

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

1N-65W-09 Robin 1 Pad

ROBIN 9-12HZ

Plan A

Plan: Permit Rev-1

Standard Planning Report

22 March, 2017

Project: WELD-NAD83-UTMFT13N
 Site: 1N-65W-09 Robin 1 Pad
 Well: ROBIN 9-12HZ
 Wellbore: Plan A
 Design: Permit Rev-1

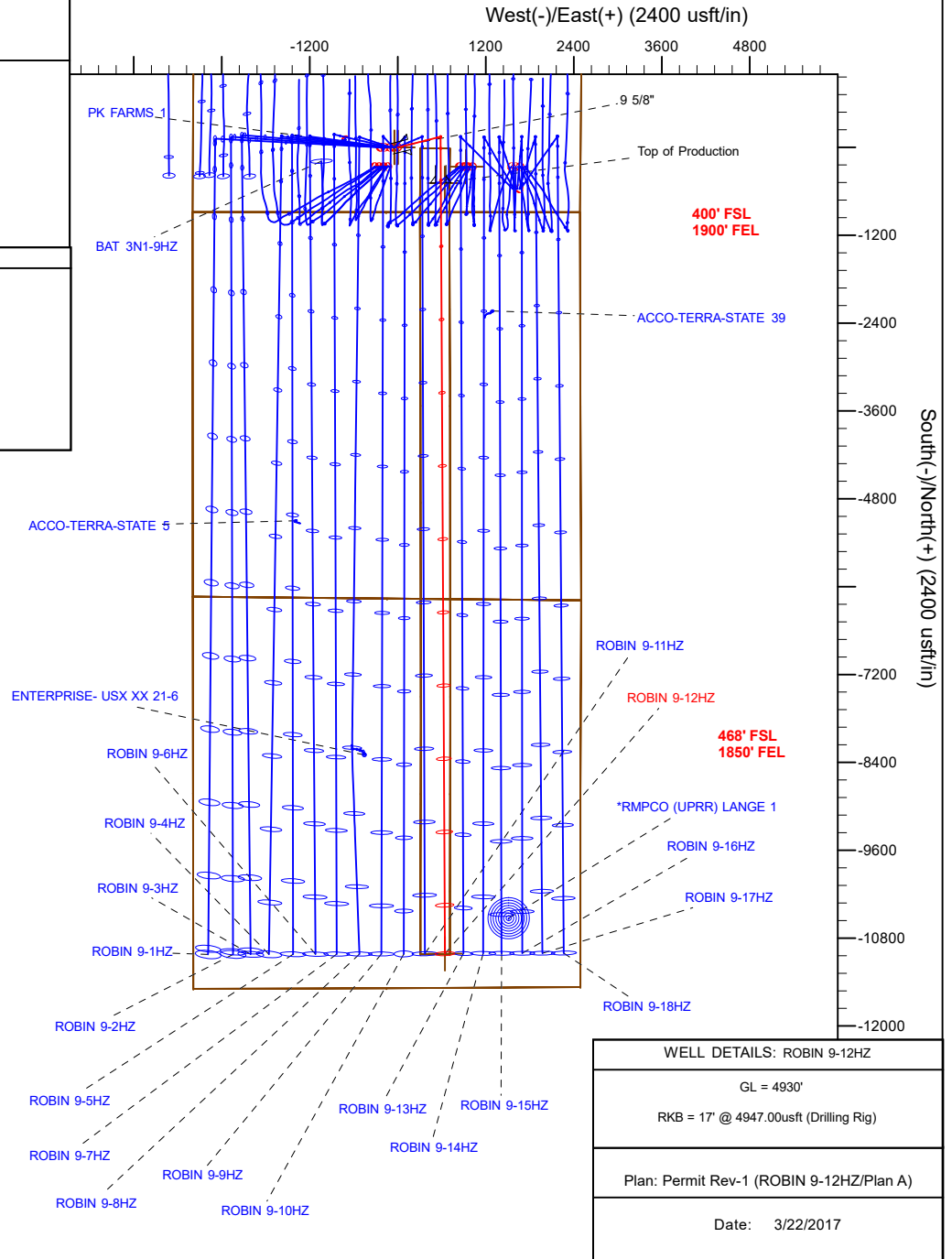
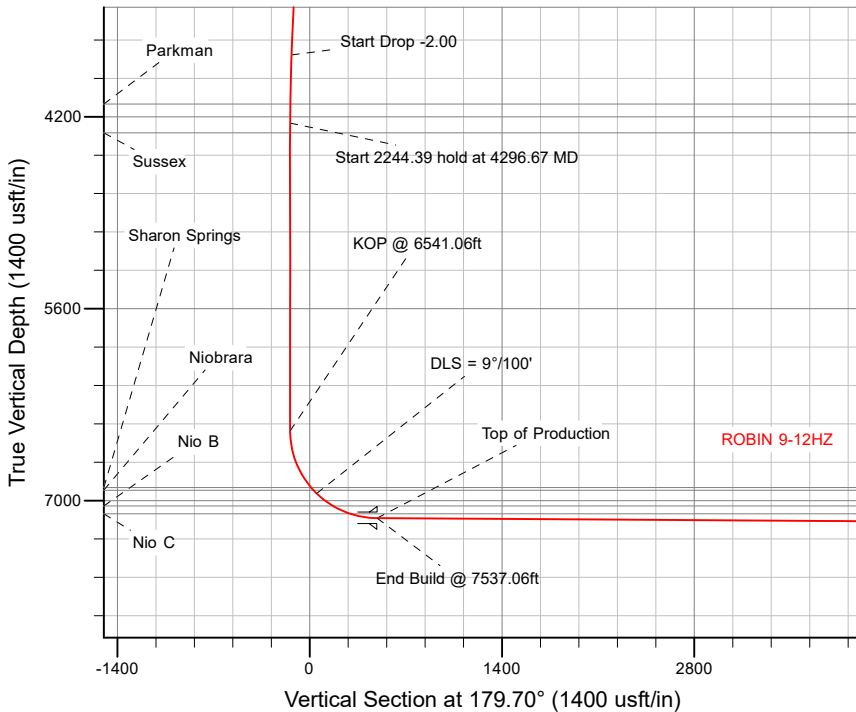
US ROCKIES WATTENBERG PLANNING

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	
3	916.67	10.00	76.00	913.29	14.04	56.31	1.50	76.00	-13.74	
4	3796.67	10.00	76.00	3749.53	135.03	541.56	0.00	0.00	-132.19	
5	4296.67	0.00	0.00	4247.00	145.55	583.79	2.00	180.00	-142.50	
6	6541.06	0.00	0.00	6491.39	145.55	583.79	0.00	0.00	-142.50	
7	7537.06	89.64	179.70	7128.00	-487.06	587.11	9.00	179.70	490.13	
8	18061.83	89.64	179.70	7194.00	-11011.48	642.44	0.00	0.00	11014.69	ROBIN 9-12HZ_TOE

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
ROBIN 9-12HZ_SHL	0.00	0.00	0.00	40.061168	-104.668490	Point
ROBIN 9-12HZ_TOE	7194.00	-11011.48	642.44	40.030929	-104.666195	Point



Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well ROBIN 9-12HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4947.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4947.00usft (Drilling Rig)
Site:	1N-65W-09 Robin 1 Pad	North Reference:	True
Well:	ROBIN 9-12HZ	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-65W-09 Robin 1 Pad				
Site Position:		Northing:	14,549,180.70 usft	Latitude:	40.061172
From:	Lat/Long	Easting:	1,732,933.64 usft	Longitude:	-104.669348
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.21 °

Well	ROBIN 9-12HZ					
Well Position	+N-S	-1.66 usft	Northing:	14,549,179.93 usft	Latitude:	40.061168
	+E-W	239.90 usft	Easting:	1,733,173.55 usft	Longitude:	-104.668490
Position Uncertainty		3.28 usft	Wellhead Elevation:		Ground Level:	4,930.00 usft

Wellbore	Plan A				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/12/2017	8.01	66.59	52,358.39746096

Design	Permit Rev-1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	179.70

Plan Survey Tool Program	Date	3/22/2017			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	1,500.00	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:crustal field declinatio	
2	1,500.00	18,061.83	Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWD+I Fixed:v2:Rockies, crustal dec +	

Corporate Planning Report

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Well:	ROBIN 9-12HZ	Survey Calculation Method:	Minimum Curvature
Wellbore:	Plan A		
Design:	Permit Rev-1		

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	
916.67	10.00	76.00	913.29	14.04	56.31	1.50	1.50	0.00	76.00	
3,796.67	10.00	76.00	3,749.53	135.03	541.56	0.00	0.00	0.00	0.00	
4,296.67	0.00	0.00	4,247.00	145.55	583.79	2.00	-2.00	0.00	180.00	
6,541.06	0.00	0.00	6,491.39	145.55	583.79	0.00	0.00	0.00	0.00	
7,537.06	89.64	179.70	7,128.00	-487.06	587.11	9.00	9.00	18.04	179.70	
18,061.83	89.64	179.70	7,194.00	-11,011.48	642.44	0.00	0.00	0.00	0.00	ROBIN 9-12HZ_TOE

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well ROBIN 9-12HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4947.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4947.00usft (Drilling Rig)
Site:	1N-65W-09 Robin 1 Pad	North Reference:	True
Well:	ROBIN 9-12HZ	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	0.00
100.00	0.00	0.00	100.00	0.00	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	0.00
250.00	0.00	0.00	250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 1.50										
300.00	0.75	76.00	300.00	0.08	0.32	-0.08	1.50	1.50	0.00	
400.00	2.25	76.00	399.96	0.71	2.86	-0.70	1.50	1.50	0.00	
500.00	3.75	76.00	499.82	1.98	7.94	-1.94	1.50	1.50	0.00	
600.00	5.25	76.00	599.51	3.88	15.55	-3.80	1.50	1.50	0.00	
700.00	6.75	76.00	698.96	6.41	25.69	-6.27	1.50	1.50	0.00	
783.74	8.01	76.00	782.00	9.01	36.12	-8.82	1.50	1.50	0.00	
Fox Hills										
800.00	8.25	76.00	798.10	9.56	38.35	-9.36	1.50	1.50	0.00	
900.00	9.75	76.00	896.87	13.35	53.53	-13.07	1.50	1.50	0.00	
916.67	10.00	76.00	913.29	14.04	56.31	-13.74	1.50	1.50	0.00	
Start 2880.00 hold at 916.67 MD										
1,000.00	10.00	76.00	995.35	17.54	70.35	-17.17	0.00	0.00	0.00	
1,100.00	10.00	76.00	1,093.84	21.74	87.20	-21.28	0.00	0.00	0.00	
1,200.00	10.00	76.00	1,192.32	25.94	104.05	-25.40	0.00	0.00	0.00	
1,300.00	10.00	76.00	1,290.80	30.14	120.89	-29.51	0.00	0.00	0.00	
1,400.00	10.00	76.00	1,389.28	34.34	137.74	-33.62	0.00	0.00	0.00	
1,500.00	10.00	76.00	1,487.76	38.54	154.59	-37.73	0.00	0.00	0.00	
1,512.43	10.00	76.00	1,500.00	39.07	156.69	-38.25	0.00	0.00	0.00	
9 5/8"										
1,600.00	10.00	76.00	1,586.24	42.75	171.44	-41.85	0.00	0.00	0.00	
1,700.00	10.00	76.00	1,684.72	46.95	188.29	-45.96	0.00	0.00	0.00	
1,800.00	10.00	76.00	1,783.20	51.15	205.14	-50.07	0.00	0.00	0.00	
1,900.00	10.00	76.00	1,881.68	55.35	221.99	-54.18	0.00	0.00	0.00	
2,000.00	10.00	76.00	1,980.16	59.55	238.84	-58.30	0.00	0.00	0.00	
2,100.00	10.00	76.00	2,078.64	63.75	255.69	-62.41	0.00	0.00	0.00	
2,200.00	10.00	76.00	2,177.12	67.95	272.54	-66.52	0.00	0.00	0.00	
2,300.00	10.00	76.00	2,275.60	72.15	289.38	-70.64	0.00	0.00	0.00	
2,400.00	10.00	76.00	2,374.09	76.35	306.23	-74.75	0.00	0.00	0.00	
2,500.00	10.00	76.00	2,472.57	80.55	323.08	-78.86	0.00	0.00	0.00	
2,600.00	10.00	76.00	2,571.05	84.75	339.93	-82.97	0.00	0.00	0.00	
2,700.00	10.00	76.00	2,669.53	88.96	356.78	-87.09	0.00	0.00	0.00	
2,800.00	10.00	76.00	2,768.01	93.16	373.63	-91.20	0.00	0.00	0.00	
2,900.00	10.00	76.00	2,866.49	97.36	390.48	-95.31	0.00	0.00	0.00	
3,000.00	10.00	76.00	2,964.97	101.56	407.33	-99.42	0.00	0.00	0.00	
3,100.00	10.00	76.00	3,063.45	105.76	424.18	-103.54	0.00	0.00	0.00	
3,200.00	10.00	76.00	3,161.93	109.96	441.03	-107.65	0.00	0.00	0.00	
3,300.00	10.00	76.00	3,260.41	114.16	457.87	-111.76	0.00	0.00	0.00	
3,400.00	10.00	76.00	3,358.89	118.36	474.72	-115.87	0.00	0.00	0.00	
3,500.00	10.00	76.00	3,457.37	122.56	491.57	-119.99	0.00	0.00	0.00	
3,600.00	10.00	76.00	3,555.85	126.76	508.42	-124.10	0.00	0.00	0.00	
3,700.00	10.00	76.00	3,654.34	130.96	525.27	-128.21	0.00	0.00	0.00	
3,796.67	10.00	76.00	3,749.53	135.03	541.56	-132.19	0.00	0.00	0.00	
Start Drop -2.00										
3,800.00	9.93	76.00	3,752.82	135.17	542.12	-132.32	2.00	-2.00	0.00	
3,900.00	7.93	76.00	3,851.60	138.92	557.18	-136.00	2.00	-2.00	0.00	
4,000.00	5.93	76.00	3,950.86	141.84	568.90	-138.86	2.00	-2.00	0.00	
4,100.00	3.93	76.00	4,050.49	143.92	577.24	-140.90	2.00	-2.00	0.00	
4,156.61	2.80	76.00	4,107.00	144.73	580.47	-141.69	2.00	-2.00	0.00	

**Corporate
Planning Report**

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Well:	ROBIN 9-12HZ	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										
4,200.00	1.93	76.00	4,150.35	145.16	582.21	-142.11	2.00	-2.00	0.00	
4,296.67	0.00	0.00	4,247.00	145.55	583.79	-142.50	2.00	-2.00	0.00	
Start 2244.39 hold at 4296.67 MD										
4,300.00	0.00	0.00	4,250.33	145.55	583.79	-142.50	0.00	0.00	0.00	
4,367.67	0.00	0.00	4,318.00	145.55	583.79	-142.50	0.00	0.00	0.00	
Sussex										
4,400.00	0.00	0.00	4,350.33	145.55	583.79	-142.50	0.00	0.00	0.00	
4,500.00	0.00	0.00	4,450.33	145.55	583.79	-142.50	0.00	0.00	0.00	
4,600.00	0.00	0.00	4,550.33	145.55	583.79	-142.50	0.00	0.00	0.00	
4,700.00	0.00	0.00	4,650.33	145.55	583.79	-142.50	0.00	0.00	0.00	
4,800.00	0.00	0.00	4,750.33	145.55	583.79	-142.50	0.00	0.00	0.00	
4,900.00	0.00	0.00	4,850.33	145.55	583.79	-142.50	0.00	0.00	0.00	
5,000.00	0.00	0.00	4,950.33	145.55	583.79	-142.50	0.00	0.00	0.00	
5,100.00	0.00	0.00	5,050.33	145.55	583.79	-142.50	0.00	0.00	0.00	
5,200.00	0.00	0.00	5,150.33	145.55	583.79	-142.50	0.00	0.00	0.00	
5,300.00	0.00	0.00	5,250.33	145.55	583.79	-142.50	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,350.33	145.55	583.79	-142.50	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,450.33	145.55	583.79	-142.50	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,550.33	145.55	583.79	-142.50	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,650.33	145.55	583.79	-142.50	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,750.33	145.55	583.79	-142.50	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,850.33	145.55	583.79	-142.50	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,950.33	145.55	583.79	-142.50	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,050.33	145.55	583.79	-142.50	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,150.33	145.55	583.79	-142.50	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,250.33	145.55	583.79	-142.50	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,350.33	145.55	583.79	-142.50	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,450.33	145.55	583.79	-142.50	0.00	0.00	0.00	
6,541.06	0.00	0.00	6,491.39	145.55	583.79	-142.50	0.00	0.00	0.00	
KOP @ 6541.06ft										
6,600.00	5.30	179.70	6,550.25	142.83	583.80	-139.77	9.00	9.00	0.00	
6,700.00	14.30	179.70	6,648.69	125.82	583.89	-122.76	9.00	9.00	0.00	
6,800.00	23.30	179.70	6,743.25	93.62	584.06	-90.56	9.00	9.00	0.00	
6,900.00	32.30	179.70	6,831.61	47.02	584.31	-43.96	9.00	9.00	0.00	
6,991.27	40.52	179.70	6,905.00	-7.11	584.59	10.17	9.00	9.00	0.00	
Sharon Springs										
7,000.00	41.30	179.70	6,911.60	-12.83	584.62	15.89	9.00	9.00	0.00	
7,016.70	42.81	179.70	6,924.00	-24.02	584.68	27.08	9.00	9.00	0.00	
Niobrara										
7,050.00	45.80	179.70	6,947.83	-47.27	584.80	50.33	9.00	9.00	0.00	
DLS = 9°/100'										
7,100.00	50.30	179.70	6,981.24	-84.45	585.00	87.51	9.00	9.00	0.00	
7,200.00	59.30	179.70	7,038.82	-166.09	585.43	169.15	9.00	9.00	0.00	
7,200.36	59.34	179.70	7,039.00	-166.40	585.43	169.46	9.00	9.00	0.00	
Nio B										
7,300.00	68.30	179.70	7,082.91	-255.72	585.90	258.79	9.00	9.00	0.00	
7,341.54	72.04	179.70	7,097.00	-294.79	586.10	297.86	9.00	9.00	0.00	
Nio C										
7,400.00	77.30	179.70	7,112.45	-351.15	586.40	354.22	9.00	9.00	0.00	
7,500.00	86.30	179.70	7,126.69	-450.03	586.92	453.10	9.00	9.00	0.00	
7,537.06	89.64	179.70	7,128.00	-487.06	587.11	490.13	9.00	9.00	0.00	

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Wellbore:	Plan A		
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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)
End Build @ 7537.06ft - Top of Production									
7,600.00	89.64	179.70	7,128.39	-550.00	587.44	553.07	0.00	0.00	0.00
7,700.00	89.64	179.70	7,129.02	-649.99	587.97	653.06	0.00	0.00	0.00
7,800.00	89.64	179.70	7,129.65	-749.99	588.50	753.06	0.00	0.00	0.00
7,900.00	89.64	179.70	7,130.27	-849.99	589.02	853.06	0.00	0.00	0.00
8,000.00	89.64	179.70	7,130.90	-949.98	589.55	953.06	0.00	0.00	0.00
8,100.00	89.64	179.70	7,131.53	-1,049.98	590.07	1,053.06	0.00	0.00	0.00
8,200.00	89.64	179.70	7,132.15	-1,149.98	590.60	1,153.05	0.00	0.00	0.00
8,300.00	89.64	179.70	7,132.78	-1,249.97	591.12	1,253.05	0.00	0.00	0.00
8,400.00	89.64	179.70	7,133.41	-1,349.97	591.65	1,353.05	0.00	0.00	0.00
8,500.00	89.64	179.70	7,134.04	-1,449.97	592.18	1,453.05	0.00	0.00	0.00
8,600.00	89.64	179.70	7,134.66	-1,549.96	592.70	1,553.05	0.00	0.00	0.00
8,700.00	89.64	179.70	7,135.29	-1,649.96	593.23	1,653.04	0.00	0.00	0.00
8,800.00	89.64	179.70	7,135.92	-1,749.96	593.75	1,753.04	0.00	0.00	0.00
8,900.00	89.64	179.70	7,136.54	-1,849.95	594.28	1,853.04	0.00	0.00	0.00
9,000.00	89.64	179.70	7,137.17	-1,949.95	594.80	1,953.04	0.00	0.00	0.00
9,100.00	89.64	179.70	7,137.80	-2,049.95	595.33	2,053.04	0.00	0.00	0.00
9,200.00	89.64	179.70	7,138.43	-2,149.94	595.86	2,153.03	0.00	0.00	0.00
9,300.00	89.64	179.70	7,139.05	-2,249.94	596.38	2,253.03	0.00	0.00	0.00
9,400.00	89.64	179.70	7,139.68	-2,349.94	596.91	2,353.03	0.00	0.00	0.00
9,500.00	89.64	179.70	7,140.31	-2,449.93	597.43	2,453.03	0.00	0.00	0.00
9,600.00	89.64	179.70	7,140.93	-2,549.93	597.96	2,553.03	0.00	0.00	0.00
9,700.00	89.64	179.70	7,141.56	-2,649.93	598.48	2,653.02	0.00	0.00	0.00
9,800.00	89.64	179.70	7,142.19	-2,749.92	599.01	2,753.02	0.00	0.00	0.00
9,900.00	89.64	179.70	7,142.81	-2,849.92	599.53	2,853.02	0.00	0.00	0.00
10,000.00	89.64	179.70	7,143.44	-2,949.92	600.06	2,953.02	0.00	0.00	0.00
10,100.00	89.64	179.70	7,144.07	-3,049.91	600.59	3,053.02	0.00	0.00	0.00
10,200.00	89.64	179.70	7,144.70	-3,149.91	601.11	3,153.01	0.00	0.00	0.00
10,300.00	89.64	179.70	7,145.32	-3,249.91	601.64	3,253.01	0.00	0.00	0.00
10,400.00	89.64	179.70	7,145.95	-3,349.90	602.16	3,353.01	0.00	0.00	0.00
10,500.00	89.64	179.70	7,146.58	-3,449.90	602.69	3,453.01	0.00	0.00	0.00
10,600.00	89.64	179.70	7,147.20	-3,549.90	603.21	3,553.01	0.00	0.00	0.00
10,700.00	89.64	179.70	7,147.83	-3,649.89	603.74	3,653.01	0.00	0.00	0.00
10,800.00	89.64	179.70	7,148.46	-3,749.89	604.27	3,753.00	0.00	0.00	0.00
10,900.00	89.64	179.70	7,149.09	-3,849.89	604.79	3,853.00	0.00	0.00	0.00
11,000.00	89.64	179.70	7,149.71	-3,949.88	605.32	3,953.00	0.00	0.00	0.00
11,100.00	89.64	179.70	7,150.34	-4,049.88	605.84	4,053.00	0.00	0.00	0.00
11,200.00	89.64	179.70	7,150.97	-4,149.88	606.37	4,153.00	0.00	0.00	0.00
11,300.00	89.64	179.70	7,151.59	-4,249.87	606.89	4,252.99	0.00	0.00	0.00
11,400.00	89.64	179.70	7,152.22	-4,349.87	607.42	4,352.99	0.00	0.00	0.00
11,500.00	89.64	179.70	7,152.85	-4,449.87	607.95	4,452.99	0.00	0.00	0.00
11,600.00	89.64	179.70	7,153.48	-4,549.86	608.47	4,552.99	0.00	0.00	0.00
11,700.00	89.64	179.70	7,154.10	-4,649.86	609.00	4,652.99	0.00	0.00	0.00
11,800.00	89.64	179.70	7,154.73	-4,749.86	609.52	4,752.98	0.00	0.00	0.00
11,900.00	89.64	179.70	7,155.36	-4,849.85	610.05	4,852.98	0.00	0.00	0.00
12,000.00	89.64	179.70	7,155.98	-4,949.85	610.57	4,952.98	0.00	0.00	0.00
12,100.00	89.64	179.70	7,156.61	-5,049.85	611.10	5,052.98	0.00	0.00	0.00
12,200.00	89.64	179.70	7,157.24	-5,149.84	611.63	5,152.98	0.00	0.00	0.00
12,300.00	89.64	179.70	7,157.87	-5,249.84	612.15	5,252.97	0.00	0.00	0.00
12,400.00	89.64	179.70	7,158.49	-5,349.84	612.68	5,352.97	0.00	0.00	0.00
12,500.00	89.64	179.70	7,159.12	-5,449.83	613.20	5,452.97	0.00	0.00	0.00
12,600.00	89.64	179.70	7,159.75	-5,549.83	613.73	5,552.97	0.00	0.00	0.00
12,700.00	89.64	179.70	7,160.37	-5,649.83	614.25	5,652.97	0.00	0.00	0.00
12,800.00	89.64	179.70	7,161.00	-5,749.82	614.78	5,752.96	0.00	0.00	0.00

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well ROBIN 9-12HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4947.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4947.00usft (Drilling Rig)
Site:	1N-65W-09 Robin 1 Pad	North Reference:	True
Well:	ROBIN 9-12HZ	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)	
12,900.00	89.64	179.70	7,161.63	-5,849.82	615.31	5,852.96	0.00	0.00	0.00	
13,000.00	89.64	179.70	7,162.26	-5,949.82	615.83	5,952.96	0.00	0.00	0.00	
13,100.00	89.64	179.70	7,162.88	-6,049.81	616.36	6,052.96	0.00	0.00	0.00	
13,200.00	89.64	179.70	7,163.51	-6,149.81	616.88	6,152.96	0.00	0.00	0.00	
13,300.00	89.64	179.70	7,164.14	-6,249.81	617.41	6,252.95	0.00	0.00	0.00	
13,400.00	89.64	179.70	7,164.76	-6,349.80	617.93	6,352.95	0.00	0.00	0.00	
13,500.00	89.64	179.70	7,165.39	-6,449.80	618.46	6,452.95	0.00	0.00	0.00	
13,600.00	89.64	179.70	7,166.02	-6,549.80	618.98	6,552.95	0.00	0.00	0.00	
13,700.00	89.64	179.70	7,166.65	-6,649.79	619.51	6,652.95	0.00	0.00	0.00	
13,800.00	89.64	179.70	7,167.27	-6,749.79	620.04	6,752.94	0.00	0.00	0.00	
13,900.00	89.64	179.70	7,167.90	-6,849.79	620.56	6,852.94	0.00	0.00	0.00	
14,000.00	89.64	179.70	7,168.53	-6,949.78	621.09	6,952.94	0.00	0.00	0.00	
14,100.00	89.64	179.70	7,169.15	-7,049.78	621.61	7,052.94	0.00	0.00	0.00	
14,200.00	89.64	179.70	7,169.78	-7,149.78	622.14	7,152.94	0.00	0.00	0.00	
14,300.00	89.64	179.70	7,170.41	-7,249.77	622.66	7,252.93	0.00	0.00	0.00	
14,400.00	89.64	179.70	7,171.04	-7,349.77	623.19	7,352.93	0.00	0.00	0.00	
14,500.00	89.64	179.70	7,171.66	-7,449.77	623.72	7,452.93	0.00	0.00	0.00	
14,600.00	89.64	179.70	7,172.29	-7,549.76	624.24	7,552.93	0.00	0.00	0.00	
14,700.00	89.64	179.70	7,172.92	-7,649.76	624.77	7,652.93	0.00	0.00	0.00	
14,800.00	89.64	179.70	7,173.54	-7,749.76	625.29	7,752.92	0.00	0.00	0.00	
14,900.00	89.64	179.70	7,174.17	-7,849.75	625.82	7,852.92	0.00	0.00	0.00	
15,000.00	89.64	179.70	7,174.80	-7,949.75	626.34	7,952.92	0.00	0.00	0.00	
15,100.00	89.64	179.70	7,175.43	-8,049.75	626.87	8,052.92	0.00	0.00	0.00	
15,200.00	89.64	179.70	7,176.05	-8,149.74	627.40	8,152.92	0.00	0.00	0.00	
15,300.00	89.64	179.70	7,176.68	-8,249.74	627.92	8,252.91	0.00	0.00	0.00	
15,400.00	89.64	179.70	7,177.31	-8,349.74	628.45	8,352.91	0.00	0.00	0.00	
15,500.00	89.64	179.70	7,177.93	-8,449.73	628.97	8,452.91	0.00	0.00	0.00	
15,600.00	89.64	179.70	7,178.56	-8,549.73	629.50	8,552.91	0.00	0.00	0.00	
15,700.00	89.64	179.70	7,179.19	-8,649.73	630.02	8,652.91	0.00	0.00	0.00	
15,800.00	89.64	179.70	7,179.82	-8,749.72	630.55	8,752.90	0.00	0.00	0.00	
15,900.00	89.64	179.70	7,180.44	-8,849.72	631.08	8,852.90	0.00	0.00	0.00	
16,000.00	89.64	179.70	7,181.07	-8,949.72	631.60	8,952.90	0.00	0.00	0.00	
16,100.00	89.64	179.70	7,181.70	-9,049.71	632.13	9,052.90	0.00	0.00	0.00	
16,200.00	89.64	179.70	7,182.32	-9,149.71	632.65	9,152.90	0.00	0.00	0.00	
16,300.00	89.64	179.70	7,182.95	-9,249.71	633.18	9,252.90	0.00	0.00	0.00	
16,400.00	89.64	179.70	7,183.58	-9,349.70	633.70	9,352.89	0.00	0.00	0.00	
16,500.00	89.64	179.70	7,184.21	-9,449.70	634.23	9,452.89	0.00	0.00	0.00	
16,600.00	89.64	179.70	7,184.83	-9,549.70	634.76	9,552.89	0.00	0.00	0.00	
16,700.00	89.64	179.70	7,185.46	-9,649.69	635.28	9,652.89	0.00	0.00	0.00	
16,800.00	89.64	179.70	7,186.09	-9,749.69	635.81	9,752.89	0.00	0.00	0.00	
16,900.00	89.64	179.70	7,186.71	-9,849.69	636.33	9,852.88	0.00	0.00	0.00	
17,000.00	89.64	179.70	7,187.34	-9,949.68	636.86	9,952.88	0.00	0.00	0.00	
17,100.00	89.64	179.70	7,187.97	-10,049.68	637.38	10,052.88	0.00	0.00	0.00	
17,200.00	89.64	179.70	7,188.60	-10,149.68	637.91	10,152.88	0.00	0.00	0.00	
17,300.00	89.64	179.70	7,189.22	-10,249.67	638.44	10,252.88	0.00	0.00	0.00	
17,400.00	89.64	179.70	7,189.85	-10,349.67	638.96	10,352.87	0.00	0.00	0.00	
17,500.00	89.64	179.70	7,190.48	-10,449.67	639.49	10,452.87	0.00	0.00	0.00	
17,600.00	89.64	179.70	7,191.10	-10,549.66	640.01	10,552.87	0.00	0.00	0.00	
17,700.00	89.64	179.70	7,191.73	-10,649.66	640.54	10,652.87	0.00	0.00	0.00	
17,800.00	89.64	179.70	7,192.36	-10,749.66	641.06	10,752.87	0.00	0.00	0.00	
17,900.00	89.64	179.70	7,192.99	-10,849.65	641.59	10,852.86	0.00	0.00	0.00	
18,000.00	89.64	179.70	7,193.61	-10,949.65	642.11	10,952.86	0.00	0.00	0.00	
18,061.83	89.64	179.70	7,194.00	-11,011.48	642.44	11,014.69	0.00	0.00	0.00	

Corporate Planning Report

Database:	PLANNING	Local Co-ordinate Reference:	Well ROBIN 9-12HZ
Company:	US ROCKIES WATTENBERG PLANNING	TVD Reference:	RKB = 17' @ 4947.00usft (Drilling Rig)
Project:	WELD-NAD83-UTMFT13N	MD Reference:	RKB = 17' @ 4947.00usft (Drilling Rig)
Site:	1N-65W-09 Robin 1 Pad	North Reference:	True
Well:	ROBIN 9-12HZ	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)
TD Well @ 18061.95ft									

Casing Points					
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")	
1,512.43	1,500.00	9 5/8"	9-5/8	13-1/2	
7,537.06	7,128.00	Top of Production	5-1/2	7-7/8	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
783.74	782.00	Fox Hills				
4,156.61	4,107.00	Parkman				
4,367.67	4,318.00	Sussex				
6,991.27	6,905.00	Sharon Springs				
7,016.70	6,924.00	Niobrara				
7,200.36	7,039.00	Nio B				
7,341.54	7,097.00	Nio C				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
250.00	250.00	0.00	0.00	Start Build 1.50	
916.67	913.29	14.04	56.31	Start 2880.00 hold at 916.67 MD	
3,796.67	3,749.53	135.03	541.56	Start Drop -2.00	
4,296.67	4,247.00	145.55	583.79	Start 2244.39 hold at 4296.67 MD	
6,541.06	6,491.39	145.55	583.79	KOP @ 6541.06ft	
7,050.00	6,947.83	-47.27	584.80	DLS = 9°/100'	
7,537.06	7,128.00	-487.06	587.11	End Build @ 7537.06ft	
18,061.83	7,194.00	-11,011.48	642.44	TD Well @ 18061.95ft	