

# **US ROCKIES WATTENBERG PLANNING**

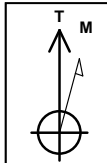
**WELD-NAD83-UTMFT13N  
1N-68W-03 HAMMER 3-5HZ PAD  
HAMMER 3-3HZ**

**Plan A**

**Plan: Permit Rev-1**

## **Standard Planning Report**

**07 February, 2017**



Azimuths to True North  
Magnetic North: 8.20°  
  
Magnetic Field  
Strength: 52343.3snT  
Dip Angle: 66.56°  
Date: 1/31/2017  
Model: IGRF2010

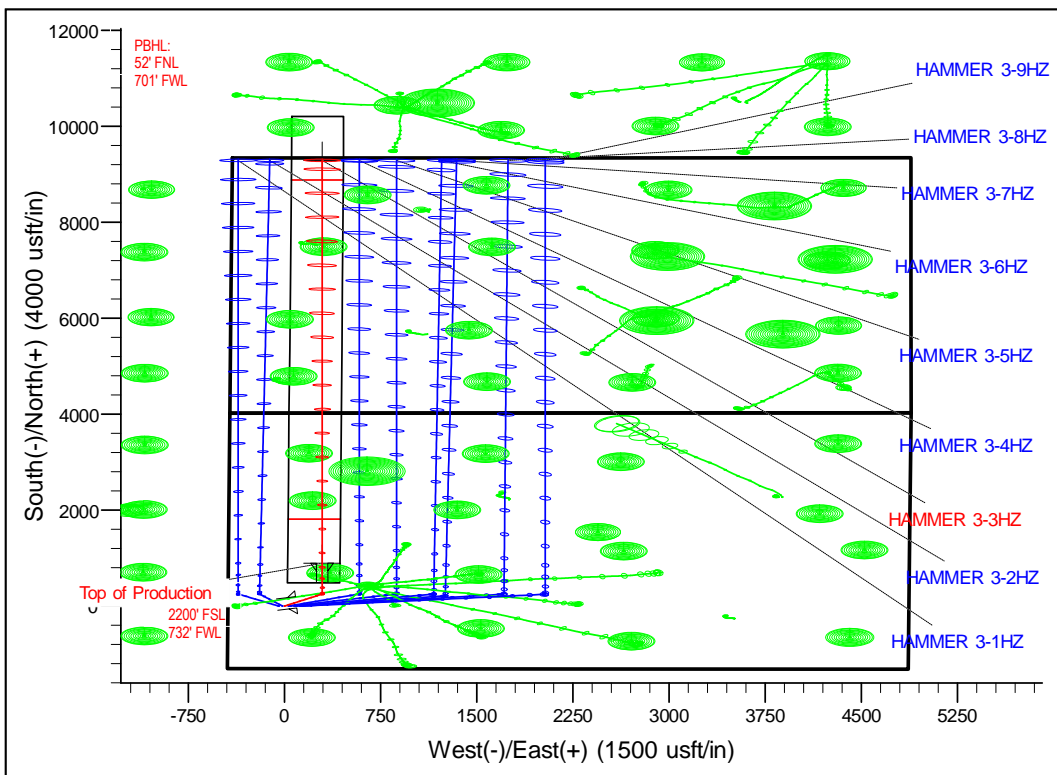
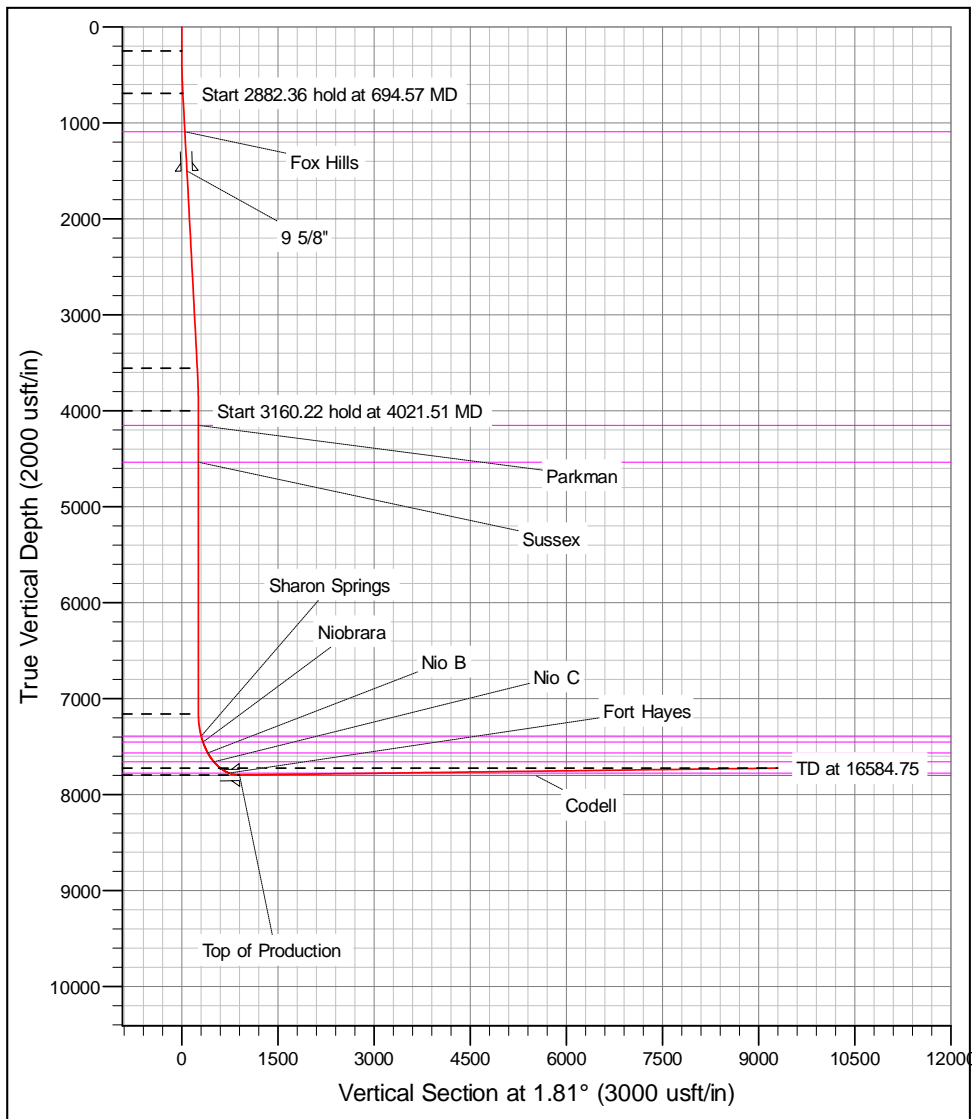
SITE: 1N-68W-03 HAMMER 3-5HZ PAD  
  
Well: HAMMER 3-3HZ  
Wellbore: Plan A  
Design: Permit Rev-1

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1094.00	1097.73	Fox Hills
4153.00	4174.51	Parkman
4537.00	4558.51	Sussex
7391.00	7417.89	Sharon Springs
7452.00	7484.93	Niobrara
7567.00	7623.00	Nio B
7659.00	7754.84	Nio C
7776.00	8018.39	Fort Hayes
7807.00		Codell

WELL DETAILS: HAMMER 3-3HZ						
+N/-S	+E/-W	GL: 5045.00	RKB @ 5062.00usft (D Rig)			
0.00	0.00	Northing	Easting	Latitude	Longitude	Slot
		14554632.65	1641153.50	40.076616	-104.997366	

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
694.57	6.67	49.49	693.57	16.79	19.65	1.50	17.40
3576.93	6.67	49.49	3556.43	234.21	274.13	0.00	242.76
4021.51	0.00	0.00	4000.00	251.00	293.78	1.50	260.16
7181.73	0.00	0.00	7160.22	251.00	293.78	0.00	260.16
8187.17	90.49	360.00	7796.82	893.06	293.78	9.00	901.90
16584.75	90.49	360.00	7725.00	9290.34	293.78	0.00	9294.98

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
HAMMER 3-3HZ_PBHL	7725.00	9290.34	293.78	14563923.00	1641447.00	40.102129	-104.996315



# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HAMMER 3-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Site:</b>	1N-68W-03 HAMMER 3-5HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HAMMER 3-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

<b>Project</b>	WELD-NAD83-UTMFT13N		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Zone 13N (108 W to 102 W)		

<b>Site</b>	1N-68W-03 HAMMER 3-5HZ PAD				
<b>Site Position:</b>		<b>Northing:</b>	14,554,633.01 usft	<b>Latitude:</b>	40.076617
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,641,108.45 usft	<b>Longitude:</b>	-104.997527
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	0.00 °

<b>Well</b>	HAMMER 3-3HZ					
<b>Well Position</b>	<b>+N/-S</b>	-0.36 usft	<b>Northing:</b>	14,554,632.65 usft	<b>Latitude:</b>	40.076616
	<b>+E/-W</b>	45.04 usft	<b>Easting:</b>	1,641,153.49 usft	<b>Longitude:</b>	-104.997366
<b>Position Uncertainty</b>		3.28 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b>	5,045.00 usft

<b>Wellbore</b>	Plan A				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	1/31/2017	8.20	66.56	52,343.27248559

<b>Design</b>	Permit Rev-1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	1.81

<b>Plan Survey Tool Program</b>	<b>Date</b>	2/7/2017			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	1,506.50 Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI	Fixed:v2:standard declinator	
2	1,506.50	16,584.75 Permit Rev-1 (Plan A)	APC_ISCWSA REV 2 MWI	Fixed:v2:crustal field declinat	

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HAMMER 3-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Site:</b>	1N-68W-03 HAMMER 3-5HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HAMMER 3-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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	
694.57	6.67	49.49	693.57	16.79	19.65	1.50	1.50	0.00	49.49	
3,576.93	6.67	49.49	3,556.43	234.21	274.13	0.00	0.00	0.00	0.00	
4,021.51	0.00	0.00	4,000.00	251.00	293.78	1.50	-1.50	0.00	180.00	
7,181.73	0.00	0.00	7,160.22	251.00	293.78	0.00	0.00	0.00	0.00	
8,187.17	90.49	360.00	7,796.82	893.06	293.78	9.00	9.00	0.00	360.00	
16,584.75	90.49	360.00	7,725.00	9,290.34	293.78	0.00	0.00	0.00	0.00	HAMMER 3-3HZ_P

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HAMMER 3-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Site:</b>	1N-68W-03 HAMMER 3-5HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HAMMER 3-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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
300.00	0.75	49.49	300.00	0.21	0.25	0.22	1.50	1.50	0.00	0.00
400.00	2.25	49.49	399.96	1.91	2.24	1.98	1.50	1.50	0.00	0.00
500.00	3.75	49.49	499.82	5.31	6.22	5.51	1.50	1.50	0.00	0.00
600.00	5.25	49.49	599.51	10.41	12.18	10.79	1.50	1.50	0.00	0.00
694.57	6.67	49.49	693.57	16.79	19.65	17.40	1.50	1.50	0.00	0.00
700.00	6.67	49.49	698.96	17.20	20.13	17.82	0.00	0.00	0.00	0.00
800.00	6.67	49.49	798.28	24.74	28.96	25.64	0.00	0.00	0.00	0.00
900.00	6.67	49.49	897.61	32.28	37.79	33.46	0.00	0.00	0.00	0.00
1,000.00	6.67	49.49	996.93	39.83	46.61	41.28	0.00	0.00	0.00	0.00
1,097.73	6.67	49.49	1,094.00	47.20	55.24	48.92	0.00	0.00	0.00	0.00
<b>Fox Hills</b>										
1,100.00	6.67	49.49	1,096.25	47.37	55.44	49.10	0.00	0.00	0.00	0.00
1,200.00	6.67	49.49	1,195.58	54.91	64.27	56.92	0.00	0.00	0.00	0.00
1,300.00	6.67	49.49	1,294.90	62.46	73.10	64.74	0.00	0.00	0.00	0.00
1,400.00	6.67	49.49	1,394.22	70.00	81.93	72.55	0.00	0.00	0.00	0.00
1,500.00	6.67	49.49	1,493.55	77.54	90.76	80.37	0.00	0.00	0.00	0.00
1,506.50	6.67	49.49	1,500.00	78.03	91.33	80.88	0.00	0.00	0.00	0.00
<b>9 5/8"</b>										
1,600.00	6.67	49.49	1,592.87	85.09	99.59	88.19	0.00	0.00	0.00	0.00
1,700.00	6.67	49.49	1,692.19	92.63	108.42	96.01	0.00	0.00	0.00	0.00
1,800.00	6.67	49.49	1,791.52	100.17	117.25	103.83	0.00	0.00	0.00	0.00
1,900.00	6.67	49.49	1,890.84	107.72	126.08	111.65	0.00	0.00	0.00	0.00
2,000.00	6.67	49.49	1,990.17	115.26	134.90	119.47	0.00	0.00	0.00	0.00
2,100.00	6.67	49.49	2,089.49	122.80	143.73	127.28	0.00	0.00	0.00	0.00
2,200.00	6.67	49.49	2,188.81	130.35	152.56	135.10	0.00	0.00	0.00	0.00
2,300.00	6.67	49.49	2,288.14	137.89	161.39	142.92	0.00	0.00	0.00	0.00
2,400.00	6.67	49.49	2,387.46	145.43	170.22	150.74	0.00	0.00	0.00	0.00
2,500.00	6.67	49.49	2,486.78	152.98	179.05	158.56	0.00	0.00	0.00	0.00
2,600.00	6.67	49.49	2,586.11	160.52	187.88	166.38	0.00	0.00	0.00	0.00
2,700.00	6.67	49.49	2,685.43	168.06	196.71	174.20	0.00	0.00	0.00	0.00
2,800.00	6.67	49.49	2,784.75	175.61	205.54	182.01	0.00	0.00	0.00	0.00
2,900.00	6.67	49.49	2,884.08	183.15	214.37	189.83	0.00	0.00	0.00	0.00
3,000.00	6.67	49.49	2,983.40	190.69	223.19	197.65	0.00	0.00	0.00	0.00
3,100.00	6.67	49.49	3,082.72	198.24	232.02	205.47	0.00	0.00	0.00	0.00
3,200.00	6.67	49.49	3,182.05	205.78	240.85	213.29	0.00	0.00	0.00	0.00
3,300.00	6.67	49.49	3,281.37	213.32	249.68	221.11	0.00	0.00	0.00	0.00
3,400.00	6.67	49.49	3,380.69	220.87	258.51	228.93	0.00	0.00	0.00	0.00
3,500.00	6.67	49.49	3,480.02	228.41	267.34	236.75	0.00	0.00	0.00	0.00
3,576.93	6.67	49.49	3,556.43	234.21	274.13	242.76	0.00	0.00	0.00	0.00
3,600.00	6.32	49.49	3,579.35	235.91	276.12	244.52	1.50	-1.50	0.00	0.00
3,700.00	4.82	49.49	3,678.87	242.22	283.50	251.06	1.50	-1.50	0.00	0.00
3,800.00	3.32	49.49	3,778.62	246.83	288.90	255.84	1.50	-1.50	0.00	0.00
3,900.00	1.82	49.49	3,878.51	249.74	292.31	258.86	1.50	-1.50	0.00	0.00
4,000.00	0.32	49.49	3,978.49	250.96	293.73	260.12	1.50	-1.50	0.00	0.00
4,021.51	0.00	0.00	4,000.00	251.00	293.78	260.16	1.50	-1.50	0.00	0.00
4,100.00	0.00	0.00	4,078.49	251.00	293.78	260.16	0.00	0.00	0.00	0.00
4,174.51	0.00	0.00	4,153.00	251.00	293.78	260.16	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,200.00	0.00	0.00	4,178.49	251.00	293.78	260.16	0.00	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HAMMER 3-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Site:</b>	1N-68W-03 HAMMER 3-5HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HAMMER 3-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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)
4,300.00	0.00	0.00	4,278.49	251.00	293.78	260.16	0.00	0.00	0.00
4,400.00	0.00	0.00	4,378.49	251.00	293.78	260.16	0.00	0.00	0.00
4,500.00	0.00	0.00	4,478.49	251.00	293.78	260.16	0.00	0.00	0.00
4,558.51	0.00	0.00	4,537.00	251.00	293.78	260.16	0.00	0.00	0.00
<b>Sussex</b>									
4,600.00	0.00	0.00	4,578.49	251.00	293.78	260.16	0.00	0.00	0.00
4,700.00	0.00	0.00	4,678.49	251.00	293.78	260.16	0.00	0.00	0.00
4,800.00	0.00	0.00	4,778.49	251.00	293.78	260.16	0.00	0.00	0.00
4,900.00	0.00	0.00	4,878.49	251.00	293.78	260.16	0.00	0.00	0.00
5,000.00	0.00	0.00	4,978.49	251.00	293.78	260.16	0.00	0.00	0.00
5,100.00	0.00	0.00	5,078.49	251.00	293.78	260.16	0.00	0.00	0.00
5,200.00	0.00	0.00	5,178.49	251.00	293.78	260.16	0.00	0.00	0.00
5,300.00	0.00	0.00	5,278.49	251.00	293.78	260.16	0.00	0.00	0.00
5,400.00	0.00	0.00	5,378.49	251.00	293.78	260.16	0.00	0.00	0.00
5,500.00	0.00	0.00	5,478.49	251.00	293.78	260.16	0.00	0.00	0.00
5,600.00	0.00	0.00	5,578.49	251.00	293.78	260.16	0.00	0.00	0.00
5,700.00	0.00	0.00	5,678.49	251.00	293.78	260.16	0.00	0.00	0.00
5,800.00	0.00	0.00	5,778.49	251.00	293.78	260.16	0.00	0.00	0.00
5,900.00	0.00	0.00	5,878.49	251.00	293.78	260.16	0.00	0.00	0.00
6,000.00	0.00	0.00	5,978.49	251.00	293.78	260.16	0.00	0.00	0.00
6,100.00	0.00	0.00	6,078.49	251.00	293.78	260.16	0.00	0.00	0.00
6,200.00	0.00	0.00	6,178.49	251.00	293.78	260.16	0.00	0.00	0.00
6,300.00	0.00	0.00	6,278.49	251.00	293.78	260.16	0.00	0.00	0.00
6,400.00	0.00	0.00	6,378.49	251.00	293.78	260.16	0.00	0.00	0.00
6,500.00	0.00	0.00	6,478.49	251.00	293.78	260.16	0.00	0.00	0.00
6,600.00	0.00	0.00	6,578.49	251.00	293.78	260.16	0.00	0.00	0.00
6,700.00	0.00	0.00	6,678.49	251.00	293.78	260.16	0.00	0.00	0.00
6,800.00	0.00	0.00	6,778.49	251.00	293.78	260.16	0.00	0.00	0.00
6,900.00	0.00	0.00	6,878.49	251.00	293.78	260.16	0.00	0.00	0.00
7,000.00	0.00	0.00	6,978.49	251.00	293.78	260.16	0.00	0.00	0.00
7,100.00	0.00	0.00	7,078.49	251.00	293.78	260.16	0.00	0.00	0.00
7,181.73	0.00	0.00	7,160.22	251.00	293.78	260.16	0.00	0.00	0.00
7,200.00	1.64	360.00	7,178.49	251.26	293.78	260.42	9.00	9.00	0.00
7,300.00	10.64	360.00	7,277.81	261.96	293.78	271.11	9.00	9.00	0.00
7,400.00	19.64	360.00	7,374.24	288.05	293.78	297.20	9.00	9.00	0.00
7,417.89	21.25	360.00	7,391.00	294.30	293.78	303.44	9.00	9.00	0.00
<b>Sharon Springs</b>									
7,484.83	27.28	360.00	7,452.00	321.80	293.78	330.93	9.00	9.00	0.00
<b>Niobrara</b>									
7,500.00	28.64	360.00	7,465.40	328.92	293.78	338.04	9.00	9.00	0.00
7,600.00	37.64	360.00	7,549.04	383.54	293.78	392.63	9.00	9.00	0.00
7,623.00	39.71	360.00	7,567.00	397.91	293.78	407.00	9.00	9.00	0.00
<b>Nio B</b>									
7,700.00	46.64	360.00	7,623.11	450.57	293.78	459.63	9.00	9.00	0.00
7,754.84	51.58	360.00	7,659.00	492.02	293.78	501.05	9.00	9.00	0.00
<b>Nio C</b>									
7,800.00	55.64	360.00	7,685.78	528.36	293.78	537.38	9.00	9.00	0.00
7,900.00	64.64	360.00	7,735.51	615.00	293.78	623.98	9.00	9.00	0.00
8,000.00	73.64	360.00	7,771.08	708.35	293.78	717.28	9.00	9.00	0.00
8,018.39	75.30	360.00	7,776.00	726.07	293.78	734.99	9.00	9.00	0.00
<b>Fort Hayes</b>									
8,100.00	82.64	360.00	7,791.60	806.12	293.78	815.00	9.00	9.00	0.00
8,187.17	90.49	360.00	7,796.82	893.06	293.78	901.90	9.00	9.00	0.00

## Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HAMMER 3-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Site:</b>	1N-68W-03 HAMMER 3-5HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HAMMER 3-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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)
<b>Top of Production - HAMMER 3-3HZ_PHL</b>									
8,200.00	90.49	360.00	7,796.71	905.89	293.78	914.73	0.00	0.00	0.00
8,300.00	90.49	360.00	7,795.85	1,005.89	293.78	1,014.67	0.00	0.00	0.00
8,400.00	90.49	360.00	7,795.00	1,105.89	293.78	1,114.62	0.00	0.00	0.00
8,500.00	90.49	360.00	7,794.14	1,205.88	293.78	1,214.56	0.00	0.00	0.00
8,600.00	90.49	360.00	7,793.29	1,305.88	293.78	1,314.51	0.00	0.00	0.00
8,700.00	90.49	360.00	7,792.43	1,405.87	293.78	1,414.46	0.00	0.00	0.00
8,800.00	90.49	360.00	7,791.58	1,505.87	293.78	1,514.40	0.00	0.00	0.00
8,900.00	90.49	360.00	7,790.72	1,605.87	293.78	1,614.35	0.00	0.00	0.00
9,000.00	90.49	360.00	7,789.87	1,705.86	293.78	1,714.30	0.00	0.00	0.00
9,100.00	90.49	360.00	7,789.01	1,805.86	293.78	1,814.24	0.00	0.00	0.00
9,200.00	90.49	360.00	7,788.15	1,905.86	293.78	1,914.19	0.00	0.00	0.00
9,300.00	90.49	360.00	7,787.30	2,005.85	293.78	2,014.14	0.00	0.00	0.00
9,400.00	90.49	360.00	7,786.44	2,105.85	293.78	2,114.08	0.00	0.00	0.00
9,500.00	90.49	360.00	7,785.59	2,205.85	293.78	2,214.03	0.00	0.00	0.00
9,600.00	90.49	360.00	7,784.73	2,305.84	293.78	2,313.97	0.00	0.00	0.00
9,700.00	90.49	360.00	7,783.88	2,405.84	293.78	2,413.92	0.00	0.00	0.00
9,800.00	90.49	360.00	7,783.02	2,505.83	293.78	2,513.87	0.00	0.00	0.00
9,900.00	90.49	360.00	7,782.17	2,605.83	293.78	2,613.81	0.00	0.00	0.00
10,000.00	90.49	360.00	7,781.31	2,705.83	293.78	2,713.76	0.00	0.00	0.00
10,100.00	90.49	360.00	7,780.46	2,805.82	293.78	2,813.71	0.00	0.00	0.00
10,200.00	90.49	360.00	7,779.60	2,905.82	293.78	2,913.65	0.00	0.00	0.00
10,300.00	90.49	360.00	7,778.75	3,005.82	293.78	3,013.60	0.00	0.00	0.00
10,400.00	90.49	360.00	7,777.89	3,105.81	293.78	3,113.55	0.00	0.00	0.00
10,500.00	90.49	360.00	7,777.04	3,205.81	293.78	3,213.49	0.00	0.00	0.00
10,600.00	90.49	360.00	7,776.18	3,305.80	293.78	3,313.44	0.00	0.00	0.00
10,700.00	90.49	360.00	7,775.33	3,405.80	293.78	3,413.38	0.00	0.00	0.00
10,800.00	90.49	360.00	7,774.47	3,505.80	293.78	3,513.33	0.00	0.00	0.00
10,900.00	90.49	360.00	7,773.62	3,605.79	293.78	3,613.28	0.00	0.00	0.00
11,000.00	90.49	360.00	7,772.76	3,705.79	293.78	3,713.22	0.00	0.00	0.00
11,100.00	90.49	360.00	7,771.91	3,805.79	293.78	3,813.17	0.00	0.00	0.00
11,200.00	90.49	360.00	7,771.05	3,905.78	293.78	3,913.12	0.00	0.00	0.00
11,300.00	90.49	360.00	7,770.20	4,005.78	293.78	4,013.06	0.00	0.00	0.00
11,400.00	90.49	360.00	7,769.34	4,105.78	293.78	4,113.01	0.00	0.00	0.00
11,500.00	90.49	360.00	7,768.49	4,205.77	293.78	4,212.96	0.00	0.00	0.00
11,600.00	90.49	360.00	7,767.63	4,305.77	293.78	4,312.90	0.00	0.00	0.00
11,700.00	90.49	360.00	7,766.77	4,405.76	293.78	4,412.85	0.00	0.00	0.00
11,800.00	90.49	360.00	7,765.92	4,505.76	293.78	4,512.80	0.00	0.00	0.00
11,900.00	90.49	360.00	7,765.06	4,605.76	293.78	4,612.74	0.00	0.00	0.00
12,000.00	90.49	360.00	7,764.21	4,705.75	293.78	4,712.69	0.00	0.00	0.00
12,100.00	90.49	360.00	7,763.35	4,805.75	293.78	4,812.63	0.00	0.00	0.00
12,200.00	90.49	360.00	7,762.50	4,905.75	293.78	4,912.58	0.00	0.00	0.00
12,300.00	90.49	360.00	7,761.64	5,005.74	293.78	5,012.53	0.00	0.00	0.00
12,400.00	90.49	360.00	7,760.79	5,105.74	293.78	5,112.47	0.00	0.00	0.00
12,500.00	90.49	360.00	7,759.93	5,205.74	293.78	5,212.42	0.00	0.00	0.00
12,600.00	90.49	360.00	7,759.08	5,305.73	293.78	5,312.37	0.00	0.00	0.00
12,700.00	90.49	360.00	7,758.22	5,405.73	293.78	5,412.31	0.00	0.00	0.00
12,800.00	90.49	360.00	7,757.37	5,505.72	293.78	5,512.26	0.00	0.00	0.00
12,900.00	90.49	360.00	7,756.51	5,605.72	293.78	5,612.21	0.00	0.00	0.00
13,000.00	90.49	360.00	7,755.66	5,705.72	293.78	5,712.15	0.00	0.00	0.00
13,100.00	90.49	360.00	7,754.80	5,805.71	293.78	5,812.10	0.00	0.00	0.00
13,200.00	90.49	360.00	7,753.95	5,905.71	293.78	5,912.04	0.00	0.00	0.00
13,300.00	90.49	360.00	7,753.09	6,005.71	293.78	6,011.99	0.00	0.00	0.00
13,400.00	90.49	360.00	7,752.24	6,105.70	293.78	6,111.94	0.00	0.00	0.00

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HAMMER 3-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Site:</b>	1N-68W-03 HAMMER 3-5HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HAMMER 3-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	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)
13,500.00	90.49	360.00	7,751.38	6,205.70	293.78	6,211.88	0.00	0.00	0.00
13,600.00	90.49	360.00	7,750.53	6,305.70	293.78	6,311.83	0.00	0.00	0.00
13,700.00	90.49	360.00	7,749.67	6,405.69	293.78	6,411.78	0.00	0.00	0.00
13,800.00	90.49	360.00	7,748.82	6,505.69	293.78	6,511.72	0.00	0.00	0.00
13,900.00	90.49	360.00	7,747.96	6,605.68	293.78	6,611.67	0.00	0.00	0.00
14,000.00	90.49	360.00	7,747.11	6,705.68	293.78	6,711.62	0.00	0.00	0.00
14,100.00	90.49	360.00	7,746.25	6,805.68	293.78	6,811.56	0.00	0.00	0.00
14,200.00	90.49	360.00	7,745.39	6,905.67	293.78	6,911.51	0.00	0.00	0.00
14,300.00	90.49	360.00	7,744.54	7,005.67	293.78	7,011.45	0.00	0.00	0.00
14,400.00	90.49	360.00	7,743.68	7,105.67	293.78	7,111.40	0.00	0.00	0.00
14,500.00	90.49	360.00	7,742.83	7,205.66	293.78	7,211.35	0.00	0.00	0.00
14,600.00	90.49	360.00	7,741.97	7,305.66	293.78	7,311.29	0.00	0.00	0.00
14,700.00	90.49	360.00	7,741.12	7,405.66	293.78	7,411.24	0.00	0.00	0.00
14,800.00	90.49	360.00	7,740.26	7,505.65	293.78	7,511.19	0.00	0.00	0.00
14,900.00	90.49	360.00	7,739.41	7,605.65	293.78	7,611.13	0.00	0.00	0.00
15,000.00	90.49	360.00	7,738.55	7,705.64	293.78	7,711.08	0.00	0.00	0.00
15,100.00	90.49	360.00	7,737.70	7,805.64	293.78	7,811.03	0.00	0.00	0.00
15,200.00	90.49	360.00	7,736.84	7,905.64	293.78	7,910.97	0.00	0.00	0.00
15,300.00	90.49	360.00	7,735.99	8,005.63	293.78	8,010.92	0.00	0.00	0.00
15,400.00	90.49	360.00	7,735.13	8,105.63	293.78	8,110.87	0.00	0.00	0.00
15,500.00	90.49	360.00	7,734.28	8,205.63	293.78	8,210.81	0.00	0.00	0.00
15,600.00	90.49	360.00	7,733.42	8,305.62	293.78	8,310.76	0.00	0.00	0.00
15,700.00	90.49	360.00	7,732.57	8,405.62	293.78	8,410.70	0.00	0.00	0.00
15,800.00	90.49	360.00	7,731.71	8,505.61	293.78	8,510.65	0.00	0.00	0.00
15,900.00	90.49	360.00	7,730.86	8,605.61	293.78	8,610.60	0.00	0.00	0.00
16,000.00	90.49	360.00	7,730.00	8,705.61	293.78	8,710.54	0.00	0.00	0.00
16,100.00	90.49	360.00	7,729.15	8,805.60	293.78	8,810.49	0.00	0.00	0.00
16,200.00	90.49	360.00	7,728.29	8,905.60	293.78	8,910.44	0.00	0.00	0.00
16,300.00	90.49	360.00	7,727.44	9,005.60	293.78	9,010.38	0.00	0.00	0.00
16,400.00	90.49	360.00	7,726.58	9,105.59	293.78	9,110.33	0.00	0.00	0.00
16,500.00	90.49	360.00	7,725.72	9,205.59	293.78	9,210.28	0.00	0.00	0.00
16,584.75	90.49	360.00	7,725.00	9,290.34	293.78	9,294.98	0.00	0.00	0.00
<b>HAMMER 3-3HZ_PBHL</b>									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
HAMMER 3-3HZ_PBI - hit/miss target - Shape - Point	0.00	0.00	7,725.00	9,290.34	293.78	14,563,923.00	1,641,447.00	40.102129	-104.996316
HAMMER 3-3HZ_PHL - plan hits target center - Point	0.00	0.00	7,796.82	893.06	293.78	14,555,525.72	1,641,447.25	40.079069	-104.996316

# Corporate Planning Report

<b>Database:</b>	PLANNING	<b>Local Co-ordinate Reference:</b>	Well HAMMER 3-3HZ
<b>Company:</b>	US ROCKIES WATTENBERG PLANNING	<b>TVD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Project:</b>	WELD-NAD83-UTMFT13N	<b>MD Reference:</b>	RKB @ 5062.00usft (D Rig)
<b>Site:</b>	1N-68W-03 HAMMER 3-5HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	HAMMER 3-3HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Plan A		
<b>Design:</b>	Permit Rev-1		

### Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,506.50	1,500.00	9 5/8"	9-5/8	13-1/2
8,187.17	7,796.82	Top of Production	5-1/2	8-1/2

### Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,097.73	1,094.00	Fox Hills			
4,174.51	4,153.00	Parkman			
4,558.51	4,537.00	Sussex			
7,417.89	7,391.00	Sharon Springs			
7,484.83	7,452.00	Niobrara			
7,623.00	7,567.00	Nio B			
7,754.84	7,659.00	Nio C			
8,018.39	7,776.00	Fort Hayes			