

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
1N-66W-13 AZUL 14-13HZ PAD
AZUL 13-17HZ**

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 13-17HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1599.00	1631.05	Fox Hills
4240.00	4374.55	Parkman
4604.00	4752.68	Sussex
7102.00	7298.20	Sharon Springs
7128.00	7326.49	Niobrara
7263.00	7485.40	Nio B
7320.00	7562.41	Nio C
7470.00	7854.93	Fort Hayes
7492.00	7946.91	Codell

WELL DETAILS: AZUL 13-17HZ

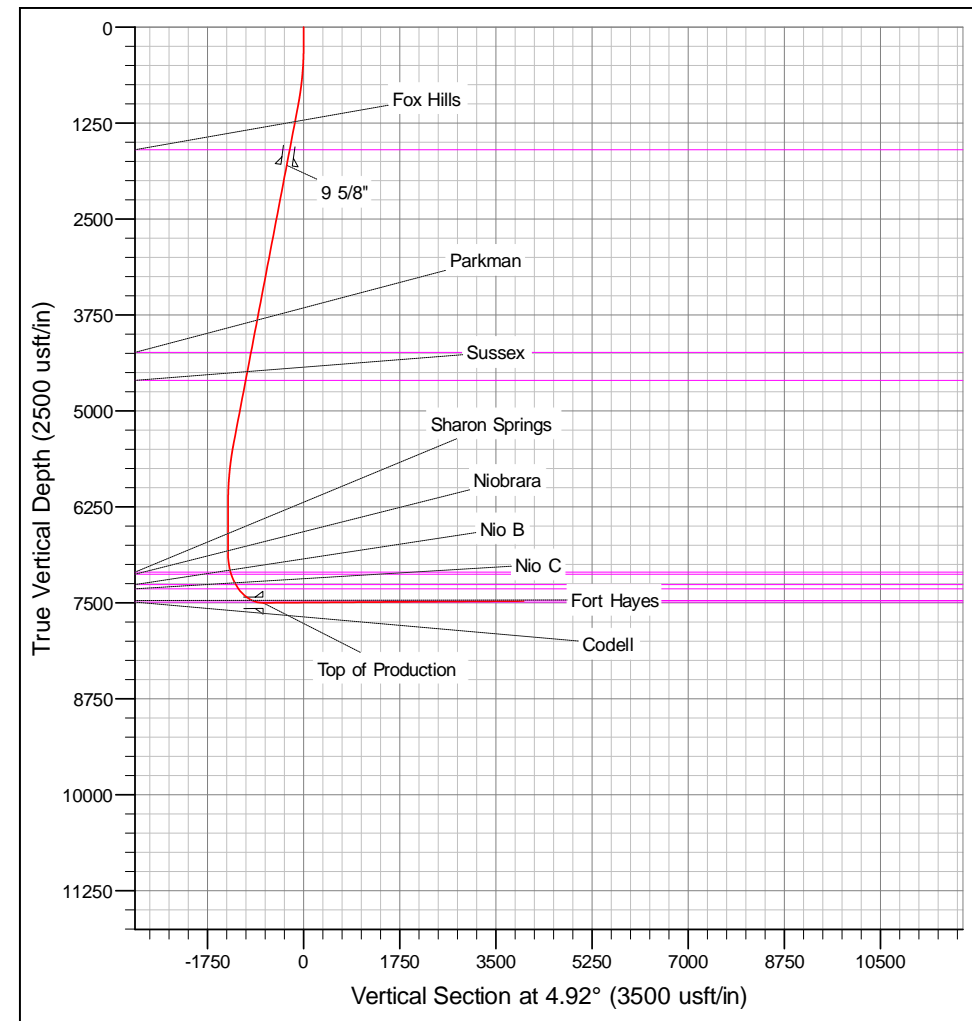
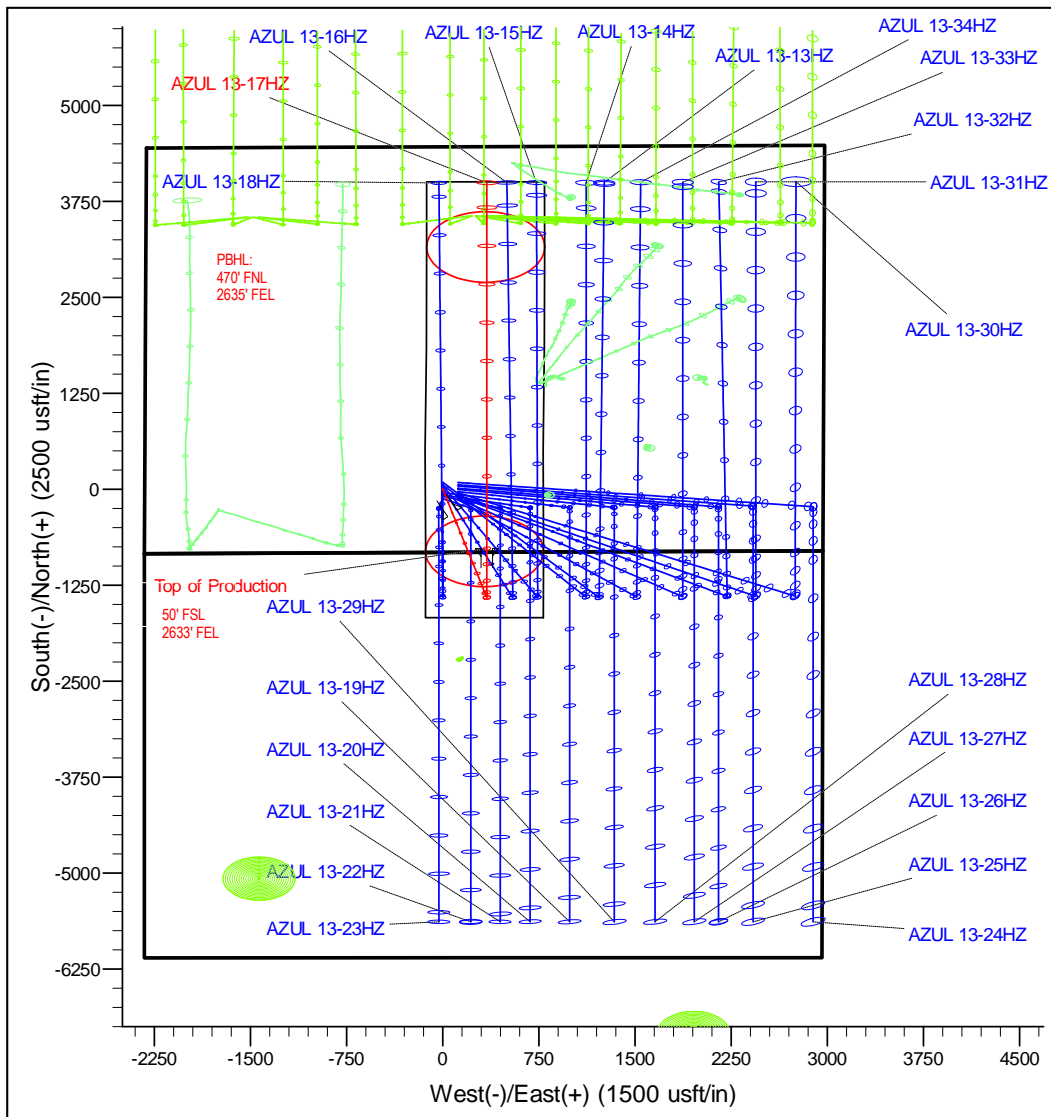
+N/-S	+E/-W	GL: 5051.00	RKB @ 5068.00usft (D Rig)	Latitude	Longitude	Slot
0.00	0.00	14543707.75	1716919.44	40.046292	-104.726641	

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
AZUL 13-17HZ_PBL	7477.00	3994.21	343.82	14547703.00	1717251.00	40.057261	-104.725412

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
1035.54	15.71	166.30	1025.73	-103.98	25.35	2.00	-101.42
5804.78	15.71	166.30	5424.27	-1306.02	318.47	0.00	1273.90
6390.32	0.00	0.00	6200.00	-1410.00	343.82	2.00	1375.32
7054.82	0.00	0.00	6864.50	-1410.00	343.82	0.00	1375.32
8058.04	90.29	360.00	7501.11	-770.16	343.82	9.00	-737.83
12822.47	90.29	360.00	7477.00	3994.21	343.82	0.00	4008.98



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-17HZ
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 13-17HZ	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 13-17HZ					
Well Position	+N/-S	-89.94 usft	Northing:	14,543,707.75 usft	Latitude:	40.046292
	+E/-W	-0.84 usft	Easting:	1,716,919.44 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	52,319.22319468

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	4.92

Plan Survey Tool Program	Date	6/7/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,822.47	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	
1,035.54	15.71	166.30	1,025.73	-103.98	25.35	2.00	2.00	0.00	166.30	
5,604.78	15.71	166.30	5,424.27	-1,306.02	318.47	0.00	0.00	0.00	0.00	
6,390.32	0.00	0.00	6,200.00	-1,410.00	343.82	2.00	-2.00	0.00	180.00	
7,054.82	0.00	0.00	6,864.50	-1,410.00	343.82	0.00	0.00	0.00	0.00	
8,058.04	90.29	360.00	7,501.12	-770.16	343.82	9.00	9.00	0.00	360.00	
12,822.47	90.29	360.00	7,477.00	3,994.21	343.82	0.00	0.00	0.00	0.00	AZUL 13-17HZ_PBI

Corporate Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 5068.00usft (D Rig)
Site:	1N-66W-13 AZUL 14-13HZ PAD	North Reference:	True
Well:	AZUL 13-17HZ	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	1.00	166.30	300.00	-0.42	0.10	-0.41	2.00	2.00	0.00
400.00	3.00	166.30	399.93	-3.81	0.93	-3.72	2.00	2.00	0.00
500.00	5.00	166.30	499.68	-10.59	2.58	-10.33	2.00	2.00	0.00
600.00	7.00	166.30	599.13	-20.75	5.06	-20.24	2.00	2.00	0.00
700.00	9.00	166.30	698.15	-34.27	8.36	-33.42	2.00	2.00	0.00
800.00	11.00	166.30	796.63	-51.14	12.47	-49.88	2.00	2.00	0.00
900.00	13.00	166.30	894.44	-71.33	17.39	-69.58	2.00	2.00	0.00
1,000.00	15.00	166.30	991.46	-94.84	23.13	-92.50	2.00	2.00	0.00
1,035.54	15.71	166.30	1,025.73	-103.98	25.35	-101.42	2.00	2.00	0.00
1,100.00	15.71	166.30	1,087.78	-120.94	29.49	-117.96	0.00	0.00	0.00
1,200.00	15.71	166.30	1,184.05	-147.24	35.90	-143.62	0.00	0.00	0.00
1,300.00	15.71	166.30	1,280.31	-173.55	42.32	-169.28	0.00	0.00	0.00
1,400.00	15.71	166.30	1,376.58	-199.86	48.73	-194.94	0.00	0.00	0.00
1,500.00	15.71	166.30	1,472.84	-226.17	55.15	-220.60	0.00	0.00	0.00
1,600.00	15.71	166.30	1,569.11	-252.47	61.56	-246.26	0.00	0.00	0.00
1,631.05	15.71	166.30	1,599.00	-260.64	63.56	-254.23	0.00	0.00	0.00
Fox Hills									
1,700.00	15.71	166.30	1,665.37	-278.78	67.98	-271.92	0.00	0.00	0.00
1,800.00	15.71	166.30	1,761.63	-305.09	74.39	-297.58	0.00	0.00	0.00
1,839.86	15.71	166.30	1,800.00	-315.57	76.95	-307.81	0.00	0.00	0.00
9 5/8"									
1,900.00	15.71	166.30	1,857.90	-331.40	80.81	-323.24	0.00	0.00	0.00
2,000.00	15.71	166.30	1,954.16	-357.70	87.22	-348.90	0.00	0.00	0.00
2,100.00	15.71	166.30	2,050.43	-384.01	93.64	-374.56	0.00	0.00	0.00
2,200.00	15.71	166.30	2,146.69	-410.32	100.05	-400.22	0.00	0.00	0.00
2,300.00	15.71	166.30	2,242.95	-436.62	106.47	-425.88	0.00	0.00	0.00
2,400.00	15.71	166.30	2,339.22	-462.93	112.88	-451.54	0.00	0.00	0.00
2,500.00	15.71	166.30	2,435.48	-489.24	119.30	-477.21	0.00	0.00	0.00
2,600.00	15.71	166.30	2,531.75	-515.55	125.71	-502.87	0.00	0.00	0.00
2,700.00	15.71	166.30	2,628.01	-541.85	132.13	-528.53	0.00	0.00	0.00
2,800.00	15.71	166.30	2,724.27	-568.16	138.54	-554.19	0.00	0.00	0.00
2,900.00	15.71	166.30	2,820.54	-594.47	144.96	-579.85	0.00	0.00	0.00
3,000.00	15.71	166.30	2,916.80	-620.78	151.37	-605.51	0.00	0.00	0.00
3,100.00	15.71	166.30	3,013.07	-647.08	157.79	-631.17	0.00	0.00	0.00
3,200.00	15.71	166.30	3,109.33	-673.39	164.20	-656.83	0.00	0.00	0.00
3,300.00	15.71	166.30	3,205.60	-699.70	170.62	-682.49	0.00	0.00	0.00
3,400.00	15.71	166.30	3,301.86	-726.00	177.03	-708.15	0.00	0.00	0.00
3,500.00	15.71	166.30	3,398.12	-752.31	183.45	-733.81	0.00	0.00	0.00
3,600.00	15.71	166.30	3,494.39	-778.62	189.86	-759.47	0.00	0.00	0.00
3,700.00	15.71	166.30	3,590.65	-804.93	196.28	-785.13	0.00	0.00	0.00
3,800.00	15.71	166.30	3,686.92	-831.23	202.69	-810.79	0.00	0.00	0.00
3,900.00	15.71	166.30	3,783.18	-857.54	209.11	-836.45	0.00	0.00	0.00
4,000.00	15.71	166.30	3,879.44	-883.85	215.52	-862.11	0.00	0.00	0.00
4,100.00	15.71	166.30	3,975.71	-910.16	221.94	-887.77	0.00	0.00	0.00
4,200.00	15.71	166.30	4,071.97	-936.46	228.35	-913.43	0.00	0.00	0.00
4,300.00	15.71	166.30	4,168.24	-962.77	234.77	-939.09	0.00	0.00	0.00
4,374.55	15.71	166.30	4,240.00	-982.38	239.55	-958.22	0.00	0.00	0.00
Parkman									
4,400.00	15.71	166.30	4,264.50	-989.08	241.18	-964.75	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 13-17HZ	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	15.71	166.30	4,360.76	-1,015.38	247.60	-990.41	0.00	0.00	0.00
4,600.00	15.71	166.30	4,457.03	-1,041.69	254.01	-1,016.07	0.00	0.00	0.00
4,700.00	15.71	166.30	4,553.29	-1,068.00	260.43	-1,041.73	0.00	0.00	0.00
4,752.68	15.71	166.30	4,604.00	-1,081.86	263.80	-1,055.25	0.00	0.00	0.00
Sussex									
4,800.00	15.71	166.30	4,649.56	-1,094.31	266.84	-1,067.39	0.00	0.00	0.00
4,900.00	15.71	166.30	4,745.82	-1,120.61	273.25	-1,093.05	0.00	0.00	0.00
5,000.00	15.71	166.30	4,842.09	-1,146.92	279.67	-1,118.71	0.00	0.00	0.00
5,100.00	15.71	166.30	4,938.35	-1,173.23	286.08	-1,144.37	0.00	0.00	0.00
5,200.00	15.71	166.30	5,034.61	-1,199.53	292.50	-1,170.03	0.00	0.00	0.00
5,300.00	15.71	166.30	5,130.88	-1,225.84	298.91	-1,195.69	0.00	0.00	0.00
5,400.00	15.71	166.30	5,227.14	-1,252.15	305.33	-1,221.35	0.00	0.00	0.00
5,500.00	15.71	166.30	5,323.41	-1,278.46	311.74	-1,247.01	0.00	0.00	0.00
5,600.00	15.71	166.30	5,419.67	-1,304.76	318.16	-1,272.67	0.00	0.00	0.00
5,604.78	15.71	166.30	5,424.27	-1,306.02	318.47	-1,273.90	0.00	0.00	0.00
5,700.00	13.81	166.30	5,516.35	-1,329.59	324.21	-1,296.88	2.00	-2.00	0.00
5,800.00	11.81	166.30	5,613.85	-1,351.12	329.46	-1,317.89	2.00	-2.00	0.00
5,900.00	9.81	166.30	5,712.07	-1,369.33	333.90	-1,335.65	2.00	-2.00	0.00
6,000.00	7.81	166.30	5,810.89	-1,384.21	337.53	-1,350.16	2.00	-2.00	0.00
6,100.00	5.81	166.30	5,910.18	-1,395.72	340.34	-1,361.39	2.00	-2.00	0.00
6,200.00	3.81	166.30	6,009.82	-1,403.86	342.32	-1,369.33	2.00	-2.00	0.00
6,300.00	1.81	166.30	6,109.70	-1,408.62	343.48	-1,373.97	2.00	-2.00	0.00
6,390.32	0.00	0.00	6,200.00	-1,410.00	343.82	-1,375.32	2.00	-2.00	0.00
6,400.00	0.00	0.00	6,209.68	-1,410.00	343.82	-1,375.32	0.00	0.00	0.00
6,500.00	0.00	0.00	6,309.68	-1,410.00	343.82	-1,375.32	0.00	0.00	0.00
6,600.00	0.00	0.00	6,409.68	-1,410.00	343.82	-1,375.32	0.00	0.00	0.00
6,700.00	0.00	0.00	6,509.68	-1,410.00	343.82	-1,375.32	0.00	0.00	0.00
6,800.00	0.00	0.00	6,609.68	-1,410.00	343.82	-1,375.32	0.00	0.00	0.00
6,900.00	0.00	0.00	6,709.68	-1,410.00	343.82	-1,375.32	0.00	0.00	0.00
7,000.00	0.00	0.00	6,809.68	-1,410.00	343.82	-1,375.32	0.00	0.00	0.00
7,054.82	0.00	0.00	6,864.50	-1,410.00	343.82	-1,375.32	0.00	0.00	0.00
7,100.00	4.07	360.00	6,909.65	-1,408.40	343.82	-1,373.72	9.00	9.00	0.00
7,200.00	13.07	360.00	7,008.43	-1,393.52	343.82	-1,358.90	9.00	9.00	0.00
7,298.20	21.90	360.00	7,102.00	-1,364.04	343.82	-1,329.53	9.00	9.00	0.00
Sharon Springs									
7,300.00	22.07	360.00	7,103.67	-1,363.37	343.82	-1,328.86	9.00	9.00	0.00
7,326.49	24.45	360.00	7,128.00	-1,352.91	343.82	-1,318.44	9.00	9.00	0.00
Niobrara									
7,400.00	31.07	360.00	7,193.02	-1,318.69	343.82	-1,284.34	9.00	9.00	0.00
7,485.40	38.75	360.00	7,263.00	-1,269.85	343.82	-1,235.69	9.00	9.00	0.00
Nio B									
7,500.00	40.07	360.00	7,274.28	-1,260.59	343.82	-1,226.45	9.00	9.00	0.00
7,562.41	45.68	360.00	7,320.00	-1,218.14	343.82	-1,184.16	9.00	9.00	0.00
Nio C									
7,600.00	49.07	360.00	7,345.45	-1,190.48	343.82	-1,156.61	9.00	9.00	0.00
7,700.00	58.07	360.00	7,404.78	-1,110.11	343.82	-1,076.54	9.00	9.00	0.00
7,800.00	67.07	360.00	7,450.80	-1,021.45	343.82	-988.20	9.00	9.00	0.00
7,854.93	72.01	360.00	7,470.00	-970.00	343.82	-936.94	9.00	9.00	0.00
Fort Hayes									
7,900.00	76.07	360.00	7,482.39	-926.68	343.82	-893.78	9.00	9.00	0.00
7,946.91	80.29	360.00	7,492.00	-880.77	343.82	-848.04	9.00	9.00	0.00
Codell									
8,000.00	85.07	360.00	7,498.76	-828.13	343.82	-795.59	9.00	9.00	0.00

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Site:	1N-66W-13 AZUL 14-13HZ PAD	North Reference:	True
Well:	AZUL 13-17HZ	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)	
8,058.04	90.29	360.00	7,501.12	-770.16	343.82	-737.83	9.00	9.00	0.00	
Top of Production - AZUL 13-17HZ_PHL										
8,100.00	90.29	360.00	7,500.90	-728.20	343.82	-696.03	0.00	0.00	0.00	
8,200.00	90.29	360.00	7,500.40	-628.20	343.82	-596.40	0.00	0.00	0.00	
8,300.00	90.29	360.00	7,499.89	-528.20	343.82	-496.77	0.00	0.00	0.00	
8,400.00	90.29	360.00	7,499.38	-428.20	343.82	-397.14	0.00	0.00	0.00	
8,500.00	90.29	360.00	7,498.88	-328.20	343.82	-297.51	0.00	0.00	0.00	
8,600.00	90.29	360.00	7,498.37	-228.21	343.82	-197.88	0.00	0.00	0.00	
8,700.00	90.29	360.00	7,497.87	-128.21	343.82	-98.25	0.00	0.00	0.00	
8,800.00	90.29	360.00	7,497.36	-28.21	343.82	1.38	0.00	0.00	0.00	
8,900.00	90.29	360.00	7,496.85	71.79	343.82	101.01	0.00	0.00	0.00	
9,000.00	90.29	360.00	7,496.35	171.79	343.82	200.64	0.00	0.00	0.00	
9,100.00	90.29	360.00	7,495.84	271.79	343.82	300.27	0.00	0.00	0.00	
9,200.00	90.29	360.00	7,495.34	371.79	343.82	399.90	0.00	0.00	0.00	
9,300.00	90.29	360.00	7,494.83	471.78	343.82	499.53	0.00	0.00	0.00	
9,400.00	90.29	360.00	7,494.32	571.78	343.82	599.16	0.00	0.00	0.00	
9,500.00	90.29	360.00	7,493.82	671.78	343.82	698.79	0.00	0.00	0.00	
9,600.00	90.29	360.00	7,493.31	771.78	343.82	798.42	0.00	0.00	0.00	
9,700.00	90.29	360.00	7,492.80	871.78	343.82	898.05	0.00	0.00	0.00	
9,800.00	90.29	360.00	7,492.30	971.78	343.82	997.68	0.00	0.00	0.00	
9,900.00	90.29	360.00	7,491.79	1,071.78	343.82	1,097.32	0.00	0.00	0.00	
10,000.00	90.29	360.00	7,491.29	1,171.78	343.82	1,196.95	0.00	0.00	0.00	
10,100.00	90.29	360.00	7,490.78	1,271.77	343.82	1,296.58	0.00	0.00	0.00	
10,200.00	90.29	360.00	7,490.27	1,371.77	343.82	1,396.21	0.00	0.00	0.00	
10,300.00	90.29	360.00	7,489.77	1,471.77	343.82	1,495.84	0.00	0.00	0.00	
10,400.00	90.29	360.00	7,489.26	1,571.77	343.82	1,595.47	0.00	0.00	0.00	
10,500.00	90.29	360.00	7,488.76	1,671.77	343.82	1,695.10	0.00	0.00	0.00	
10,600.00	90.29	360.00	7,488.25	1,771.77	343.82	1,794.73	0.00	0.00	0.00	
10,700.00	90.29	360.00	7,487.74	1,871.77	343.82	1,894.36	0.00	0.00	0.00	
10,800.00	90.29	360.00	7,487.24	1,971.77	343.82	1,993.99	0.00	0.00	0.00	
10,900.00	90.29	360.00	7,486.73	2,071.76	343.82	2,093.62	0.00	0.00	0.00	
11,000.00	90.29	360.00	7,486.22	2,171.76	343.82	2,193.25	0.00	0.00	0.00	
11,100.00	90.29	360.00	7,485.72	2,271.76	343.82	2,292.88	0.00	0.00	0.00	
11,200.00	90.29	360.00	7,485.21	2,371.76	343.82	2,392.51	0.00	0.00	0.00	
11,300.00	90.29	360.00	7,484.71	2,471.76	343.82	2,492.14	0.00	0.00	0.00	
11,400.00	90.29	360.00	7,484.20	2,571.76	343.82	2,591.77	0.00	0.00	0.00	
11,500.00	90.29	360.00	7,483.69	2,671.76	343.82	2,691.40	0.00	0.00	0.00	
11,600.00	90.29	360.00	7,483.19	2,771.76	343.82	2,791.03	0.00	0.00	0.00	
11,700.00	90.29	360.00	7,482.68	2,871.75	343.82	2,890.66	0.00	0.00	0.00	
11,800.00	90.29	360.00	7,482.18	2,971.75	343.82	2,990.29	0.00	0.00	0.00	
11,900.00	90.29	360.00	7,481.67	3,071.75	343.82	3,089.92	0.00	0.00	0.00	
12,000.00	90.29	360.00	7,481.16	3,171.75	343.82	3,189.55	0.00	0.00	0.00	
12,100.00	90.29	360.00	7,480.66	3,271.75	343.82	3,289.18	0.00	0.00	0.00	
12,200.00	90.29	360.00	7,480.15	3,371.75	343.82	3,388.81	0.00	0.00	0.00	
12,300.00	90.29	360.00	7,479.64	3,471.75	343.82	3,488.44	0.00	0.00	0.00	
12,400.00	90.29	360.00	7,479.14	3,571.75	343.82	3,588.07	0.00	0.00	0.00	
12,500.00	90.29	360.00	7,478.63	3,671.74	343.82	3,687.70	0.00	0.00	0.00	
12,600.00	90.29	360.00	7,478.13	3,771.74	343.82	3,787.33	0.00	0.00	0.00	
12,700.00	90.29	360.00	7,477.62	3,871.74	343.82	3,886.96	0.00	0.00	0.00	
12,800.00	90.29	360.00	7,477.11	3,971.74	343.82	3,986.59	0.00	0.00	0.00	
12,822.47	90.29	360.00	7,477.00	3,994.21	343.82	4,008.98	0.00	0.00	0.00	
AZUL 13-17HZ_PBHL										

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-17HZ
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 13-17HZ	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 13-17HZ_PBHL	0.00	0.00	7,477.00	3,994.21	343.82	14,547,703.00	1,717,251.00	40.057261	-104.725413
- plan hits target center									
- Point									
AZUL 13-17HZ_PHL	0.00	0.00	7,501.12	-770.16	343.82	14,542,938.65	1,717,265.62	40.044177	-104.725413
- plan hits target center									
- Point									

Casing Points					
	Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
	1,839.86	1,800.00	9 5/8"	9-5/8	13-1/2
	8,058.04	7,501.12	Top of Production	5-1/2	7-7/8

Formations						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,631.05	1,599.00	Fox Hills			
	4,374.55	4,240.00	Parkman			
	4,752.68	4,604.00	Sussex			
	7,298.20	7,102.00	Sharon Springs			
	7,326.49	7,128.00	Niobrara			
	7,485.40	7,263.00	Nio B			
	7,562.41	7,320.00	Nio C			
	7,854.93	7,470.00	Fort Hayes			
	7,946.91	7,492.00	Codell			