

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-66W-13 AZUL 13-13HZ
AZUL 13-8HZ**

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

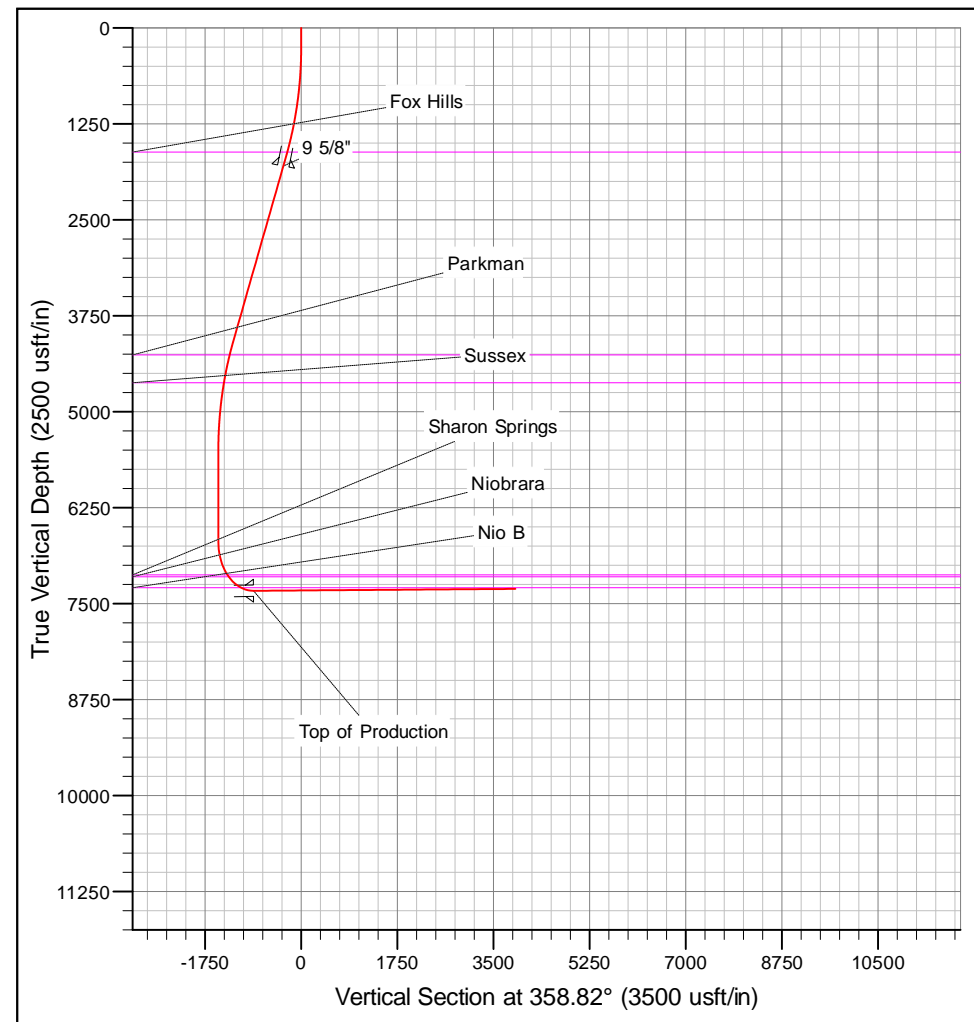
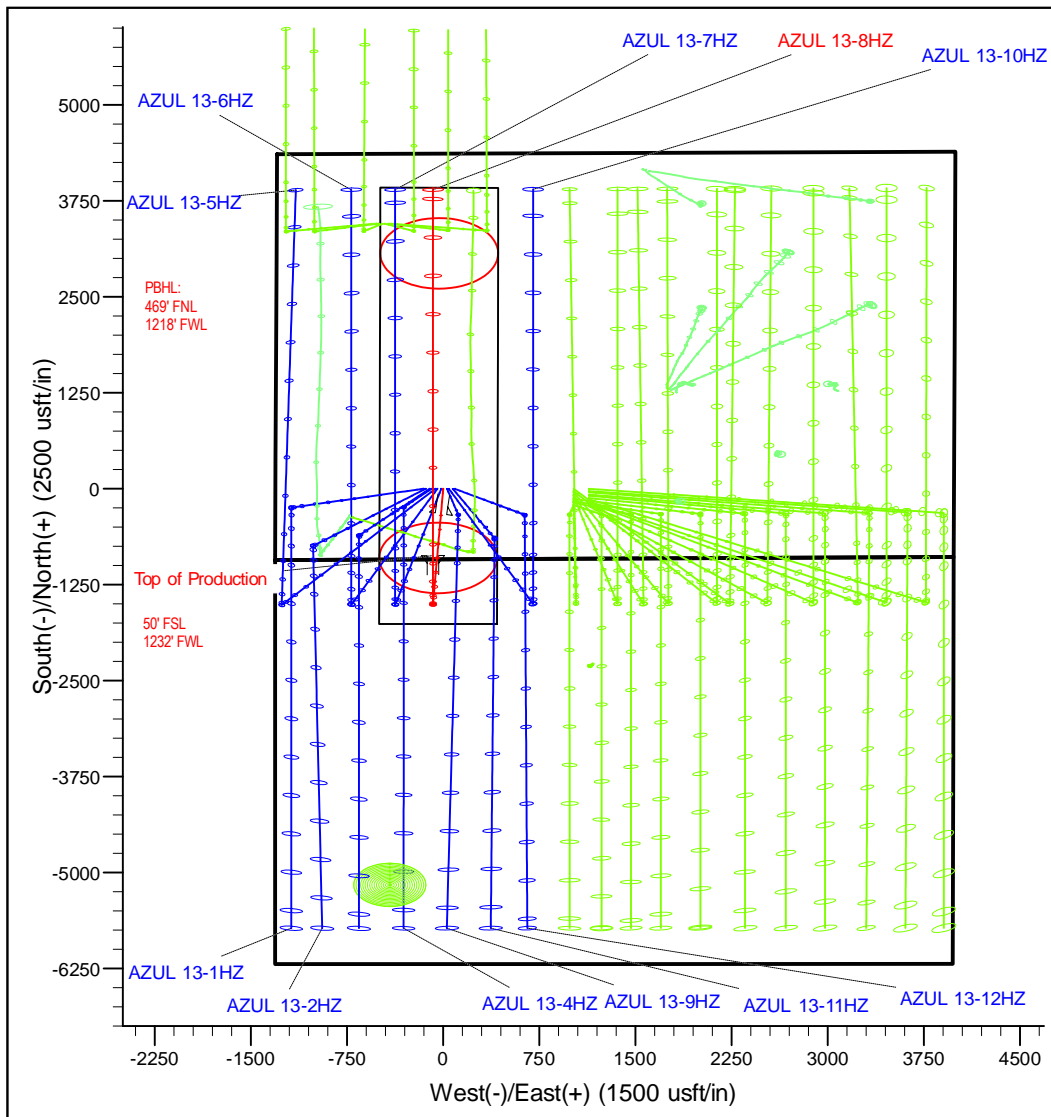
Well: AZUL 13-8HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1619.00	1650.14	Fox Hills
4260.00	4492.85	Parkman
4624.00	4871.86	Sussex
7125.00	7421.99	Sharon Springs
7151.00	7458.04	Niobrara
7293.00	7723.44	Nio B

WELL DETAILS: AZUL 13-8HZ					
		GL: 5071.00	RKB @ 5088.00usft (D Rig)		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14543794.23	1715902.43	40.046538	-104.730274

DESIGN TARGET DETAILS						
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude
AZUL 13-8HZ_PBHL	7309.00	3896.83	-80.00	14547690.80	1715810.63	40.057239

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
1704.25	21.81	183.03	1669.38	-273.12	-14.47	1.50	-272.77
4301.47	21.81	183.03	4080.62	-1236.88	-65.53	0.09	-235.27
5755.73	0.00	0.00	5500.00	-1510.00	-80.00	1.58	508.04
6953.08	0.00	0.00	6697.35	-1510.00	-80.00	0.00	508.04
7956.41	90.30	360.00	7333.96	-870.05	-80.00	9.00	-868.22
12723.35	90.30	360.00	7309.00	3896.83	-80.00	0.00	897.65



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5088.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5088.00usft (D Rig)
Site:	1N-66W-13 AZUL 13-13HZ	North Reference:	True
Well:	AZUL 13-8HZ	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 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 13-8HZ					
Well Position	+N/-S	-1.46 usft	Northing:	14,543,794.23 usft	Latitude:	40.046538
	+E/-W	150.01 usft	Easting:	1,715,902.43 usft	Longitude:	-104.730274
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	5,071.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/8/2017	8.01	66.56	52,317.95846421

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	358.82

Plan Survey Tool Program	Date	6/12/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,723.35	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	
1,704.25	21.81	183.03	1,669.38	-273.12	-14.47	1.50	1.50	0.00	183.03	
4,301.47	21.81	183.03	4,080.62	-1,236.88	-65.53	0.00	0.00	0.00	0.00	
5,755.73	0.00	0.00	5,500.00	-1,510.00	-80.00	1.50	-1.50	0.00	180.00	
6,953.08	0.00	0.00	6,697.35	-1,510.00	-80.00	0.00	0.00	0.00	0.00	
7,956.41	90.30	360.00	7,333.96	-870.05	-80.00	9.00	9.00	0.00	360.00	
12,723.35	90.30	360.00	7,309.00	3,896.83	-80.00	0.00	0.00	0.00	0.00	AZUL 13-8HZ_PBH

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5088.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5088.00usft (D Rig)
Site:	1N-66W-13 AZUL 13-13HZ	North Reference:	True
Well:	AZUL 13-8HZ	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	183.03	300.00	-0.33	-0.02	-0.33	1.50	1.50	0.00
400.00	2.25	183.03	399.96	-2.94	-0.16	-2.94	1.50	1.50	0.00
500.00	3.75	183.03	499.82	-8.17	-0.43	-8.16	1.50	1.50	0.00
600.00	5.25	183.03	599.51	-16.00	-0.85	-15.98	1.50	1.50	0.00
700.00	6.75	183.03	698.96	-26.44	-1.40	-26.41	1.50	1.50	0.00
800.00	8.25	183.03	798.10	-39.47	-2.09	-39.42	1.50	1.50	0.00
900.00	9.75	183.03	896.87	-55.09	-2.92	-55.02	1.50	1.50	0.00
1,000.00	11.25	183.03	995.19	-73.29	-3.88	-73.20	1.50	1.50	0.00
1,100.00	12.75	183.03	1,093.00	-94.05	-4.98	-93.93	1.50	1.50	0.00
1,200.00	14.25	183.03	1,190.24	-117.36	-6.22	-117.21	1.50	1.50	0.00
1,300.00	15.75	183.03	1,286.83	-143.21	-7.59	-143.02	1.50	1.50	0.00
1,400.00	17.25	183.03	1,382.71	-171.57	-9.09	-171.35	1.50	1.50	0.00
1,500.00	18.75	183.03	1,477.81	-202.43	-10.72	-202.17	1.50	1.50	0.00
1,600.00	20.25	183.03	1,572.07	-235.76	-12.49	-235.46	1.50	1.50	0.00
1,650.14	21.00	183.03	1,619.00	-253.40	-13.43	-253.07	1.50	1.50	0.00
Fox Hills									
1,700.00	21.75	183.03	1,665.43	-271.55	-14.39	-271.19	1.50	1.50	0.00
1,704.25	21.81	183.03	1,669.38	-273.12	-14.47	-272.77	1.50	1.50	0.00
1,800.00	21.81	183.03	1,758.27	-308.65	-16.35	-308.25	0.00	0.00	0.00
1,844.95	21.81	183.03	1,800.00	-325.33	-17.24	-324.91	0.00	0.00	0.00
9 5/8"									
1,900.00	21.81	183.03	1,851.11	-345.76	-18.32	-345.31	0.00	0.00	0.00
2,000.00	21.81	183.03	1,943.94	-382.87	-20.28	-382.37	0.00	0.00	0.00
2,100.00	21.81	183.03	2,036.78	-419.97	-22.25	-419.43	0.00	0.00	0.00
2,200.00	21.81	183.03	2,129.62	-457.08	-24.22	-456.49	0.00	0.00	0.00
2,300.00	21.81	183.03	2,222.46	-494.19	-26.18	-493.55	0.00	0.00	0.00
2,400.00	21.81	183.03	2,315.30	-531.29	-28.15	-530.60	0.00	0.00	0.00
2,500.00	21.81	183.03	2,408.14	-568.40	-30.11	-567.66	0.00	0.00	0.00
2,600.00	21.81	183.03	2,500.98	-605.51	-32.08	-604.72	0.00	0.00	0.00
2,700.00	21.81	183.03	2,593.82	-642.62	-34.05	-641.78	0.00	0.00	0.00
2,800.00	21.81	183.03	2,686.66	-679.72	-36.01	-678.84	0.00	0.00	0.00
2,900.00	21.81	183.03	2,779.50	-716.83	-37.98	-715.90	0.00	0.00	0.00
3,000.00	21.81	183.03	2,872.34	-753.94	-39.94	-752.96	0.00	0.00	0.00
3,100.00	21.81	183.03	2,965.18	-791.04	-41.91	-790.02	0.00	0.00	0.00
3,200.00	21.81	183.03	3,058.02	-828.15	-43.88	-827.08	0.00	0.00	0.00
3,300.00	21.81	183.03	3,150.86	-865.26	-45.84	-864.14	0.00	0.00	0.00
3,400.00	21.81	183.03	3,243.70	-902.37	-47.81	-901.19	0.00	0.00	0.00
3,500.00	21.81	183.03	3,336.54	-939.47	-49.77	-938.25	0.00	0.00	0.00
3,600.00	21.81	183.03	3,429.38	-976.58	-51.74	-975.31	0.00	0.00	0.00
3,700.00	21.81	183.03	3,522.22	-1,013.69	-53.71	-1,012.37	0.00	0.00	0.00
3,800.00	21.81	183.03	3,615.06	-1,050.79	-55.67	-1,049.43	0.00	0.00	0.00
3,900.00	21.81	183.03	3,707.90	-1,087.90	-57.64	-1,086.49	0.00	0.00	0.00
4,000.00	21.81	183.03	3,800.74	-1,125.01	-59.60	-1,123.55	0.00	0.00	0.00
4,100.00	21.81	183.03	3,893.58	-1,162.12	-61.57	-1,160.61	0.00	0.00	0.00
4,200.00	21.81	183.03	3,986.42	-1,199.22	-63.53	-1,197.67	0.00	0.00	0.00
4,300.00	21.81	183.03	4,079.26	-1,236.33	-65.50	-1,234.73	0.00	0.00	0.00
4,301.47	21.81	183.03	4,080.62	-1,236.88	-65.53	-1,235.27	0.00	0.00	0.00
4,400.00	20.34	183.03	4,172.56	-1,272.26	-67.40	-1,270.60	1.50	-1.50	0.00
4,492.85	18.94	183.03	4,260.00	-1,303.42	-69.06	-1,301.72	1.50	-1.50	0.00

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5088.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5088.00usft (D Rig)
Site:	1N-66W-13 AZUL 13-13HZ	North Reference:	True
Well:	AZUL 13-8HZ	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)
Parkman									
4,500.00	18.84	183.03	4,266.77	-1,305.73	-69.18	-1,304.03	1.50	-1.50	0.00
4,600.00	17.34	183.03	4,361.83	-1,336.73	-70.82	-1,334.99	1.50	-1.50	0.00
4,700.00	15.84	183.03	4,457.66	-1,365.23	-72.33	-1,363.46	1.50	-1.50	0.00
4,800.00	14.34	183.03	4,554.21	-1,391.22	-73.71	-1,389.42	1.50	-1.50	0.00
4,871.86	13.26	183.03	4,624.00	-1,408.34	-74.61	-1,406.51	1.50	-1.50	0.00
Sussex									
4,900.00	12.84	183.03	4,651.41	-1,414.68	-74.95	-1,412.84	1.50	-1.50	0.00
5,000.00	11.34	183.03	4,749.19	-1,435.59	-76.06	-1,433.72	1.50	-1.50	0.00
5,100.00	9.84	183.03	4,847.49	-1,453.93	-77.03	-1,452.05	1.50	-1.50	0.00
5,200.00	8.34	183.03	4,946.23	-1,469.70	-77.86	-1,467.79	1.50	-1.50	0.00
5,300.00	6.84	183.03	5,045.35	-1,482.88	-78.56	-1,480.96	1.50	-1.50	0.00
5,400.00	5.34	183.03	5,144.79	-1,493.47	-79.12	-1,491.53	1.50	-1.50	0.00
5,500.00	3.84	183.03	5,244.46	-1,501.45	-79.55	-1,499.51	1.50	-1.50	0.00
5,600.00	2.34	183.03	5,344.32	-1,506.83	-79.83	-1,504.87	1.50	-1.50	0.00
5,700.00	0.84	183.03	5,444.27	-1,509.59	-79.98	-1,507.63	1.50	-1.50	0.00
5,755.73	0.00	0.00	5,500.00	-1,510.00	-80.00	-1,508.04	1.50	-1.50	0.00
5,800.00	0.00	0.00	5,544.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
5,900.00	0.00	0.00	5,644.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
6,000.00	0.00	0.00	5,744.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
6,100.00	0.00	0.00	5,844.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
6,200.00	0.00	0.00	5,944.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
6,300.00	0.00	0.00	6,044.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
6,400.00	0.00	0.00	6,144.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
6,500.00	0.00	0.00	6,244.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
6,600.00	0.00	0.00	6,344.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
6,700.00	0.00	0.00	6,444.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
6,800.00	0.00	0.00	6,544.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
6,900.00	0.00	0.00	6,644.27	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
6,953.08	0.00	0.00	6,697.35	-1,510.00	-80.00	-1,508.04	0.00	0.00	0.00
7,000.00	4.22	360.00	6,744.23	-1,508.27	-80.00	-1,506.31	9.00	9.00	0.00
7,100.00	13.22	360.00	6,842.97	-1,493.12	-80.00	-1,491.16	9.00	9.00	0.00
7,200.00	22.22	360.00	6,938.13	-1,462.71	-80.00	-1,460.76	9.00	9.00	0.00
7,300.00	31.22	360.00	7,027.35	-1,417.79	-80.00	-1,415.85	9.00	9.00	0.00
7,400.00	40.22	360.00	7,108.46	-1,359.46	-80.00	-1,357.53	9.00	9.00	0.00
7,421.99	42.20	360.00	7,125.00	-1,344.97	-80.00	-1,343.05	9.00	9.00	0.00
Sharon Springs									
7,458.04	45.45	360.00	7,151.00	-1,320.02	-80.00	-1,318.10	9.00	9.00	0.00
Niobrara									
7,500.00	49.22	360.00	7,179.43	-1,289.17	-80.00	-1,287.25	9.00	9.00	0.00
7,600.00	58.22	360.00	7,238.54	-1,208.63	-80.00	-1,206.74	9.00	9.00	0.00
7,700.00	67.22	360.00	7,284.32	-1,119.84	-80.00	-1,117.97	9.00	9.00	0.00
7,723.44	69.33	360.00	7,293.00	-1,098.07	-80.00	-1,096.19	9.00	9.00	0.00
Nio B									
7,800.00	76.22	360.00	7,315.65	-1,024.99	-80.00	-1,023.13	9.00	9.00	0.00
7,900.00	85.22	360.00	7,331.76	-926.40	-80.00	-924.56	9.00	9.00	0.00
7,956.41	90.30	360.00	7,333.96	-870.05	-80.00	-868.22	9.00	9.00	0.00
Top of Production - AZUL 13-8HZ_PHL									
8,000.00	90.30	360.00	7,333.73	-826.46	-80.00	-824.64	0.00	0.00	0.00
8,100.00	90.30	360.00	7,333.21	-726.46	-80.00	-724.66	0.00	0.00	0.00
8,200.00	90.30	360.00	7,332.68	-626.46	-80.00	-624.69	0.00	0.00	0.00
8,300.00	90.30	360.00	7,332.16	-526.46	-80.00	-524.71	0.00	0.00	0.00
8,400.00	90.30	360.00	7,331.64	-426.46	-80.00	-424.73	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5088.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5088.00usft (D Rig)
Site:	1N-66W-13 AZUL 13-13HZ	North Reference:	True
Well:	AZUL 13-8HZ	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)
8,500.00	90.30	360.00	7,331.11	-326.46	-80.00	-324.75	0.00	0.00	0.00
8,600.00	90.30	360.00	7,330.59	-226.47	-80.00	-224.78	0.00	0.00	0.00
8,700.00	90.30	360.00	7,330.07	-126.47	-80.00	-124.80	0.00	0.00	0.00
8,800.00	90.30	360.00	7,329.54	-26.47	-80.00	-24.82	0.00	0.00	0.00
8,900.00	90.30	360.00	7,329.02	73.53	-80.00	75.16	0.00	0.00	0.00
9,000.00	90.30	360.00	7,328.50	173.53	-80.00	175.13	0.00	0.00	0.00
9,100.00	90.30	360.00	7,327.97	273.53	-80.00	275.11	0.00	0.00	0.00
9,200.00	90.30	360.00	7,327.45	373.53	-80.00	375.09	0.00	0.00	0.00
9,300.00	90.30	360.00	7,326.92	473.52	-80.00	475.07	0.00	0.00	0.00
9,400.00	90.30	360.00	7,326.40	573.52	-80.00	575.04	0.00	0.00	0.00
9,500.00	90.30	360.00	7,325.88	673.52	-80.00	675.02	0.00	0.00	0.00
9,600.00	90.30	360.00	7,325.35	773.52	-80.00	775.00	0.00	0.00	0.00
9,700.00	90.30	360.00	7,324.83	873.52	-80.00	874.98	0.00	0.00	0.00
9,800.00	90.30	360.00	7,324.31	973.52	-80.00	974.96	0.00	0.00	0.00
9,900.00	90.30	360.00	7,323.78	1,073.52	-80.00	1,074.93	0.00	0.00	0.00
10,000.00	90.30	360.00	7,323.26	1,173.52	-80.00	1,174.91	0.00	0.00	0.00
10,100.00	90.30	360.00	7,322.74	1,273.51	-80.00	1,274.89	0.00	0.00	0.00
10,200.00	90.30	360.00	7,322.21	1,373.51	-80.00	1,374.87	0.00	0.00	0.00
10,300.00	90.30	360.00	7,321.69	1,473.51	-80.00	1,474.84	0.00	0.00	0.00
10,400.00	90.30	360.00	7,321.17	1,573.51	-80.00	1,574.82	0.00	0.00	0.00
10,500.00	90.30	360.00	7,320.64	1,673.51	-80.00	1,674.80	0.00	0.00	0.00
10,600.00	90.30	360.00	7,320.12	1,773.51	-80.00	1,774.78	0.00	0.00	0.00
10,700.00	90.30	360.00	7,319.59	1,873.51	-80.00	1,874.75	0.00	0.00	0.00
10,800.00	90.30	360.00	7,319.07	1,973.50	-80.00	1,974.73	0.00	0.00	0.00
10,900.00	90.30	360.00	7,318.55	2,073.50	-80.00	2,074.71	0.00	0.00	0.00
11,000.00	90.30	360.00	7,318.02	2,173.50	-80.00	2,174.69	0.00	0.00	0.00
11,100.00	90.30	360.00	7,317.50	2,273.50	-80.00	2,274.66	0.00	0.00	0.00
11,200.00	90.30	360.00	7,316.98	2,373.50	-80.00	2,374.64	0.00	0.00	0.00
11,300.00	90.30	360.00	7,316.45	2,473.50	-80.00	2,474.62	0.00	0.00	0.00
11,400.00	90.30	360.00	7,315.93	2,573.50	-80.00	2,574.60	0.00	0.00	0.00
11,500.00	90.30	360.00	7,315.41	2,673.49	-80.00	2,674.57	0.00	0.00	0.00
11,600.00	90.30	360.00	7,314.88	2,773.49	-80.00	2,774.55	0.00	0.00	0.00
11,700.00	90.30	360.00	7,314.36	2,873.49	-80.00	2,874.53	0.00	0.00	0.00
11,800.00	90.30	360.00	7,313.83	2,973.49	-80.00	2,974.51	0.00	0.00	0.00
11,900.00	90.30	360.00	7,313.31	3,073.49	-80.00	3,074.48	0.00	0.00	0.00
12,000.00	90.30	360.00	7,312.79	3,173.49	-80.00	3,174.46	0.00	0.00	0.00
12,100.00	90.30	360.00	7,312.26	3,273.49	-80.00	3,274.44	0.00	0.00	0.00
12,200.00	90.30	360.00	7,311.74	3,373.49	-80.00	3,374.42	0.00	0.00	0.00
12,300.00	90.30	360.00	7,311.22	3,473.48	-80.00	3,474.39	0.00	0.00	0.00
12,400.00	90.30	360.00	7,310.69	3,573.48	-80.00	3,574.37	0.00	0.00	0.00
12,500.00	90.30	360.00	7,310.17	3,673.48	-80.00	3,674.35	0.00	0.00	0.00
12,600.00	90.30	360.00	7,309.65	3,773.48	-80.00	3,774.33	0.00	0.00	0.00
12,700.00	90.30	360.00	7,309.12	3,873.48	-80.00	3,874.30	0.00	0.00	0.00
12,723.35	90.30	360.00	7,309.00	3,896.83	-80.00	3,897.65	0.00	0.00	0.00
AZUL 13-8HZ_PBHL									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-8HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 5088.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5088.00usft (D Rig)
Site:	1N-66W-13 AZUL 13-13HZ	North Reference:	True
Well:	AZUL 13-8HZ	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 13-8HZ_PBHL	0.00	0.00	7,309.00	3,896.83	-80.00	14,547,690.79	1,715,810.63	40.057239	-104.730560
- plan hits target center									
- Point									
AZUL 13-8HZ_PHL	0.00	0.00	7,333.96	-870.05	-80.00	14,542,923.94	1,715,825.07	40.044149	-104.730560
- plan hits target center									
- Point									

Casing Points					
	Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
	1,844.95	1,800.00	9 5/8"	9-5/8	13-1/2
	7,956.41	7,333.96	Top of Production	5-1/2	7-7/8

Formations						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,650.14	1,619.00	Fox Hills			
	4,492.85	4,260.00	Parkman			
	4,871.86	4,624.00	Sussex			
	7,421.99	7,125.00	Sharon Springs			
	7,458.04	7,151.00	Niobrara			
	7,723.44	7,293.00	Nio B			