

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
1N-66W-13 AZUL 13-13HZ  
AZUL 13-12HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**12 June, 2017**



Azimuths to True North  
Magnetic North: 8.01°

Magnetic Field  
Strength: 52318.0snT  
Dip Angle: 66.56°  
Date: 6/8/2017  
Model: IGRF2010

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

Well: AZUL 13-12HZ  
Wellbore: Plan A  
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1619.00	1630.58	Fox Hills
4260.00	4302.80	Parkman
4624.00	4670.34	Sussex
7136.00	7218.50	Sharon Springs
7162.00	7253.33	Niobrara
7286.00	7457.68	Nio B
7339.00	7599.72	Nio C

## WELL DETAILS: AZUL 13-12HZ

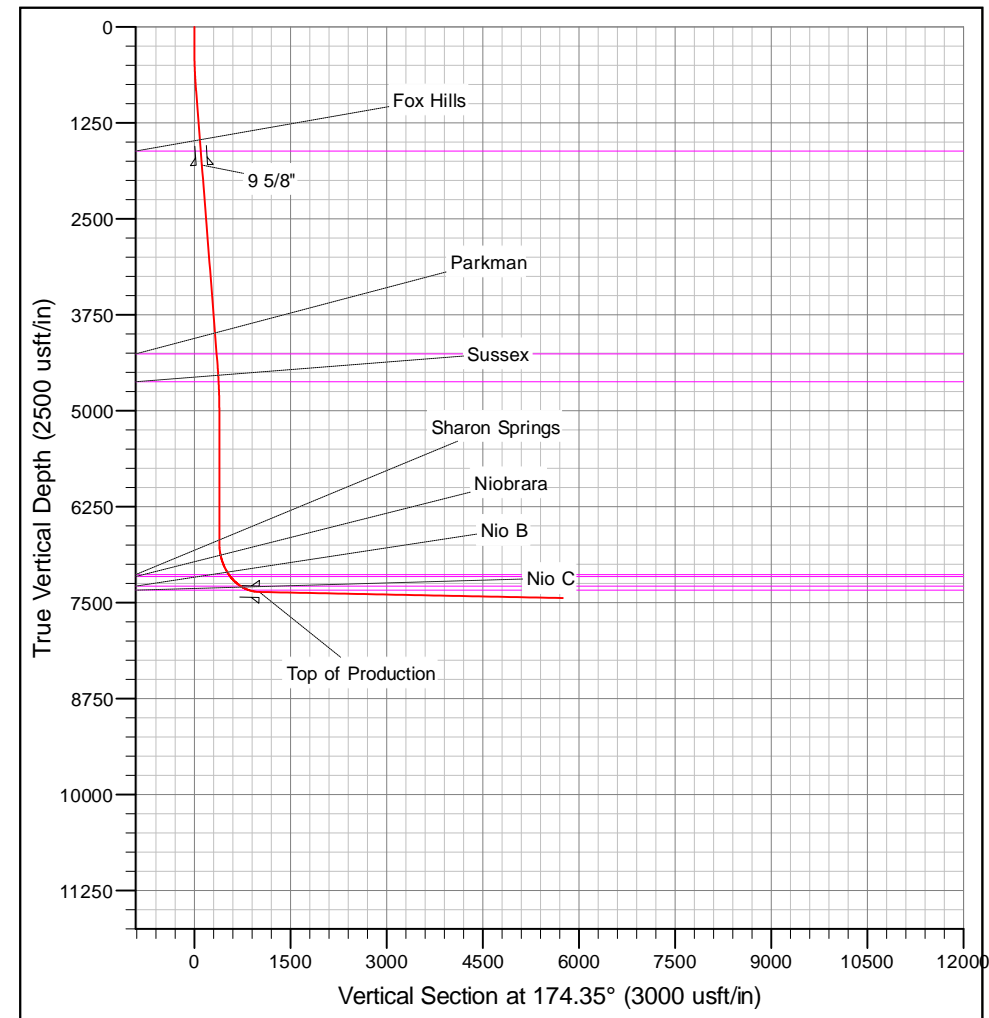
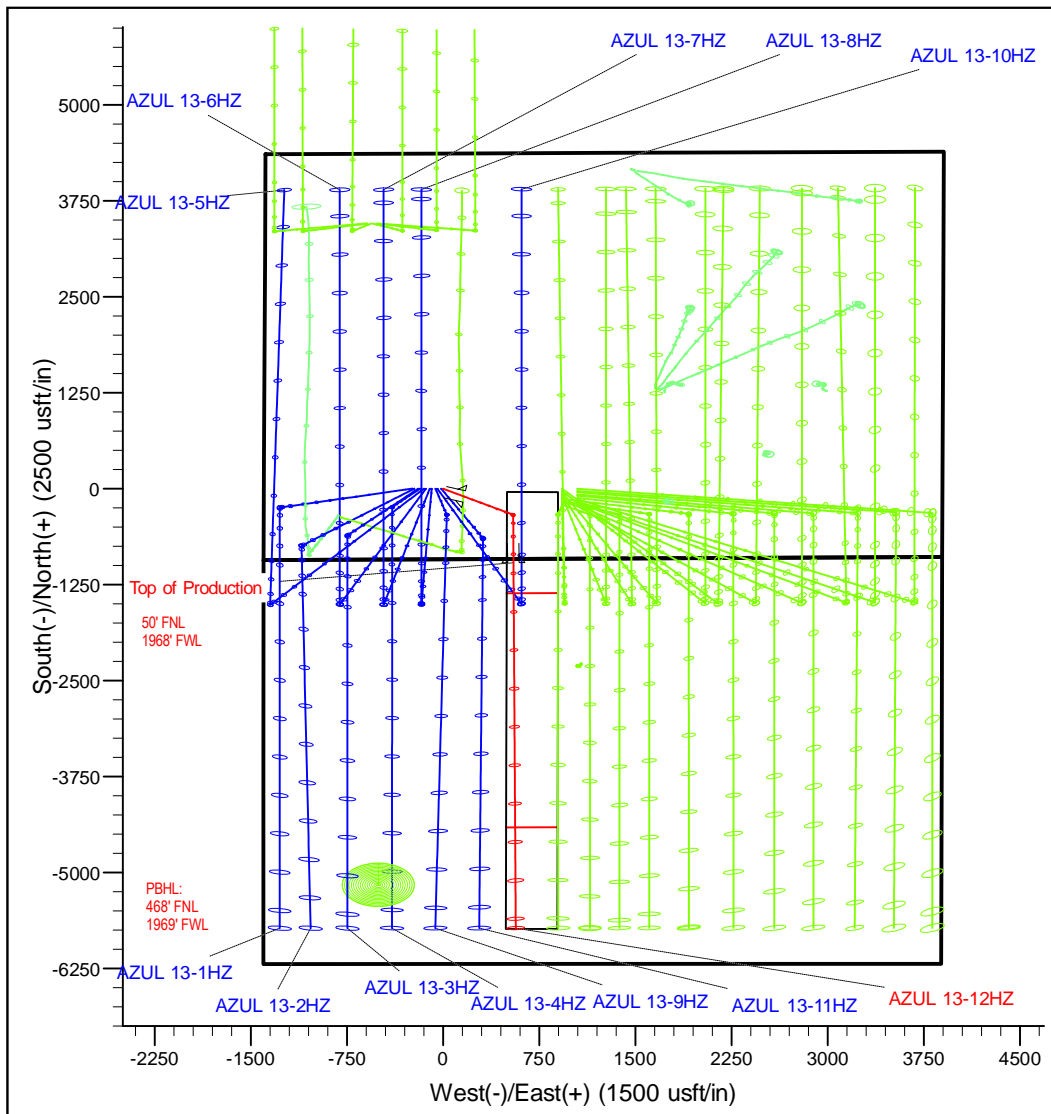
+N/-S	+E/-W	GL: 5071.00 Northing	RKB @ 5088.00usft (D Rig) Easting	Latitude	Longitude	Slot
0.00	0.00	1453793.77	1715992.55	40.046536	-104.729952	

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
AZUL 13-12HZ_PBHL	7442.00	-5722.52	566.10	14538073.00	1716576.00	40.030821	-104.727930

## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	V Sct
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
834.48	8.77	121.75	832.20	-23.49	37.95	1.50	27.11
4462.47	8.77	121.75	4417.80	-314.51	508.15	0.00	363.01
5046.95	0.00	0.00	5000.00	-338.00	546.10	1.50	390.12
6772.68	0.00	0.00	6725.73	-338.00	546.10	0.00	390.12
7762.01	89.04	179.79	7362.26	-963.95	548.42	9.00	013.26
12521.28	89.04	179.79	7442.00	-5722.52	566.10	0.00	750.45



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well AZUL 13-12HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66W-13 AZUL 13-13HZ	<b>North Reference:</b>	True
<b>Well:</b>	AZUL 13-12HZ	<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-66W-13 AZUL 13-13HZ			
Site Position:		Northing:	14,543,795.23 usft	Latitude:	40.046542
From:	Lat/Long	Easting:	1,715,752.42 usft	Longitude:	-104.730810
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.17

Well	AZUL 13-12HZ					
Well Position	+N-S	-2.18 usft	Northing:	14,543,793.77 usft	Latitude:	40.046536
	+E-W	240.12 usft	Easting:	1,715,992.55 usft	Longitude:	-104.729952
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,071.00 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>
	IGRF2010	6/8/2017	8.01	66.56	52,317.99020046

<b>Design</b>	Permit Rev-1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	174.35

<b>Plan Survey Tool Program</b>	<b>Date</b>	6/12/2017			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	1,813.72	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:crustal field declinat	
2	1,813.72	12,521.28	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:Rockies, crustal dex	

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<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66W-13 AZUL 13-13HZ	<b>North Reference:</b>	True
<b>Well:</b>	AZUL 13-12HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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	
834.48	8.77	121.75	832.20	-23.49	37.95	1.50	1.50	0.00	121.75	
4,462.47	8.77	121.75	4,417.80	-314.51	508.15	0.00	0.00	0.00	0.00	
5,046.95	0.00	0.00	5,000.00	-338.00	546.10	1.50	-1.50	0.00	180.00	
6,772.68	0.00	0.00	6,725.73	-338.00	546.10	0.00	0.00	0.00	0.00	
7,762.01	89.04	179.79	7,362.26	-963.95	548.42	9.00	9.00	0.00	179.79	
12,521.28	89.04	179.79	7,442.00	-5,722.52	566.10	0.00	0.00	0.00	0.00	AZUL 13-12HZ_PBI

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<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well AZUL 13-12HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66W-13 AZUL 13-13HZ	<b>North Reference:</b>	True
<b>Well:</b>	AZUL 13-12HZ	<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
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.75	121.75	300.00	-0.17	0.28	0.20	1.50	1.50	0.00
400.00	2.25	121.75	399.96	-1.55	2.50	1.79	1.50	1.50	0.00
500.00	3.75	121.75	499.82	-4.30	6.95	4.97	1.50	1.50	0.00
600.00	5.25	121.75	599.51	-8.43	13.63	9.73	1.50	1.50	0.00
700.00	6.75	121.75	698.96	-13.93	22.51	16.08	1.50	1.50	0.00
800.00	8.25	121.75	798.10	-20.80	33.61	24.01	1.50	1.50	0.00
834.48	8.77	121.75	832.20	-23.49	37.95	27.11	1.50	1.50	0.00
900.00	8.77	121.75	896.96	-28.74	46.44	33.18	0.00	0.00	0.00
1,000.00	8.77	121.75	995.79	-36.77	59.40	42.43	0.00	0.00	0.00
1,100.00	8.77	121.75	1,094.62	-44.79	72.36	51.69	0.00	0.00	0.00
1,200.00	8.77	121.75	1,193.45	-52.81	85.32	60.95	0.00	0.00	0.00
1,300.00	8.77	121.75	1,292.28	-60.83	98.28	70.21	0.00	0.00	0.00
1,400.00	8.77	121.75	1,391.11	-68.85	111.24	79.47	0.00	0.00	0.00
1,500.00	8.77	121.75	1,489.95	-76.87	124.20	88.73	0.00	0.00	0.00
1,600.00	8.77	121.75	1,588.78	-84.90	137.16	97.99	0.00	0.00	0.00
1,630.58	8.77	121.75	1,619.00	-87.35	141.13	100.82	0.00	0.00	0.00
Fox Hills									
1,700.00	8.77	121.75	1,687.61	-92.92	150.12	107.24	0.00	0.00	0.00
1,800.00	8.77	121.75	1,786.44	-100.94	163.08	116.50	0.00	0.00	0.00
1,813.72	8.77	121.75	1,800.00	-102.04	164.86	117.77	0.00	0.00	0.00
9 5/8"									
1,900.00	8.77	121.75	1,885.27	-108.96	176.05	125.76	0.00	0.00	0.00
2,000.00	8.77	121.75	1,984.10	-116.98	189.01	135.02	0.00	0.00	0.00
2,100.00	8.77	121.75	2,082.94	-125.00	201.97	144.28	0.00	0.00	0.00
2,200.00	8.77	121.75	2,181.77	-133.03	214.93	153.54	0.00	0.00	0.00
2,300.00	8.77	121.75	2,280.60	-141.05	227.89	162.80	0.00	0.00	0.00
2,400.00	8.77	121.75	2,379.43	-149.07	240.85	172.05	0.00	0.00	0.00
2,500.00	8.77	121.75	2,478.26	-157.09	253.81	181.31	0.00	0.00	0.00
2,600.00	8.77	121.75	2,577.09	-165.11	266.77	190.57	0.00	0.00	0.00
2,700.00	8.77	121.75	2,675.92	-173.13	279.73	199.83	0.00	0.00	0.00
2,800.00	8.77	121.75	2,774.76	-181.15	292.69	209.09	0.00	0.00	0.00
2,900.00	8.77	121.75	2,873.59	-189.18	305.65	218.35	0.00	0.00	0.00
3,000.00	8.77	121.75	2,972.42	-197.20	318.61	227.61	0.00	0.00	0.00
3,100.00	8.77	121.75	3,071.25	-205.22	331.57	236.86	0.00	0.00	0.00
3,200.00	8.77	121.75	3,170.08	-213.24	344.53	246.12	0.00	0.00	0.00
3,300.00	8.77	121.75	3,268.91	-221.26	357.49	255.38	0.00	0.00	0.00
3,400.00	8.77	121.75	3,367.75	-229.28	370.45	264.64	0.00	0.00	0.00
3,500.00	8.77	121.75	3,466.58	-237.31	383.41	273.90	0.00	0.00	0.00
3,600.00	8.77	121.75	3,565.41	-245.33	396.37	283.16	0.00	0.00	0.00
3,700.00	8.77	121.75	3,664.24	-253.35	409.33	292.42	0.00	0.00	0.00
3,800.00	8.77	121.75	3,763.07	-261.37	422.29	301.67	0.00	0.00	0.00
3,900.00	8.77	121.75	3,861.90	-269.39	435.25	310.93	0.00	0.00	0.00
4,000.00	8.77	121.75	3,960.74	-277.41	448.21	320.19	0.00	0.00	0.00
4,100.00	8.77	121.75	4,059.57	-285.44	461.17	329.45	0.00	0.00	0.00
4,200.00	8.77	121.75	4,158.40	-293.46	474.13	338.71	0.00	0.00	0.00
4,300.00	8.77	121.75	4,257.23	-301.48	487.09	347.97	0.00	0.00	0.00
4,302.80	8.77	121.75	4,260.00	-301.70	487.46	348.23	0.00	0.00	0.00
Parkman									
4,400.00	8.77	121.75	4,356.06	-309.50	500.05	357.22	0.00	0.00	0.00

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<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66W-13 AZUL 13-13HZ	<b>North Reference:</b>	True
<b>Well:</b>	AZUL 13-12HZ	<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)
4,462.47	8.77	121.75	4,417.80	-314.51	508.15	363.01	0.00	0.00	0.00
4,500.00	8.20	121.75	4,454.92	-317.43	512.86	366.37	1.50	-1.50	0.00
4,600.00	6.70	121.75	4,554.07	-324.25	523.89	374.25	1.50	-1.50	0.00
4,670.34	5.65	121.75	4,624.00	-328.24	530.33	378.85	1.50	-1.50	0.00
<b>Sussex</b>									
4,700.00	5.20	121.75	4,653.53	-329.71	532.71	380.55	1.50	-1.50	0.00
4,800.00	3.70	121.75	4,753.23	-333.80	539.31	385.27	1.50	-1.50	0.00
4,900.00	2.20	121.75	4,853.09	-336.51	543.70	388.40	1.50	-1.50	0.00
5,000.00	0.70	121.75	4,953.05	-337.85	545.85	389.94	1.50	-1.50	0.00
5,046.95	0.00	0.00	5,000.00	-338.00	546.10	390.12	1.50	-1.50	0.00
5,100.00	0.00	0.00	5,053.05	-338.00	546.10	390.12	0.00	0.00	0.00
5,200.00	0.00	0.00	5,153.05	-338.00	546.10	390.12	0.00	0.00	0.00
5,300.00	0.00	0.00	5,253.05	-338.00	546.10	390.12	0.00	0.00	0.00
5,400.00	0.00	0.00	5,353.05	-338.00	546.10	390.12	0.00	0.00	0.00
5,500.00	0.00	0.00	5,453.05	-338.00	546.10	390.12	0.00	0.00	0.00
5,600.00	0.00	0.00	5,553.05	-338.00	546.10	390.12	0.00	0.00	0.00
5,700.00	0.00	0.00	5,653.05	-338.00	546.10	390.12	0.00	0.00	0.00
5,800.00	0.00	0.00	5,753.05	-338.00	546.10	390.12	0.00	0.00	0.00
5,900.00	0.00	0.00	5,853.05	-338.00	546.10	390.12	0.00	0.00	0.00
6,000.00	0.00	0.00	5,953.05	-338.00	546.10	390.12	0.00	0.00	0.00
6,100.00	0.00	0.00	6,053.05	-338.00	546.10	390.12	0.00	0.00	0.00
6,200.00	0.00	0.00	6,153.05	-338.00	546.10	390.12	0.00	0.00	0.00
6,300.00	0.00	0.00	6,253.05	-338.00	546.10	390.12	0.00	0.00	0.00
6,400.00	0.00	0.00	6,353.05	-338.00	546.10	390.12	0.00	0.00	0.00
6,500.00	0.00	0.00	6,453.05	-338.00	546.10	390.12	0.00	0.00	0.00
6,600.00	0.00	0.00	6,553.05	-338.00	546.10	390.12	0.00	0.00	0.00
6,700.00	0.00	0.00	6,653.05	-338.00	546.10	390.12	0.00	0.00	0.00
6,772.68	0.00	0.00	6,725.73	-338.00	546.10	390.12	0.00	0.00	0.00
6,800.00	2.46	179.79	6,753.05	-338.59	546.10	390.70	9.00	9.00	0.00
6,900.00	11.46	179.79	6,852.21	-350.69	546.15	402.75	9.00	9.00	0.00
7,000.00	20.46	179.79	6,948.25	-378.16	546.25	430.09	9.00	9.00	0.00
7,100.00	29.46	179.79	7,038.82	-420.31	546.41	472.06	9.00	9.00	0.00
7,200.00	38.46	179.79	7,121.68	-476.11	546.61	527.61	9.00	9.00	0.00
7,218.50	40.12	179.79	7,136.00	-487.83	546.66	539.27	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,253.33	43.26	179.79	7,162.00	-510.99	546.74	562.33	9.00	9.00	0.00
<b>Niobrara</b>									
7,300.00	47.46	179.79	7,194.79	-544.19	546.87	595.38	9.00	9.00	0.00
7,400.00	56.46	179.79	7,256.35	-622.86	547.16	673.70	9.00	9.00	0.00
7,457.68	61.65	179.79	7,286.00	-672.32	547.34	722.94	9.00	9.00	0.00
<b>Nio B</b>									
7,500.00	65.46	179.79	7,304.84	-710.20	547.48	760.65	9.00	9.00	0.00
7,599.72	74.43	179.79	7,339.00	-803.78	547.83	853.80	9.00	9.00	0.00
<b>Nio C</b>									
7,600.00	74.46	179.79	7,339.08	-804.05	547.83	854.07	9.00	9.00	0.00
7,700.00	83.46	179.79	7,358.21	-902.10	548.20	951.68	9.00	9.00	0.00
7,762.01	89.04	179.79	7,362.26	-963.95	548.42	1,013.26	9.00	9.00	0.00
<b>Top of Production - AZUL 13-12HZ_PHL</b>									
7,800.00	89.04	179.79	7,362.90	-1,001.93	548.57	1,051.07	0.00	0.00	0.00
7,900.00	89.04	179.79	7,364.57	-1,101.92	548.94	1,150.61	0.00	0.00	0.00
8,000.00	89.04	179.79	7,366.25	-1,201.90	549.31	1,250.14	0.00	0.00	0.00
8,100.00	89.04	179.79	7,367.92	-1,301.89	549.68	1,349.68	0.00	0.00	0.00
8,200.00	89.04	179.79	7,369.60	-1,401.87	550.05	1,449.21	0.00	0.00	0.00

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<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66W-13 AZUL 13-13HZ	<b>North Reference:</b>	True
<b>Well:</b>	AZUL 13-12HZ	<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)	
8,300.00	89.04	179.79	7,371.28	-1,501.86	550.42	1,548.75	0.00	0.00	0.00	
8,400.00	89.04	179.79	7,372.95	-1,601.84	550.79	1,648.29	0.00	0.00	0.00	
8,500.00	89.04	179.79	7,374.63	-1,701.83	551.17	1,747.82	0.00	0.00	0.00	
8,600.00	89.04	179.79	7,376.30	-1,801.82	551.54	1,847.36	0.00	0.00	0.00	
8,700.00	89.04	179.79	7,377.98	-1,901.80	551.91	1,946.89	0.00	0.00	0.00	
8,800.00	89.04	179.79	7,379.65	-2,001.79	552.28	2,046.43	0.00	0.00	0.00	
8,900.00	89.04	179.79	7,381.33	-2,101.77	552.65	2,145.97	0.00	0.00	0.00	
9,000.00	89.04	179.79	7,383.00	-2,201.76	553.02	2,245.50	0.00	0.00	0.00	
9,100.00	89.04	179.79	7,384.68	-2,301.74	553.39	2,345.04	0.00	0.00	0.00	
9,200.00	89.04	179.79	7,386.35	-2,401.73	553.76	2,444.58	0.00	0.00	0.00	
9,300.00	89.04	179.79	7,388.03	-2,501.71	554.14	2,544.11	0.00	0.00	0.00	
9,400.00	89.04	179.79	7,389.71	-2,601.70	554.51	2,643.65	0.00	0.00	0.00	
9,500.00	89.04	179.79	7,391.38	-2,701.68	554.88	2,743.18	0.00	0.00	0.00	
9,600.00	89.04	179.79	7,393.06	-2,801.67	555.25	2,842.72	0.00	0.00	0.00	
9,700.00	89.04	179.79	7,394.73	-2,901.65	555.62	2,942.26	0.00	0.00	0.00	
9,800.00	89.04	179.79	7,396.41	-3,001.64	555.99	3,041.79	0.00	0.00	0.00	
9,900.00	89.04	179.79	7,398.08	-3,101.62	556.36	3,141.33	0.00	0.00	0.00	
10,000.00	89.04	179.79	7,399.76	-3,201.61	556.74	3,240.86	0.00	0.00	0.00	
10,100.00	89.04	179.79	7,401.43	-3,301.59	557.11	3,340.40	0.00	0.00	0.00	
10,200.00	89.04	179.79	7,403.11	-3,401.58	557.48	3,439.94	0.00	0.00	0.00	
10,300.00	89.04	179.79	7,404.78	-3,501.56	557.85	3,539.47	0.00	0.00	0.00	
10,400.00	89.04	179.79	7,406.46	-3,601.55	558.22	3,639.01	0.00	0.00	0.00	
10,500.00	89.04	179.79	7,408.13	-3,701.54	558.59	3,738.55	0.00	0.00	0.00	
10,600.00	89.04	179.79	7,409.81	-3,801.52	558.96	3,838.08	0.00	0.00	0.00	
10,700.00	89.04	179.79	7,411.49	-3,901.51	559.33	3,937.62	0.00	0.00	0.00	
10,800.00	89.04	179.79	7,413.16	-4,001.49	559.71	4,037.15	0.00	0.00	0.00	
10,900.00	89.04	179.79	7,414.84	-4,101.48	560.08	4,136.69	0.00	0.00	0.00	
11,000.00	89.04	179.79	7,416.51	-4,201.46	560.45	4,236.23	0.00	0.00	0.00	
11,100.00	89.04	179.79	7,418.19	-4,301.45	560.82	4,335.76	0.00	0.00	0.00	
11,200.00	89.04	179.79	7,419.86	-4,401.43	561.19	4,435.30	0.00	0.00	0.00	
11,300.00	89.04	179.79	7,421.54	-4,501.42	561.56	4,534.84	0.00	0.00	0.00	
11,400.00	89.04	179.79	7,423.21	-4,601.40	561.93	4,634.37	0.00	0.00	0.00	
11,500.00	89.04	179.79	7,424.89	-4,701.39	562.31	4,733.91	0.00	0.00	0.00	
11,600.00	89.04	179.79	7,426.56	-4,801.37	562.68	4,833.44	0.00	0.00	0.00	
11,700.00	89.04	179.79	7,428.24	-4,901.36	563.05	4,932.98	0.00	0.00	0.00	
11,800.00	89.04	179.79	7,429.92	-5,001.34	563.42	5,032.52	0.00	0.00	0.00	
11,900.00	89.04	179.79	7,431.59	-5,101.33	563.79	5,132.05	0.00	0.00	0.00	
12,000.00	89.04	179.79	7,433.27	-5,201.31	564.16	5,231.59	0.00	0.00	0.00	
12,100.00	89.04	179.79	7,434.94	-5,301.30	564.53	5,331.12	0.00	0.00	0.00	
12,200.00	89.04	179.79	7,436.62	-5,401.29	564.90	5,430.66	0.00	0.00	0.00	
12,300.00	89.04	179.79	7,438.29	-5,501.27	565.28	5,530.20	0.00	0.00	0.00	
12,400.00	89.04	179.79	7,439.97	-5,601.26	565.65	5,629.73	0.00	0.00	0.00	
12,500.00	89.04	179.79	7,441.64	-5,701.24	566.02	5,729.27	0.00	0.00	0.00	
12,521.28	89.04	179.79	7,442.00	-5,722.52	566.10	5,750.45	0.00	0.00	0.00	
AZUL 13-12HZ_PBHL										

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well AZUL 13-12HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
<b>Site:</b>	1N-66W-13 AZUL 13-13HZ	<b>North Reference:</b>	True
<b>Well:</b>	AZUL 13-12HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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 13-12HZ_PHL	0.00	0.00	7,362.26	-963.95	548.42	14,542,831.49	1,716,543.89	40.043889	-104.727993
- plan hits target center									
- Point									
AZUL 13-12HZ_PBHL	0.00	0.00	7,442.00	-5,722.52	566.10	14,538,073.00	1,716,576.00	40.030821	-104.727930
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,813.72	1,800.00	9 5/8"	9-5/8	13-1/2	
7,762.01	7,362.26	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,630.58	1,619.00	Fox Hills				
4,302.80	4,260.00	Parkman				
4,670.34	4,624.00	Sussex				
7,218.50	7,136.00	Sharon Springs				
7,253.33	7,162.00	Niobrara				
7,457.68	7,286.00	Nio B				
7,599.72	7,339.00	Nio C				