

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
1N-68W-15 CLELAND 11-15HZ PAD  
CLELAND 15-3HZ**

## **Plan A**

### **Plan: Permit Rev-1**

SHL Lat/Long: 40.048727/-104.992050  
Survey Program: MWD+IFR

## **Standard Planning Report**

**08 March, 2019**

Project: WELD-NAD83-UTMFT13N  
Site: 1N-68W-15 CLELAND 11-15HZ PAD  
Well: CLELAND 15-3HZ  
Wellbore: Plan A  
Design: Permit Rev-1

# US ROCKIES WATTENBERG PLANNING

## CASING DETAILS

TVD	MD	Size
1500.00	1516.25	9-5/8
7791.00	8316.51	5-1/2

WELL DETAILS: CLELAND 15-3HZ

GL = 5151'

RKB = 17' @ 5168.00usft (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	380.00	0.00	0.00	380.00	0.00	0.00	0.00	0.00	0.00	
3	1406.67	15.40	225.40	1394.35	-96.30	-97.65	1.50	225.40	96.76	
4	4206.67	15.40	225.40	4093.82	-618.39	-627.08	0.00	0.00	621.34	
5	4976.67	0.00	0.00	4854.58	-690.61	-700.32	2.00	180.00	693.90	
6	7196.91	0.00	0.00	7074.82	-690.61	-700.32	0.00	0.00	693.90	
7	8316.51	89.57	180.27	7791.00	-1401.40	-703.65	8.00	180.27	1404.70	
8	19186.59	89.57	180.27	7873.00	-12271.05	-754.58	0.00	0.00	12274.47	CLELAND 15-3HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
CLELAND 15-3HZ_SHL	0.00	0.00	0.00	40.048727	-104.992050
CLELAND 15-3HZ_BHL	7873.00	-12271.05	-754.58	40.015028	-104.994745

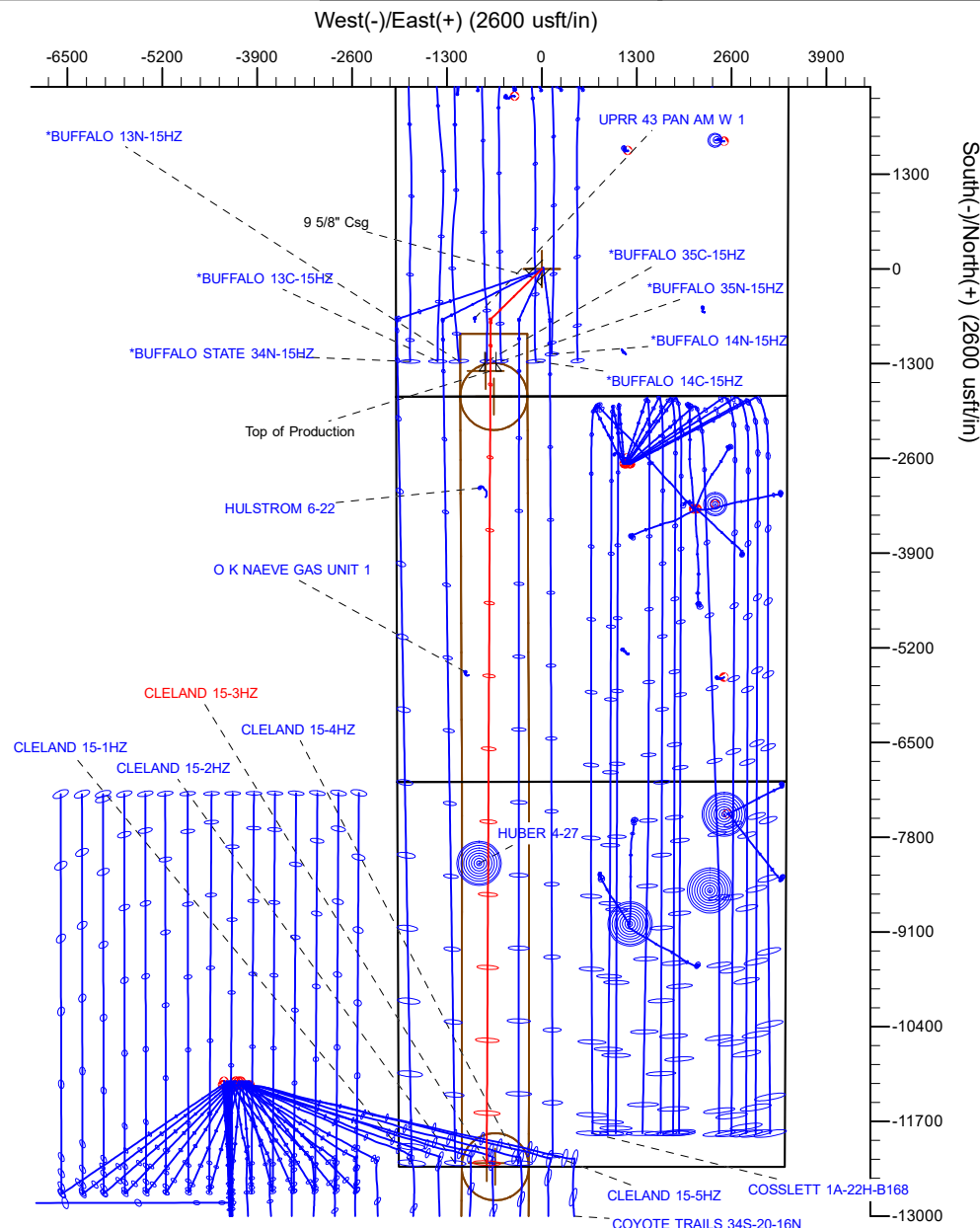
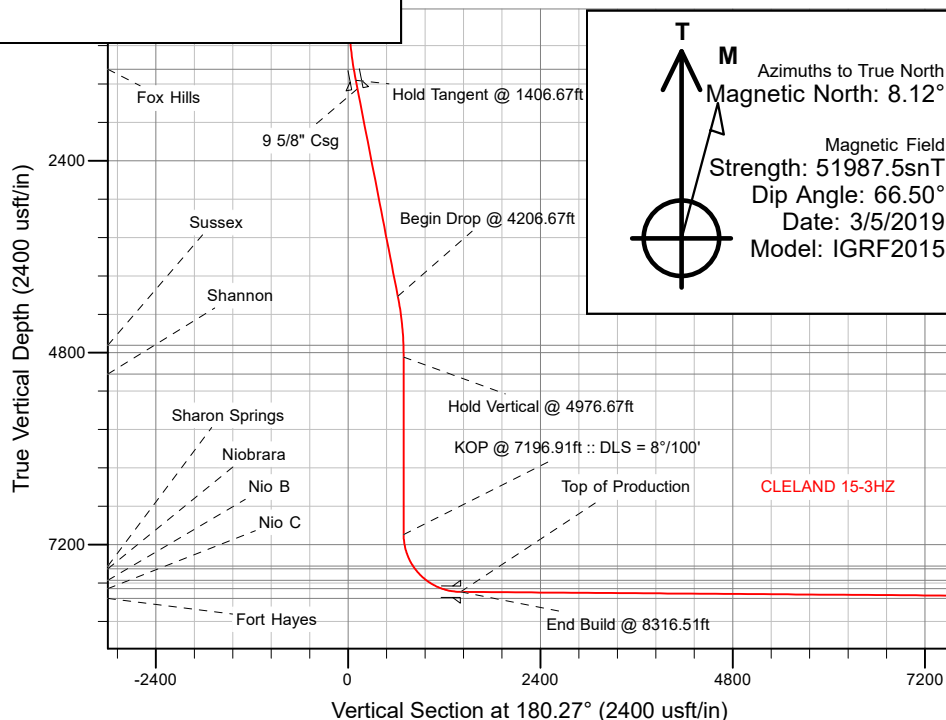
## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1254.00	1261.81	Fox Hills
4707.00	4829.02	Sussex
5066.00	5188.09	Shannon
7468.00	7613.12	Sharon Springs
7502.00	7654.61	Niobrara
7645.00	7856.42	Nio B
7749.00	8075.36	Nio C
7872.00	19054.03	Fort Hayes

**SHL**  
**1750' FSL**  
**1999' FWL**

**HEEL**  
**350' FSL**  
**1295' FWL**

**TOE**  
**50' FSL**  
**1206' FWL**



Plan: Permit Rev-1 (CLELAND 15-3HZ/Plan A)

Created By: \_\_\_\_\_ Date: 3/8/2019  
Reviewed: \_\_\_\_\_ Date: \_\_\_\_\_

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well CLELAND 15-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Site:</b>	1N-68W-15 CLELAND 11-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	CLELAND 15-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

<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		1N-68W-15 CLELAND 11-15HZ PAD			
Site Position:		Northing:	14,544,455.99 usft	Latitude:	40.048669
From:	Lat/Long	Easting:	1,642,620.22 usft	Longitude:	-104.992126
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.01 °

Well	CLELAND 15-3HZ					
Well Position	+N/-S	21.12 usft	Northing:	14,544,477.11 usft	Latitude:	40.048727
	+E/-W	21.27 usft	Easting:	1,642,641.49 usft	Longitude:	-104.992050
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,151.00 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	3/5/2019	8.12	66.50	51,987.50526187

<b>Design</b>	Permit Rev-1				
<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	180.27	

<b>Plan Survey Tool Program</b>		<b>Date</b>	3/8/2019		
<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-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	
2	1,500.00	19,186.59	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 CLELAND 15-3HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 5168.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 5168.00usft (Drilling Rig)
Site:	1N-68W-15 CLELAND 11-15HZ PAD	North Reference:	True
Well:	CLELAND 15-3HZ	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	
380.00	0.00	0.00	380.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,406.67	15.40	225.40	1,394.35	-96.30	-97.65	1.50	1.50	0.00	225.40	
4,206.67	15.40	225.40	4,093.82	-618.39	-627.08	0.00	0.00	0.00	0.00	
4,976.67	0.00	0.00	4,854.58	-690.61	-700.32	2.00	-2.00	17.48	180.00	
7,196.91	0.00	0.00	7,074.82	-690.61	-700.32	0.00	0.00	0.00	0.00	
8,316.51	89.57	180.27	7,791.00	-1,401.40	-703.65	8.00	8.00	-16.05	180.27	
19,186.59	89.57	180.27	7,873.00	-12,271.05	-754.58	0.00	0.00	0.00	0.00	CLELAND 15-3HZ_BI

# Corporate Planning Report

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<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Site:</b>	1N-68W-15 CLELAND 11-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	CLELAND 15-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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
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
380.00	0.00	0.00	380.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 380.00ft									
400.00	0.30	225.40	400.00	-0.04	-0.04	0.04	1.50	1.50	0.00
500.00	1.80	225.40	499.98	-1.32	-1.34	1.33	1.50	1.50	0.00
600.00	3.30	225.40	599.88	-4.45	-4.51	4.47	1.50	1.50	0.00
700.00	4.80	225.40	699.63	-9.41	-9.54	9.45	1.50	1.50	0.00
800.00	6.30	225.40	799.15	-16.20	-16.42	16.27	1.50	1.50	0.00
900.00	7.80	225.40	898.40	-24.81	-25.16	24.93	1.50	1.50	0.00
1,000.00	9.30	225.40	997.28	-35.25	-35.75	35.42	1.50	1.50	0.00
1,100.00	10.80	225.40	1,095.74	-47.51	-48.17	47.73	1.50	1.50	0.00
1,200.00	12.30	225.40	1,193.72	-61.56	-62.43	61.86	1.50	1.50	0.00
1,261.81	13.23	225.40	1,254.00	-71.15	-72.15	71.49	1.50	1.50	0.00
Fox Hills									
1,300.00	13.80	225.40	1,291.13	-77.42	-78.51	77.79	1.50	1.50	0.00
1,400.00	15.30	225.40	1,387.92	-95.06	-96.39	95.51	1.50	1.50	0.00
1,406.67	15.40	225.40	1,394.35	-96.30	-97.65	96.76	1.50	1.50	0.00
Hold Tangent @ 1406.67ft									
1,500.00	15.40	225.40	1,484.33	-113.70	-115.30	114.24	0.00	0.00	0.00
1,516.25	15.40	225.40	1,500.00	-116.73	-118.37	117.29	0.00	0.00	0.00
9 5/8" Csg									
1,600.00	15.40	225.40	1,580.74	-132.35	-134.21	132.98	0.00	0.00	0.00
1,700.00	15.40	225.40	1,677.15	-150.99	-153.12	151.71	0.00	0.00	0.00
1,800.00	15.40	225.40	1,773.56	-169.64	-172.02	170.45	0.00	0.00	0.00
1,900.00	15.40	225.40	1,869.97	-188.28	-190.93	189.18	0.00	0.00	0.00
2,000.00	15.40	225.40	1,966.38	-206.93	-209.84	207.92	0.00	0.00	0.00
2,100.00	15.40	225.40	2,062.79	-225.58	-228.75	226.65	0.00	0.00	0.00
2,200.00	15.40	225.40	2,159.20	-244.22	-247.66	245.39	0.00	0.00	0.00
2,300.00	15.40	225.40	2,255.61	-262.87	-266.57	264.12	0.00	0.00	0.00
2,400.00	15.40	225.40	2,352.02	-281.52	-285.47	282.86	0.00	0.00	0.00
2,500.00	15.40	225.40	2,448.43	-300.16	-304.38	301.59	0.00	0.00	0.00
2,600.00	15.40	225.40	2,544.84	-318.81	-323.29	320.33	0.00	0.00	0.00
2,700.00	15.40	225.40	2,641.25	-337.45	-342.20	339.06	0.00	0.00	0.00
2,800.00	15.40	225.40	2,737.66	-356.10	-361.11	357.80	0.00	0.00	0.00
2,900.00	15.40	225.40	2,834.07	-374.75	-380.01	376.53	0.00	0.00	0.00
3,000.00	15.40	225.40	2,930.48	-393.39	-398.92	395.27	0.00	0.00	0.00
3,100.00	15.40	225.40	3,026.88	-412.04	-417.83	414.00	0.00	0.00	0.00
3,200.00	15.40	225.40	3,123.29	-430.68	-436.74	432.74	0.00	0.00	0.00
3,300.00	15.40	225.40	3,219.70	-449.33	-455.65	451.47	0.00	0.00	0.00
3,400.00	15.40	225.40	3,316.11	-467.98	-474.56	470.21	0.00	0.00	0.00
3,500.00	15.40	225.40	3,412.52	-486.62	-493.46	488.94	0.00	0.00	0.00
3,600.00	15.40	225.40	3,508.93	-505.27	-512.37	507.68	0.00	0.00	0.00
3,700.00	15.40	225.40	3,605.34	-523.91	-531.28	526.41	0.00	0.00	0.00
3,800.00	15.40	225.40	3,701.75	-542.56	-550.19	545.15	0.00	0.00	0.00
3,900.00	15.40	225.40	3,798.16	-561.21	-569.10	563.88	0.00	0.00	0.00
4,000.00	15.40	225.40	3,894.57	-579.85	-588.01	582.62	0.00	0.00	0.00
4,100.00	15.40	225.40	3,990.98	-598.50	-606.91	601.35	0.00	0.00	0.00
4,200.00	15.40	225.40	4,087.39	-617.14	-625.82	620.09	0.00	0.00	0.00
4,206.67	15.40	225.40	4,093.82	-618.39	-627.08	621.34	0.00	0.00	0.00
Begin Drop @ 4206.67ft									
4,300.00	13.53	225.40	4,184.19	-634.76	-643.68	637.79	2.00	-2.00	0.00

## Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well CLELAND 15-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Site:</b>	1N-68W-15 CLELAND 11-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	CLELAND 15-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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)
4,400.00	11.53	225.40	4,281.80	-650.00	-659.13	653.09	2.00	-2.00	0.00
4,500.00	9.53	225.40	4,380.11	-662.83	-672.15	665.99	2.00	-2.00	0.00
4,600.00	7.53	225.40	4,479.00	-673.25	-682.72	676.46	2.00	-2.00	0.00
4,700.00	5.53	225.40	4,578.34	-681.24	-690.82	684.49	2.00	-2.00	0.00
4,800.00	3.53	225.40	4,678.02	-686.79	-696.44	690.06	2.00	-2.00	0.00
4,829.02	2.95	225.40	4,707.00	-687.94	-697.61	691.22	2.00	-2.00	0.00
Sussex									
4,900.00	1.53	225.40	4,777.92	-689.89	-699.59	693.18	2.00	-2.00	0.00
4,976.67	0.00	0.00	4,854.58	-690.61	-700.32	693.90	2.00	-2.00	175.57
Hold Vertical @ 4976.67ft									
5,000.00	0.00	0.00	4,877.91	-690.61	-700.32	693.90	0.00	0.00	0.00
5,100.00	0.00	0.00	4,977.91	-690.61	-700.32	693.90	0.00	0.00	0.00
5,188.09	0.00	0.00	5,066.00	-690.61	-700.32	693.90	0.00	0.00	0.00
Shannon									
5,200.00	0.00	0.00	5,077.91	-690.61	-700.32	693.90	0.00	0.00	0.00
5,300.00	0.00	0.00	5,177.91	-690.61	-700.32	693.90	0.00	0.00	0.00
5,400.00	0.00	0.00	5,277.91	-690.61	-700.32	693.90	0.00	0.00	0.00
5,500.00	0.00	0.00	5,377.91	-690.61	-700.32	693.90	0.00	0.00	0.00
5,600.00	0.00	0.00	5,477.91	-690.61	-700.32	693.90	0.00	0.00	0.00
5,700.00	0.00	0.00	5,577.91	-690.61	-700.32	693.90	0.00	0.00	0.00
5,800.00	0.00	0.00	5,677.91	-690.61	-700.32	693.90	0.00	0.00	0.00
5,900.00	0.00	0.00	5,777.91	-690.61	-700.32	693.90	0.00	0.00	0.00
6,000.00	0.00	0.00	5,877.91	-690.61	-700.32	693.90	0.00	0.00	0.00
6,100.00	0.00	0.00	5,977.91	-690.61	-700.32	693.90	0.00	0.00	0.00
6,200.00	0.00	0.00	6,077.91	-690.61	-700.32	693.90	0.00	0.00	0.00
6,300.00	0.00	0.00	6,177.91	-690.61	-700.32	693.90	0.00	0.00	0.00
6,400.00	0.00	0.00	6,277.91	-690.61	-700.32	693.90	0.00	0.00	0.00
6,500.00	0.00	0.00	6,377.91	-690.61	-700.32	693.90	0.00	0.00	0.00
6,600.00	0.00	0.00	6,477.91	-690.61	-700.32	693.90	0.00	0.00	0.00
6,700.00	0.00	0.00	6,577.91	-690.61	-700.32	693.90	0.00	0.00	0.00
6,800.00	0.00	0.00	6,677.91	-690.61	-700.32	693.90	0.00	0.00	0.00
6,900.00	0.00	0.00	6,777.91	-690.61	-700.32	693.90	0.00	0.00	0.00
7,000.00	0.00	0.00	6,877.91	-690.61	-700.32	693.90	0.00	0.00	0.00
7,100.00	0.00	0.00	6,977.91	-690.61	-700.32	693.90	0.00	0.00	0.00
7,196.91	0.00	0.00	7,074.82	-690.61	-700.32	693.90	0.00	0.00	0.00
KOP @ 7196.91ft :: DLS = 8°/100'									
7,200.00	0.25	180.27	7,077.91	-690.62	-700.32	693.91	8.00	8.00	-5,816.55
7,300.00	8.25	180.27	7,177.56	-698.02	-700.36	701.31	8.00	8.00	0.00
7,400.00	16.25	180.27	7,275.20	-719.21	-700.46	722.51	8.00	8.00	0.00
7,500.00	24.25	180.27	7,368.95	-753.79	-700.62	757.08	8.00	8.00	0.00
7,600.00	32.25	180.27	7,456.97	-801.08	-700.84	804.37	8.00	8.00	0.00
7,613.12	33.30	180.27	7,468.00	-808.18	-700.87	811.48	8.00	8.00	0.00
Sharon Springs									
7,654.61	36.62	180.27	7,502.00	-831.95	-700.98	835.25	8.00	8.00	0.00
Niobrara									
7,700.00	40.25	180.27	7,537.55	-860.16	-701.12	863.45	8.00	8.00	0.00
7,800.00	48.25	180.27	7,609.12	-929.88	-701.44	933.17	8.00	8.00	0.00
7,856.42	52.76	180.27	7,645.00	-973.40	-701.65	976.70	8.00	8.00	0.00
Nio B									
7,900.00	56.25	180.27	7,670.30	-1,008.88	-701.81	1,012.17	8.00	8.00	0.00
8,000.00	64.25	180.27	7,719.88	-1,095.62	-702.22	1,098.92	8.00	8.00	0.00
8,075.36	70.28	180.27	7,749.00	-1,165.09	-702.54	1,168.39	8.00	8.00	0.00
Nio C									

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well CLELAND 15-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Site:</b>	1N-68W-15 CLELAND 11-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	CLELAND 15-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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)	
8,100.00	72.25	180.27	7,756.92	-1,188.43	-702.65	1,191.72	8.00	8.00	0.00	
8,200.00	80.25	180.27	7,780.67	-1,285.48	-703.11	1,288.78	8.00	8.00	0.00	
8,300.00	88.25	180.27	7,790.68	-1,384.89	-703.57	1,388.19	8.00	8.00	0.00	
8,316.51	89.57	180.27	7,791.00	-1,401.40	-703.65	1,404.70	8.00	8.00	0.00	
End Build @ 8316.51ft - Top of Production										
8,400.00	89.57	180.27	7,791.63	-1,484.89	-704.04	1,488.19	0.00	0.00	0.00	
8,500.00	89.57	180.27	7,792.38	-1,584.88	-704.51	1,588.19	0.00	0.00	0.00	
8,600.00	89.57	180.27	7,793.14	-1,684.88	-704.98	1,688.18	0.00	0.00	0.00	
8,700.00	89.57	180.27	7,793.89	-1,784.88	-705.45	1,788.18	0.00	0.00	0.00	
8,800.00	89.57	180.27	7,794.65	-1,884.87	-705.92	1,888.18	0.00	0.00	0.00	
8,900.00	89.57	180.27	7,795.40	-1,984.87	-706.39	1,988.17	0.00	0.00	0.00	
9,000.00	89.57	180.27	7,796.16	-2,084.86	-706.85	2,088.17	0.00	0.00	0.00	
9,100.00	89.57	180.27	7,796.91	-2,184.86	-707.32	2,188.17	0.00	0.00	0.00	
9,200.00	89.57	180.27	7,797.66	-2,284.86	-707.79	2,288.17	0.00	0.00	0.00	
9,300.00	89.57	180.27	7,798.42	-2,384.85	-708.26	2,388.16	0.00	0.00	0.00	
9,400.00	89.57	180.27	7,799.17	-2,484.85	-708.73	2,488.16	0.00	0.00	0.00	
9,500.00	89.57	180.27	7,799.93	-2,584.84	-709.20	2,588.16	0.00	0.00	0.00	
9,600.00	89.57	180.27	7,800.68	-2,684.84	-709.67	2,688.15	0.00	0.00	0.00	
9,700.00	89.57	180.27	7,801.44	-2,784.84	-710.13	2,788.15	0.00	0.00	0.00	
9,800.00	89.57	180.27	7,802.19	-2,884.83	-710.60	2,888.15	0.00	0.00	0.00	
9,900.00	89.57	180.27	7,802.94	-2,984.83	-711.07	2,988.15	0.00	0.00	0.00	
10,000.00	89.57	180.27	7,803.70	-3,084.82	-711.54	3,088.14	0.00	0.00	0.00	
10,100.00	89.57	180.27	7,804.45	-3,184.82	-712.01	3,188.14	0.00	0.00	0.00	
10,200.00	89.57	180.27	7,805.21	-3,284.82	-712.48	3,288.14	0.00	0.00	0.00	
10,300.00	89.57	180.27	7,805.96	-3,384.81	-712.95	3,388.13	0.00	0.00	0.00	
10,400.00	89.57	180.27	7,806.72	-3,484.81	-713.41	3,488.13	0.00	0.00	0.00	
10,500.00	89.57	180.27	7,807.47	-3,584.80	-713.88	3,588.13	0.00	0.00	0.00	
10,600.00	89.57	180.27	7,808.23	-3,684.80	-714.35	3,688.13	0.00	0.00	0.00	
10,700.00	89.57	180.27	7,808.98	-3,784.80	-714.82	3,788.12	0.00	0.00	0.00	
10,800.00	89.57	180.27	7,809.73	-3,884.79	-715.29	3,888.12	0.00	0.00	0.00	
10,900.00	89.57	180.27	7,810.49	-3,984.79	-715.76	3,988.12	0.00	0.00	0.00	
11,000.00	89.57	180.27	7,811.24	-4,084.78	-716.23	4,088.11	0.00	0.00	0.00	
11,100.00	89.57	180.27	7,812.00	-4,184.78	-716.69	4,188.11	0.00	0.00	0.00	
11,200.00	89.57	180.27	7,812.75	-4,284.78	-717.16	4,288.11	0.00	0.00	0.00	
11,300.00	89.57	180.27	7,813.51	-4,384.77	-717.63	4,388.11	0.00	0.00	0.00	
11,400.00	89.57	180.27	7,814.26	-4,484.77	-718.10	4,488.10	0.00	0.00	0.00	
11,500.00	89.57	180.27	7,815.01	-4,584.76	-718.57	4,588.10	0.00	0.00	0.00	
11,600.00	89.57	180.27	7,815.77	-4,684.76	-719.04	4,688.10	0.00	0.00	0.00	
11,700.00	89.57	180.27	7,816.52	-4,784.76	-719.51	4,788.09	0.00	0.00	0.00	
11,800.00	89.57	180.27	7,817.28	-4,884.75	-719.97	4,888.09	0.00	0.00	0.00	
11,900.00	89.57	180.27	7,818.03	-4,984.75	-720.44	4,988.09	0.00	0.00	0.00	
12,000.00	89.57	180.27	7,818.79	-5,084.75	-720.91	5,088.09	0.00	0.00	0.00	
12,100.00	89.57	180.27	7,819.54	-5,184.74	-721.38	5,188.08	0.00	0.00	0.00	
12,200.00	89.57	180.27	7,820.30	-5,284.74	-721.85	5,288.08	0.00	0.00	0.00	
12,300.00	89.57	180.27	7,821.05	-5,384.73	-722.32	5,388.08	0.00	0.00	0.00	
12,400.00	89.57	180.27	7,821.80	-5,484.73	-722.79	5,488.07	0.00	0.00	0.00	
12,500.00	89.57	180.27	7,822.56	-5,584.73	-723.25	5,588.07	0.00	0.00	0.00	
12,600.00	89.57	180.27	7,823.31	-5,684.72	-723.72	5,688.07	0.00	0.00	0.00	
12,700.00	89.57	180.27	7,824.07	-5,784.72	-724.19	5,788.07	0.00	0.00	0.00	
12,800.00	89.57	180.27	7,824.82	-5,884.71	-724.66	5,888.06	0.00	0.00	0.00	
12,900.00	89.57	180.27	7,825.58	-5,984.71	-725.13	5,988.06	0.00	0.00	0.00	
13,000.00	89.57	180.27	7,826.33	-6,084.71	-725.60	6,088.06	0.00	0.00	0.00	
13,100.00	89.57	180.27	7,827.08	-6,184.70	-726.07	6,188.05	0.00	0.00	0.00	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well CLELAND 15-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Site:</b>	1N-68W-15 CLELAND 11-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	CLELAND 15-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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	89.57	180.27	7,827.84	-6,284.70	-726.53	6,288.05	0.00	0.00	0.00	
13,300.00	89.57	180.27	7,828.59	-6,384.69	-727.00	6,388.05	0.00	0.00	0.00	
13,400.00	89.57	180.27	7,829.35	-6,484.69	-727.47	6,488.05	0.00	0.00	0.00	
13,500.00	89.57	180.27	7,830.10	-6,584.69	-727.94	6,588.04	0.00	0.00	0.00	
13,600.00	89.57	180.27	7,830.86	-6,684.68	-728.41	6,688.04	0.00	0.00	0.00	
13,700.00	89.57	180.27	7,831.61	-6,784.68	-728.88	6,788.04	0.00	0.00	0.00	
13,800.00	89.57	180.27	7,832.37	-6,884.67	-729.35	6,888.03	0.00	0.00	0.00	
13,900.00	89.57	180.27	7,833.12	-6,984.67	-729.81	6,988.03	0.00	0.00	0.00	
14,000.00	89.57	180.27	7,833.87	-7,084.67	-730.28	7,088.03	0.00	0.00	0.00	
14,100.00	89.57	180.27	7,834.63	-7,184.66	-730.75	7,188.03	0.00	0.00	0.00	
14,200.00	89.57	180.27	7,835.38	-7,284.66	-731.22	7,288.02	0.00	0.00	0.00	
14,300.00	89.57	180.27	7,836.14	-7,384.65	-731.69	7,388.02	0.00	0.00	0.00	
14,400.00	89.57	180.27	7,836.89	-7,484.65	-732.16	7,488.02	0.00	0.00	0.00	
14,500.00	89.57	180.27	7,837.65	-7,584.65	-732.62	7,588.01	0.00	0.00	0.00	
14,600.00	89.57	180.27	7,838.40	-7,684.64	-733.09	7,688.01	0.00	0.00	0.00	
14,700.00	89.57	180.27	7,839.15	-7,784.64	-733.56	7,788.01	0.00	0.00	0.00	
14,800.00	89.57	180.27	7,839.91	-7,884.63	-734.03	7,888.01	0.00	0.00	0.00	
14,900.00	89.57	180.27	7,840.66	-7,984.63	-734.50	7,988.00	0.00	0.00	0.00	
15,000.00	89.57	180.27	7,841.42	-8,084.63	-734.97	8,088.00	0.00	0.00	0.00	
15,100.00	89.57	180.27	7,842.17	-8,184.62	-735.44	8,188.00	0.00	0.00	0.00	
15,200.00	89.57	180.27	7,842.93	-8,284.62	-735.90	8,287.99	0.00	0.00	0.00	
15,300.00	89.57	180.27	7,843.68	-8,384.62	-736.37	8,387.99	0.00	0.00	0.00	
15,400.00	89.57	180.27	7,844.44	-8,484.61	-736.84	8,487.99	0.00	0.00	0.00	
15,500.00	89.57	180.27	7,845.19	-8,584.61	-737.31	8,587.99	0.00	0.00	0.00	
15,600.00	89.57	180.27	7,845.94	-8,684.60	-737.78	8,687.98	0.00	0.00	0.00	
15,700.00	89.57	180.27	7,846.70	-8,784.60	-738.25	8,787.98	0.00	0.00	0.00	
15,800.00	89.57	180.27	7,847.45	-8,884.60	-738.72	8,887.98	0.00	0.00	0.00	
15,900.00	89.57	180.27	7,848.21	-8,984.59	-739.18	8,987.97	0.00	0.00	0.00	
16,000.00	89.57	180.27	7,848.96	-9,084.59	-739.65	9,087.97	0.00	0.00	0.00	
16,100.00	89.57	180.27	7,849.72	-9,184.58	-740.12	9,187.97	0.00	0.00	0.00	
16,200.00	89.57	180.27	7,850.47	-9,284.58	-740.59	9,287.97	0.00	0.00	0.00	
16,300.00	89.57	180.27	7,851.22	-9,384.58	-741.06	9,387.96	0.00	0.00	0.00	
16,400.00	89.57	180.27	7,851.98	-9,484.57	-741.53	9,487.96	0.00	0.00	0.00	
16,500.00	89.57	180.27	7,852.73	-9,584.57	-742.00	9,587.96	0.00	0.00	0.00	
16,600.00	89.57	180.27	7,853.49	-9,684.56	-742.46	9,687.96	0.00	0.00	0.00	
16,700.00	89.57	180.27	7,854.24	-9,784.56	-742.93	9,787.95	0.00	0.00	0.00	
16,800.00	89.57	180.27	7,855.00	-9,884.56	-743.40	9,887.95	0.00	0.00	0.00	
16,900.00	89.57	180.27	7,855.75	-9,984.55	-743.87	9,987.95	0.00	0.00	0.00	
17,000.00	89.57	180.27	7,856.51	-10,084.55	-744.34	10,087.94	0.00	0.00	0.00	
17,100.00	89.57	180.27	7,857.26	-10,184.54	-744.81	10,187.94	0.00	0.00	0.00	
17,200.00	89.57	180.27	7,858.01	-10,284.54	-745.28	10,287.94	0.00	0.00	0.00	
17,300.00	89.57	180.27	7,858.77	-10,384.54	-745.74	10,387.94	0.00	0.00	0.00	
17,400.00	89.57	180.27	7,859.52	-10,484.53	-746.21	10,487.93	0.00	0.00	0.00	
17,500.00	89.57	180.27	7,860.28	-10,584.53	-746.68	10,587.93	0.00	0.00	0.00	
17,600.00	89.57	180.27	7,861.03	-10,684.52	-747.15	10,687.93	0.00	0.00	0.00	
17,700.00	89.57	180.27	7,861.79	-10,784.52	-747.62	10,787.92	0.00	0.00	0.00	
17,800.00	89.57	180.27	7,862.54	-10,884.52	-748.09	10,887.92	0.00	0.00	0.00	
17,900.00	89.57	180.27	7,863.29	-10,984.51	-748.56	10,987.92	0.00	0.00	0.00	
18,000.00	89.57	180.27	7,864.05	-11,084.51	-749.02	11,087.92	0.00	0.00	0.00	
18,100.00	89.57	180.27	7,864.80	-11,184.50	-749.49	11,187.91	0.00	0.00	0.00	
18,200.00	89.57	180.27	7,865.56	-11,284.50	-749.96	11,287.91	0.00	0.00	0.00	
18,300.00	89.57	180.27	7,866.31	-11,384.50	-750.43	11,387.91	0.00	0.00	0.00	
18,400.00	89.57	180.27	7,867.07	-11,484.49	-750.90	11,487.90	0.00	0.00	0.00	
18,500.00	89.57	180.27	7,867.82	-11,584.49	-751.37	11,587.90	0.00	0.00	0.00	



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well CLELAND 15-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB = 17' @ 5168.00usft (Drilling Rig)
<b>Site:</b>	1N-68W-15 CLELAND 11-15HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	CLELAND 15-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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)
18,600.00	89.57	180.27	7,868.58	-11,684.49	-751.84	11,687.90	0.00	0.00	0.00
18,700.00	89.57	180.27	7,869.33	-11,784.48	-752.30	11,787.90	0.00	0.00	0.00
18,800.00	89.57	180.27	7,870.08	-11,884.48	-752.77	11,887.89	0.00	0.00	0.00
18,900.00	89.57	180.27	7,870.84	-11,984.47	-753.24	11,987.89	0.00	0.00	0.00
19,000.00	89.57	180.27	7,871.59	-12,084.47	-753.71	12,087.89	0.00	0.00	0.00
19,054.03	89.57	180.27	7,872.00	-12,138.50	-753.96	12,141.91	0.00	0.00	0.00
Fort Hayes									
19,100.00	89.57	180.27	7,872.35	-12,184.47	-754.18	12,187.88	0.00	0.00	0.00
19,186.59	89.57	180.27	7,873.00	-12,271.05	-754.58	12,274.47	0.00	0.00	0.00
TD Well @ 19186.59ft									

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,516.25	1,500.00	9 5/8" Csg	9-5/8	13-1/2
8,316.51	7,791.00	Top of Production	5-1/2	7-7/8

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,261.81	1,254.00	Fox Hills				
4,829.02	4,707.00	Sussex				
5,188.09	5,066.00	Shannon				
7,613.12	7,468.00	Sharon Springs				
7,654.61	7,502.00	Niobrara				
7,856.42	7,645.00	Nio B				
8,075.36	7,749.00	Nio C				
19,054.03	7,872.00	Fort Hayes				

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
380.00	380.00	0.00	0.00	Begin Nudge @ 380.00ft
1,406.67	1,394.35	-96.30	-97.65	Hold Tangent @ 1406.67ft
4,206.67	4,093.82	-618.39	-627.08	Begin Drop @ 4206.67ft
4,976.67	4,854.58	-690.61	-700.32	Hold Vertical @ 4976.67ft
7,196.91	7,074.82	-690.61	-700.32	KOP @ 7196.91ft :: DLS = 8°/100'
8,316.51	7,791.00	-1,401.40	-703.65	End Build @ 8316.51ft
19,186.59	7,873.00	-12,271.05	-754.58	TD Well @ 19186.59ft