

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-66W-13 AZUL 14-13HZ PAD
AZUL 13-16HZ**

Plan A

Plan: Permit Rev-1

Standard Planning Report

07 June, 2017



Azimuths to True North
Magnetic North: 8.01°

Magnetic Field
Strength: 52319.2snT
Dip Angle: 66.56°
Date: 6/5/2017
Model: IGRF2010

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

Well: AZUL 13-16HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1599.00	1627.14	Fox Hills
4240.00	4401.31	Parkman
4604.00	4783.66	Sussex
7102.00	7352.74	Sharon Springs
7128.00	7386.48	Niobrara
7261.00	7596.94	Nio B
7319.00	7743.70	Nio C

WELL DETAILS: AZUL 13-16HZ

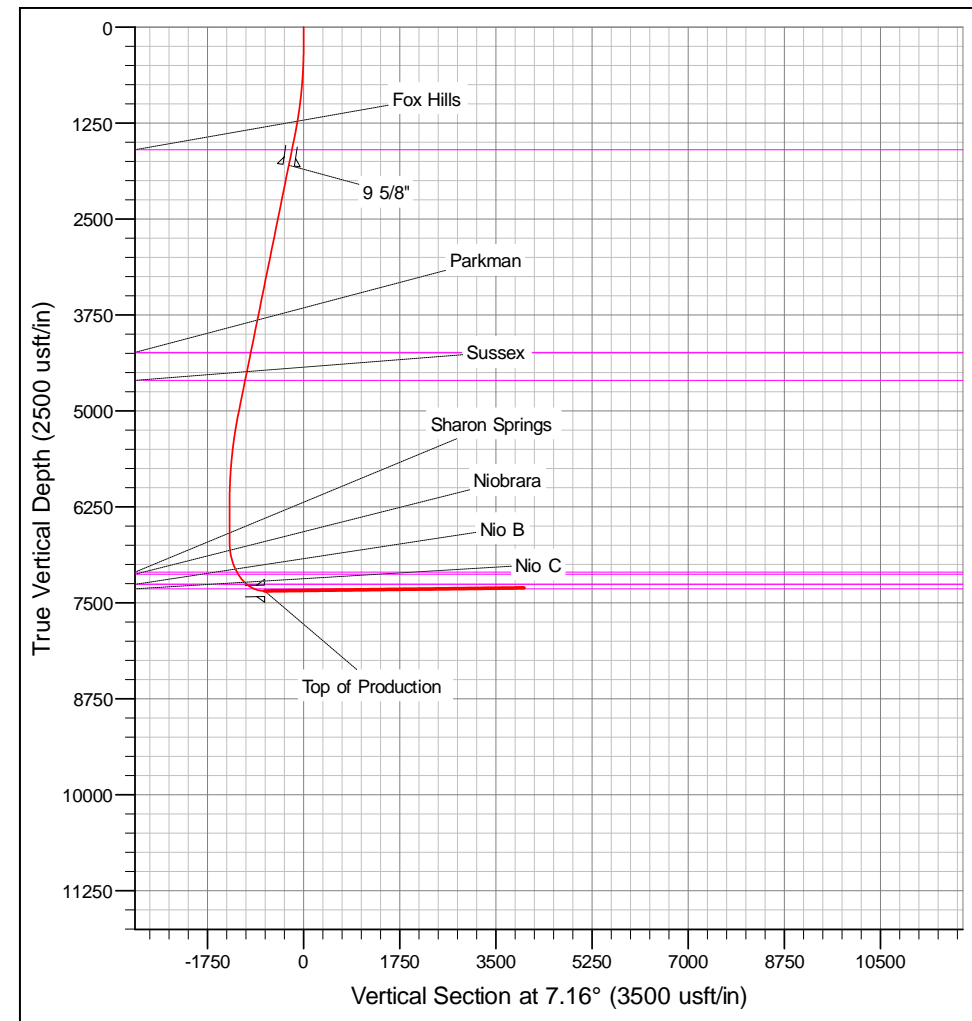
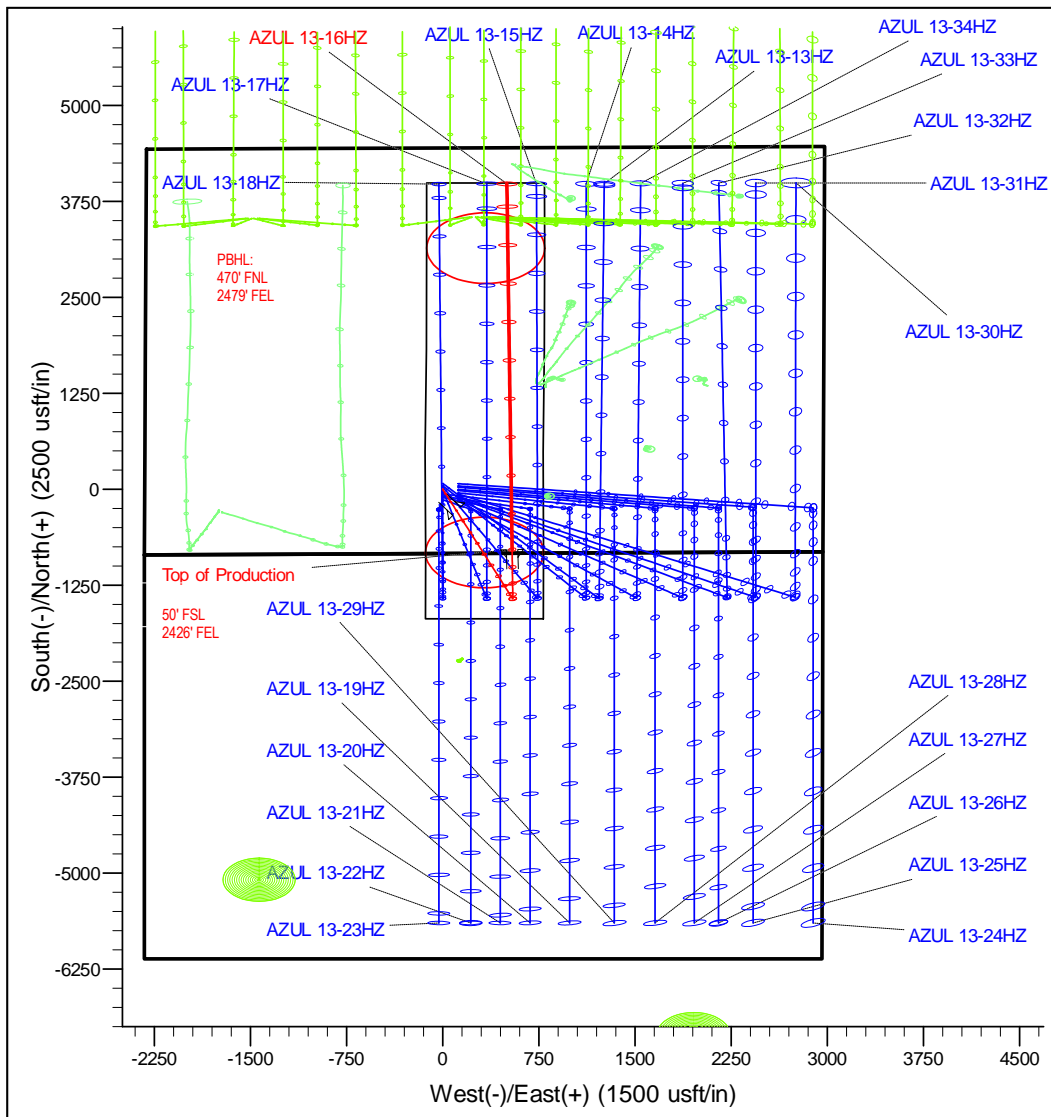
+N/-S	+E/-W	GL: 5051.00	RKB @ 5068.00usft (D Rig)	Slot
0.00	0.00	Northing 14543722.68	Easting 1716919.40 Latitude 40.046333	Longitude -104.726641

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
AZUL 13-16HZ_PBL	7306.00	3980.34	499.82	14547704.54	1717407.00	40.057264	-104.724855

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
1438.33	17.82	159.05	1419.25	-171.24	65.55	1.50	-161.74
5231.93	17.82	159.05	5030.75	-1255.76	480.70	0.00	-1186.08
6420.26	0.00	0.00	6200.00	-1427.00	546.25	1.50	-1347.82
6929.59	0.00	0.00	6709.33	-1427.00	546.25	0.00	-1347.82
7034.92	90.48	359.51	7345.93	-785.07	540.74	9.00	-711.58
12700.68	90.48	359.51	7306.00	3980.34	499.82	0.00	-4011.60



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-16HZ
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 13-16HZ	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 13-16HZ					
Well Position	+N/-S	-75.01 usft	Northing:	14,543,722.68 usft	Latitude:	40.046333
	+E/-W	-0.84 usft	Easting:	1,716,919.40 usft	Longitude:	-104.726641
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	52,319.24476095

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	7.16

Plan Survey Tool Program	Date	6/7/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,700.68	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	
1,438.33	17.82	159.05	1,419.25	-171.24	65.55	1.50	1.50	0.00	159.05	
5,231.93	17.82	159.05	5,030.75	-1,255.76	480.70	0.00	0.00	0.00	0.00	
6,420.26	0.00	0.00	6,200.00	-1,427.00	546.25	1.50	-1.50	0.00	180.00	
6,929.59	0.00	0.00	6,709.33	-1,427.00	546.25	0.00	0.00	0.00	0.00	
7,934.92	90.48	359.51	7,345.93	-785.07	540.74	9.00	9.00	0.00	359.51	
12,700.68	90.48	359.51	7,306.00	3,980.34	499.82	0.00	0.00	0.00	0.00	AZUL 13-16HZ_PBI

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-16HZ
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 13-16HZ	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	159.05	300.00	-0.31	0.12	-0.29	1.50	1.50	0.00
400.00	2.25	159.05	399.96	-2.75	1.05	-2.60	1.50	1.50	0.00
500.00	3.75	159.05	499.82	-7.64	2.92	-7.21	1.50	1.50	0.00
600.00	5.25	159.05	599.51	-14.97	5.73	-14.13	1.50	1.50	0.00
700.00	6.75	159.05	698.96	-24.73	9.47	-23.35	1.50	1.50	0.00
800.00	8.25	159.05	798.10	-36.92	14.13	-34.87	1.50	1.50	0.00
900.00	9.75	159.05	896.87	-51.53	19.72	-48.67	1.50	1.50	0.00
1,000.00	11.25	159.05	995.19	-68.54	26.24	-64.74	1.50	1.50	0.00
1,100.00	12.75	159.05	1,093.00	-87.96	33.67	-83.08	1.50	1.50	0.00
1,200.00	14.25	159.05	1,190.24	-109.76	42.02	-103.67	1.50	1.50	0.00
1,300.00	15.75	159.05	1,286.83	-133.93	51.27	-126.50	1.50	1.50	0.00
1,400.00	17.25	159.05	1,382.71	-160.46	61.42	-151.55	1.50	1.50	0.00
1,438.33	17.82	159.05	1,419.25	-171.24	65.55	-161.74	1.50	1.50	0.00
1,500.00	17.82	159.05	1,477.96	-188.87	72.30	-178.39	0.00	0.00	0.00
1,600.00	17.82	159.05	1,573.16	-217.46	83.24	-205.40	0.00	0.00	0.00
1,627.14	17.82	159.05	1,599.00	-225.22	86.21	-212.72	0.00	0.00	0.00
Fox Hills									
1,700.00	17.82	159.05	1,668.36	-246.05	94.19	-232.40	0.00	0.00	0.00
1,800.00	17.82	159.05	1,763.56	-274.64	105.13	-259.40	0.00	0.00	0.00
1,838.28	17.82	159.05	1,800.00	-285.58	109.32	-269.73	0.00	0.00	0.00
9 5/8"									
1,900.00	17.82	159.05	1,858.76	-303.23	116.07	-286.40	0.00	0.00	0.00
2,000.00	17.82	159.05	1,953.96	-331.81	127.02	-313.40	0.00	0.00	0.00
2,100.00	17.82	159.05	2,049.16	-360.40	137.96	-340.40	0.00	0.00	0.00
2,200.00	17.82	159.05	2,144.36	-388.99	148.90	-367.41	0.00	0.00	0.00
2,300.00	17.82	159.05	2,239.56	-417.58	159.85	-394.41	0.00	0.00	0.00
2,400.00	17.82	159.05	2,334.76	-446.17	170.79	-421.41	0.00	0.00	0.00
2,500.00	17.82	159.05	2,429.96	-474.75	181.73	-448.41	0.00	0.00	0.00
2,600.00	17.82	159.05	2,525.16	-503.34	192.68	-475.41	0.00	0.00	0.00
2,700.00	17.82	159.05	2,620.36	-531.93	203.62	-502.41	0.00	0.00	0.00
2,800.00	17.82	159.05	2,715.56	-560.52	214.56	-529.42	0.00	0.00	0.00
2,900.00	17.82	159.05	2,810.76	-589.11	225.51	-556.42	0.00	0.00	0.00
3,000.00	17.82	159.05	2,905.96	-617.69	236.45	-583.42	0.00	0.00	0.00
3,100.00	17.82	159.05	3,001.16	-646.28	247.39	-610.42	0.00	0.00	0.00
3,200.00	17.82	159.05	3,096.36	-674.87	258.34	-637.42	0.00	0.00	0.00
3,300.00	17.82	159.05	3,191.56	-703.46	269.28	-664.43	0.00	0.00	0.00
3,400.00	17.82	159.05	3,286.76	-732.05	280.22	-691.43	0.00	0.00	0.00
3,500.00	17.82	159.05	3,381.96	-760.63	291.17	-718.43	0.00	0.00	0.00
3,600.00	17.82	159.05	3,477.16	-789.22	302.11	-745.43	0.00	0.00	0.00
3,700.00	17.82	159.05	3,572.36	-817.81	313.05	-772.43	0.00	0.00	0.00
3,800.00	17.82	159.05	3,667.55	-846.40	324.00	-799.43	0.00	0.00	0.00
3,900.00	17.82	159.05	3,762.75	-874.99	334.94	-826.44	0.00	0.00	0.00
4,000.00	17.82	159.05	3,857.95	-903.57	345.88	-853.44	0.00	0.00	0.00
4,100.00	17.82	159.05	3,953.15	-932.16	356.83	-880.44	0.00	0.00	0.00
4,200.00	17.82	159.05	4,048.35	-960.75	367.77	-907.44	0.00	0.00	0.00
4,300.00	17.82	159.05	4,143.55	-989.34	378.71	-934.44	0.00	0.00	0.00
4,400.00	17.82	159.05	4,238.75	-1,017.92	389.66	-961.44	0.00	0.00	0.00
4,401.31	17.82	159.05	4,240.00	-1,018.30	389.80	-961.80	0.00	0.00	0.00
Parkman									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-16HZ
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 13-16HZ	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)
4,500.00	17.82	159.05	4,333.95	-1,046.51	400.60	-988.45	0.00	0.00	0.00
4,600.00	17.82	159.05	4,429.15	-1,075.10	411.54	-1,015.45	0.00	0.00	0.00
4,700.00	17.82	159.05	4,524.35	-1,103.69	422.49	-1,042.45	0.00	0.00	0.00
4,783.66	17.82	159.05	4,604.00	-1,127.61	431.64	-1,065.04	0.00	0.00	0.00
Sussex									
4,800.00	17.82	159.05	4,619.55	-1,132.28	433.43	-1,069.45	0.00	0.00	0.00
4,900.00	17.82	159.05	4,714.75	-1,160.86	444.37	-1,096.45	0.00	0.00	0.00
5,000.00	17.82	159.05	4,809.95	-1,189.45	455.32	-1,123.45	0.00	0.00	0.00
5,100.00	17.82	159.05	4,905.15	-1,218.04	466.26	-1,150.46	0.00	0.00	0.00
5,200.00	17.82	159.05	5,000.35	-1,246.63	477.20	-1,177.46	0.00	0.00	0.00
5,231.93	17.82	159.05	5,030.75	-1,255.76	480.70	-1,186.08	0.00	0.00	0.00
5,300.00	16.80	159.05	5,095.73	-1,274.68	487.94	-1,203.95	1.50	-1.50	0.00
5,400.00	15.30	159.05	5,191.83	-1,300.50	497.83	-1,228.34	1.50	-1.50	0.00
5,500.00	13.80	159.05	5,288.62	-1,323.97	506.81	-1,250.51	1.50	-1.50	0.00
5,600.00	12.30	159.05	5,386.03	-1,345.06	514.88	-1,270.43	1.50	-1.50	0.00
5,700.00	10.80	159.05	5,484.00	-1,363.77	522.05	-1,288.10	1.50	-1.50	0.00
5,800.00	9.30	159.05	5,582.46	-1,380.07	528.29	-1,303.50	1.50	-1.50	0.00
5,900.00	7.80	159.05	5,681.35	-1,393.96	533.60	-1,316.62	1.50	-1.50	0.00
6,000.00	6.30	159.05	5,780.59	-1,405.43	537.99	-1,327.45	1.50	-1.50	0.00
6,100.00	4.80	159.05	5,880.12	-1,414.47	541.45	-1,335.99	1.50	-1.50	0.00
6,200.00	3.30	159.05	5,979.86	-1,421.07	543.98	-1,342.22	1.50	-1.50	0.00
6,300.00	1.80	159.05	6,079.76	-1,425.23	545.57	-1,346.15	1.50	-1.50	0.00
6,400.00	0.30	159.05	6,179.74	-1,426.95	546.23	-1,347.77	1.50	-1.50	0.00
6,420.26	0.00	0.00	6,200.00	-1,427.00	546.25	-1,347.82	1.50	-1.50	0.00
6,500.00	0.00	0.00	6,279.74	-1,427.00	546.25	-1,347.82	0.00	0.00	0.00
6,600.00	0.00	0.00	6,379.74	-1,427.00	546.25	-1,347.82	0.00	0.00	0.00
6,700.00	0.00	0.00	6,479.74	-1,427.00	546.25	-1,347.82	0.00	0.00	0.00
6,800.00	0.00	0.00	6,579.74	-1,427.00	546.25	-1,347.82	0.00	0.00	0.00
6,900.00	0.00	0.00	6,679.74	-1,427.00	546.25	-1,347.82	0.00	0.00	0.00
6,929.59	0.00	0.00	6,709.33	-1,427.00	546.25	-1,347.82	0.00	0.00	0.00
7,000.00	6.34	359.51	6,779.60	-1,423.11	546.22	-1,343.97	9.00	9.00	0.00
7,100.00	15.34	359.51	6,877.71	-1,404.33	546.06	-1,325.35	9.00	9.00	0.00
7,200.00	24.34	359.51	6,971.68	-1,370.43	545.76	-1,291.75	9.00	9.00	0.00
7,300.00	33.34	359.51	7,059.19	-1,322.25	545.35	-1,244.00	9.00	9.00	0.00
7,352.74	38.08	359.51	7,102.00	-1,291.48	545.09	-1,213.50	9.00	9.00	0.00
Sharon Springs									
7,386.49	41.12	359.51	7,128.00	-1,269.97	544.90	-1,192.18	9.00	9.00	0.00
Niobrara									
7,400.00	42.34	359.51	7,138.09	-1,260.97	544.82	-1,183.26	9.00	9.00	0.00
7,500.00	51.34	359.51	7,206.42	-1,188.11	544.20	-1,111.05	9.00	9.00	0.00
7,596.94	60.06	359.51	7,261.00	-1,108.11	543.51	-1,031.75	9.00	9.00	0.00
Nio B									
7,600.00	60.34	359.51	7,262.52	-1,105.45	543.49	-1,029.12	9.00	9.00	0.00
7,700.00	69.34	359.51	7,305.00	-1,015.04	542.71	-939.51	9.00	9.00	0.00
7,743.70	73.27	359.51	7,319.00	-973.66	542.36	-898.50	9.00	9.00	0.00
Nio C									
7,800.00	78.34	359.51	7,332.80	-919.09	541.89	-844.42	9.00	9.00	0.00
7,900.00	87.34	359.51	7,345.26	-819.98	541.04	-746.18	9.00	9.00	0.00
7,934.92	90.48	359.51	7,345.93	-785.07	540.74	-711.58	9.00	9.00	0.00
Top of Production - AZUL 13-16HZ_PHL									
8,000.00	90.48	359.51	7,345.38	-720.00	540.18	-647.08	0.00	0.00	0.00
8,100.00	90.48	359.51	7,344.54	-620.00	539.32	-547.98	0.00	0.00	0.00
8,200.00	90.48	359.51	7,343.70	-520.01	538.46	-448.87	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-16HZ
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 13-16HZ	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)
8,300.00	90.48	359.51	7,342.87	-420.02	537.60	-349.76	0.00	0.00	0.00
8,400.00	90.48	359.51	7,342.03	-320.02	536.74	-250.66	0.00	0.00	0.00
8,500.00	90.48	359.51	7,341.19	-220.03	535.89	-151.55	0.00	0.00	0.00
8,600.00	90.48	359.51	7,340.35	-120.04	535.03	-52.44	0.00	0.00	0.00
8,700.00	90.48	359.51	7,339.52	-20.05	534.17	46.66	0.00	0.00	0.00
8,800.00	90.48	359.51	7,338.68	79.95	533.31	145.77	0.00	0.00	0.00
8,900.00	90.48	359.51	7,337.84	179.94	532.45	244.88	0.00	0.00	0.00
9,000.00	90.48	359.51	7,337.00	279.93	531.59	343.98	0.00	0.00	0.00
9,100.00	90.48	359.51	7,336.16	379.93	530.73	443.09	0.00	0.00	0.00
9,200.00	90.48	359.51	7,335.33	479.92	529.88	542.20	0.00	0.00	0.00
9,300.00	90.48	359.51	7,334.49	579.91	529.02	641.30	0.00	0.00	0.00
9,400.00	90.48	359.51	7,333.65	679.90	528.16	740.41	0.00	0.00	0.00
9,500.00	90.48	359.51	7,332.81	779.90	527.30	839.52	0.00	0.00	0.00
9,600.00	90.48	359.51	7,331.98	879.89	526.44	938.62	0.00	0.00	0.00
9,700.00	90.48	359.51	7,331.14	979.88	525.58	1,037.73	0.00	0.00	0.00
9,800.00	90.48	359.51	7,330.30	1,079.87	524.72	1,136.84	0.00	0.00	0.00
9,900.00	90.48	359.51	7,329.46	1,179.87	523.87	1,235.94	0.00	0.00	0.00
10,000.00	90.48	359.51	7,328.63	1,279.86	523.01	1,335.05	0.00	0.00	0.00
10,100.00	90.48	359.51	7,327.79	1,379.85	522.15	1,434.16	0.00	0.00	0.00
10,200.00	90.48	359.51	7,326.95	1,479.85	521.29	1,533.26	0.00	0.00	0.00
10,300.00	90.48	359.51	7,326.11	1,579.84	520.43	1,632.37	0.00	0.00	0.00
10,400.00	90.48	359.51	7,325.27	1,679.83	519.57	1,731.48	0.00	0.00	0.00
10,500.00	90.48	359.51	7,324.44	1,779.82	518.71	1,830.58	0.00	0.00	0.00
10,600.00	90.48	359.51	7,323.60	1,879.82	517.86	1,929.69	0.00	0.00	0.00
10,700.00	90.48	359.51	7,322.76	1,979.81	517.00	2,028.80	0.00	0.00	0.00
10,800.00	90.48	359.51	7,321.92	2,079.80	516.14	2,127.90	0.00	0.00	0.00
10,900.00	90.48	359.51	7,321.09	2,179.80	515.28	2,227.01	0.00	0.00	0.00
11,000.00	90.48	359.51	7,320.25	2,279.79	514.42	2,326.12	0.00	0.00	0.00
11,100.00	90.48	359.51	7,319.41	2,379.78	513.56	2,425.22	0.00	0.00	0.00
11,200.00	90.48	359.51	7,318.57	2,479.77	512.70	2,524.33	0.00	0.00	0.00
11,300.00	90.48	359.51	7,317.73	2,579.77	511.85	2,623.44	0.00	0.00	0.00
11,400.00	90.48	359.51	7,316.90	2,679.76	510.99	2,722.54	0.00	0.00	0.00
11,500.00	90.48	359.51	7,316.06	2,779.75	510.13	2,821.65	0.00	0.00	0.00
11,600.00	90.48	359.51	7,315.22	2,879.75	509.27	2,920.76	0.00	0.00	0.00
11,700.00	90.48	359.51	7,314.38	2,979.74	508.41	3,019.86	0.00	0.00	0.00
11,800.00	90.48	359.51	7,313.55	3,079.73	507.55	3,118.97	0.00	0.00	0.00
11,900.00	90.48	359.51	7,312.71	3,179.72	506.69	3,218.08	0.00	0.00	0.00
12,000.00	90.48	359.51	7,311.87	3,279.72	505.84	3,317.18	0.00	0.00	0.00
12,100.00	90.48	359.51	7,311.03	3,379.71	504.98	3,416.29	0.00	0.00	0.00
12,200.00	90.48	359.51	7,310.19	3,479.70	504.12	3,515.40	0.00	0.00	0.00
12,300.00	90.48	359.51	7,309.36	3,579.70	503.26	3,614.50	0.00	0.00	0.00
12,400.00	90.48	359.51	7,308.52	3,679.69	502.40	3,713.61	0.00	0.00	0.00
12,500.00	90.48	359.51	7,307.68	3,779.68	501.54	3,812.72	0.00	0.00	0.00
12,600.00	90.48	359.51	7,306.84	3,879.67	500.68	3,911.82	0.00	0.00	0.00
12,700.00	90.48	359.51	7,306.01	3,979.67	499.83	4,010.93	0.00	0.00	0.00
12,700.68	90.48	359.51	7,306.00	3,980.34	499.82	4,011.60	0.00	0.00	0.00
AZUL 13-16HZ_PBHL									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-16HZ
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 13-16HZ	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 13-16HZ_PBHL	0.00	0.00	7,306.00	3,980.34	499.82	14,547,704.53	1,717,406.99	40.057264	-104.724855
- plan hits target center									
- Point									
AZUL 13-16HZ_PHL	0.00	0.00	7,345.93	-785.07	540.74	14,542,939.27	1,717,462.54	40.044177	-104.724709
- plan hits target center									
- Point									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(usft)	(usft)	Name	(")	(")
	1,838.28	1,800.00	9 5/8"	9-5/8	13-1/2
	7,934.92	7,345.93	Top of Production	5-1/2	7-7/8

Formations						
	Measured Depth	Vertical Depth			Dip	Dip Direction
	(usft)	(usft)	Name	Lithology	(°)	(°)
	1,627.14	1,599.00	Fox Hills			
	4,401.31	4,240.00	Parkman			
	4,783.66	4,604.00	Sussex			
	7,352.74	7,102.00	Sharon Springs			
	7,386.49	7,128.00	Niobrara			
	7,596.94	7,261.00	Nio B			
	7,743.70	7,319.00	Nio C			