

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

3N-66W-20 BARCLAY FARMS 35-20HZ PAD

BARCLAY 20-6HZ

Plan A

Plan: Permit Rev-1

SHL Lat/Long: 40.205106/-104.802722

Survey Program: MWD+IFR+MSA

Standard Planning Report

04 October, 2018

Project: WELD-NAD83-UTMFT13N
Site: 3N-66W-20 BARCLAY FARMS 35-20HZ PAD
Well: BARCLAY 20-6HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

CASING DETAILS

TVD	MD	Size
1500.00	1523.46	9-5/8
7174.24	7854.10	5-1/2

WELL DETAILS: BARCLAY 20-6HZ

GL = 4917'

RKB = 17' @ 4934.00usft (Drilling Rig)

SECTION DETAILS

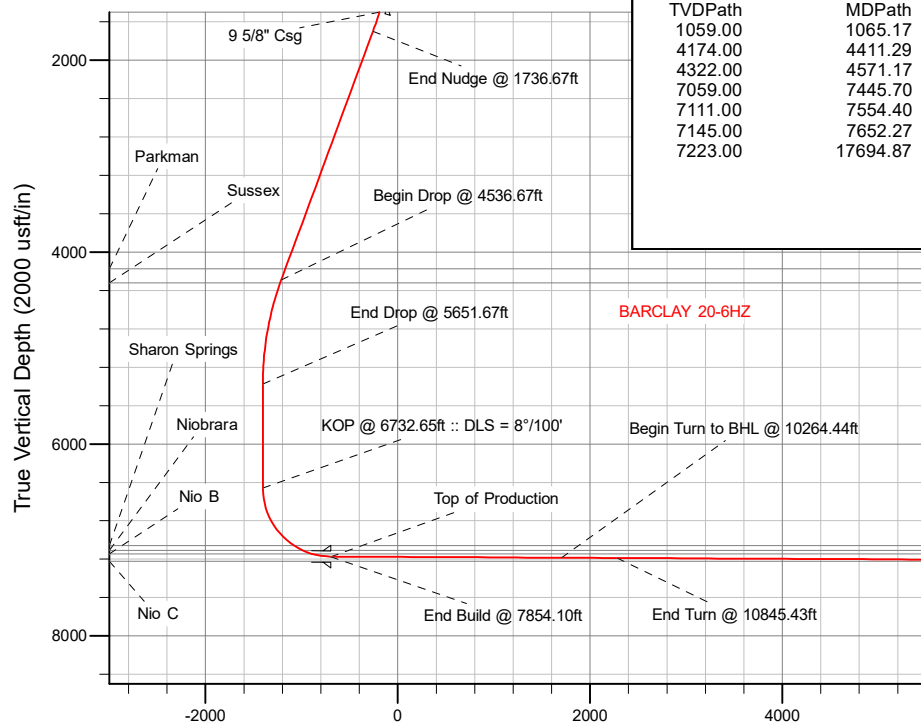
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	1736.67	22.30	205.00	1699.42	-258.91	-120.73	1.50	205.00	-256.55	
4	4536.67	22.30	205.00	4290.00	-1221.84	-569.75	0.00	0.00	-1210.68	
5	5651.67	0.00	0.00	5377.06	-1416.03	-660.30	2.00	180.00	-1403.09	
6	6732.65	0.00	0.00	6458.05	-1416.03	-660.30	0.00	0.00	-1403.09	
7	7854.10	89.72	352.83	7174.24	-708.95	-749.23	8.00	352.83	-694.44	
8	10264.44	89.72	352.83	7186.19	1682.52	-1050.00	0.00	0.00	1702.37	BARCLAY 20-6HZ_target
9	10845.43	89.72	1.55	7189.08	2262.25	-1078.46	1.50	90.02	2282.53	
10	18300.57	89.72	1.55	7226.00	9714.58	-877.24	0.00	0.00	9729.63	BARCLAY 20-6HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
BARCLAY 20-6HZ_SHL	0.00	0.00	0.00	40.205106	-104.802722
BARCLAY 20-6HZ_BHL	7226.00	9714.58	-877.24	40.231783	-104.805865

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1059.00	1065.17	Fox Hills
4174.00	4411.29	Parkman
4322.00	4571.17	Sussex
7059.00	7445.70	Sharon Springs
7111.00	7554.40	Niobrara
7145.00	7652.27	Nio B
7223.00	17694.87	Nio C



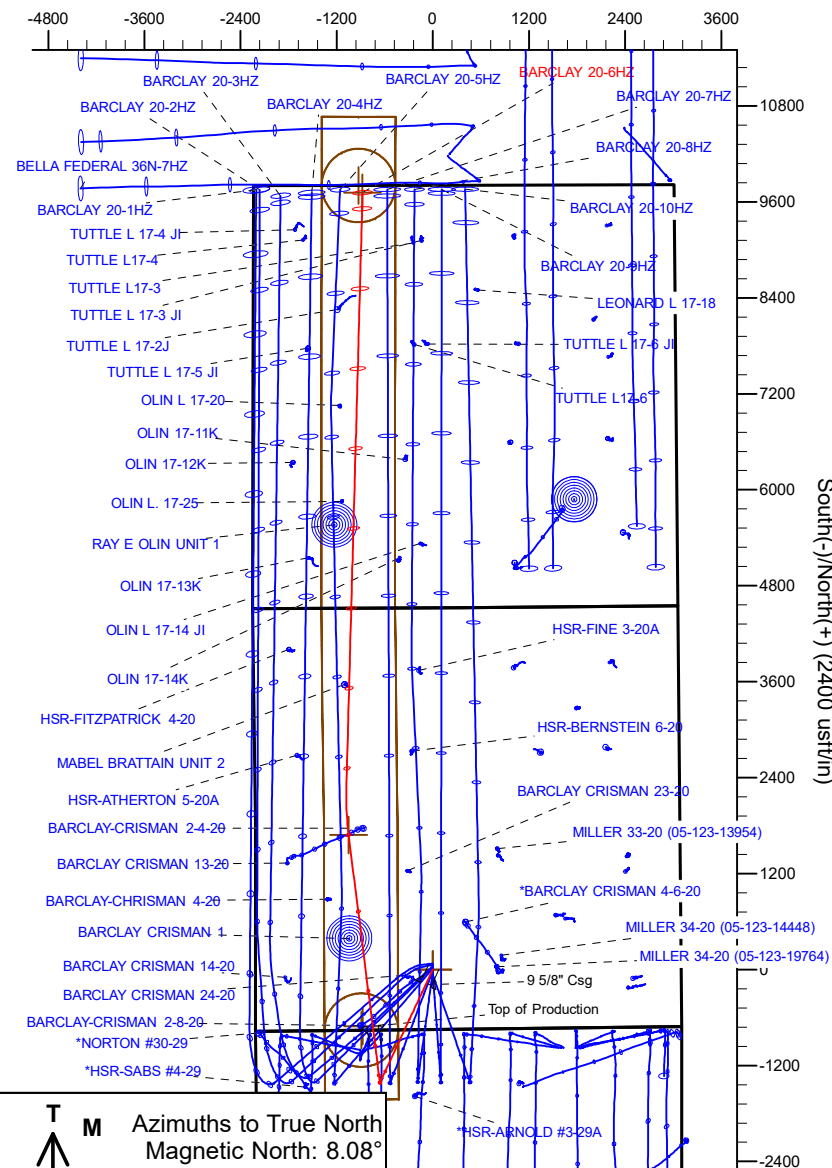
Vertical Section at 358.90° (2000 usft/in)

SHL
749' FSL
2214' FWL

HEEL
50' FSL
1463' FWL

BHL
90' FNL
1362' FWL

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



Azimuths to True North
Magnetic North: 8.08°

Magnetic Field
Strength: 52138.6snT
Dip Angle: 66.66°
Date: 10/3/2018
Model: IGRF2015

Plan: Permit Rev-1 (BARCLAY 20-6HZ/Plan A)

Date: 10/04/2016

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BARCLAY 20-6HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4934.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4934.00usft (Drilling Rig)
Site:	3N-66W-20 BARCLAY FARMS 35-20HZ PAD	North Reference:	True
Well:	BARCLAY 20-6HZ	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-20 BARCLAY FARMS 35-20HZ PAD			
Site Position:		Northing:	14,601,558.41 usft	Latitude: 40.205312
From:	Lat/Long	Easting:	1,695,499.31 usft	Longitude: -104.802720
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.13 °

Well	BARCLAY 20-6HZ			
Well Position	+N/-S	-75.02 usft	Northing:	14,601,483.39 usft
	+E/-W	-0.56 usft	Easting:	1,695,498.92 usft
Position Uncertainty	3.28 usft	Wellhead Elevation:		Ground Level: 4,917.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/3/2018	8.08	66.66	52,138.59963251

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	358.90

Plan Survey Tool Program	Date	10/4/2018		
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	18,300.57	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+II Fixed:v2:Rockies, crustal dec +

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Site:	3N-66W-20 BARCLAY FARMS 35-20HZ PAD	North Reference:	True
Well:	BARCLAY 20-6HZ	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	
1,736.67	22.30	205.00	1,699.42	-258.91	-120.73	1.50	1.50	0.00	205.00	
4,536.67	22.30	205.00	4,290.00	-1,221.84	-569.75	0.00	0.00	0.00	0.00	
5,651.67	0.00	0.00	5,377.06	-1,416.03	-660.30	2.00	-2.00	0.00	180.00	
6,732.65	0.00	0.00	6,458.05	-1,416.03	-660.30	0.00	0.00	0.00	0.00	
7,854.10	89.72	352.83	7,174.24	-708.95	-749.23	8.00	8.00	-0.64	352.83	
10,264.44	89.72	352.83	7,186.19	1,682.52	-1,050.00	0.00	0.00	0.00	0.00	BARCLAY 20-6HZ_ta
10,845.43	89.72	1.55	7,189.08	2,262.25	-1,078.46	1.50	0.00	1.50	90.02	
18,300.57	89.72	1.55	7,226.00	9,714.58	-877.24	0.00	0.00	0.00	0.00	BARCLAY 20-6HZ_BI

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4934.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4934.00usft (Drilling Rig)
Site:	3N-66W-20 BARCLAY FARMS 35-20HZ PAD	North Reference:	True
Well:	BARCLAY 20-6HZ	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
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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 250.00ft									
300.00	0.75	205.00	300.00	-0.30	-0.14	-0.29	1.50	1.50	0.00
400.00	2.25	205.00	399.96	-2.67	-1.24	-2.64	1.50	1.50	0.00
500.00	3.75	205.00	499.82	-7.41	-3.46	-7.34	1.50	1.50	0.00
600.00	5.25	205.00	599.51	-14.52	-6.77	-14.39	1.50	1.50	0.00
700.00	6.75	205.00	698.96	-24.00	-11.19	-23.78	1.50	1.50	0.00
800.00	8.25	205.00	798.10	-35.83	-16.71	-35.50	1.50	1.50	0.00
900.00	9.75	205.00	896.87	-50.00	-23.32	-49.55	1.50	1.50	0.00
1,000.00	11.25	205.00	995.19	-66.52	-31.02	-65.91	1.50	1.50	0.00
1,065.17	12.23	205.00	1,059.00	-78.54	-36.62	-77.82	1.50	1.50	0.00
Fox Hills									
1,100.00	12.75	205.00	1,093.00	-85.36	-39.80	-84.58	1.50	1.50	0.00
1,200.00	14.25	205.00	1,190.24	-106.52	-49.67	-105.54	1.50	1.50	0.00
1,300.00	15.75	205.00	1,286.83	-129.97	-60.61	-128.79	1.50	1.50	0.00
1,400.00	17.25	205.00	1,382.71	-155.71	-72.61	-154.29	1.50	1.50	0.00
1,500.00	18.75	205.00	1,477.81	-183.72	-85.67	-182.04	1.50	1.50	0.00
1,523.46	19.10	205.00	1,500.00	-190.62	-88.89	-188.87	1.50	1.50	0.00
9 5/8" Csg									
1,600.00	20.25	205.00	1,572.07	-213.97	-99.78	-212.02	1.50	1.50	0.00
1,700.00	21.75	205.00	1,665.43	-246.45	-114.92	-244.20	1.50	1.50	0.00
1,736.67	22.30	205.00	1,699.42	-258.91	-120.73	-256.55	1.50	1.50	0.00
End Nudge @ 1736.67ft									
1,800.00	22.30	205.00	1,758.01	-280.69	-130.89	-278.13	0.00	0.00	0.00
1,900.00	22.30	205.00	1,850.53	-315.08	-146.93	-312.20	0.00	0.00	0.00
2,000.00	22.30	205.00	1,943.05	-349.47	-162.96	-346.28	0.00	0.00	0.00
2,100.00	22.30	205.00	2,035.58	-383.86	-179.00	-380.36	0.00	0.00	0.00
2,200.00	22.30	205.00	2,128.10	-418.25	-195.04	-414.43	0.00	0.00	0.00
2,300.00	22.30	205.00	2,220.62	-452.64	-211.07	-448.51	0.00	0.00	0.00
2,400.00	22.30	205.00	2,313.14	-487.04	-227.11	-482.59	0.00	0.00	0.00
2,500.00	22.30	205.00	2,405.66	-521.43	-243.14	-516.66	0.00	0.00	0.00
2,600.00	22.30	205.00	2,498.18	-555.82	-259.18	-550.74	0.00	0.00	0.00
2,700.00	22.30	205.00	2,590.70	-590.21	-275.22	-584.81	0.00	0.00	0.00
2,800.00	22.30	205.00	2,683.22	-624.60	-291.25	-618.89	0.00	0.00	0.00
2,900.00	22.30	205.00	2,775.74	-658.99	-307.29	-652.97	0.00	0.00	0.00
3,000.00	22.30	205.00	2,868.26	-693.38	-323.33	-687.04	0.00	0.00	0.00
3,100.00	22.30	205.00	2,960.79	-727.77	-339.36	-721.12	0.00	0.00	0.00
3,200.00	22.30	205.00	3,053.31	-762.16	-355.40	-755.20	0.00	0.00	0.00
3,300.00	22.30	205.00	3,145.83	-796.55	-371.44	-789.27	0.00	0.00	0.00
3,400.00	22.30	205.00	3,238.35	-830.94	-387.47	-823.35	0.00	0.00	0.00
3,500.00	22.30	205.00	3,330.87	-865.33	-403.51	-857.42	0.00	0.00	0.00
3,600.00	22.30	205.00	3,423.39	-899.72	-419.55	-891.50	0.00	0.00	0.00
3,700.00	22.30	205.00	3,515.91	-934.11	-435.58	-925.58	0.00	0.00	0.00
3,800.00	22.30	205.00	3,608.43	-968.50	-451.62	-959.65	0.00	0.00	0.00
3,900.00	22.30	205.00	3,700.95	-1,002.89	-467.66	-993.73	0.00	0.00	0.00
4,000.00	22.30	205.00	3,793.47	-1,037.28	-483.69	-1,027.80	0.00	0.00	0.00
4,100.00	22.30	205.00	3,885.99	-1,071.67	-499.73	-1,061.88	0.00	0.00	0.00
4,200.00	22.30	205.00	3,978.52	-1,106.06	-515.77	-1,095.96	0.00	0.00	0.00
4,300.00	22.30	205.00	4,071.04	-1,140.45	-531.80	-1,130.03	0.00	0.00	0.00
4,400.00	22.30	205.00	4,163.56	-1,174.84	-547.84	-1,164.11	0.00	0.00	0.00
4,411.29	22.30	205.00	4,174.00	-1,178.72	-549.65	-1,167.96	0.00	0.00	0.00

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Project: WELD-NAD83-UTMFT13N
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Well: BARCLAY 20-6HZ
Wellbore: Plan A
Design: Permit Rev-1

Local Co-ordinate Reference: Well BARCLAY 20-6HZ
TVD Reference: RKB = 17' @ 4934.00usft (Drilling Rig)
MD Reference: RKB = 17' @ 4934.00usft (Drilling Rig)
North Reference: True
Survey Calculation Method: Minimum Curvature

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									
4,500.00	22.30	205.00	4,256.08	-1,209.23	-563.87	-1,198.19	0.00	0.00	0.00
4,536.67	22.30	205.00	4,290.00	-1,221.84	-569.75	-1,210.68	0.00	0.00	0.00
Begin Drop @ 4536.67ft									
4,571.17	21.61	205.00	4,322.00	-1,233.53	-575.21	-1,222.26	2.00	-2.00	0.00
Sussex									
4,600.00	21.03	205.00	4,348.86	-1,243.04	-579.64	-1,231.68	2.00	-2.00	0.00
4,700.00	19.03	205.00	4,442.81	-1,274.08	-594.11	-1,262.44	2.00	-2.00	0.00
4,800.00	17.03	205.00	4,537.89	-1,302.14	-607.20	-1,290.24	2.00	-2.00	0.00
4,900.00	15.03	205.00	4,633.99	-1,327.17	-618.87	-1,315.04	2.00	-2.00	0.00
5,000.00	13.03	205.00	4,731.00	-1,349.14	-629.12	-1,336.82	2.00	-2.00	0.00
5,100.00	11.03	205.00	4,828.80	-1,368.04	-637.93	-1,355.54	2.00	-2.00	0.00
5,200.00	9.03	205.00	4,927.27	-1,383.83	-645.29	-1,371.18	2.00	-2.00	0.00
5,300.00	7.03	205.00	5,026.28	-1,396.49	-651.19	-1,383.73	2.00	-2.00	0.00
5,400.00	5.03	205.00	5,125.72	-1,406.02	-655.64	-1,393.17	2.00	-2.00	0.00
5,500.00	3.03	205.00	5,225.47	-1,412.39	-658.61	-1,399.49	2.00	-2.00	0.00
5,600.00	1.03	205.00	5,325.40	-1,415.61	-660.11	-1,402.67	2.00	-2.00	0.00
5,651.67	0.00	0.00	5,377.06	-1,416.03	-660.30	-1,403.09	2.00	-2.00	0.00
End Drop @ 5651.67ft									
5,700.00	0.00	0.00	5,425.40	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
5,800.00	0.00	0.00	5,525.40	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
5,900.00	0.00	0.00	5,625.40	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
6,000.00	0.00	0.00	5,725.40	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
6,100.00	0.00	0.00	5,825.40	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
6,200.00	0.00	0.00	5,925.40	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
6,300.00	0.00	0.00	6,025.40	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
6,400.00	0.00	0.00	6,125.40	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
6,500.00	0.00	0.00	6,225.40	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
6,600.00	0.00	0.00	6,325.40	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
6,700.00	0.00	0.00	6,425.40	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
6,732.65	0.00	0.00	6,458.05	-1,416.03	-660.30	-1,403.09	0.00	0.00	0.00
KOP @ 6732.65ft :: DLS = 8°/100'									
6,800.00	5.39	352.83	6,525.30	-1,412.89	-660.70	-1,399.94	8.00	8.00	0.00
6,900.00	13.39	352.83	6,623.88	-1,396.72	-662.73	-1,383.74	8.00	8.00	0.00
7,000.00	21.39	352.83	6,719.23	-1,367.09	-666.46	-1,354.04	8.00	8.00	0.00
7,100.00	29.39	352.83	6,809.50	-1,324.59	-671.80	-1,311.44	8.00	8.00	0.00
7,200.00	37.39	352.83	6,892.93	-1,270.03	-678.67	-1,256.77	8.00	8.00	0.00
7,300.00	45.39	352.83	6,967.89	-1,204.48	-686.91	-1,191.07	8.00	8.00	0.00
7,400.00	53.39	352.83	7,032.93	-1,129.22	-696.37	-1,115.65	8.00	8.00	0.00
7,445.70	57.04	352.83	7,059.00	-1,091.99	-701.06	-1,078.33	8.00	8.00	0.00
Sharon Springs									
7,500.00	61.39	352.83	7,086.79	-1,045.72	-706.88	-1,031.95	8.00	8.00	0.00
7,554.40	65.74	352.83	7,111.00	-997.39	-712.95	-983.52	8.00	8.00	0.00
Niobrara									
7,600.00	69.39	352.83	7,128.40	-955.59	-718.21	-941.62	8.00	8.00	0.00
7,652.27	73.57	352.83	7,145.00	-906.42	-724.40	-892.34	8.00	8.00	0.00
Nio B									
7,700.00	77.39	352.83	7,156.96	-860.59	-730.16	-846.41	8.00	8.00	0.00
7,800.00	85.39	352.83	7,171.93	-762.57	-742.49	-748.17	8.00	8.00	0.00
7,854.10	89.72	352.83	7,174.24	-708.95	-749.23	-694.44	8.00	8.00	0.00
End Build @ 7854.10ft - Top of Production									
7,900.00	89.72	352.83	7,174.46	-663.41	-754.96	-648.79	0.00	0.00	0.00
8,000.00	89.72	352.83	7,174.96	-564.19	-767.44	-549.36	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BARCLAY 20-6HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4934.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4934.00usft (Drilling Rig)
Site:	3N-66W-20 BARCLAY FARMS 35-20HZ PAD	North Reference:	True
Well:	BARCLAY 20-6HZ	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)
8,100.00	89.72	352.83	7,175.46	-464.98	-779.92	-449.92	0.00	0.00	0.00
8,200.00	89.72	352.83	7,175.95	-365.76	-792.39	-350.48	0.00	0.00	0.00
8,300.00	89.72	352.83	7,176.45	-266.54	-804.87	-251.04	0.00	0.00	0.00
8,400.00	89.72	352.83	7,176.94	-167.32	-817.35	-151.60	0.00	0.00	0.00
8,500.00	89.72	352.83	7,177.44	-68.11	-829.83	-52.16	0.00	0.00	0.00
8,600.00	89.72	352.83	7,177.94	31.11	-842.31	47.27	0.00	0.00	0.00
8,700.00	89.72	352.83	7,178.43	130.33	-854.79	146.71	0.00	0.00	0.00
8,800.00	89.72	352.83	7,178.93	229.54	-867.26	246.15	0.00	0.00	0.00
8,900.00	89.72	352.83	7,179.42	328.76	-879.74	345.59	0.00	0.00	0.00
9,000.00	89.72	352.83	7,179.92	427.98	-892.22	445.03	0.00	0.00	0.00
9,100.00	89.72	352.83	7,180.42	527.20	-904.70	544.47	0.00	0.00	0.00
9,200.00	89.72	352.83	7,180.91	626.41	-917.18	643.91	0.00	0.00	0.00
9,300.00	89.72	352.83	7,181.41	725.63	-929.65	743.34	0.00	0.00	0.00
9,400.00	89.72	352.83	7,181.90	824.85	-942.13	842.78	0.00	0.00	0.00
9,500.00	89.72	352.83	7,182.40	924.07	-954.61	942.22	0.00	0.00	0.00
9,600.00	89.72	352.83	7,182.90	1,023.28	-967.09	1,041.66	0.00	0.00	0.00
9,700.00	89.72	352.83	7,183.39	1,122.50	-979.57	1,141.10	0.00	0.00	0.00
9,800.00	89.72	352.83	7,183.89	1,221.72	-992.05	1,240.54	0.00	0.00	0.00
9,900.00	89.72	352.83	7,184.38	1,320.93	-1,004.52	1,339.97	0.00	0.00	0.00
10,000.00	89.72	352.83	7,184.88	1,420.15	-1,017.00	1,439.41	0.00	0.00	0.00
10,100.00	89.72	352.83	7,185.37	1,519.37	-1,029.48	1,538.85	0.00	0.00	0.00
10,200.00	89.72	352.83	7,185.87	1,618.59	-1,041.96	1,638.29	0.00	0.00	0.00
10,264.44	89.72	352.83	7,186.19	1,682.52	-1,050.00	1,702.37	0.00	0.00	0.00
Begin Turn to BHL @ 10264.44ft									
10,300.00	89.72	353.37	7,186.37	1,717.82	-1,054.27	1,737.75	1.50	0.00	1.50
10,400.00	89.72	354.87	7,186.86	1,817.29	-1,064.53	1,837.39	1.50	0.00	1.50
10,500.00	89.72	356.37	7,187.36	1,916.99	-1,072.17	1,937.22	1.50	0.00	1.50
10,600.00	89.72	357.87	7,187.86	2,016.86	-1,077.20	2,037.17	1.50	0.00	1.50
10,700.00	89.72	359.37	7,188.35	2,116.83	-1,079.62	2,137.17	1.50	0.00	1.50
10,800.00	89.72	0.87	7,188.85	2,216.83	-1,079.42	2,237.14	1.50	0.00	1.50
10,845.43	89.72	1.55	7,189.08	2,262.25	-1,078.46	2,282.53	1.50	0.00	1.50
End Turn @ 10845.43ft									
10,900.00	89.72	1.55	7,189.35	2,316.79	-1,076.99	2,337.04	0.00	0.00	0.00
11,000.00	89.72	1.55	7,189.84	2,416.76	-1,074.29	2,436.94	0.00	0.00	0.00
11,100.00	89.72	1.55	7,190.34	2,516.72	-1,071.59	2,536.83	0.00	0.00	0.00
11,200.00	89.72	1.55	7,190.83	2,616.68	-1,068.89	2,636.72	0.00	0.00	0.00
11,300.00	89.72	1.55	7,191.33	2,716.64	-1,066.19	2,736.61	0.00	0.00	0.00
11,400.00	89.72	1.55	7,191.82	2,816.61	-1,063.49	2,836.50	0.00	0.00	0.00
11,500.00	89.72	1.55	7,192.32	2,916.57	-1,060.80	2,936.40	0.00	0.00	0.00
11,600.00	89.72	1.55	7,192.81	3,016.53	-1,058.10	3,036.29	0.00	0.00	0.00
11,700.00	89.72	1.55	7,193.31	3,116.49	-1,055.40	3,136.18	0.00	0.00	0.00
11,800.00	89.72	1.55	7,193.80	3,216.46	-1,052.70	3,236.07	0.00	0.00	0.00
11,900.00	89.72	1.55	7,194.30	3,316.42	-1,050.00	3,335.96	0.00	0.00	0.00
12,000.00	89.72	1.55	7,194.79	3,416.38	-1,047.30	3,435.86	0.00	0.00	0.00
12,100.00	89.72	1.55	7,195.29	3,516.34	-1,044.60	3,535.75	0.00	0.00	0.00
12,200.00	89.72	1.55	7,195.78	3,616.31	-1,041.90	3,635.64	0.00	0.00	0.00
12,300.00	89.72	1.55	7,196.28	3,716.27	-1,039.20	3,735.53	0.00	0.00	0.00
12,400.00	89.72	1.55	7,196.77	3,816.23	-1,036.50	3,835.43	0.00	0.00	0.00
12,500.00	89.72	1.55	7,197.27	3,916.19	-1,033.80	3,935.32	0.00	0.00	0.00
12,600.00	89.72	1.55	7,197.77	4,016.15	-1,031.11	4,035.21	0.00	0.00	0.00
12,700.00	89.72	1.55	7,198.26	4,116.12	-1,028.41	4,135.10	0.00	0.00	0.00
12,800.00	89.72	1.55	7,198.76	4,216.08	-1,025.71	4,234.99	0.00	0.00	0.00
12,900.00	89.72	1.55	7,199.25	4,316.04	-1,023.01	4,334.89	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BARCLAY 20-6HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4934.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4934.00usft (Drilling Rig)
Site:	3N-66W-20 BARCLAY FARMS 35-20HZ PAD	North Reference:	True
Well:	BARCLAY 20-6HZ	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)
13,000.00	89.72	1.55	7,199.75	4,416.00	-1,020.31	4,434.78	0.00	0.00	0.00
13,100.00	89.72	1.55	7,200.24	4,515.97	-1,017.61	4,534.67	0.00	0.00	0.00
13,200.00	89.72	1.55	7,200.74	4,615.93	-1,014.91	4,634.56	0.00	0.00	0.00
13,300.00	89.72	1.55	7,201.23	4,715.89	-1,012.21	4,734.45	0.00	0.00	0.00
13,400.00	89.72	1.55	7,201.73	4,815.85	-1,009.51	4,834.35	0.00	0.00	0.00
13,500.00	89.72	1.55	7,202.22	4,915.82	-1,006.81	4,934.24	0.00	0.00	0.00
13,600.00	89.72	1.55	7,202.72	5,015.78	-1,004.11	5,034.13	0.00	0.00	0.00
13,700.00	89.72	1.55	7,203.21	5,115.74	-1,001.42	5,134.02	0.00	0.00	0.00
13,800.00	89.72	1.55	7,203.71	5,215.70	-998.72	5,233.91	0.00	0.00	0.00
13,900.00	89.72	1.55	7,204.20	5,315.67	-996.02	5,333.81	0.00	0.00	0.00
14,000.00	89.72	1.55	7,204.70	5,415.63	-993.32	5,433.70	0.00	0.00	0.00
14,100.00	89.72	1.55	7,205.19	5,515.59	-990.62	5,533.59	0.00	0.00	0.00
14,200.00	89.72	1.55	7,205.69	5,615.55	-987.92	5,633.48	0.00	0.00	0.00
14,300.00	89.72	1.55	7,206.19	5,715.51	-985.22	5,733.38	0.00	0.00	0.00
14,400.00	89.72	1.55	7,206.68	5,815.48	-982.52	5,833.27	0.00	0.00	0.00
14,500.00	89.72	1.55	7,207.18	5,915.44	-979.82	5,933.16	0.00	0.00	0.00
14,600.00	89.72	1.55	7,207.67	6,015.40	-977.12	6,033.05	0.00	0.00	0.00
14,700.00	89.72	1.55	7,208.17	6,115.36	-974.42	6,132.94	0.00	0.00	0.00
14,800.00	89.72	1.55	7,208.66	6,215.33	-971.73	6,232.84	0.00	0.00	0.00
14,900.00	89.72	1.55	7,209.16	6,315.29	-969.03	6,332.73	0.00	0.00	0.00
15,000.00	89.72	1.55	7,209.65	6,415.25	-966.33	6,432.62	0.00	0.00	0.00
15,100.00	89.72	1.55	7,210.15	6,515.21	-963.63	6,532.51	0.00	0.00	0.00
15,200.00	89.72	1.55	7,210.64	6,615.18	-960.93	6,632.40	0.00	0.00	0.00
15,300.00	89.72	1.55	7,211.14	6,715.14	-958.23	6,732.30	0.00	0.00	0.00
15,400.00	89.72	1.55	7,211.63	6,815.10	-955.53	6,832.19	0.00	0.00	0.00
15,500.00	89.72	1.55	7,212.13	6,915.06	-952.83	6,932.08	0.00	0.00	0.00
15,600.00	89.72	1.55	7,212.62	7,015.03	-950.13	7,031.97	0.00	0.00	0.00
15,700.00	89.72	1.55	7,213.12	7,114.99	-947.43	7,131.86	0.00	0.00	0.00
15,800.00	89.72	1.55	7,213.61	7,214.95	-944.73	7,231.76	0.00	0.00	0.00
15,900.00	89.72	1.55	7,214.11	7,314.91	-942.04	7,331.65	0.00	0.00	0.00
16,000.00	89.72	1.55	7,214.61	7,414.87	-939.34	7,431.54	0.00	0.00	0.00
16,100.00	89.72	1.55	7,215.10	7,514.84	-936.64	7,531.43	0.00	0.00	0.00
16,200.00	89.72	1.55	7,215.60	7,614.80	-933.94	7,631.33	0.00	0.00	0.00
16,300.00	89.72	1.55	7,216.09	7,714.76	-931.24	7,731.22	0.00	0.00	0.00
16,400.00	89.72	1.55	7,216.59	7,814.72	-928.54	7,831.11	0.00	0.00	0.00
16,500.00	89.72	1.55	7,217.08	7,914.69	-925.84	7,931.00	0.00	0.00	0.00
16,600.00	89.72	1.55	7,217.58	8,014.65	-923.14	8,030.89	0.00	0.00	0.00
16,700.00	89.72	1.55	7,218.07	8,114.61	-920.44	8,130.79	0.00	0.00	0.00
16,800.00	89.72	1.55	7,218.57	8,214.57	-917.74	8,230.68	0.00	0.00	0.00
16,900.00	89.72	1.55	7,219.06	8,314.54	-915.04	8,330.57	0.00	0.00	0.00
17,000.00	89.72	1.55	7,219.56	8,414.50	-912.35	8,430.46	0.00	0.00	0.00
17,100.00	89.72	1.55	7,220.05	8,514.46	-909.65	8,530.35	0.00	0.00	0.00
17,200.00	89.72	1.55	7,220.55	8,614.42	-906.95	8,630.25	0.00	0.00	0.00
17,300.00	89.72	1.55	7,221.04	8,714.38	-904.25	8,730.14	0.00	0.00	0.00
17,400.00	89.72	1.55	7,221.54	8,814.35	-901.55	8,830.03	0.00	0.00	0.00
17,500.00	89.72	1.55	7,222.03	8,914.31	-898.85	8,929.92	0.00	0.00	0.00
17,600.00	89.72	1.55	7,222.53	9,014.27	-896.15	9,029.81	0.00	0.00	0.00
17,694.87	89.72	1.55	7,223.00	9,109.11	-893.59	9,124.59	0.00	0.00	0.00
Nio C									
17,700.00	89.72	1.55	7,223.03	9,114.23	-893.45	9,129.71	0.00	0.00	0.00
17,800.00	89.72	1.55	7,223.52	9,214.20	-890.75	9,229.60	0.00	0.00	0.00
17,900.00	89.72	1.55	7,224.02	9,314.16	-888.05	9,329.49	0.00	0.00	0.00
18,000.00	89.72	1.55	7,224.51	9,414.12	-885.35	9,429.38	0.00	0.00	0.00
18,100.00	89.72	1.55	7,225.01	9,514.08	-882.65	9,529.28	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well BARCLAY 20-6HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4934.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4934.00usft (Drilling Rig)
Site:	3N-66W-20 BARCLAY FARMS 35-20HZ PAD	North Reference:	True
Well:	BARCLAY 20-6HZ	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)	
18,200.00	89.72	1.55	7,225.50	9,614.05	-879.96	9,629.17	0.00	0.00	0.00	
18,300.00	89.72	1.55	7,226.00	9,714.01	-877.26	9,729.06	0.00	0.00	0.00	
18,300.57	89.72	1.55	7,226.00	9,714.58	-877.24	9,729.63	0.00	0.00	0.00	
TD Well @ 18300.57ft										

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	
7,854.10	7,174.24	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,065.17	1,059.00	Fox Hills				
4,411.29	4,174.00	Parkman				
4,571.17	4,322.00	Sussex				
7,445.70	7,059.00	Sharon Springs				
7,554.40	7,111.00	Niobrara				
7,652.27	7,145.00	Nio B				
17,694.87	7,223.00	Nio C				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
250.00	250.00	0.00	0.00	Begin Nudge @ 250.00ft	
1,736.67	1,699.42	-258.91	-120.73	End Nudge @ 1736.67ft	
4,536.67	4,290.00	-1,221.84	-569.75	Begin Drop @ 4536.67ft	
5,651.67	5,377.06	-1,416.03	-660.30	End Drop @ 5651.67ft	
6,732.65	6,458.05	-1,416.03	-660.30	KOP @ 6732.65ft :: DLS = 8°/100'	
7,854.10	7,174.24	-708.95	-749.23	End Build @ 7854.10ft	
10,264.44	7,186.19	1,682.52	-1,050.00	Begin Turn to BHL @ 10264.44ft	
10,845.43	7,189.08	2,262.25	-1,078.46	End Turn @ 10845.43ft	
18,300.57	7,226.00	9,714.58	-877.24	TD Well @ 18300.57ft	