

US ROCKIES WATTENBERG PLANNING

**WELD-NAD83-UTMFT13N
3N-65W-29 RW 35-29HZ Pad
RW 4N-5HZ**

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 4N-5HZ
Wellbore: Plan A
Design: Permit Rev-1

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1220.00	1230.74	Fox Hills Mkr
3940.00	4069.34	Parkman
4633.00	4792.71	Sussex
6943.00	7216.60	Sharon Springs
7010.00	7352.63	Niobrara
7057.00	7528.87	Nio B

WELL DETAILS: RW 4N-5HZ

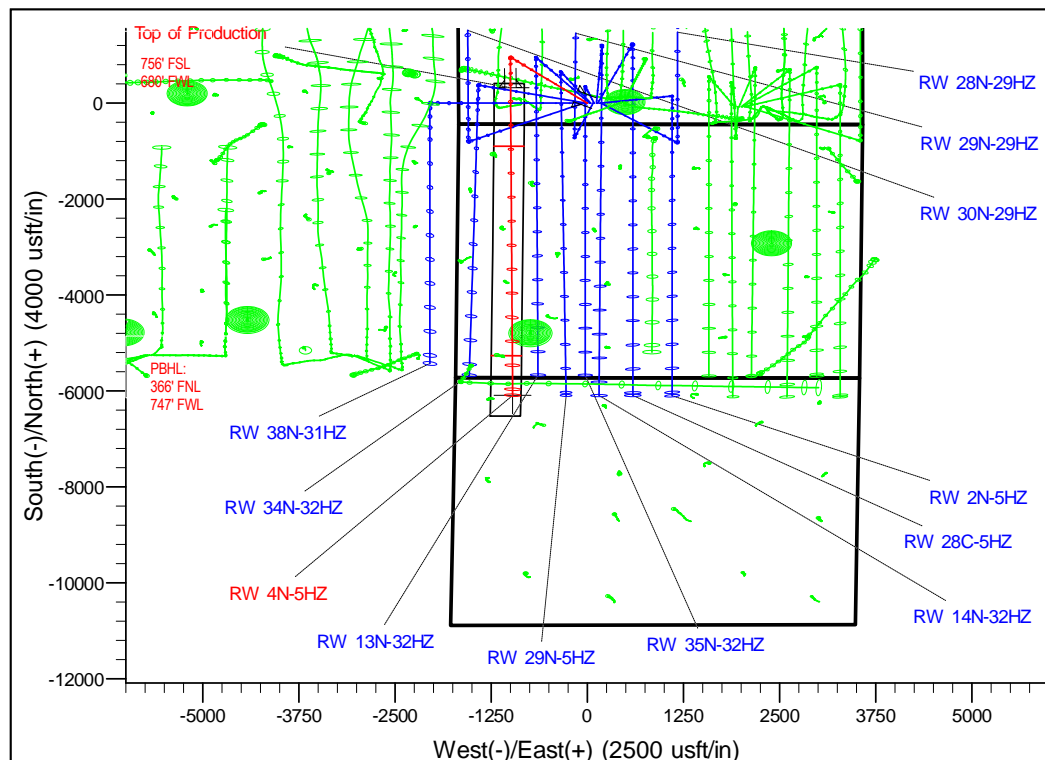
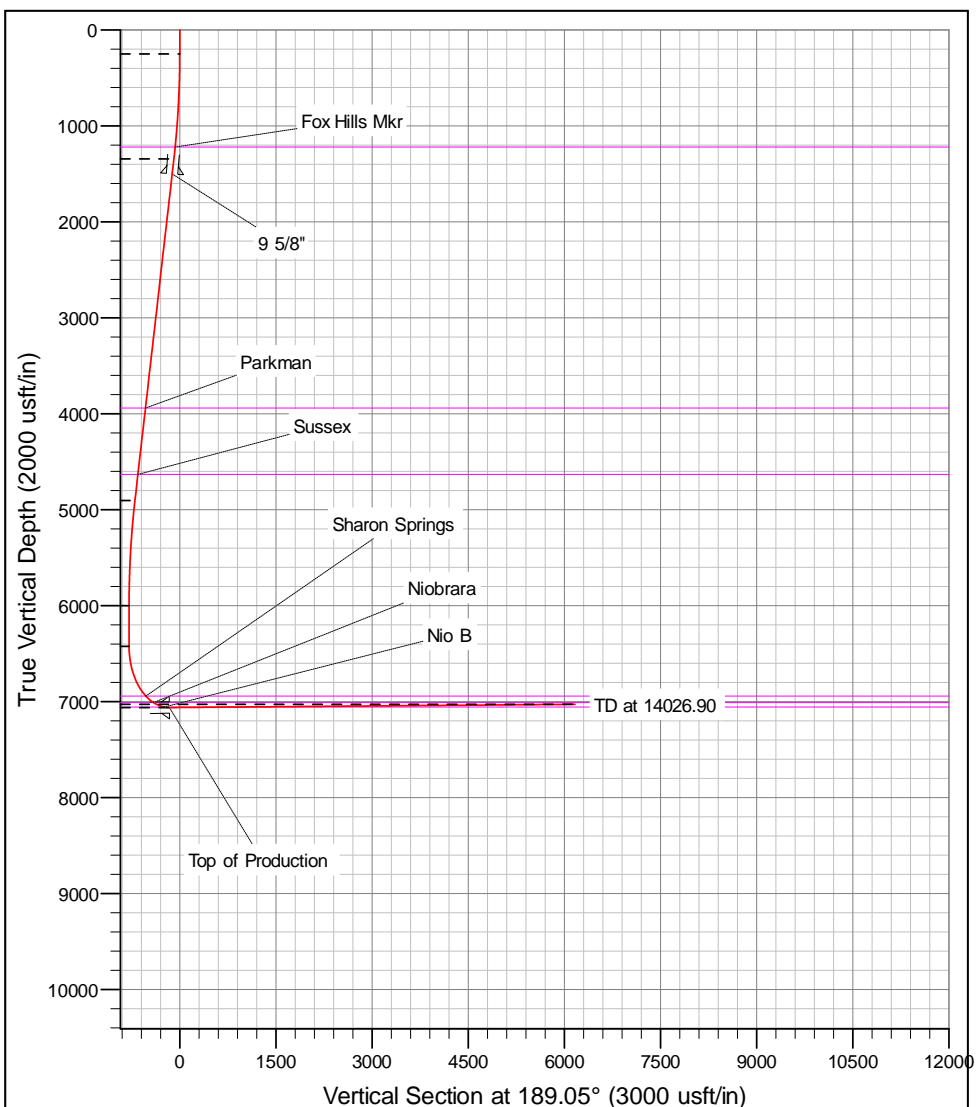
+N/-S	+E/-W	GL: 4885.00	RKB @ 4902.00usft (D Rig)	Longitude	Slot
0.00	0.00	Northing 14596214.10	Easting 1726786.23	Latitude 40.190391	

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
1360.91	16.66	313.83	1345.31	111.09	-115.72	1.50	-91.50
5076.31	16.66	313.83	4904.69	848.91	-884.28	0.00	-699.26
6187.22	0.00	0.00	6000.00	960.00	-1000.00	1.50	-790.76
6613.17	0.00	0.00	6425.95	960.00	-1000.00	0.00	-790.76
7616.51	90.30	179.76	7062.56	320.05	-997.28	9.00	-159.21
14026.90	90.30	179.76	7029.00	-6090.19	-970.00	0.00	6166.96

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RW 4-5HZ_PBHL	7029.00	-6090.19	-970.00	14590120.57	1725837.45	40.173667	-104.694205



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RW 4N-5HZ
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 4N-5HZ	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 4N-5HZ					
Well Position	+N/-S	-0.73 usft	Northing:	14,596,214.10 usft	Latitude:	40.190391
	+E/-W	60.04 usft	Easting:	1,726,786.23 usft	Longitude:	-104.690733
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	52,443.63544953

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	189.05

Plan Survey Tool Program	Date	1/11/2017		
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	14,026.83	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	
1,360.91	16.66	313.83	1,345.31	111.09	-115.72	1.50	1.50	0.00	313.83	
5,076.31	16.66	313.83	4,904.69	848.91	-884.28	0.00	0.00	0.00	0.00	
6,187.22	0.00	0.00	6,000.00	960.00	-1,000.00	1.50	-1.50	0.00	180.00	
6,613.17	0.00	0.00	6,425.95	960.00	-1,000.00	0.00	0.00	0.00	0.00	
7,616.51	90.30	179.76	7,062.56	320.05	-997.28	9.00	9.00	0.00	179.76	
14,026.90	90.30	179.76	7,029.00	-6,090.19	-970.00	0.00	0.00	0.00	0.00	RW 4-5HZ_PBHL

Corporate Planning Report

Database: PLANNING
Company: US ROCKIES WATTENBERG PLANNING
Project: WELD-NAD83-UTMFT13N
Site: 3N-65W-29 RW 35-29HZ Pad
Well: RW 4N-5HZ
Wellbore: Plan A
Design: Permit Rev-1

Local Co-ordinate Reference: Well RW 4N-5HZ
TVD Reference: RKB @ 4902.00usft (D Rig)
MD Reference: RKB @ 4902.00usft (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	313.83	300.00	0.23	-0.24	-0.19	1.50	1.50	0.00
400.00	2.25	313.83	399.96	2.04	-2.12	-1.68	1.50	1.50	0.00
500.00	3.75	313.83	499.82	5.66	-5.90	-4.67	1.50	1.50	0.00
600.00	5.25	313.83	599.51	11.10	-11.56	-9.14	1.50	1.50	0.00
700.00	6.75	313.83	698.96	18.34	-19.10	-15.10	1.50	1.50	0.00
800.00	8.25	313.83	798.10	27.37	-28.52	-22.55	1.50	1.50	0.00
900.00	9.75	313.83	896.87	38.21	-39.80	-31.47	1.50	1.50	0.00
1,000.00	11.25	313.83	995.19	50.83	-52.95	-41.87	1.50	1.50	0.00
1,100.00	12.75	313.83	1,093.00	65.23	-67.94	-53.73	1.50	1.50	0.00
1,200.00	14.25	313.83	1,190.24	81.39	-84.78	-67.04	1.50	1.50	0.00
1,230.74	14.71	313.83	1,220.00	86.72	-90.33	-71.43	1.50	1.50	0.00
Fox Hills Mkr									
1,300.00	15.75	313.83	1,286.83	99.32	-103.45	-81.81	1.50	1.50	0.00
1,360.91	16.66	313.83	1,345.31	111.09	-115.72	-91.50	1.50	1.50	0.00
1,400.00	16.66	313.83	1,382.76	118.85	-123.80	-97.90	0.00	0.00	0.00
1,500.00	16.66	313.83	1,478.56	138.71	-144.49	-114.26	0.00	0.00	0.00
1,522.38	16.66	313.83	1,500.00	143.15	-149.12	-117.92	0.00	0.00	0.00
9 5/8"									
1,600.00	16.66	313.83	1,574.36	158.57	-165.18	-130.61	0.00	0.00	0.00
1,700.00	16.66	313.83	1,670.16	178.43	-185.86	-146.97	0.00	0.00	0.00
1,800.00	16.66	313.83	1,765.97	198.29	-206.55	-163.33	0.00	0.00	0.00
1,900.00	16.66	313.83	1,861.77	218.14	-227.23	-179.69	0.00	0.00	0.00
2,000.00	16.66	313.83	1,957.57	238.00	-247.92	-196.05	0.00	0.00	0.00
2,100.00	16.66	313.83	2,053.37	257.86	-268.61	-212.40	0.00	0.00	0.00
2,200.00	16.66	313.83	2,149.17	277.72	-289.29	-228.76	0.00	0.00	0.00
2,300.00	16.66	313.83	2,244.97	297.58	-309.98	-245.12	0.00	0.00	0.00
2,400.00	16.66	313.83	2,340.77	317.44	-330.66	-261.48	0.00	0.00	0.00
2,500.00	16.66	313.83	2,436.57	337.30	-351.35	-277.83	0.00	0.00	0.00
2,600.00	16.66	313.83	2,532.37	357.15	-372.04	-294.19	0.00	0.00	0.00
2,700.00	16.66	313.83	2,628.17	377.01	-392.72	-310.55	0.00	0.00	0.00
2,800.00	16.66	313.83	2,723.97	396.87	-413.41	-326.91	0.00	0.00	0.00
2,900.00	16.66	313.83	2,819.77	416.73	-434.09	-343.26	0.00	0.00	0.00
3,000.00	16.66	313.83	2,915.57	436.59	-454.78	-359.62	0.00	0.00	0.00
3,100.00	16.66	313.83	3,011.37	456.45	-475.46	-375.98	0.00	0.00	0.00
3,200.00	16.66	313.83	3,107.17	476.30	-496.15	-392.34	0.00	0.00	0.00
3,300.00	16.66	313.83	3,202.97	496.16	-516.84	-408.69	0.00	0.00	0.00
3,400.00	16.66	313.83	3,298.77	516.02	-537.52	-425.05	0.00	0.00	0.00
3,500.00	16.66	313.83	3,394.57	535.88	-558.21	-441.41	0.00	0.00	0.00
3,600.00	16.66	313.83	3,490.37	555.74	-578.89	-457.77	0.00	0.00	0.00
3,700.00	16.66	313.83	3,586.17	575.60	-599.58	-474.12	0.00	0.00	0.00
3,800.00	16.66	313.83	3,681.98	595.46	-620.27	-490.48	0.00	0.00	0.00
3,900.00	16.66	313.83	3,777.78	615.31	-640.95	-506.84	0.00	0.00	0.00
4,000.00	16.66	313.83	3,873.58	635.17	-661.64	-523.20	0.00	0.00	0.00
4,069.34	16.66	313.83	3,940.00	648.94	-675.98	-534.54	0.00	0.00	0.00
Parkman									
4,100.00	16.66	313.83	3,969.38	655.03	-682.32	-539.55	0.00	0.00	0.00
4,200.00	16.66	313.83	4,065.18	674.89	-703.01	-555.91	0.00	0.00	0.00
4,300.00	16.66	313.83	4,160.98	694.75	-723.70	-572.27	0.00	0.00	0.00
4,400.00	16.66	313.83	4,256.78	714.61	-744.38	-588.63	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RW 4N-5HZ
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 4N-5HZ	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	16.66	313.83	4,352.58	734.46	-765.07	-604.98	0.00	0.00	0.00
4,600.00	16.66	313.83	4,448.38	754.32	-785.75	-621.34	0.00	0.00	0.00
4,700.00	16.66	313.83	4,544.18	774.18	-806.44	-637.70	0.00	0.00	0.00
4,792.71	16.66	313.83	4,633.00	792.59	-825.62	-652.87	0.00	0.00	0.00
Sussex									
4,800.00	16.66	313.83	4,639.98	794.04	-827.12	-654.06	0.00	0.00	0.00
4,900.00	16.66	313.83	4,735.78	813.90	-847.81	-670.42	0.00	0.00	0.00
5,000.00	16.66	313.83	4,831.58	833.76	-868.50	-686.77	0.00	0.00	0.00
5,076.31	16.66	313.83	4,904.69	848.91	-884.28	-699.26	0.00	0.00	0.00
5,100.00	16.31	313.83	4,927.40	853.57	-889.13	-703.09	1.50	-1.50	0.00
5,200.00	14.81	313.83	5,023.74	872.14	-908.48	-718.39	1.50	-1.50	0.00
5,300.00	13.31	313.83	5,120.74	888.96	-926.00	-732.25	1.50	-1.50	0.00
5,400.00	11.81	313.83	5,218.34	904.02	-941.69	-744.65	1.50	-1.50	0.00
5,500.00	10.31	313.83	5,316.48	917.30	-955.52	-755.59	1.50	-1.50	0.00
5,600.00	8.81	313.83	5,415.09	928.80	-967.50	-765.06	1.50	-1.50	0.00
5,700.00	7.31	313.83	5,514.10	938.51	-977.61	-773.06	1.50	-1.50	0.00
5,800.00	5.81	313.83	5,613.44	946.42	-985.85	-779.57	1.50	-1.50	0.00
5,900.00	4.31	313.83	5,713.05	952.53	-992.21	-784.60	1.50	-1.50	0.00
6,000.00	2.81	313.83	5,812.86	956.82	-996.69	-788.14	1.50	-1.50	0.00
6,100.00	1.31	313.83	5,912.79	959.31	-999.28	-790.19	1.50	-1.50	0.00
6,187.22	0.00	0.00	6,000.00	960.00	-1,000.00	-790.76	1.50	-1.50	0.00
6,200.00	0.00	0.00	6,012.78	960.00	-1,000.00	-790.76	0.00	0.00	0.00
6,300.00	0.00	0.00	6,112.78	960.00	-1,000.00	-790.76	0.00	0.00	0.00
6,400.00	0.00	0.00	6,212.78	960.00	-1,000.00	-790.76	0.00	0.00	0.00
6,500.00	0.00	0.00	6,312.78	960.00	-1,000.00	-790.76	0.00	0.00	0.00
6,600.00	0.00	0.00	6,412.78	960.00	-1,000.00	-790.76	0.00	0.00	0.00
6,613.17	0.00	0.00	6,425.95	960.00	-1,000.00	-790.76	0.00	0.00	0.00
6,700.00	7.81	179.76	6,512.51	954.09	-999.97	-784.93	9.00	9.00	0.00
6,800.00	16.81	179.76	6,610.11	932.78	-999.88	-763.90	9.00	9.00	0.00
6,900.00	25.81	179.76	6,703.18	896.47	-999.73	-728.07	9.00	9.00	0.00
7,000.00	34.81	179.76	6,789.41	846.05	-999.52	-678.30	9.00	9.00	0.00
7,100.00	43.81	179.76	6,866.70	782.76	-999.25	-615.84	9.00	9.00	0.00
7,200.00	52.81	179.76	6,933.14	708.15	-998.93	-542.22	9.00	9.00	0.00
7,216.60	54.31	179.76	6,943.00	694.80	-998.87	-529.03	9.00	9.00	0.00
Sharon Springs									
7,300.00	61.81	179.76	6,987.09	624.08	-998.57	-459.24	9.00	9.00	0.00
7,352.63	66.55	179.76	7,010.00	576.71	-998.37	-412.50	9.00	9.00	0.00
Niobrara									
7,400.00	70.81	179.76	7,027.22	532.59	-998.18	-368.96	9.00	9.00	0.00
7,500.00	79.81	179.76	7,052.54	435.96	-997.77	-273.60	9.00	9.00	0.00
7,528.87	82.41	179.76	7,057.00	407.44	-997.65	-245.45	9.00	9.00	0.00
Nio B									
7,600.00	88.81	179.76	7,062.44	336.56	-997.35	-175.49	9.00	9.00	0.00
7,616.51	90.30	179.76	7,062.56	320.05	-997.28	-159.20	9.00	9.00	0.00
Top of Production - RW 4N-5HZ_PHL									
7,700.00	90.30	179.76	7,062.13	236.56	-996.92	-76.81	0.00	0.00	0.00
7,800.00	90.30	179.76	7,061.60	136.56	-996.50	21.88	0.00	0.00	0.00
7,900.00	90.30	179.76	7,061.08	36.56	-996.07	120.56	0.00	0.00	0.00
8,000.00	90.30	179.76	7,060.56	-63.43	-995.65	219.25	0.00	0.00	0.00
8,100.00	90.30	179.76	7,060.03	-163.43	-995.22	317.93	0.00	0.00	0.00
8,200.00	90.30	179.76	7,059.51	-263.43	-994.79	416.62	0.00	0.00	0.00
8,300.00	90.30	179.76	7,058.99	-363.43	-994.37	515.31	0.00	0.00	0.00
8,400.00	90.30	179.76	7,058.46	-463.42	-993.94	613.99	0.00	0.00	0.00
8,500.00	90.30	179.76	7,057.94	-563.42	-993.52	712.68	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RW 4N-5HZ
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 4N-5HZ	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	90.30	179.76	7,057.42	-663.42	-993.09	811.37	0.00	0.00	0.00
8,700.00	90.30	179.76	7,056.89	-763.42	-992.67	910.05	0.00	0.00	0.00
8,800.00	90.30	179.76	7,056.37	-863.42	-992.24	1,008.74	0.00	0.00	0.00
8,900.00	90.30	179.76	7,055.84	-963.41	-991.82	1,107.42	0.00	0.00	0.00
9,000.00	90.30	179.76	7,055.32	-1,063.41	-991.39	1,206.11	0.00	0.00	0.00
9,100.00	90.30	179.76	7,054.80	-1,163.41	-990.96	1,304.80	0.00	0.00	0.00
9,200.00	90.30	179.76	7,054.27	-1,263.41	-990.54	1,403.48	0.00	0.00	0.00
9,300.00	90.30	179.76	7,053.75	-1,363.40	-990.11	1,502.17	0.00	0.00	0.00
9,400.00	90.30	179.76	7,053.23	-1,463.40	-989.69	1,600.85	0.00	0.00	0.00
9,500.00	90.30	179.76	7,052.70	-1,563.40	-989.26	1,699.54	0.00	0.00	0.00
9,600.00	90.30	179.76	7,052.18	-1,663.40	-988.84	1,798.23	0.00	0.00	0.00
9,700.00	90.30	179.76	7,051.66	-1,763.39	-988.41	1,896.91	0.00	0.00	0.00
9,800.00	90.30	179.76	7,051.13	-1,863.39	-987.99	1,995.60	0.00	0.00	0.00
9,900.00	90.30	179.76	7,050.61	-1,963.39	-987.56	2,094.28	0.00	0.00	0.00
10,000.00	90.30	179.76	7,050.08	-2,063.39	-987.13	2,192.97	0.00	0.00	0.00
10,100.00	90.30	179.76	7,049.56	-2,163.39	-986.71	2,291.66	0.00	0.00	0.00
10,200.00	90.30	179.76	7,049.04	-2,263.38	-986.28	2,390.34	0.00	0.00	0.00
10,300.00	90.30	179.76	7,048.51	-2,363.38	-985.86	2,489.03	0.00	0.00	0.00
10,400.00	90.30	179.76	7,047.99	-2,463.38	-985.43	2,587.71	0.00	0.00	0.00
10,500.00	90.30	179.76	7,047.47	-2,563.38	-985.01	2,686.40	0.00	0.00	0.00
10,600.00	90.30	179.76	7,046.94	-2,663.37	-984.58	2,785.09	0.00	0.00	0.00
10,700.00	90.30	179.76	7,046.42	-2,763.37	-984.16	2,883.77	0.00	0.00	0.00
10,800.00	90.30	179.76	7,045.90	-2,863.37	-983.73	2,982.46	0.00	0.00	0.00
10,900.00	90.30	179.76	7,045.37	-2,963.37	-983.31	3,081.14	0.00	0.00	0.00
11,000.00	90.30	179.76	7,044.85	-3,063.37	-982.88	3,179.83	0.00	0.00	0.00
11,100.00	90.30	179.76	7,044.33	-3,163.36	-982.45	3,278.52	0.00	0.00	0.00
11,200.00	90.30	179.76	7,043.80	-3,263.36	-982.03	3,377.20	0.00	0.00	0.00
11,300.00	90.30	179.76	7,043.28	-3,363.36	-981.60	3,475.89	0.00	0.00	0.00
11,400.00	90.30	179.76	7,042.75	-3,463.36	-981.18	3,574.58	0.00	0.00	0.00
11,500.00	90.30	179.76	7,042.23	-3,563.35	-980.75	3,673.26	0.00	0.00	0.00
11,600.00	90.30	179.76	7,041.71	-3,663.35	-980.33	3,771.95	0.00	0.00	0.00
11,700.00	90.30	179.76	7,041.18	-3,763.35	-979.90	3,870.63	0.00	0.00	0.00
11,800.00	90.30	179.76	7,040.66	-3,863.35	-979.48	3,969.32	0.00	0.00	0.00
11,900.00	90.30	179.76	7,040.14	-3,963.34	-979.05	4,068.01	0.00	0.00	0.00
12,000.00	90.30	179.76	7,039.61	-4,063.34	-978.62	4,166.69	0.00	0.00	0.00
12,100.00	90.30	179.76	7,039.09	-4,163.34	-978.20	4,265.38	0.00	0.00	0.00
12,200.00	90.30	179.76	7,038.57	-4,263.34	-977.77	4,364.06	0.00	0.00	0.00
12,300.00	90.30	179.76	7,038.04	-4,363.34	-977.35	4,462.75	0.00	0.00	0.00
12,400.00	90.30	179.76	7,037.52	-4,463.33	-976.92	4,561.44	0.00	0.00	0.00
12,500.00	90.30	179.76	7,036.99	-4,563.33	-976.50	4,660.12	0.00	0.00	0.00
12,600.00	90.30	179.76	7,036.47	-4,663.33	-976.07	4,758.81	0.00	0.00	0.00
12,700.00	90.30	179.76	7,035.95	-4,763.33	-975.65	4,857.49	0.00	0.00	0.00
12,800.00	90.30	179.76	7,035.42	-4,863.32	-975.22	4,956.18	0.00	0.00	0.00
12,900.00	90.30	179.76	7,034.90	-4,963.32	-974.80	5,054.87	0.00	0.00	0.00
13,000.00	90.30	179.76	7,034.38	-5,063.32	-974.37	5,153.55	0.00	0.00	0.00
13,100.00	90.30	179.76	7,033.85	-5,163.32	-973.94	5,252.24	0.00	0.00	0.00
13,200.00	90.30	179.76	7,033.33	-5,263.32	-973.52	5,350.92	0.00	0.00	0.00
13,300.00	90.30	179.76	7,032.81	-5,363.31	-973.09	5,449.61	0.00	0.00	0.00
13,400.00	90.30	179.76	7,032.28	-5,463.31	-972.67	5,548.30	0.00	0.00	0.00
13,500.00	90.30	179.76	7,031.76	-5,563.31	-972.24	5,646.98	0.00	0.00	0.00
13,600.00	90.30	179.76	7,031.24	-5,663.31	-971.82	5,745.67	0.00	0.00	0.00
13,700.00	90.30	179.76	7,030.71	-5,763.30	-971.39	5,844.35	0.00	0.00	0.00
13,800.00	90.30	179.76	7,030.19	-5,863.30	-970.97	5,943.04	0.00	0.00	0.00
13,900.00	90.30	179.76	7,029.66	-5,963.30	-970.54	6,041.73	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well RW 4N-5HZ
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 4N-5HZ	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)
14,000.00	90.30	179.76	7,029.14	-6,063.30	-970.11	6,140.41	0.00	0.00	0.00
14,026.90	90.30	179.76	7,029.00	-6,090.19	-970.00	6,166.96	0.00	0.00	0.00
RW 4-5HZ_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 4-5HZ_PBHL	0.00	0.00	7,029.00	-6,090.19	-970.00	14,590,120.56	1,725,837.45	40.173667	-104.694206
- plan hits target center									
- Point									
RW 4N-5HZ_PHL	0.00	0.00	7,062.56	320.05	-997.28	14,596,530.67	1,725,787.84	40.191270	-104.694304
- plan hits target center									
- Point									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,522.38	1,500.00	9 5/8"	9-5/8	13-1/2	
7,616.51	7,062.56	Top of Production	5-1/2	8-1/2	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,230.74	1,220.00	Fox Hills Mkr				
4,069.34	3,940.00	Parkman				
4,792.71	4,633.00	Sussex				
7,216.60	6,943.00	Sharon Springs				
7,352.63	7,010.00	Niobrara				
7,528.87	7,057.00	Nio B				