Nio C									
7,600.00	82.26	179.92	7,249.49	-266.81	307.66	267.24	8.00	8.00	0.00
7,699.29	90.21	179.92	7,256.00	-365.81	307.79	366.24	8.00	8.00	0.00
End Build @ 7699.29ft - Top of Production									
7,700.00	90.21	179.92	7,256.00	-366.52	307.79	366.95	0.02	0.02	0.00
7,800.00	90.21	179.92	7,255.64	-466.52	307.92	466.95	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FARLEY 23-3HZ
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 23-3HZ	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)
7,900.00	90.21	179.92	7,255.28	-566.52	308.06	566.95	0.00	0.00	0.00
8,000.00	90.21	179.92	7,254.92	-666.52	308.19	666.95	0.00	0.00	0.00
8,100.00	90.21	179.92	7,254.55	-766.51	308.32	766.94	0.00	0.00	0.00
8,200.00	90.21	179.92	7,254.19	-866.51	308.45	866.94	0.00	0.00	0.00
8,300.00	90.21	179.92	7,253.83	-966.51	308.59	966.94	0.00	0.00	0.00
8,400.00	90.21	179.92	7,253.47	-1,066.51	308.72	1,066.94	0.00	0.00	0.00
8,500.00	90.21	179.92	7,253.11	-1,166.51	308.85	1,166.94	0.00	0.00	0.00
8,600.00	90.21	179.92	7,252.74	-1,266.51	308.98	1,266.94	0.00	0.00	0.00
8,700.00	90.21	179.92	7,252.38	-1,366.51	309.12	1,366.94	0.00	0.00	0.00
8,800.00	90.21	179.92	7,252.02	-1,466.51	309.25	1,466.94	0.00	0.00	0.00
8,900.00	90.21	179.92	7,251.66	-1,566.51	309.38	1,566.94	0.00	0.00	0.00
9,000.00	90.21	179.92	7,251.30	-1,666.51	309.51	1,666.94	0.00	0.00	0.00
9,100.00	90.21	179.92	7,250.94	-1,766.51	309.65	1,766.94	0.00	0.00	0.00
9,200.00	90.21	179.92	7,250.57	-1,866.51	309.78	1,866.94	0.00	0.00	0.00
9,300.00	90.21	179.92	7,250.21	-1,966.51	309.91	1,966.94	0.00	0.00	0.00
9,400.00	90.21	179.92	7,249.85	-2,066.51	310.04	2,066.94	0.00	0.00	0.00
9,500.00	90.21	179.92	7,249.49	-2,166.50	310.18	2,166.94	0.00	0.00	0.00
9,600.00	90.21	179.92	7,249.13	-2,266.50	310.31	2,266.93	0.00	0.00	0.00
9,700.00	90.21	179.92	7,248.76	-2,366.50	310.44	2,366.93	0.00	0.00	0.00
9,800.00	90.21	179.92	7,248.40	-2,466.50	310.57	2,466.93	0.00	0.00	0.00
9,900.00	90.21	179.92	7,248.04	-2,566.50	310.70	2,566.93	0.00	0.00	0.00
10,000.00	90.21	179.92	7,247.68	-2,666.50	310.84	2,666.93	0.00	0.00	0.00
10,100.00	90.21	179.92	7,247.32	-2,766.50	310.97	2,766.93	0.00	0.00	0.00
10,200.00	90.21	179.92	7,246.96	-2,866.50	311.10	2,866.93	0.00	0.00	0.00
10,300.00	90.21	179.92	7,246.59	-2,966.50	311.23	2,966.93	0.00	0.00	0.00
10,400.00	90.21	179.92	7,246.23	-3,066.50	311.37	3,066.93	0.00	0.00	0.00
10,500.00	90.21	179.92	7,245.87	-3,166.50	311.50	3,166.93	0.00	0.00	0.00
10,600.00	90.21	179.92	7,245.51	-3,266.50	311.63	3,266.93	0.00	0.00	0.00
10,700.00	90.21	179.92	7,245.15	-3,366.50	311.76	3,366.93	0.00	0.00	0.00
10,800.00	90.21	179.92	7,244.78	-3,466.49	311.90	3,466.93	0.00	0.00	0.00
10,900.00	90.21	179.92	7,244.42	-3,566.49	312.03	3,566.93	0.00	0.00	0.00
11,000.00	90.21	179.92	7,244.06	-3,666.49	312.16	3,666.93	0.00	0.00	0.00
11,100.00	90.21	179.92	7,243.70	-3,766.49	312.29	3,766.93	0.00	0.00	0.00
11,200.00	90.21	179.92	7,243.34	-3,866.49	312.43	3,866.92	0.00	0.00	0.00
11,300.00	90.21	179.92	7,242.98	-3,966.49	312.56	3,966.92	0.00	0.00	0.00
11,400.00	90.21	179.92	7,242.61	-4,066.49	312.69	4,066.92	0.00	0.00	0.00
11,500.00	90.21	179.92	7,242.25	-4,166.49	312.82	4,166.92	0.00	0.00	0.00
11,600.00	90.21	179.92	7,241.89	-4,266.49	312.96	4,266.92	0.00	0.00	0.00
11,700.00	90.21	179.92	7,241.53	-4,366.49	313.09	4,366.92	0.00	0.00	0.00
11,800.00	90.21	179.92	7,241.17	-4,466.49	313.22	4,466.92	0.00	0.00	0.00
11,900.00	90.21	179.92	7,240.80	-4,566.49	313.35	4,566.92	0.00	0.00	0.00
12,000.00	90.21	179.92	7,240.44	-4,666.49	313.48	4,666.92	0.00	0.00	0.00
12,100.00	90.21	179.92	7,240.08	-4,766.49	313.62	4,766.92	0.00	0.00	0.00
12,200.00	90.21	179.92	7,239.72	-4,866.48	313.75	4,866.92	0.00	0.00	0.00
12,300.00	90.21	179.92	7,239.36	-4,966.48	313.88	4,966.92	0.00	0.00	0.00
12,400.00	90.21	179.92	7,238.99	-5,066.48	314.01	5,066.92	0.00	0.00	0.00
12,500.00	90.21	179.92	7,238.63	-5,166.48	314.15	5,166.92	0.00	0.00	0.00
12,600.00	90.21	179.92	7,238.27	-5,266.48	314.28	5,266.92	0.00	0.00	0.00
12,700.00	90.21	179.92	7,237.91	-5,366.48	314.41	5,366.91	0.00	0.00	0.00
12,800.00	90.21	179.92	7,237.55	-5,466.48	314.54	5,466.91	0.00	0.00	0.00
12,900.00	90.21	179.92	7,237.19	-5,566.48	314.68	5,566.91	0.00	0.00	0.00
13,000.00	90.21	179.92	7,236.82	-5,666.48	314.81	5,666.91	0.00	0.00	0.00
13,100.00	90.21	179.92	7,236.46	-5,766.48	314.94	5,766.91	0.00	0.00	0.00
13,200.00	90.21	179.92	7,236.10	-5,866.48	315.07	5,866.91	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well FARLEY 23-3HZ
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 23-3HZ	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)
13,227.66	90.21	179.92	7,236.00	-5,894.13	315.11	5,894.57	0.00	0.00	0.00
TD Well @ 13227.66ft									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,507.60	1,500.00	9 5/8" Csg	9-5/8	13-1/2
7,699.29	7,256.00	Top of Production	5-1/2	7-7/8

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,175.20	1,171.00	Fox Hills			
4,202.89	4,171.00	Parkman			
4,380.89	4,349.00	Sussex			
7,139.54	7,050.00	Sharon Springs			
7,226.30	7,107.00	Niobrara			
7,323.59	7,161.00	Nio B			
7,527.01	7,236.00	Nio C			

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.00	400.00	0.00	0.00	Begin Nudge @ 400.00ft
946.67	944.80	29.47	25.62	End Nudge @ 946.67ft
3,746.66	3,716.17	330.87	287.62	Begin Drop @ 3746.66ft
4,156.66	4,124.77	352.98	306.84	End Drop @ 4156.66ft
6,571.70	6,539.81	352.98	306.84	KOP @ 6571.70ft :: DLS = 8°/100'
7,699.29	7,256.00	-365.81	307.79	End Build @ 7699.29ft
13,227.66	7,236.00	-5,894.13	315.11	TD Well @ 13227.66ft