

# **US ROCKIES WATTENBERG PLANNING**

**WELD-NAD83-UTMFT13N  
1N-66W-13 AZUL 13-13HZ  
AZUL 13-7HZ**

**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 13-7HZ  
Wellbore: Plan A  
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1619.00	1648.59	Fox Hills
4260.00	4428.97	Parkman
4624.00	4812.18	Sussex
7137.00	7389.65	Sharon Springs
7163.00	7422.03	Niobrara
7305.00	7633.31	Nio B
7375.00	7795.34	Nio C

## WELL DETAILS: AZUL 13-7HZ

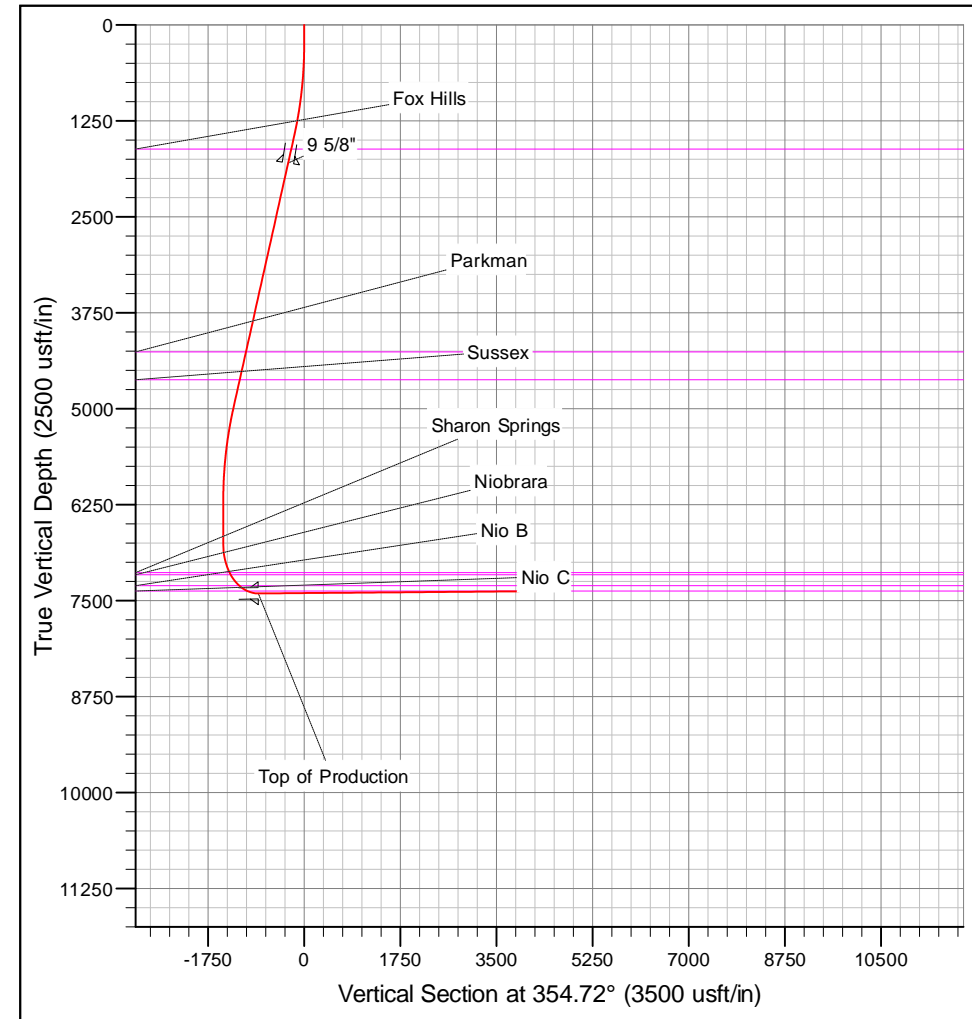
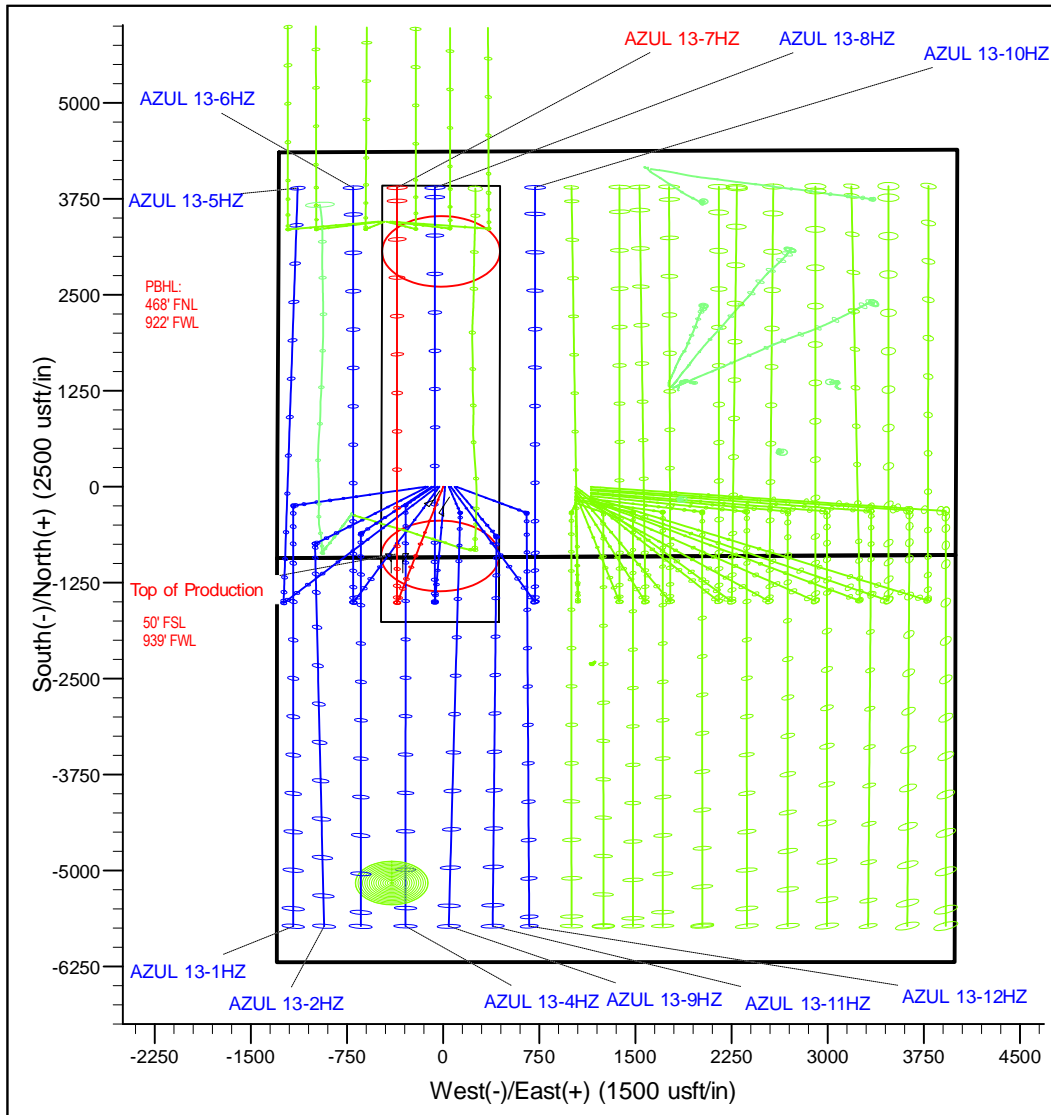
		GL: 5071.00	RKB @ 5088.00usft (D Rig)		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14543794.55	1715887.60	40.046539	-104.730327

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
AZUL 13-7HZ_PBHL	7380.00	3895.19	-360.00	14547688.63	1715515.80	40.057236	-104.731614

## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	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
1464.58	18.22	193.38	1444.22	-186.28	-44.32	1.50	181.41
5214.11	18.22	193.38	5005.78	-1326.72	-315.88	0.08	292.04
6428.69	0.00	0.00	6200.00	-1513.00	-360.00	1.50	473.45
6999.55	0.00	0.00	6770.85	-1513.00	-360.00	0.00	473.45
8003.21	90.33	360.00	7407.46	-872.71	-360.00	9.00	835.88
12771.20	90.33	360.00	7380.00	3895.19	-360.00	0.00	911.79



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well AZUL 13-7HZ
<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 13-7HZ	<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 13-7HZ					
Well Position	+N/-S	-1.09 usft	Northing:	14,543,794.54 usft	Latitude:	40.046539
	+E/-W	135.17 usft	Easting:	1,715,887.60 usft	Longitude:	-104.730327
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	52,317.95359332

<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	354.72

<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	12,771.20	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI Fixed:v2:crustal field declinat

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
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	
1,464.58	18.22	193.38	1,444.22	-186.28	-44.32	1.50	1.50	0.00	193.38	
5,214.11	18.22	193.38	5,005.78	-1,326.72	-315.68	0.00	0.00	0.00	0.00	
6,428.69	0.00	0.00	6,200.00	-1,513.00	-360.00	1.50	-1.50	0.00	180.00	
6,999.55	0.00	0.00	6,770.85	-1,513.00	-360.00	0.00	0.00	0.00	0.00	
8,003.21	90.33	360.00	7,407.46	-872.71	-360.00	9.00	9.00	0.00	360.00	
12,771.20	90.33	360.00	7,380.00	3,895.19	-360.00	0.00	0.00	0.00	0.00	AZUL 13-7HZ_PBH

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well AZUL 13-7HZ
<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 13-7HZ	<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	193.38	300.00	-0.32	-0.08	-0.31	1.50	1.50	0.00
400.00	2.25	193.38	399.96	-2.86	-0.68	-2.79	1.50	1.50	0.00
500.00	3.75	193.38	499.82	-7.96	-1.89	-7.75	1.50	1.50	0.00
600.00	5.25	193.38	599.51	-15.59	-3.71	-15.18	1.50	1.50	0.00
700.00	6.75	193.38	698.96	-25.76	-6.13	-25.08	1.50	1.50	0.00
800.00	8.25	193.38	798.10	-38.46	-9.15	-37.45	1.50	1.50	0.00
900.00	9.75	193.38	896.87	-53.67	-12.77	-52.27	1.50	1.50	0.00
1,000.00	11.25	193.38	995.19	-71.40	-16.99	-69.53	1.50	1.50	0.00
1,100.00	12.75	193.38	1,093.00	-91.63	-21.80	-89.23	1.50	1.50	0.00
1,200.00	14.25	193.38	1,190.24	-114.34	-27.21	-111.35	1.50	1.50	0.00
1,300.00	15.75	193.38	1,286.83	-139.52	-33.20	-135.87	1.50	1.50	0.00
1,400.00	17.25	193.38	1,382.71	-167.14	-39.77	-162.78	1.50	1.50	0.00
1,464.58	18.22	193.38	1,444.22	-186.28	-44.32	-181.41	1.50	1.50	0.00
1,500.00	18.22	193.38	1,477.86	-197.05	-46.89	-191.90	0.00	0.00	0.00
1,600.00	18.22	193.38	1,572.85	-227.47	-54.12	-221.52	0.00	0.00	0.00
1,648.59	18.22	193.38	1,619.00	-242.25	-57.64	-235.92	0.00	0.00	0.00
Fox Hills									
1,700.00	18.22	193.38	1,667.83	-257.89	-61.36	-251.14	0.00	0.00	0.00
1,800.00	18.22	193.38	1,762.82	-288.30	-68.60	-280.76	0.00	0.00	0.00
1,839.14	18.22	193.38	1,800.00	-300.21	-71.43	-292.36	0.00	0.00	0.00
9 5/8"									
1,900.00	18.22	193.38	1,857.81	-318.72	-75.83	-310.39	0.00	0.00	0.00
2,000.00	18.22	193.38	1,952.80	-349.13	-83.07	-340.01	0.00	0.00	0.00
2,100.00	18.22	193.38	2,047.78	-379.55	-90.31	-369.63	0.00	0.00	0.00
2,200.00	18.22	193.38	2,142.77	-409.96	-97.55	-399.25	0.00	0.00	0.00
2,300.00	18.22	193.38	2,237.76	-440.38	-104.78	-428.87	0.00	0.00	0.00
2,400.00	18.22	193.38	2,332.74	-470.79	-112.02	-458.49	0.00	0.00	0.00
2,500.00	18.22	193.38	2,427.73	-501.21	-119.26	-488.11	0.00	0.00	0.00
2,600.00	18.22	193.38	2,522.72	-531.62	-126.49	-517.73	0.00	0.00	0.00
2,700.00	18.22	193.38	2,617.70	-562.04	-133.73	-547.35	0.00	0.00	0.00
2,800.00	18.22	193.38	2,712.69	-592.46	-140.97	-576.97	0.00	0.00	0.00
2,900.00	18.22	193.38	2,807.68	-622.87	-148.20	-606.59	0.00	0.00	0.00
3,000.00	18.22	193.38	2,902.67	-653.29	-155.44	-636.21	0.00	0.00	0.00
3,100.00	18.22	193.38	2,997.65	-683.70	-162.68	-665.83	0.00	0.00	0.00
3,200.00	18.22	193.38	3,092.64	-714.12	-169.92	-695.45	0.00	0.00	0.00
3,300.00	18.22	193.38	3,187.63	-744.53	-177.15	-725.07	0.00	0.00	0.00
3,400.00	18.22	193.38	3,282.61	-774.95	-184.39	-754.69	0.00	0.00	0.00
3,500.00	18.22	193.38	3,377.60	-805.36	-191.63	-784.31	0.00	0.00	0.00
3,600.00	18.22	193.38	3,472.59	-835.78	-198.86	-813.93	0.00	0.00	0.00
3,700.00	18.22	193.38	3,567.57	-866.19	-206.10	-843.55	0.00	0.00	0.00
3,800.00	18.22	193.38	3,662.56	-896.61	-213.34	-873.17	0.00	0.00	0.00
3,900.00	18.22	193.38	3,757.55	-927.03	-220.57	-902.79	0.00	0.00	0.00
4,000.00	18.22	193.38	3,852.53	-957.44	-227.81	-932.41	0.00	0.00	0.00
4,100.00	18.22	193.38	3,947.52	-987.86	-235.05	-962.03	0.00	0.00	0.00
4,200.00	18.22	193.38	4,042.51	-1,018.27	-242.29	-991.65	0.00	0.00	0.00
4,300.00	18.22	193.38	4,137.50	-1,048.69	-249.52	-1,021.27	0.00	0.00	0.00
4,400.00	18.22	193.38	4,232.48	-1,079.10	-256.76	-1,050.89	0.00	0.00	0.00
4,428.97	18.22	193.38	4,260.00	-1,087.91	-258.86	-1,059.47	0.00	0.00	0.00
Parkman									

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<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5088.00usft (D Rig)
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<b>Well:</b>	AZUL 13-7HZ	<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)	
4,500.00	18.22	193.38	4,327.47	-1,109.52	-264.00	-1,080.51	0.00	0.00	0.00	
4,600.00	18.22	193.38	4,422.46	-1,139.93	-271.23	-1,110.13	0.00	0.00	0.00	
4,700.00	18.22	193.38	4,517.44	-1,170.35	-278.47	-1,139.75	0.00	0.00	0.00	
4,800.00	18.22	193.38	4,612.43	-1,200.76	-285.71	-1,169.37	0.00	0.00	0.00	
4,812.18	18.22	193.38	4,624.00	-1,204.47	-286.59	-1,172.98	0.00	0.00	0.00	
<b>Sussex</b>										
4,900.00	18.22	193.38	4,707.42	-1,231.18	-292.94	-1,199.00	0.00	0.00	0.00	
5,000.00	18.22	193.38	4,802.40	-1,261.59	-300.18	-1,228.62	0.00	0.00	0.00	
5,100.00	18.22	193.38	4,897.39	-1,292.01	-307.42	-1,258.24	0.00	0.00	0.00	
5,200.00	18.22	193.38	4,992.38	-1,322.43	-314.66	-1,287.86	0.00	0.00	0.00	
5,214.11	18.22	193.38	5,005.78	-1,326.72	-315.68	-1,292.04	0.00	0.00	0.00	
5,300.00	16.93	193.38	5,087.66	-1,351.95	-321.68	-1,316.61	1.50	-1.50	0.00	
5,400.00	15.43	193.38	5,183.70	-1,379.06	-328.13	-1,343.01	1.50	-1.50	0.00	
5,500.00	13.93	193.38	5,280.43	-1,403.71	-334.00	-1,367.01	1.50	-1.50	0.00	
5,600.00	12.43	193.38	5,377.79	-1,425.89	-339.27	-1,388.62	1.50	-1.50	0.00	
5,700.00	10.93	193.38	5,475.72	-1,445.59	-343.96	-1,407.80	1.50	-1.50	0.00	
5,800.00	9.43	193.38	5,574.14	-1,462.78	-348.05	-1,424.54	1.50	-1.50	0.00	
5,900.00	7.93	193.38	5,672.99	-1,477.46	-351.54	-1,438.84	1.50	-1.50	0.00	
6,000.00	6.43	193.38	5,772.21	-1,489.62	-354.44	-1,450.68	1.50	-1.50	0.00	
6,100.00	4.93	193.38	5,871.71	-1,499.25	-356.73	-1,460.06	1.50	-1.50	0.00	
6,200.00	3.43	193.38	5,971.44	-1,506.34	-358.42	-1,466.96	1.50	-1.50	0.00	
6,300.00	1.93	193.38	6,071.33	-1,510.89	-359.50	-1,471.39	1.50	-1.50	0.00	
6,400.00	0.43	193.38	6,171.31	-1,512.90	-359.98	-1,473.35	1.50	-1.50	0.00	
6,428.69	0.00	0.00	6,200.00	-1,513.00	-360.00	-1,473.45	1.50	-1.50	0.00	
6,500.00	0.00	0.00	6,271.31	-1,513.00	-360.00	-1,473.45	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,371.31	-1,513.00	-360.00	-1,473.45	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,471.31	-1,513.00	-360.00	-1,473.45	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,571.31	-1,513.00	-360.00	-1,473.45	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,671.31	-1,513.00	-360.00	-1,473.45	0.00	0.00	0.00	
6,999.55	0.00	0.00	6,770.85	-1,513.00	-360.00	-1,473.45	0.00	0.00	0.00	
7,000.00	0.04	0.00	6,771.31	-1,513.00	-360.00	-1,473.45	9.00	9.00	0.00	
7,100.00	9.04	360.00	6,870.89	-1,505.09	-360.00	-1,465.57	9.00	9.00	0.00	
7,200.00	18.04	360.00	6,968.01	-1,481.70	-360.00	-1,442.28	9.00	9.00	0.00	
7,300.00	27.04	360.00	7,060.28	-1,443.41	-360.00	-1,404.15	9.00	9.00	0.00	
7,389.65	35.11	360.00	7,137.00	-1,397.17	-360.00	-1,358.11	9.00	9.00	0.00	
<b>Sharon Springs</b>										
7,400.00	36.04	360.00	7,145.42	-1,391.15	-360.00	-1,352.11	9.00	9.00	0.00	
7,422.03	38.02	360.00	7,163.00	-1,377.88	-360.00	-1,338.90	9.00	9.00	0.00	
<b>Niobrara</b>										
7,500.00	45.04	360.00	7,221.33	-1,326.22	-360.00	-1,287.46	9.00	9.00	0.00	
7,600.00	54.04	360.00	7,286.16	-1,250.21	-360.00	-1,211.77	9.00	9.00	0.00	
7,633.31	57.04	360.00	7,305.00	-1,222.75	-360.00	-1,184.43	9.00	9.00	0.00	
<b>Nio B</b>										
7,700.00	63.04	360.00	7,338.29	-1,164.99	-360.00	-1,126.92	9.00	9.00	0.00	
7,795.34	71.62	360.00	7,375.00	-1,077.10	-360.00	-1,039.40	9.00	9.00	0.00	
<b>Nio C</b>										
7,800.00	72.04	360.00	7,376.45	-1,072.67	-360.00	-1,034.99	9.00	9.00	0.00	
7,900.00	81.04	360.00	7,399.71	-975.52	-360.00	-938.25	9.00	9.00	0.00	
8,000.00	90.04	360.00	7,407.47	-875.93	-360.00	-839.08	9.00	9.00	0.00	
8,003.21	90.33	360.00	7,407.46	-872.72	-360.00	-835.88	9.00	9.00	0.00	
<b>Top of Production - AZUL 13-7HZ_PHL</b>										
8,100.00	90.33	360.00	7,406.90	-775.93	-360.00	-739.50	0.00	0.00	0.00	
8,200.00	90.33	360.00	7,406.33	-675.93	-360.00	-639.93	0.00	0.00	0.00	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well AZUL 13-7HZ
<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 13-7HZ	<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	90.33	360.00	7,405.75	-575.93	-360.00	-540.36	0.00	0.00	0.00
8,400.00	90.33	360.00	7,405.18	-475.93	-360.00	-440.78	0.00	0.00	0.00
8,500.00	90.33	360.00	7,404.60	-375.93	-360.00	-341.21	0.00	0.00	0.00
8,600.00	90.33	360.00	7,404.02	-275.94	-360.00	-241.63	0.00	0.00	0.00
8,700.00	90.33	360.00	7,403.45	-175.94	-360.00	-142.06	0.00	0.00	0.00
8,800.00	90.33	360.00	7,402.87	-75.94	-360.00	-42.49	0.00	0.00	0.00
8,900.00	90.33	360.00	7,402.30	24.06	-360.00	57.09	0.00	0.00	0.00
9,000.00	90.33	360.00	7,401.72	124.06	-360.00	156.66	0.00	0.00	0.00
9,100.00	90.33	360.00	7,401.14	224.06	-360.00	256.24	0.00	0.00	0.00
9,200.00	90.33	360.00	7,400.57	324.05	-360.00	355.81	0.00	0.00	0.00
9,300.00	90.33	360.00	7,399.99	424.05	-360.00	455.38	0.00	0.00	0.00
9,400.00	90.33	360.00	7,399.42	524.05	-360.00	554.96	0.00	0.00	0.00
9,500.00	90.33	360.00	7,398.84	624.05	-360.00	654.53	0.00	0.00	0.00
9,600.00	90.33	360.00	7,398.26	724.05	-360.00	754.11	0.00	0.00	0.00
9,700.00	90.33	360.00	7,397.69	824.05	-360.00	853.68	0.00	0.00	0.00
9,800.00	90.33	360.00	7,397.11	924.04	-360.00	953.25	0.00	0.00	0.00
9,900.00	90.33	360.00	7,396.54	1,024.04	-360.00	1,052.83	0.00	0.00	0.00
10,000.00	90.33	360.00	7,395.96	1,124.04	-360.00	1,152.40	0.00	0.00	0.00
10,100.00	90.33	360.00	7,395.39	1,224.04	-360.00	1,251.98	0.00	0.00	0.00
10,200.00	90.33	360.00	7,394.81	1,324.04	-360.00	1,351.55	0.00	0.00	0.00
10,300.00	90.33	360.00	7,394.23	1,424.04	-360.00	1,451.12	0.00	0.00	0.00
10,400.00	90.33	360.00	7,393.66	1,524.03	-360.00	1,550.70	0.00	0.00	0.00
10,500.00	90.33	360.00	7,393.08	1,624.03	-360.00	1,650.27	0.00	0.00	0.00
10,600.00	90.33	360.00	7,392.51	1,724.03	-360.00	1,749.85	0.00	0.00	0.00
10,700.00	90.33	360.00	7,391.93	1,824.03	-360.00	1,849.42	0.00	0.00	0.00
10,800.00	90.33	360.00	7,391.35	1,924.03	-360.00	1,948.99	0.00	0.00	0.00
10,900.00	90.33	360.00	7,390.78	2,024.03	-360.00	2,048.57	0.00	0.00	0.00
11,000.00	90.33	360.00	7,390.20	2,124.02	-360.00	2,148.14	0.00	0.00	0.00
11,100.00	90.33	360.00	7,389.63	2,224.02	-360.00	2,247.72	0.00	0.00	0.00
11,200.00	90.33	360.00	7,389.05	2,324.02	-360.00	2,347.29	0.00	0.00	0.00
11,300.00	90.33	360.00	7,388.47	2,424.02	-360.00	2,446.86	0.00	0.00	0.00
11,400.00	90.33	360.00	7,387.90	2,524.02	-360.00	2,546.44	0.00	0.00	0.00
11,500.00	90.33	360.00	7,387.32	2,624.02	-360.00	2,646.01	0.00	0.00	0.00
11,600.00	90.33	360.00	7,386.75	2,724.01	-360.00	2,745.59	0.00	0.00	0.00
11,700.00	90.33	360.00	7,386.17	2,824.01	-360.00	2,845.16	0.00	0.00	0.00
11,800.00	90.33	360.00	7,385.59	2,924.01	-360.00	2,944.73	0.00	0.00	0.00
11,900.00	90.33	360.00	7,385.02	3,024.01	-360.00	3,044.31	0.00	0.00	0.00
12,000.00	90.33	360.00	7,384.44	3,124.01	-360.00	3,143.88	0.00	0.00	0.00
12,100.00	90.33	360.00	7,383.87	3,224.01	-360.00	3,243.46	0.00	0.00	0.00
12,200.00	90.33	360.00	7,383.29	3,324.00	-360.00	3,343.03	0.00	0.00	0.00
12,300.00	90.33	360.00	7,382.71	3,424.00	-360.00	3,442.60	0.00	0.00	0.00
12,400.00	90.33	360.00	7,382.14	3,524.00	-360.00	3,542.18	0.00	0.00	0.00
12,500.00	90.33	360.00	7,381.56	3,624.00	-360.00	3,641.75	0.00	0.00	0.00
12,600.00	90.33	360.00	7,380.99	3,724.00	-360.00	3,741.33	0.00	0.00	0.00
12,700.00	90.33	360.00	7,380.41	3,824.00	-360.00	3,840.90	0.00	0.00	0.00
12,771.20	90.33	360.00	7,380.00	3,895.19	-360.00	3,911.79	0.00	0.00	0.00
AZUL 13-7HZ_PBHL									

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<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 13-7HZ_PBHL	0.00	0.00	7,380.00	3,895.19	-360.00	14,547,688.63	1,715,515.80	40.057236	-104.731614
- plan hits target center									
- Point									
AZUL 13-7HZ_PHL	0.00	0.00	7,407.46	-872.72	-360.00	14,542,920.74	1,715,530.24	40.044142	-104.731614
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,839.14	1,800.00	9 5/8"	9-5/8	13-1/2	
8,003.21	7,407.46	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,648.59	1,619.00	Fox Hills				
4,428.97	4,260.00	Parkman				
4,812.18	4,624.00	Sussex				
7,389.65	7,137.00	Sharon Springs				
7,422.03	7,163.00	Niobrara				
7,633.31	7,305.00	Nio B				
7,795.34	7,375.00	Nio C				