

US ROCKIES WATTENBERG PLANNING

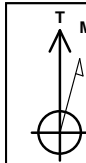
**WELD-NAD83-UTMFT13N
1N-66W-13 AZUL 14-13HZ PAD
AZUL 13-15HZ**

Plan A

Plan: Permit Rev-1

Standard Planning Report

07 June, 2017



Azimuths to True North
Magnetic North: 8.01°

Magnetic Field
Strength: 52319.3snT
Dip Angle: 66.56°
Date: 6/5/2017
Model: IGRF2010

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

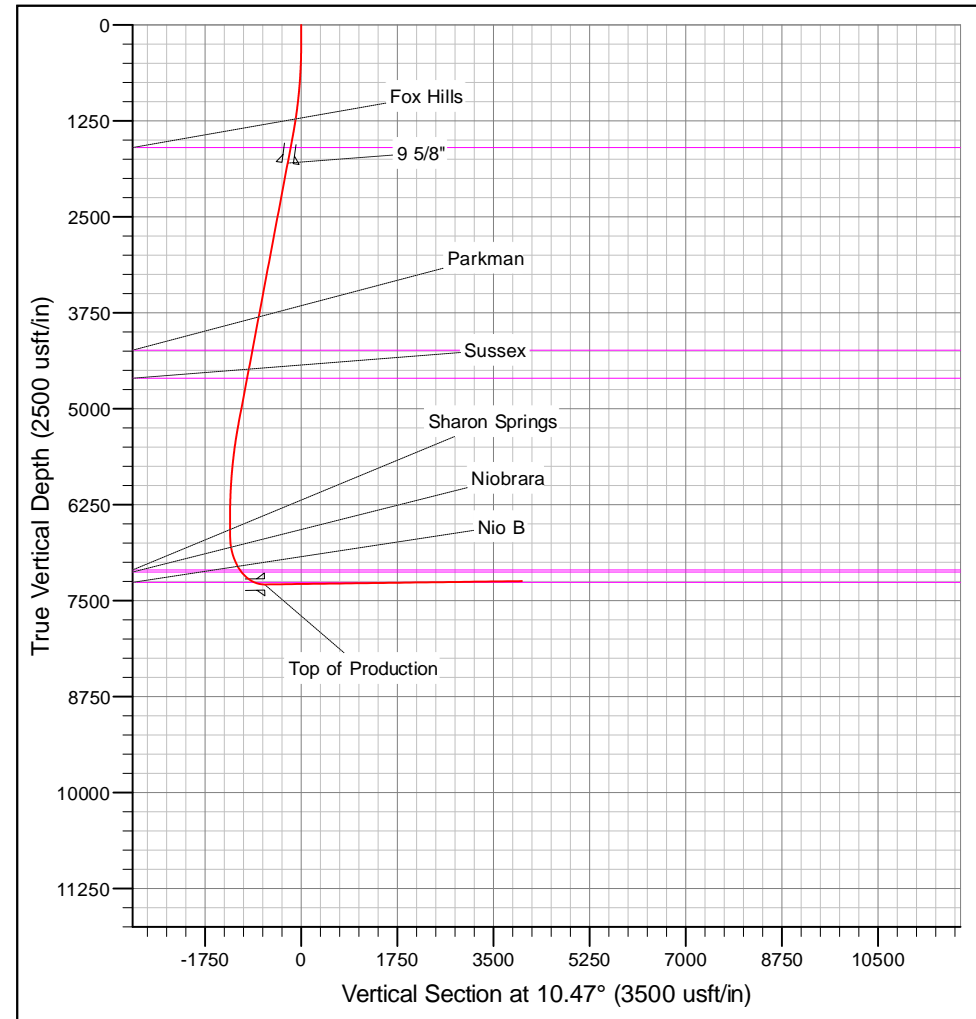
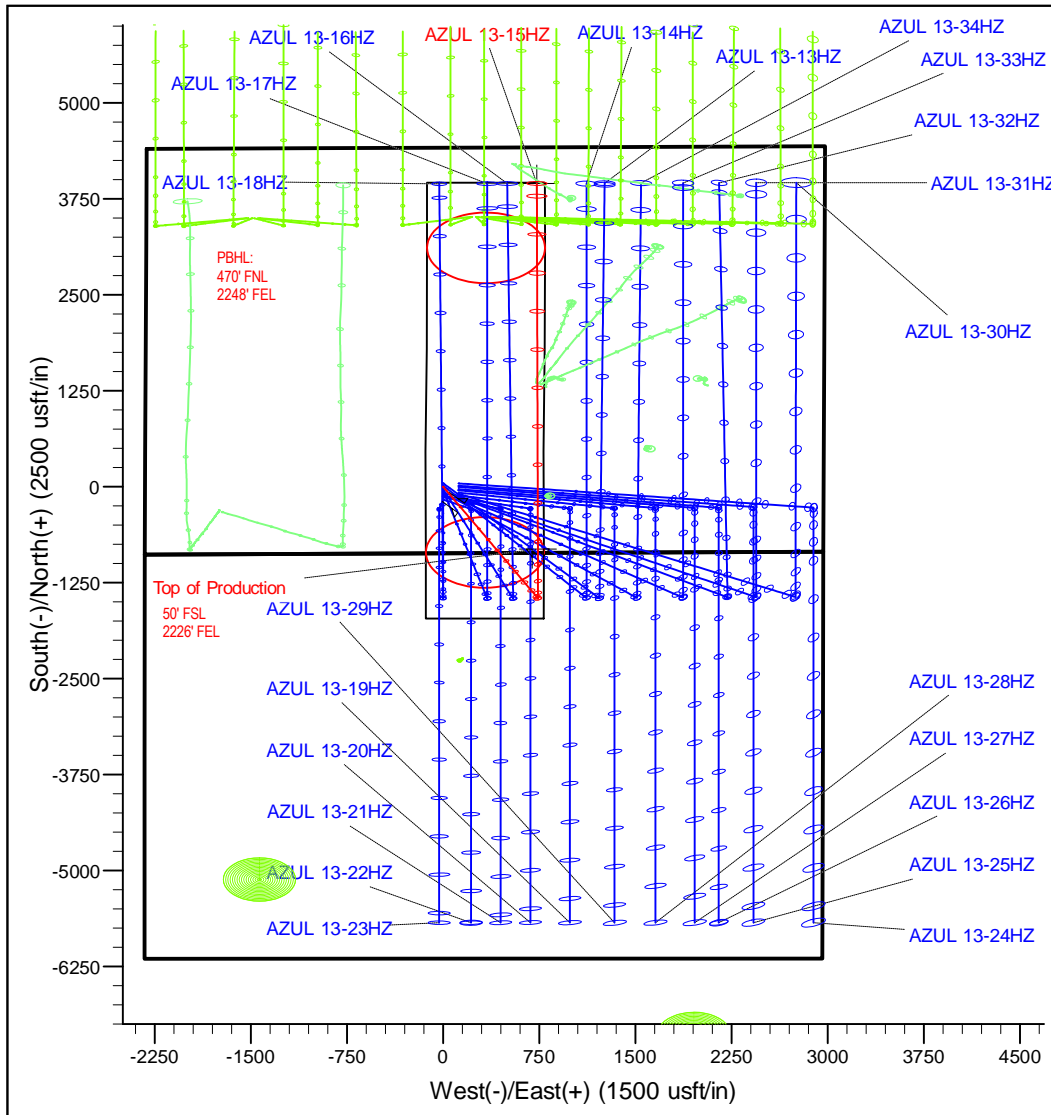
Well: AZUL 13-15HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1599.00	1627.66	Fox Hills
4240.00	4410.29	Parkman
4604.00	4793.81	Sussex
7102.00	7393.55	Sharon Springs
7128.00	7431.31	Niobrara
7264.00	7712.61	Nio B

WELL DETAILS: AZUL 13-15HZ					
		GL: 5051.00	RKB @ 5068.00usft (D Rig)		
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	14543752.91	1716919.58	40.046416	-104.726640

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
AZUL 13-15HZ_PBHL	7247.00	3951.42	730.55	14547706.55	1717638.00	40.057267	-104.724029

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
1473.93	18.36	153.02	1453.09	-173.26	88.19	1.50	-154.34
5418.52	18.36	153.02	5196.91	-1280.49	651.81	0.08	-140.65
6642.44	0.00	0.00	6400.00	-1453.75	740.00	1.50	294.99
6896.08	0.00	0.00	6653.63	-1453.75	740.00	0.00	294.99
7901.86	90.52	359.90	7290.23	-811.35	738.88	9.00	-663.50
12664.83	90.52	359.90	7247.00	3951.42	730.55	0.00	018.38



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-15HZ
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 13-15HZ	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 13-15HZ			
Well Position	+N/-S	-44.79 usft	Northing:	14,543,752.90 usft
	+E/-W	-0.56 usft	Easting:	1,716,919.58 usft
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	52,319.28852124

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	10.47

Plan Survey Tool Program	Date	6/7/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	12,664.83	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	
1,473.93	18.36	153.02	1,453.09	-173.26	88.19	1.50	1.50	0.00	153.02	
5,418.52	18.36	153.02	5,196.91	-1,280.49	651.81	0.00	0.00	0.00	0.00	
6,642.44	0.00	0.00	6,400.00	-1,453.75	740.00	1.50	-1.50	0.00	180.00	
6,896.08	0.00	0.00	6,653.63	-1,453.75	740.00	0.00	0.00	0.00	0.00	
7,901.86	90.52	359.90	7,290.23	-811.35	738.88	9.00	9.00	0.00	359.90	
12,664.83	90.52	359.90	7,247.00	3,951.42	730.55	0.00	0.00	0.00	0.00	AZUL 13-15HZ_PBI

Corporate Planning Report

Database: PLANNING
Company: US ROCKIES WATTENBERG PLANNING
Project: WELD-NAD83-UTMFT13N
Site: 1N-66W-13 AZUL 14-13HZ PAD
Well: AZUL 13-15HZ
Wellbore: Plan A
Design: Permit Rev-1

Local Co-ordinate Reference: Well AZUL 13-15HZ
TVD Reference: RKB @ 5068.00usft (D Rig)
MD Reference: RKB @ 5068.00usft (D Rig)
North Reference: True
Survey Calculation Method: Minimum Curvature

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	153.02	300.00	-0.29	0.15	-0.26	1.50	1.50	0.00
400.00	2.25	153.02	399.96	-2.62	1.34	-2.34	1.50	1.50	0.00
500.00	3.75	153.02	499.82	-7.29	3.71	-6.49	1.50	1.50	0.00
600.00	5.25	153.02	599.51	-14.28	7.27	-12.72	1.50	1.50	0.00
700.00	6.75	153.02	698.96	-23.60	12.01	-21.02	1.50	1.50	0.00
800.00	8.25	153.02	798.10	-35.23	17.93	-31.38	1.50	1.50	0.00
900.00	9.75	153.02	896.87	-49.17	25.03	-43.80	1.50	1.50	0.00
1,000.00	11.25	153.02	995.19	-65.41	33.29	-58.27	1.50	1.50	0.00
1,100.00	12.75	153.02	1,093.00	-83.94	42.73	-74.77	1.50	1.50	0.00
1,200.00	14.25	153.02	1,190.24	-104.74	53.32	-93.30	1.50	1.50	0.00
1,300.00	15.75	153.02	1,286.83	-127.81	65.06	-113.85	1.50	1.50	0.00
1,400.00	17.25	153.02	1,382.71	-153.12	77.94	-136.39	1.50	1.50	0.00
1,473.93	18.36	153.02	1,453.09	-173.26	88.19	-154.34	1.50	1.50	0.00
1,500.00	18.36	153.02	1,477.84	-180.58	91.92	-160.86	0.00	0.00	0.00
1,600.00	18.36	153.02	1,572.75	-208.65	106.21	-185.86	0.00	0.00	0.00
1,627.66	18.36	153.02	1,599.00	-216.41	110.16	-192.78	0.00	0.00	0.00
Fox Hills									
1,700.00	18.36	153.02	1,667.66	-236.72	120.50	-210.87	0.00	0.00	0.00
1,800.00	18.36	153.02	1,762.57	-264.79	134.78	-235.87	0.00	0.00	0.00
1,839.44	18.36	153.02	1,800.00	-275.86	140.42	-245.73	0.00	0.00	0.00
9 5/8"									
1,900.00	18.36	153.02	1,857.48	-292.86	149.07	-260.87	0.00	0.00	0.00
2,000.00	18.36	153.02	1,952.39	-320.93	163.36	-285.88	0.00	0.00	0.00
2,100.00	18.36	153.02	2,047.30	-349.00	177.65	-310.88	0.00	0.00	0.00
2,200.00	18.36	153.02	2,142.21	-377.07	191.94	-335.89	0.00	0.00	0.00
2,300.00	18.36	153.02	2,237.12	-405.14	206.23	-360.89	0.00	0.00	0.00
2,400.00	18.36	153.02	2,332.03	-433.20	220.51	-385.90	0.00	0.00	0.00
2,500.00	18.36	153.02	2,426.94	-461.27	234.80	-410.90	0.00	0.00	0.00
2,600.00	18.36	153.02	2,521.85	-489.34	249.09	-435.90	0.00	0.00	0.00
2,700.00	18.36	153.02	2,616.76	-517.41	263.38	-460.91	0.00	0.00	0.00
2,800.00	18.36	153.02	2,711.67	-545.48	277.67	-485.91	0.00	0.00	0.00
2,900.00	18.36	153.02	2,806.58	-573.55	291.95	-510.92	0.00	0.00	0.00
3,000.00	18.36	153.02	2,901.49	-601.62	306.24	-535.92	0.00	0.00	0.00
3,100.00	18.36	153.02	2,996.40	-629.69	320.53	-560.92	0.00	0.00	0.00
3,200.00	18.36	153.02	3,091.31	-657.76	334.82	-585.93	0.00	0.00	0.00
3,300.00	18.36	153.02	3,186.22	-685.83	349.11	-610.93	0.00	0.00	0.00
3,400.00	18.36	153.02	3,281.13	-713.90	363.40	-635.94	0.00	0.00	0.00
3,500.00	18.36	153.02	3,376.04	-741.97	377.68	-660.94	0.00	0.00	0.00
3,600.00	18.36	153.02	3,470.95	-770.04	391.97	-685.95	0.00	0.00	0.00
3,700.00	18.36	153.02	3,565.86	-798.11	406.26	-710.95	0.00	0.00	0.00
3,800.00	18.36	153.02	3,660.77	-826.18	420.55	-735.95	0.00	0.00	0.00
3,900.00	18.36	153.02	3,755.68	-854.25	434.84	-760.96	0.00	0.00	0.00
4,000.00	18.36	153.02	3,850.59	-882.32	449.12	-785.96	0.00	0.00	0.00
4,100.00	18.36	153.02	3,945.50	-910.39	463.41	-810.97	0.00	0.00	0.00
4,200.00	18.36	153.02	4,040.41	-938.46	477.70	-835.97	0.00	0.00	0.00
4,300.00	18.36	153.02	4,135.32	-966.53	491.99	-860.98	0.00	0.00	0.00
4,400.00	18.36	153.02	4,230.23	-994.60	506.28	-885.98	0.00	0.00	0.00
4,410.29	18.36	153.02	4,240.00	-997.49	507.75	-888.55	0.00	0.00	0.00
Parkman									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-15HZ
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 13-15HZ	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	18.36	153.02	4,325.14	-1,022.67	520.57	-910.98	0.00	0.00	0.00
4,600.00	18.36	153.02	4,420.05	-1,050.74	534.85	-935.99	0.00	0.00	0.00
4,700.00	18.36	153.02	4,514.96	-1,078.81	549.14	-960.99	0.00	0.00	0.00
4,793.81	18.36	153.02	4,604.00	-1,105.14	562.55	-984.45	0.00	0.00	0.00
Sussex									
4,800.00	18.36	153.02	4,609.87	-1,106.87	563.43	-986.00	0.00	0.00	0.00
4,900.00	18.36	153.02	4,704.78	-1,134.94	577.72	-1,011.00	0.00	0.00	0.00
5,000.00	18.36	153.02	4,799.69	-1,163.01	592.01	-1,036.00	0.00	0.00	0.00
5,100.00	18.36	153.02	4,894.60	-1,191.08	606.30	-1,061.01	0.00	0.00	0.00
5,200.00	18.36	153.02	4,989.51	-1,219.15	620.58	-1,086.01	0.00	0.00	0.00
5,300.00	18.36	153.02	5,084.42	-1,247.22	634.87	-1,111.02	0.00	0.00	0.00
5,400.00	18.36	153.02	5,179.33	-1,275.29	649.16	-1,136.02	0.00	0.00	0.00
5,418.52	18.36	153.02	5,196.91	-1,280.49	651.81	-1,140.65	0.00	0.00	0.00
5,500.00	17.14	153.02	5,274.51	-1,302.62	663.07	-1,160.37	1.50	-1.50	0.00
5,600.00	15.64	153.02	5,370.45	-1,327.77	675.87	-1,182.76	1.50	-1.50	0.00
5,700.00	14.14	153.02	5,467.09	-1,350.66	687.52	-1,203.16	1.50	-1.50	0.00
5,800.00	12.64	153.02	5,564.37	-1,371.29	698.03	-1,221.54	1.50	-1.50	0.00
5,900.00	11.14	153.02	5,662.22	-1,389.65	707.37	-1,237.89	1.50	-1.50	0.00
6,000.00	9.64	153.02	5,760.58	-1,405.72	715.55	-1,252.20	1.50	-1.50	0.00
6,100.00	8.14	153.02	5,859.38	-1,419.48	722.56	-1,264.46	1.50	-1.50	0.00
6,200.00	6.64	153.02	5,958.54	-1,430.94	728.39	-1,274.67	1.50	-1.50	0.00
6,300.00	5.14	153.02	6,058.01	-1,440.08	733.04	-1,282.81	1.50	-1.50	0.00
6,400.00	3.64	153.02	6,157.72	-1,446.90	736.51	-1,288.88	1.50	-1.50	0.00
6,500.00	2.14	153.02	6,257.59	-1,451.38	738.80	-1,292.88	1.50	-1.50	0.00
6,600.00	0.64	153.02	6,357.56	-1,453.54	739.89	-1,294.80	1.50	-1.50	0.00
6,642.44	0.00	0.00	6,400.00	-1,453.75	740.00	-1,294.99	1.50	-1.50	0.00
6,700.00	0.00	0.00	6,457.56	-1,453.75	740.00	-1,294.99	0.00	0.00	0.00
6,800.00	0.00	0.00	6,557.56	-1,453.75	740.00	-1,294.99	0.00	0.00	0.00
6,896.08	0.00	0.00	6,653.63	-1,453.75	740.00	-1,294.99	0.00	0.00	0.00
6,900.00	0.35	359.90	6,657.56	-1,453.74	740.00	-1,294.98	9.00	9.00	0.00
7,000.00	9.35	359.90	6,757.09	-1,445.29	739.99	-1,286.67	9.00	9.00	0.00
7,100.00	18.35	359.90	6,854.09	-1,421.37	739.94	-1,263.16	9.00	9.00	0.00
7,200.00	27.35	359.90	6,946.14	-1,382.57	739.88	-1,225.02	9.00	9.00	0.00
7,300.00	36.35	359.90	7,031.00	-1,329.85	739.78	-1,173.20	9.00	9.00	0.00
7,393.55	44.77	359.90	7,102.00	-1,269.07	739.68	-1,113.45	9.00	9.00	0.00
Sharon Springs									
7,400.00	45.35	359.90	7,106.56	-1,264.51	739.67	-1,108.96	9.00	9.00	0.00
7,431.31	48.17	359.90	7,128.00	-1,241.70	739.63	-1,086.54	9.00	9.00	0.00
Niobrara									
7,500.00	54.35	359.90	7,170.97	-1,188.15	739.54	-1,033.90	9.00	9.00	0.00
7,600.00	63.35	359.90	7,222.64	-1,102.65	739.39	-949.85	9.00	9.00	0.00
7,700.00	72.35	359.90	7,260.30	-1,010.12	739.22	-858.90	9.00	9.00	0.00
7,712.61	73.49	359.90	7,264.00	-998.07	739.20	-847.04	9.00	9.00	0.00
Nio B									
7,800.00	81.35	359.90	7,283.02	-912.84	739.05	-763.27	9.00	9.00	0.00
7,900.00	90.35	359.90	7,290.24	-813.21	738.88	-665.33	9.00	9.00	0.00
7,901.86	90.52	359.90	7,290.23	-811.35	738.88	-663.50	8.98	8.98	0.00
Top of Production - AZUL 13-15HZ_PHL									
8,000.00	90.52	359.90	7,289.34	-713.21	738.71	-567.03	0.00	0.00	0.00
8,100.00	90.52	359.90	7,288.43	-613.22	738.53	-468.73	0.00	0.00	0.00
8,200.00	90.52	359.90	7,287.52	-513.22	738.36	-370.43	0.00	0.00	0.00
8,300.00	90.52	359.90	7,286.61	-413.23	738.18	-272.14	0.00	0.00	0.00
8,400.00	90.52	359.90	7,285.71	-313.23	738.01	-173.84	0.00	0.00	0.00
8,500.00	90.52	359.90	7,284.80	-213.23	737.83	-75.54	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-15HZ
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 13-15HZ	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)
8,600.00	90.52	359.90	7,283.89	-113.24	737.66	22.76	0.00	0.00	0.00
8,700.00	90.52	359.90	7,282.98	-13.24	737.48	121.05	0.00	0.00	0.00
8,800.00	90.52	359.90	7,282.08	86.75	737.31	219.35	0.00	0.00	0.00
8,900.00	90.52	359.90	7,281.17	186.75	737.13	317.65	0.00	0.00	0.00
9,000.00	90.52	359.90	7,280.26	286.74	736.96	415.95	0.00	0.00	0.00
9,100.00	90.52	359.90	7,279.35	386.74	736.78	514.24	0.00	0.00	0.00
9,200.00	90.52	359.90	7,278.45	486.74	736.61	612.54	0.00	0.00	0.00
9,300.00	90.52	359.90	7,277.54	586.73	736.43	710.84	0.00	0.00	0.00
9,400.00	90.52	359.90	7,276.63	686.73	736.26	809.14	0.00	0.00	0.00
9,500.00	90.52	359.90	7,275.72	786.72	736.08	907.43	0.00	0.00	0.00
9,600.00	90.52	359.90	7,274.82	886.72	735.91	1,005.73	0.00	0.00	0.00
9,700.00	90.52	359.90	7,273.91	986.71	735.73	1,104.03	0.00	0.00	0.00
9,800.00	90.52	359.90	7,273.00	1,086.71	735.56	1,202.33	0.00	0.00	0.00
9,900.00	90.52	359.90	7,272.09	1,186.71	735.38	1,300.62	0.00	0.00	0.00
10,000.00	90.52	359.90	7,271.19	1,286.70	735.21	1,398.92	0.00	0.00	0.00
10,100.00	90.52	359.90	7,270.28	1,386.70	735.03	1,497.22	0.00	0.00	0.00
10,200.00	90.52	359.90	7,269.37	1,486.69	734.86	1,595.52	0.00	0.00	0.00
10,300.00	90.52	359.90	7,268.46	1,586.69	734.68	1,693.81	0.00	0.00	0.00
10,400.00	90.52	359.90	7,267.55	1,686.68	734.51	1,792.11	0.00	0.00	0.00
10,500.00	90.52	359.90	7,266.65	1,786.68	734.33	1,890.41	0.00	0.00	0.00
10,600.00	90.52	359.90	7,265.74	1,886.68	734.16	1,988.71	0.00	0.00	0.00
10,700.00	90.52	359.90	7,264.83	1,986.67	733.99	2,087.00	0.00	0.00	0.00
10,800.00	90.52	359.90	7,263.92	2,086.67	733.81	2,185.30	0.00	0.00	0.00
10,900.00	90.52	359.90	7,263.02	2,186.66	733.64	2,283.60	0.00	0.00	0.00
11,000.00	90.52	359.90	7,262.11	2,286.66	733.46	2,381.90	0.00	0.00	0.00
11,100.00	90.52	359.90	7,261.20	2,386.65	733.29	2,480.19	0.00	0.00	0.00
11,200.00	90.52	359.90	7,260.29	2,486.65	733.11	2,578.49	0.00	0.00	0.00
11,300.00	90.52	359.90	7,259.39	2,586.65	732.94	2,676.79	0.00	0.00	0.00
11,400.00	90.52	359.90	7,258.48	2,686.64	732.76	2,775.09	0.00	0.00	0.00
11,500.00	90.52	359.90	7,257.57	2,786.64	732.59	2,873.38	0.00	0.00	0.00
11,600.00	90.52	359.90	7,256.66	2,886.63	732.41	2,971.68	0.00	0.00	0.00
11,700.00	90.52	359.90	7,255.76	2,986.63	732.24	3,069.98	0.00	0.00	0.00
11,800.00	90.52	359.90	7,254.85	3,086.62	732.06	3,168.28	0.00	0.00	0.00
11,900.00	90.52	359.90	7,253.94	3,186.62	731.89	3,266.57	0.00	0.00	0.00
12,000.00	90.52	359.90	7,253.03	3,286.62	731.71	3,364.87	0.00	0.00	0.00
12,100.00	90.52	359.90	7,252.13	3,386.61	731.54	3,463.17	0.00	0.00	0.00
12,200.00	90.52	359.90	7,251.22	3,486.61	731.36	3,561.47	0.00	0.00	0.00
12,300.00	90.52	359.90	7,250.31	3,586.60	731.19	3,659.76	0.00	0.00	0.00
12,400.00	90.52	359.90	7,249.40	3,686.60	731.01	3,758.06	0.00	0.00	0.00
12,500.00	90.52	359.90	7,248.50	3,786.59	730.84	3,856.36	0.00	0.00	0.00
12,600.00	90.52	359.90	7,247.59	3,886.59	730.66	3,954.66	0.00	0.00	0.00
12,664.83	90.52	359.90	7,247.00	3,951.42	730.55	4,018.38	0.00	0.00	0.00
AZUL 13-15HZ_PBHL									

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well AZUL 13-15HZ
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 13-15HZ	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 13-15HZ_PBHL	0.00	0.00	7,247.00	3,951.42	730.55	14,547,706.54	1,717,638.00	40.057267	-104.724029
- plan hits target center									
- Point									
AZUL 13-15HZ_PHL	0.00	0.00	7,290.23	-811.35	738.88	14,542,943.82	1,717,660.95	40.044188	-104.724000
- plan hits target center									
- Point									

Casing Points					
	Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
	1,839.44	1,800.00	9 5/8"	9-5/8	13-1/2
	7,901.86	7,290.23	Top of Production	5-1/2	7-7/8

Formations						
	Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
	1,627.66	1,599.00	Fox Hills			
	4,410.29	4,240.00	Parkman			
	4,793.81	4,604.00	Sussex			
	7,393.55	7,102.00	Sharon Springs			
	7,431.31	7,128.00	Niobrara			
	7,712.61	7,264.00	Nio B			