

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
3N-65W-29 RW 35-29HZ Pad
RW 13N-32HZ**

Plan A

Plan: Permit Rev-1

Standard Planning Report

11 January, 2017



Azimuths to True North
Magnetic North: 8.06°

Magnetic Field
Strength: 52443.6snT
Dip Angle: 66.70°
Date: 1/4/2017
Model: IGRF2010

SITE: 3N-65W-29 RW 35-29HZ Pad

Well: RW 13N-32HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1220.00	1230.60	Fox Hills Mkr
3940.00	4030.60	Parkman
4633.00	4743.98	Sussex
6904.00	7081.22	Sharon Springs
6971.00	7180.68	Niobrara
7020.00	7268.42	Nio B
7091.00	7466.11	Nio C

WELL DETAILS: RW 13N-32HZ

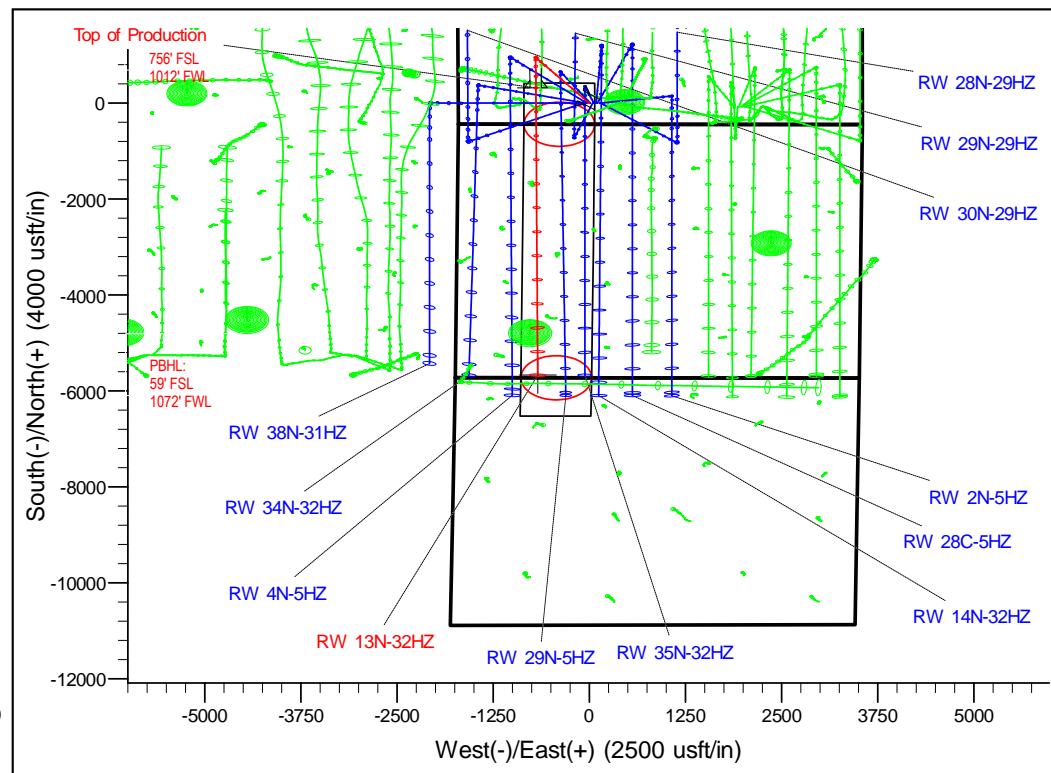
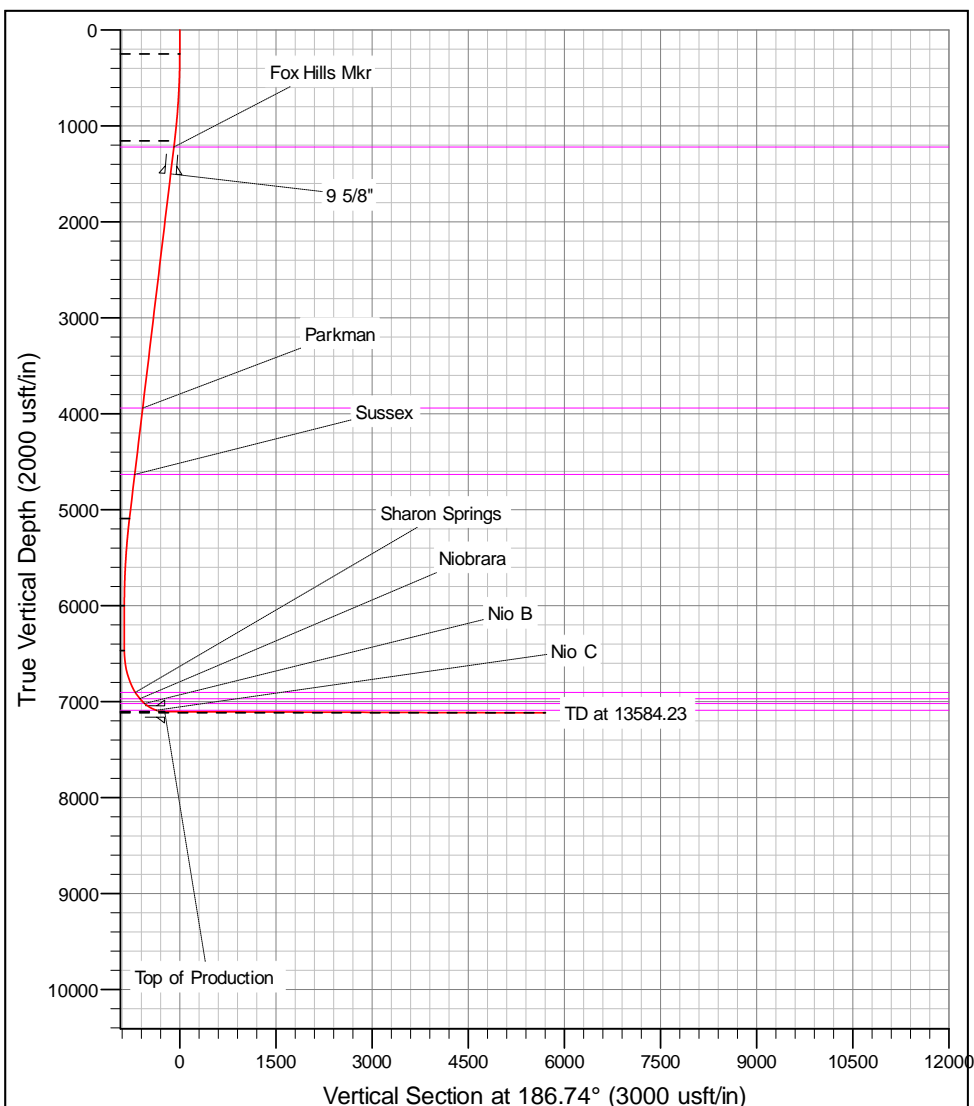
+N/-S	+E/-W	GL: 4885.00	RKB @ 4902.00usft (D Rig)	Longitude	Slot
0.00	0.00	Northings 14596214.21	Easting 1726816.39	Latitude 40.190391	

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
1165.26	13.73	323.86	1156.53	88.13	-64.36	1.50	-79.96
5217.99	13.73	323.86	5093.47	864.87	-631.64	0.00	-784.71
6133.26	0.00	0.00	6000.00	953.00	-696.00	1.50	-864.67
6602.11	0.00	0.00	6468.85	953.00	-696.00	0.00	-864.67
7600.77	89.88	179.77	7105.47	317.72	-693.50	9.00	-234.08
13584.23	89.88	179.77	7118.00	-5665.68	-670.00	0.00	5705.16

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northings	Easting	Latitude	Longitude
RW 13-32HZ_PBHL	7118.00	-5665.68	-670.00	14590546.23	1726166.14	40.174833	-104.693024



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RW 13N-32HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4902.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4902.00usft (D Rig)
Site:	3N-65W-29 RW 35-29HZ Pad	North Reference:	True
Well:	RW 13N-32HZ	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						3N-65W-29 RW 35-29HZ Pad											
Site Position:						Northing:			14,596,214.62 usft			Latitude:			40.190393		
From:			Lat/Long			Easting:			1,726,726.18 usft			Longitude:			-104.690948		
Position Uncertainty:			0.00 usft			Slot Radius:			13-3/16 "			Grid Convergence:			0.20 °		

Well	RW 13N-32HZ					
Well Position	+N/-S	-0.73 usft	Northing:	14,596,214.20 usft	Latitude:	40.190391
	+E/-W	90.21 usft	Easting:	1,726,816.39 usft	Longitude:	-104.690625
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,885.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/4/2017	8.06	66.70	52,443.64643366

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	186.74

Plan Survey Tool Program	Date	1/11/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	13,584.23	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	
1,165.26	13.73	323.86	1,156.53	88.13	-64.36	1.50	1.50	0.00	323.86	
5,217.99	13.73	323.86	5,093.47	864.87	-631.64	0.00	0.00	0.00	0.00	
6,133.26	0.00	0.00	6,000.00	953.00	-696.00	1.50	-1.50	0.00	180.00	
6,602.11	0.00	0.00	6,468.85	953.00	-696.00	0.00	0.00	0.00	0.00	
7,600.77	89.88	179.77	7,105.47	317.72	-693.50	9.00	9.00	0.00	179.77	
13,584.23	89.88	179.77	7,118.00	-5,665.68	-670.00	0.00	0.00	0.00	0.00	RW 13-32HZ_PBHI

Corporate Planning Report

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Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4902.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4902.00usft (D Rig)
Site:	3N-65W-29 RW 35-29HZ Pad	North Reference:	True
Well:	RW 13N-32HZ	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	323.86	300.00	0.26	-0.19	-0.24	1.50	1.50	0.00
400.00	2.25	323.86	399.96	2.38	-1.74	-2.16	1.50	1.50	0.00
500.00	3.75	323.86	499.82	6.60	-4.82	-5.99	1.50	1.50	0.00
600.00	5.25	323.86	599.51	12.94	-9.45	-11.74	1.50	1.50	0.00
700.00	6.75	323.86	698.96	21.38	-15.62	-19.40	1.50	1.50	0.00
800.00	8.25	323.86	798.10	31.92	-23.31	-28.96	1.50	1.50	0.00
900.00	9.75	323.86	896.87	44.55	-32.54	-40.42	1.50	1.50	0.00
1,000.00	11.25	323.86	995.19	59.27	-43.29	-53.78	1.50	1.50	0.00
1,100.00	12.75	323.86	1,093.00	76.06	-55.55	-69.01	1.50	1.50	0.00
1,165.26	13.73	323.86	1,156.53	88.13	-64.36	-79.96	1.50	1.50	0.00
1,200.00	13.73	323.86	1,190.27	94.79	-69.23	-86.00	0.00	0.00	0.00
1,230.60	13.73	323.86	1,220.00	100.65	-73.51	-91.32	0.00	0.00	0.00
Fox Hills Mkr									
1,300.00	13.73	323.86	1,287.42	113.95	-83.22	-103.39	0.00	0.00	0.00
1,400.00	13.73	323.86	1,384.56	133.12	-97.22	-120.78	0.00	0.00	0.00
1,500.00	13.73	323.86	1,481.70	152.29	-111.22	-138.17	0.00	0.00	0.00
1,518.84	13.73	323.86	1,500.00	155.90	-113.85	-141.45	0.00	0.00	0.00
9 5/8"									
1,600.00	13.73	323.86	1,578.85	171.45	-125.22	-155.56	0.00	0.00	0.00
1,700.00	13.73	323.86	1,675.99	190.62	-139.21	-172.95	0.00	0.00	0.00
1,800.00	13.73	323.86	1,773.13	209.78	-153.21	-190.34	0.00	0.00	0.00
1,900.00	13.73	323.86	1,870.27	228.95	-167.21	-207.73	0.00	0.00	0.00
2,000.00	13.73	323.86	1,967.42	248.11	-181.20	-225.12	0.00	0.00	0.00
2,100.00	13.73	323.86	2,064.56	267.28	-195.20	-242.51	0.00	0.00	0.00
2,200.00	13.73	323.86	2,161.70	286.45	-209.20	-259.90	0.00	0.00	0.00
2,300.00	13.73	323.86	2,258.85	305.61	-223.20	-277.29	0.00	0.00	0.00
2,400.00	13.73	323.86	2,355.99	324.78	-237.19	-294.68	0.00	0.00	0.00
2,500.00	13.73	323.86	2,453.13	343.94	-251.19	-312.06	0.00	0.00	0.00
2,600.00	13.73	323.86	2,550.28	363.11	-265.19	-329.45	0.00	0.00	0.00
2,700.00	13.73	323.86	2,647.42	382.28	-279.19	-346.84	0.00	0.00	0.00
2,800.00	13.73	323.86	2,744.56	401.44	-293.18	-364.23	0.00	0.00	0.00
2,900.00	13.73	323.86	2,841.70	420.61	-307.18	-381.62	0.00	0.00	0.00
3,000.00	13.73	323.86	2,938.85	439.77	-321.18	-399.01	0.00	0.00	0.00
3,100.00	13.73	323.86	3,035.99	458.94	-335.17	-416.40	0.00	0.00	0.00
3,200.00	13.73	323.86	3,133.13	478.10	-349.17	-433.79	0.00	0.00	0.00
3,300.00	13.73	323.86	3,230.28	497.27	-363.17	-451.18	0.00	0.00	0.00
3,400.00	13.73	323.86	3,327.42	516.44	-377.17	-468.57	0.00	0.00	0.00
3,500.00	13.73	323.86	3,424.56	535.60	-391.16	-485.96	0.00	0.00	0.00
3,600.00	13.73	323.86	3,521.70	554.77	-405.16	-503.35	0.00	0.00	0.00
3,700.00	13.73	323.86	3,618.85	573.93	-419.16	-520.74	0.00	0.00	0.00
3,800.00	13.73	323.86	3,715.99	593.10	-433.16	-538.13	0.00	0.00	0.00
3,900.00	13.73	323.86	3,813.13	612.27	-447.15	-555.52	0.00	0.00	0.00
4,000.00	13.73	323.86	3,910.28	631.43	-461.15	-572.91	0.00	0.00	0.00
4,030.60	13.73	323.86	3,940.00	637.30	-465.43	-578.23	0.00	0.00	0.00
Parkman									
4,100.00	13.73	323.86	4,007.42	650.60	-475.15	-590.29	0.00	0.00	0.00
4,200.00	13.73	323.86	4,104.56	669.76	-489.14	-607.68	0.00	0.00	0.00
4,300.00	13.73	323.86	4,201.71	688.93	-503.14	-625.07	0.00	0.00	0.00
4,400.00	13.73	323.86	4,298.85	708.09	-517.14	-642.46	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RW 13N-32HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4902.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4902.00usft (D Rig)
Site:	3N-65W-29 RW 35-29HZ Pad	North Reference:	True
Well:	RW 13N-32HZ	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	13.73	323.86	4,395.99	727.26	-531.14	-659.85	0.00	0.00	0.00
4,600.00	13.73	323.86	4,493.13	746.43	-545.13	-677.24	0.00	0.00	0.00
4,700.00	13.73	323.86	4,590.28	765.59	-559.13	-694.63	0.00	0.00	0.00
4,743.98	13.73	323.86	4,633.00	774.02	-565.29	-702.28	0.00	0.00	0.00
Sussex									
4,800.00	13.73	323.86	4,687.42	784.76	-573.13	-712.02	0.00	0.00	0.00
4,900.00	13.73	323.86	4,784.56	803.92	-587.13	-729.41	0.00	0.00	0.00
5,000.00	13.73	323.86	4,881.71	823.09	-601.12	-746.80	0.00	0.00	0.00
5,100.00	13.73	323.86	4,978.85	842.25	-615.12	-764.19	0.00	0.00	0.00
5,200.00	13.73	323.86	5,075.99	861.42	-629.12	-781.58	0.00	0.00	0.00
5,217.99	13.73	323.86	5,093.47	864.87	-631.64	-784.71	0.00	0.00	0.00
5,300.00	12.50	323.86	5,173.34	879.89	-642.61	-798.34	1.50	-1.50	0.00
5,400.00	11.00	323.86	5,271.24	896.34	-654.62	-813.26	1.50	-1.50	0.00
5,500.00	9.50	323.86	5,369.64	910.71	-665.11	-826.30	1.50	-1.50	0.00
5,600.00	8.00	323.86	5,468.47	922.99	-674.08	-837.44	1.50	-1.50	0.00
5,700.00	6.50	323.86	5,567.67	933.18	-681.52	-846.68	1.50	-1.50	0.00
5,800.00	5.00	323.86	5,667.17	941.27	-687.43	-854.02	1.50	-1.50	0.00
5,900.00	3.50	323.86	5,766.89	947.25	-691.80	-859.45	1.50	-1.50	0.00
6,000.00	2.00	323.86	5,866.77	951.12	-694.63	-862.97	1.50	-1.50	0.00
6,100.00	0.50	323.86	5,966.74	952.88	-695.91	-864.56	1.50	-1.50	0.00
6,133.26	0.00	0.00	6,000.00	953.00	-696.00	-864.67	1.50	-1.50	0.00
6,200.00	0.00	0.00	6,066.74	953.00	-696.00	-864.67	0.00	0.00	0.00
6,300.00	0.00	0.00	6,166.74	953.00	-696.00	-864.67	0.00	0.00	0.00
6,400.00	0.00	0.00	6,266.74	953.00	-696.00	-864.67	0.00	0.00	0.00
6,500.00	0.00	0.00	6,366.74	953.00	-696.00	-864.67	0.00	0.00	0.00
6,600.00	0.00	0.00	6,466.74	953.00	-696.00	-864.67	0.00	0.00	0.00
6,602.11	0.00	0.00	6,468.85	953.00	-696.00	-864.67	0.00	0.00	0.00
6,700.00	8.81	179.77	6,566.36	945.49	-695.97	-857.21	9.00	9.00	0.00
6,800.00	17.81	179.77	6,663.57	922.49	-695.88	-834.38	9.00	9.00	0.00
6,900.00	26.81	179.77	6,755.99	884.57	-695.73	-796.74	9.00	9.00	0.00
7,000.00	35.81	179.77	6,841.34	832.65	-695.53	-745.21	9.00	9.00	0.00
7,081.22	43.12	179.77	6,904.00	781.06	-695.32	-694.00	9.00	9.00	0.00
Sharon Springs									
7,100.00	44.81	179.77	6,917.52	768.03	-695.27	-681.06	9.00	9.00	0.00
7,180.68	52.07	179.77	6,971.00	707.70	-695.04	-621.18	9.00	9.00	0.00
Niobrara									
7,200.00	53.81	179.77	6,982.65	692.28	-694.98	-605.87	9.00	9.00	0.00
7,268.42	59.97	179.77	7,020.00	635.00	-694.75	-549.02	9.00	9.00	0.00
Nio B									
7,300.00	62.81	179.77	7,035.12	607.28	-694.64	-521.50	9.00	9.00	0.00
7,400.00	71.81	179.77	7,073.66	515.11	-694.28	-430.01	9.00	9.00	0.00
7,466.12	77.76	179.77	7,091.00	451.34	-694.03	-366.72	9.00	9.00	0.00
Nio C									
7,500.00	80.81	179.77	7,097.30	418.05	-693.90	-333.67	9.00	9.00	0.00
7,600.00	89.81	179.77	7,105.47	318.49	-693.51	-234.84	9.00	9.00	0.00
7,600.77	89.88	179.77	7,105.47	317.72	-693.50	-234.08	9.00	9.00	0.00
Top of Production - RW 13N-32HZ_PHL									
7,700.00	89.88	179.77	7,105.68	218.49	-693.11	-135.58	0.00	0.00	0.00
7,800.00	89.88	179.77	7,105.89	118.49	-692.72	-36.32	0.00	0.00	0.00
7,900.00	89.88	179.77	7,106.10	18.49	-692.33	62.94	0.00	0.00	0.00
8,000.00	89.88	179.77	7,106.30	-81.50	-691.94	162.20	0.00	0.00	0.00
8,100.00	89.88	179.77	7,106.51	-181.50	-691.54	261.46	0.00	0.00	0.00
8,200.00	89.88	179.77	7,106.72	-281.50	-691.15	360.72	0.00	0.00	0.00

Corporate Planning Report

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Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4902.00usft (D Rig)
Site:	3N-65W-29 RW 35-29HZ Pad	North Reference:	True
Well:	RW 13N-32HZ	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)
8,300.00	89.88	179.77	7,106.93	-381.50	-690.76	459.98	0.00	0.00	0.00
8,400.00	89.88	179.77	7,107.14	-481.50	-690.36	559.24	0.00	0.00	0.00
8,500.00	89.88	179.77	7,107.35	-581.50	-689.97	658.50	0.00	0.00	0.00
8,600.00	89.88	179.77	7,107.56	-681.50	-689.58	757.77	0.00	0.00	0.00
8,700.00	89.88	179.77	7,107.77	-781.50	-689.19	857.03	0.00	0.00	0.00
8,800.00	89.88	179.77	7,107.98	-881.50	-688.79	956.29	0.00	0.00	0.00
8,900.00	89.88	179.77	7,108.19	-981.50	-688.40	1,055.55	0.00	0.00	0.00
9,000.00	89.88	179.77	7,108.40	-1,081.50	-688.01	1,154.81	0.00	0.00	0.00
9,100.00	89.88	179.77	7,108.61	-1,181.49	-687.62	1,254.07	0.00	0.00	0.00
9,200.00	89.88	179.77	7,108.82	-1,281.49	-687.22	1,353.33	0.00	0.00	0.00
9,300.00	89.88	179.77	7,109.03	-1,381.49	-686.83	1,452.59	0.00	0.00	0.00
9,400.00	89.88	179.77	7,109.24	-1,481.49	-686.44	1,551.85	0.00	0.00	0.00
9,500.00	89.88	179.77	7,109.45	-1,581.49	-686.04	1,651.11	0.00	0.00	0.00
9,600.00	89.88	179.77	7,109.66	-1,681.49	-685.65	1,750.37	0.00	0.00	0.00
9,700.00	89.88	179.77	7,109.87	-1,781.49	-685.26	1,849.64	0.00	0.00	0.00
9,800.00	89.88	179.77	7,110.07	-1,881.49	-684.87	1,948.90	0.00	0.00	0.00
9,900.00	89.88	179.77	7,110.28	-1,981.49	-684.47	2,048.16	0.00	0.00	0.00
10,000.00	89.88	179.77	7,110.49	-2,081.49	-684.08	2,147.42	0.00	0.00	0.00
10,100.00	89.88	179.77	7,110.70	-2,181.48	-683.69	2,246.68	0.00	0.00	0.00
10,200.00	89.88	179.77	7,110.91	-2,281.48	-683.29	2,345.94	0.00	0.00	0.00
10,300.00	89.88	179.77	7,111.12	-2,381.48	-682.90	2,445.20	0.00	0.00	0.00
10,400.00	89.88	179.77	7,111.33	-2,481.48	-682.51	2,544.46	0.00	0.00	0.00
10,500.00	89.88	179.77	7,111.54	-2,581.48	-682.12	2,643.72	0.00	0.00	0.00
10,600.00	89.88	179.77	7,111.75	-2,681.48	-681.72	2,742.98	0.00	0.00	0.00
10,700.00	89.88	179.77	7,111.96	-2,781.48	-681.33	2,842.24	0.00	0.00	0.00
10,800.00	89.88	179.77	7,112.17	-2,881.48	-680.94	2,941.51	0.00	0.00	0.00
10,900.00	89.88	179.77	7,112.38	-2,981.48	-680.54	3,040.77	0.00	0.00	0.00
11,000.00	89.88	179.77	7,112.59	-3,081.48	-680.15	3,140.03	0.00	0.00	0.00
11,100.00	89.88	179.77	7,112.80	-3,181.47	-679.76	3,239.29	0.00	0.00	0.00
11,200.00	89.88	179.77	7,113.01	-3,281.47	-679.37	3,338.55	0.00	0.00	0.00
11,300.00	89.88	179.77	7,113.22	-3,381.47	-678.97	3,437.81	0.00	0.00	0.00
11,400.00	89.88	179.77	7,113.43	-3,481.47	-678.58	3,537.07	0.00	0.00	0.00
11,500.00	89.88	179.77	7,113.63	-3,581.47	-678.19	3,636.33	0.00	0.00	0.00
11,600.00	89.88	179.77	7,113.84	-3,681.47	-677.79	3,735.59	0.00	0.00	0.00
11,700.00	89.88	179.77	7,114.05	-3,781.47	-677.40	3,834.85	0.00	0.00	0.00
11,800.00	89.88	179.77	7,114.26	-3,881.47	-677.01	3,934.11	0.00	0.00	0.00
11,900.00	89.88	179.77	7,114.47	-3,981.47	-676.62	4,033.38	0.00	0.00	0.00
12,000.00	89.88	179.77	7,114.68	-4,081.47	-676.22	4,132.64	0.00	0.00	0.00
12,100.00	89.88	179.77	7,114.89	-4,181.46	-675.83	4,231.90	0.00	0.00	0.00
12,200.00	89.88	179.77	7,115.10	-4,281.46	-675.44	4,331.16	0.00	0.00	0.00
12,300.00	89.88	179.77	7,115.31	-4,381.46	-675.04	4,430.42	0.00	0.00	0.00
12,400.00	89.88	179.77	7,115.52	-4,481.46	-674.65	4,529.68	0.00	0.00	0.00
12,500.00	89.88	179.77	7,115.73	-4,581.46	-674.26	4,628.94	0.00	0.00	0.00
12,600.00	89.88	179.77	7,115.94	-4,681.46	-673.87	4,728.20	0.00	0.00	0.00
12,700.00	89.88	179.77	7,116.15	-4,781.46	-673.47	4,827.46	0.00	0.00	0.00
12,800.00	89.88	179.77	7,116.36	-4,881.46	-673.08	4,926.72	0.00	0.00	0.00
12,900.00	89.88	179.77	7,116.57	-4,981.46	-672.69	5,025.98	0.00	0.00	0.00
13,000.00	89.88	179.77	7,116.78	-5,081.46	-672.30	5,125.25	0.00	0.00	0.00
13,100.00	89.88	179.77	7,116.99	-5,181.45	-671.90	5,224.51	0.00	0.00	0.00
13,200.00	89.88	179.77	7,117.20	-5,281.45	-671.51	5,323.77	0.00	0.00	0.00
13,300.00	89.88	179.77	7,117.40	-5,381.45	-671.12	5,423.03	0.00	0.00	0.00
13,400.00	89.88	179.77	7,117.61	-5,481.45	-670.72	5,522.29	0.00	0.00	0.00
13,500.00	89.88	179.77	7,117.82	-5,581.45	-670.33	5,621.55	0.00	0.00	0.00
13,584.23	89.88	179.77	7,118.00	-5,665.68	-670.00	5,705.16	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RW 13N-32HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB @ 4902.00usft (D Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB @ 4902.00usft (D Rig)
Site:	3N-65W-29 RW 35-29HZ Pad	North Reference:	True
Well:	RW 13N-32HZ	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)
RW 13-32HZ_PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
RW 13N-32HZ_PHL	0.00	0.00	7,105.47	317.72	-693.50	14,596,529.50	1,726,121.78	40.191264	-104.693109
- plan hits target center									
- Point									
RW 13-32HZ_PBHL	0.00	0.00	7,118.00	-5,665.68	-670.00	14,590,546.22	1,726,166.14	40.174833	-104.693024
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,518.84	1,500.00	9 5/8"	9-5/8	13-1/2	
7,600.77	7,105.47	Top of Production	5-1/2	8-1/2	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,230.60	1,220.00	Fox Hills Mkr				
4,030.60	3,940.00	Parkman				
4,743.98	4,633.00	Sussex				
7,081.22	6,904.00	Sharon Springs				
7,180.68	6,971.00	Niobrara				
7,268.42	7,020.00	Nio B				
7,466.12	7,091.00	Nio C				