

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-66W-13 AZUL 14-13HZ PAD
AZUL 13-20HZ**

Plan A

Plan: Permit Rev-1

Standard Planning Report

07 June, 2017



Azimuths to True North
Magnetic North: 8.01°

Magnetic Field
Strength: 52319.1nT
Dip Angle: 66.56°
Date: 6/5/2017
Model: IGRF2010

SITE: 1N-66W-13 AZUL 14-13HZ PAD

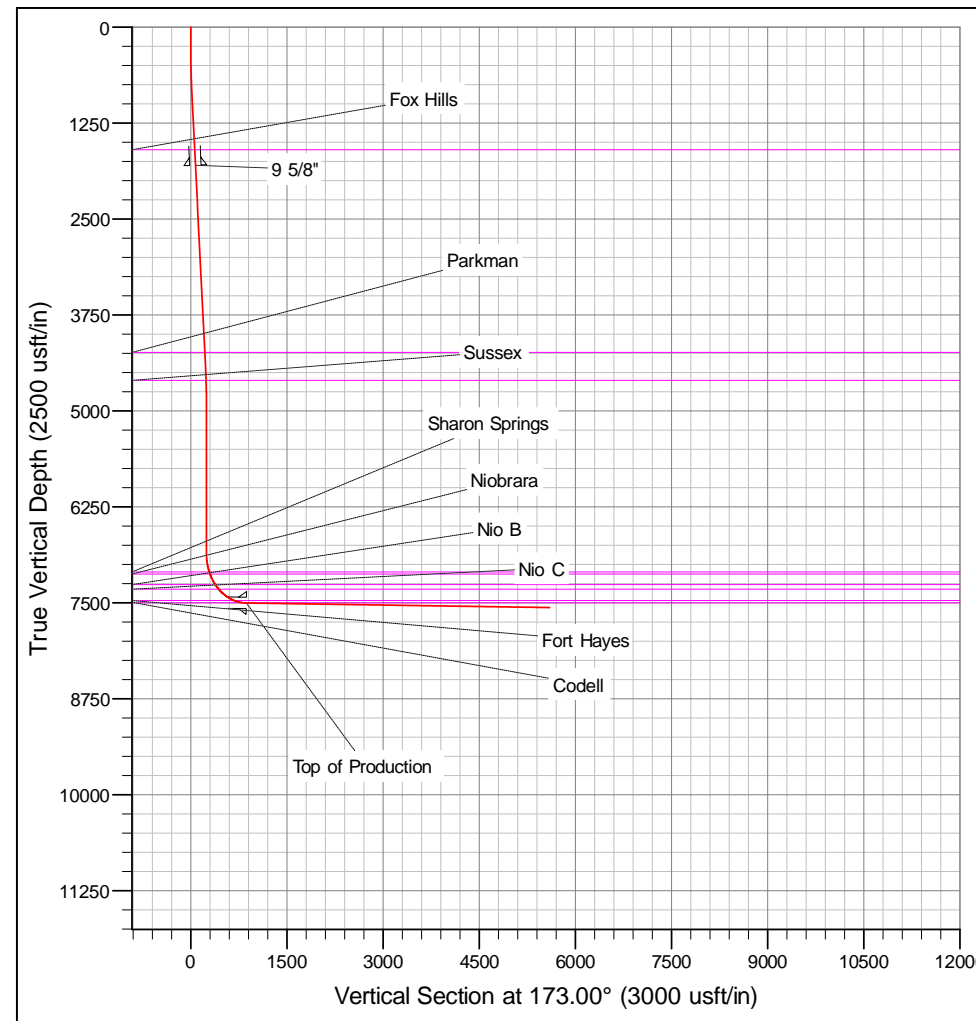
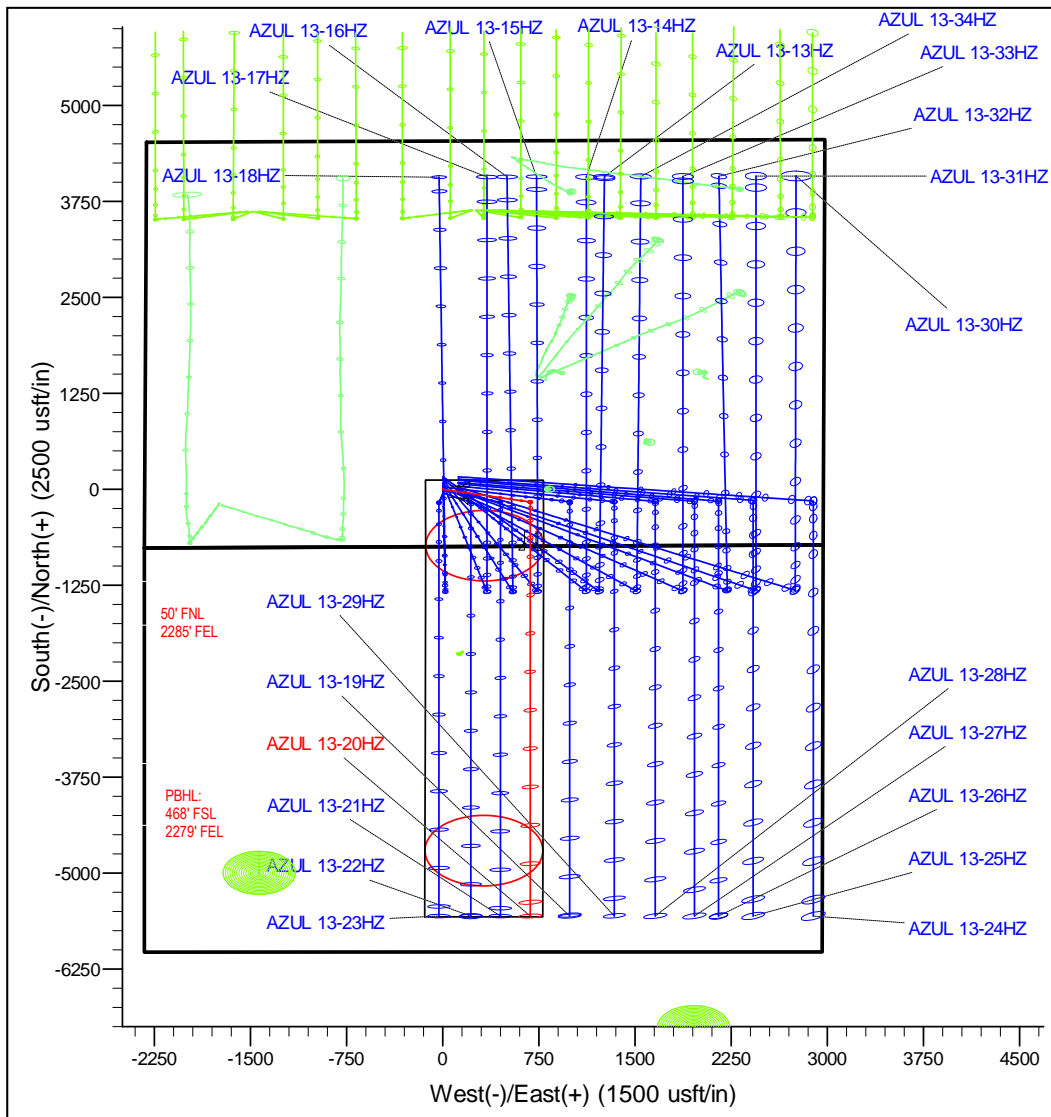
Well: AZUL 13-20HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1599.00	1612.33	Fox Hills
4240.00	4291.69	Parkman
4604.00	4659.75	Sussex
7099.00	7160.91	Sharon Springs
7125.00	7189.07	Niobrara
7264.00	7352.03	Nio B
7323.00	7431.62	Nio C
7471.00	7717.97	Fort Hayes
7493.00	7805.34	Codell

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
AZUL 13-20HZ_PBL	7563.00	-5567.85	682.11	14538077.00	1717618.00	40.030823	-104.724207

WELL DETAILS: AZUL 13-20HZ					
	GL: 5051.00	RKB @ 5068.00usft (D Rig)			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14543632.73	1716918.83	40.046086	-104.726644

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Diag	Vsect		
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		
897.11	9.71	103.52	894.02	-12.78	53.17	1.50	19.16		
4409.35	9.71	103.52	4355.38	-151.22	628.94	0.00	226.70		
5056.46	0.00	0.00	5000.00	-164.00	682.11	1.50	245.87		
6923.84	0.00	0.00	6867.38	-164.00	682.11	0.00	245.87		
7915.95	89.29	180.00	7503.95	-792.73	682.11	9.00	869.92		
12681.44	89.29	180.00	7563.00	-5567.85	682.11	0.00	5599.96		



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-20HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5068.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5068.00usft (D Rig)
Site:	1N-66W-13 AZUL 14-13HZ PAD	North Reference:	True
Well:	AZUL 13-20HZ	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-66W-13 AZUL 14-13HZ PAD											
Site Position:						Northing:			14,543,797.69 usft			Latitude:			40.046539		
From:			Lat/Long			Easting:			1,716,920.01 usft			Longitude:			-104.726638		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.18		

Well	AZUL 13-20HZ					
Well Position	+N/-S	-164.96 usft	Northing:	14,543,632.73 usft	Latitude:	40.046086
	+E/-W	-1.68 usft	Easting:	1,716,918.83 usft	Longitude:	-104.726644
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,051.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/5/2017	8.01	66.56	52,319.11453155

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	173.00

Plan Survey Tool Program	Date	6/7/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,681.44	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:crustal field declinat

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	
897.11	9.71	103.52	894.02	-12.78	53.17	1.50	1.50	0.00	103.52	
4,409.35	9.71	103.52	4,355.98	-151.22	628.94	0.00	0.00	0.00	0.00	
5,056.46	0.00	0.00	5,000.00	-164.00	682.11	1.50	-1.50	0.00	180.00	
6,923.84	0.00	0.00	6,867.38	-164.00	682.11	0.00	0.00	0.00	0.00	
7,915.95	89.29	180.00	7,503.95	-792.73	682.11	9.00	9.00	0.00	180.00	
12,681.44	89.29	180.00	7,563.00	-5,557.85	682.11	0.00	0.00	0.00	0.00	AZUL 13-20HZ_PBI

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-20HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5068.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5068.00usft (D Rig)
Site:	1N-66W-13 AZUL 14-13HZ PAD	North Reference:	True
Well:	AZUL 13-20HZ	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
300.00	0.75	103.52	300.00	-0.08	0.32	0.11	1.50	1.50	0.00
400.00	2.25	103.52	399.96	-0.69	2.86	1.03	1.50	1.50	0.00
500.00	3.75	103.52	499.82	-1.91	7.95	2.87	1.50	1.50	0.00
600.00	5.25	103.52	599.51	-3.75	15.58	5.62	1.50	1.50	0.00
700.00	6.75	103.52	698.96	-6.19	25.74	9.28	1.50	1.50	0.00
800.00	8.25	103.52	798.10	-9.24	38.43	13.85	1.50	1.50	0.00
897.11	9.71	103.52	894.02	-12.78	53.17	19.16	1.50	1.50	0.00
900.00	9.71	103.52	896.87	-12.90	53.64	19.34	0.00	0.00	0.00
1,000.00	9.71	103.52	995.44	-16.84	70.04	25.24	0.00	0.00	0.00
1,100.00	9.71	103.52	1,094.00	-20.78	86.43	31.15	0.00	0.00	0.00
1,200.00	9.71	103.52	1,192.57	-24.72	102.82	37.06	0.00	0.00	0.00
1,300.00	9.71	103.52	1,291.14	-28.66	119.22	42.97	0.00	0.00	0.00
1,400.00	9.71	103.52	1,389.71	-32.60	135.61	48.88	0.00	0.00	0.00
1,500.00	9.71	103.52	1,488.28	-36.55	152.00	54.79	0.00	0.00	0.00
1,600.00	9.71	103.52	1,586.85	-40.49	168.40	60.70	0.00	0.00	0.00
1,612.33	9.71	103.52	1,599.00	-40.97	170.42	61.43	0.00	0.00	0.00
Fox Hills									
1,700.00	9.71	103.52	1,685.41	-44.43	184.79	66.61	0.00	0.00	0.00
1,800.00	9.71	103.52	1,783.98	-48.37	201.18	72.52	0.00	0.00	0.00
1,816.25	9.71	103.52	1,800.00	-49.01	203.85	73.48	0.00	0.00	0.00
9 5/8"									
1,900.00	9.71	103.52	1,882.55	-52.31	217.58	78.43	0.00	0.00	0.00
2,000.00	9.71	103.52	1,981.12	-56.25	233.97	84.34	0.00	0.00	0.00
2,100.00	9.71	103.52	2,079.69	-60.19	250.36	90.24	0.00	0.00	0.00
2,200.00	9.71	103.52	2,178.26	-64.14	266.76	96.15	0.00	0.00	0.00
2,300.00	9.71	103.52	2,276.82	-68.08	283.15	102.06	0.00	0.00	0.00
2,400.00	9.71	103.52	2,375.39	-72.02	299.54	107.97	0.00	0.00	0.00
2,500.00	9.71	103.52	2,473.96	-75.96	315.94	113.88	0.00	0.00	0.00
2,600.00	9.71	103.52	2,572.53	-79.90	332.33	119.79	0.00	0.00	0.00
2,700.00	9.71	103.52	2,671.10	-83.84	348.72	125.70	0.00	0.00	0.00
2,800.00	9.71	103.52	2,769.67	-87.78	365.12	131.61	0.00	0.00	0.00
2,900.00	9.71	103.52	2,868.24	-91.73	381.51	137.52	0.00	0.00	0.00
3,000.00	9.71	103.52	2,966.80	-95.67	397.90	143.43	0.00	0.00	0.00
3,100.00	9.71	103.52	3,065.37	-99.61	414.30	149.33	0.00	0.00	0.00
3,200.00	9.71	103.52	3,163.94	-103.55	430.69	155.24	0.00	0.00	0.00
3,300.00	9.71	103.52	3,262.51	-107.49	447.08	161.15	0.00	0.00	0.00
3,400.00	9.71	103.52	3,361.08	-111.43	463.48	167.06	0.00	0.00	0.00
3,500.00	9.71	103.52	3,459.65	-115.37	479.87	172.97	0.00	0.00	0.00
3,600.00	9.71	103.52	3,558.21	-119.32	496.26	178.88	0.00	0.00	0.00
3,700.00	9.71	103.52	3,656.78	-123.26	512.66	184.79	0.00	0.00	0.00
3,800.00	9.71	103.52	3,755.35	-127.20	529.05	190.70	0.00	0.00	0.00
3,900.00	9.71	103.52	3,853.92	-131.14	545.44	196.61	0.00	0.00	0.00
4,000.00	9.71	103.52	3,952.49	-135.08	561.83	202.52	0.00	0.00	0.00
4,100.00	9.71	103.52	4,051.06	-139.02	578.23	208.42	0.00	0.00	0.00
4,200.00	9.71	103.52	4,149.62	-142.97	594.62	214.33	0.00	0.00	0.00
4,291.69	9.71	103.52	4,240.00	-146.58	609.65	219.75	0.00	0.00	0.00
Parkman									
4,300.00	9.71	103.52	4,248.19	-146.91	611.01	220.24	0.00	0.00	0.00
4,400.00	9.71	103.52	4,346.76	-150.85	627.41	226.15	0.00	0.00	0.00

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5068.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5068.00usft (D Rig)
Site:	1N-66W-13 AZUL 14-13HZ PAD	North Reference:	True
Well:	AZUL 13-20HZ	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)
4,409.35	9.71	103.52	4,355.98	-151.22	628.94	226.70	0.00	0.00	0.00
4,500.00	8.35	103.52	4,445.50	-154.54	642.77	231.69	1.50	-1.50	0.00
4,600.00	6.85	103.52	4,544.62	-157.63	655.62	236.32	1.50	-1.50	0.00
4,659.75	5.95	103.52	4,604.00	-159.19	662.10	238.66	1.50	-1.50	0.00
Sussex									
4,700.00	5.35	103.52	4,644.05	-160.11	665.95	240.04	1.50	-1.50	0.00
4,800.00	3.85	103.52	4,743.73	-161.99	673.74	242.85	1.50	-1.50	0.00
4,900.00	2.35	103.52	4,843.58	-163.25	678.99	244.75	1.50	-1.50	0.00
5,000.00	0.85	103.52	4,943.54	-163.90	681.70	245.72	1.50	-1.50	0.00
5,056.46	0.00	0.00	5,000.00	-164.00	682.11	245.87	1.50	-1.50	0.00
5,100.00	0.00	0.00	5,043.54	-164.00	682.11	245.87	0.00	0.00	0.00
5,200.00	0.00	0.00	5,143.54	-164.00	682.11	245.87	0.00	0.00	0.00
5,300.00	0.00	0.00	5,243.54	-164.00	682.11	245.87	0.00	0.00	0.00
5,400.00	0.00	0.00	5,343.54	-164.00	682.11	245.87	0.00	0.00	0.00
5,500.00	0.00	0.00	5,443.54	-164.00	682.11	245.87	0.00	0.00	0.00
5,600.00	0.00	0.00	5,543.54	-164.00	682.11	245.87	0.00	0.00	0.00
5,700.00	0.00	0.00	5,643.54	-164.00	682.11	245.87	0.00	0.00	0.00
5,800.00	0.00	0.00	5,743.54	-164.00	682.11	245.87	0.00	0.00	0.00
5,900.00	0.00	0.00	5,843.54	-164.00	682.11	245.87	0.00	0.00	0.00
6,000.00	0.00	0.00	5,943.54	-164.00	682.11	245.87	0.00	0.00	0.00
6,100.00	0.00	0.00	6,043.54	-164.00	682.11	245.87	0.00	0.00	0.00
6,200.00	0.00	0.00	6,143.54	-164.00	682.11	245.87	0.00	0.00	0.00
6,300.00	0.00	0.00	6,243.54	-164.00	682.11	245.87	0.00	0.00	0.00
6,400.00	0.00	0.00	6,343.54	-164.00	682.11	245.87	0.00	0.00	0.00
6,500.00	0.00	0.00	6,443.54	-164.00	682.11	245.87	0.00	0.00	0.00
6,600.00	0.00	0.00	6,543.54	-164.00	682.11	245.87	0.00	0.00	0.00
6,700.00	0.00	0.00	6,643.54	-164.00	682.11	245.87	0.00	0.00	0.00
6,800.00	0.00	0.00	6,743.54	-164.00	682.11	245.87	0.00	0.00	0.00
6,900.00	0.00	0.00	6,843.54	-164.00	682.11	245.87	0.00	0.00	0.00
6,923.84	0.00	0.00	6,867.38	-164.00	682.11	245.87	0.00	0.00	0.00
7,000.00	6.85	180.00	6,943.35	-168.55	682.11	250.39	9.00	9.00	0.00
7,100.00	15.85	180.00	7,041.30	-188.22	682.11	269.91	9.00	9.00	0.00
7,160.91	21.34	180.00	7,099.00	-207.63	682.11	289.18	9.00	9.00	0.00
Sharon Springs									
7,189.07	23.87	180.00	7,125.00	-218.46	682.11	299.92	9.00	9.00	0.00
Niobrara									
7,200.00	24.85	180.00	7,134.96	-222.96	682.11	304.39	9.00	9.00	0.00
7,300.00	33.85	180.00	7,222.03	-271.93	682.11	353.00	9.00	9.00	0.00
7,352.03	38.54	180.00	7,264.00	-302.65	682.11	383.49	9.00	9.00	0.00
Nio B									
7,400.00	42.85	180.00	7,300.37	-333.92	682.11	414.53	9.00	9.00	0.00
7,431.62	45.70	180.00	7,323.00	-355.99	682.11	436.43	9.00	9.00	0.00
Nio C									
7,500.00	51.85	180.00	7,368.04	-407.40	682.11	487.46	9.00	9.00	0.00
7,600.00	60.85	180.00	7,423.39	-490.56	682.11	570.00	9.00	9.00	0.00
7,700.00	69.85	180.00	7,465.05	-581.36	682.11	660.12	9.00	9.00	0.00
7,717.97	71.47	180.00	7,471.00	-598.32	682.11	676.96	9.00	9.00	0.00
Fort Hayes									
7,800.00	78.85	180.00	7,491.99	-677.56	682.11	755.60	9.00	9.00	0.00
7,805.34	79.33	180.00	7,493.00	-682.80	682.11	760.81	9.00	9.00	0.00
Codell									
7,900.00	87.85	180.00	7,503.55	-776.78	682.11	854.09	9.00	9.00	0.00
7,915.95	89.29	180.00	7,503.95	-792.73	682.11	869.92	9.00	9.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-20HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5068.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5068.00usft (D Rig)
Site:	1N-66W-13 AZUL 14-13HZ PAD	North Reference:	True
Well:	AZUL 13-20HZ	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)
Top of Production - AZUL 13-20HZ_PHL									
8,000.00	89.29	180.00	7,504.99	-876.77	682.11	953.33	0.00	0.00	0.00
8,100.00	89.29	180.00	7,506.23	-976.76	682.11	1,052.58	0.00	0.00	0.00
8,200.00	89.29	180.00	7,507.47	-1,076.76	682.11	1,151.83	0.00	0.00	0.00
8,300.00	89.29	180.00	7,508.71	-1,176.75	682.11	1,251.08	0.00	0.00	0.00
8,400.00	89.29	180.00	7,509.95	-1,276.74	682.11	1,350.32	0.00	0.00	0.00
8,500.00	89.29	180.00	7,511.19	-1,376.73	682.11	1,449.57	0.00	0.00	0.00
8,600.00	89.29	180.00	7,512.42	-1,476.73	682.11	1,548.82	0.00	0.00	0.00
8,700.00	89.29	180.00	7,513.66	-1,576.72	682.11	1,648.07	0.00	0.00	0.00
8,800.00	89.29	180.00	7,514.90	-1,676.71	682.11	1,747.31	0.00	0.00	0.00
8,900.00	89.29	180.00	7,516.14	-1,776.70	682.11	1,846.56	0.00	0.00	0.00
9,000.00	89.29	180.00	7,517.38	-1,876.70	682.11	1,945.81	0.00	0.00	0.00
9,100.00	89.29	180.00	7,518.62	-1,976.69	682.11	2,045.06	0.00	0.00	0.00
9,200.00	89.29	180.00	7,519.86	-2,076.68	682.11	2,144.31	0.00	0.00	0.00
9,300.00	89.29	180.00	7,521.10	-2,176.67	682.11	2,243.55	0.00	0.00	0.00
9,400.00	89.29	180.00	7,522.34	-2,276.66	682.11	2,342.80	0.00	0.00	0.00
9,500.00	89.29	180.00	7,523.58	-2,376.66	682.11	2,442.05	0.00	0.00	0.00
9,600.00	89.29	180.00	7,524.82	-2,476.65	682.11	2,541.30	0.00	0.00	0.00
9,700.00	89.29	180.00	7,526.06	-2,576.64	682.11	2,640.54	0.00	0.00	0.00
9,800.00	89.29	180.00	7,527.29	-2,676.63	682.11	2,739.79	0.00	0.00	0.00
9,900.00	89.29	180.00	7,528.53	-2,776.63	682.11	2,839.04	0.00	0.00	0.00
10,000.00	89.29	180.00	7,529.77	-2,876.62	682.11	2,938.29	0.00	0.00	0.00
10,100.00	89.29	180.00	7,531.01	-2,976.61	682.11	3,037.53	0.00	0.00	0.00
10,200.00	89.29	180.00	7,532.25	-3,076.60	682.11	3,136.78	0.00	0.00	0.00
10,300.00	89.29	180.00	7,533.49	-3,176.60	682.11	3,236.03	0.00	0.00	0.00
10,400.00	89.29	180.00	7,534.73	-3,276.59	682.11	3,335.28	0.00	0.00	0.00
10,500.00	89.29	180.00	7,535.97	-3,376.58	682.11	3,434.52	0.00	0.00	0.00
10,600.00	89.29	180.00	7,537.21	-3,476.57	682.11	3,533.77	0.00	0.00	0.00
10,700.00	89.29	180.00	7,538.45	-3,576.56	682.11	3,633.02	0.00	0.00	0.00
10,800.00	89.29	180.00	7,539.69	-3,676.56	682.11	3,732.27	0.00	0.00	0.00
10,900.00	89.29	180.00	7,540.93	-3,776.55	682.11	3,831.52	0.00	0.00	0.00
11,000.00	89.29	180.00	7,542.16	-3,876.54	682.11	3,930.76	0.00	0.00	0.00
11,100.00	89.29	180.00	7,543.40	-3,976.53	682.11	4,030.01	0.00	0.00	0.00
11,200.00	89.29	180.00	7,544.64	-4,076.53	682.11	4,129.26	0.00	0.00	0.00
11,300.00	89.29	180.00	7,545.88	-4,176.52	682.11	4,228.51	0.00	0.00	0.00
11,400.00	89.29	180.00	7,547.12	-4,276.51	682.11	4,327.75	0.00	0.00	0.00
11,500.00	89.29	180.00	7,548.36	-4,376.50	682.11	4,427.00	0.00	0.00	0.00
11,600.00	89.29	180.00	7,549.60	-4,476.50	682.11	4,526.25	0.00	0.00	0.00
11,700.00	89.29	180.00	7,550.84	-4,576.49	682.11	4,625.50	0.00	0.00	0.00
11,800.00	89.29	180.00	7,552.08	-4,676.48	682.11	4,724.74	0.00	0.00	0.00
11,900.00	89.29	180.00	7,553.32	-4,776.47	682.11	4,823.99	0.00	0.00	0.00
12,000.00	89.29	180.00	7,554.56	-4,876.46	682.11	4,923.24	0.00	0.00	0.00
12,100.00	89.29	180.00	7,555.80	-4,976.46	682.11	5,022.49	0.00	0.00	0.00
12,200.00	89.29	180.00	7,557.03	-5,076.45	682.11	5,121.74	0.00	0.00	0.00
12,300.00	89.29	180.00	7,558.27	-5,176.44	682.11	5,220.98	0.00	0.00	0.00
12,400.00	89.29	180.00	7,559.51	-5,276.43	682.11	5,320.23	0.00	0.00	0.00
12,500.00	89.29	180.00	7,560.75	-5,376.43	682.11	5,419.48	0.00	0.00	0.00
12,600.00	89.29	180.00	7,561.99	-5,476.42	682.11	5,518.73	0.00	0.00	0.00
12,681.44	89.29	180.00	7,563.00	-5,557.85	682.11	5,599.56	0.00	0.00	0.00
AZUL 13-20HZ_PBHL									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-20HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5068.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5068.00usft (D Rig)
Site:	1N-66W-13 AZUL 14-13HZ PAD	North Reference:	True
Well:	AZUL 13-20HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
AZUL 13-20HZ_PHL	0.00	0.00	7,503.95	-792.73	682.11	14,542,842.10	1,717,603.37	40.043909	-104.724207
- plan hits target center									
- Point									
AZUL 13-20HZ_PBHL	0.00	0.00	7,563.00	-5,557.85	682.11	14,538,077.00	1,717,618.00	40.030823	-104.724208
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,816.25	1,800.00	9 5/8"	9-5/8	13-1/2	
7,915.95	7,503.95	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,612.33	1,599.00	Fox Hills				
4,291.69	4,240.00	Parkman				
4,659.75	4,604.00	Sussex				
7,160.91	7,099.00	Sharon Springs				
7,189.07	7,125.00	Niobrara				
7,352.03	7,264.00	Nio B				
7,431.62	7,323.00	Nio C				
7,717.97	7,471.00	Fort Hayes				
7,805.34	7,493.00	Codell				