

# US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Bat Pad

BAT 28N-9HZ

Plan A

Plan: Permit Rev-1

## Sperry Drilling Services Proposal Report

29 October, 2014

Well Coordinates: 14,548,916.01 N, 1,733,070.17 E (40° 03' 37.60" N, 104° 40' 07.91" W)

Ground Level: 4,930.00 usft

Local Coordinate Origin:

Centered on Well BAT 28N-9HZ

Viewing Datum:

RKB = 17' @ 4947.00usft (D Rig)

TVDs to System:

N

North Reference:

True

Unit System:

Dec-Deg - API - US Survey Feet - Custom

Version: 5000.1 Build: 70

**HALLIBURTON**

Project: WELD-NAD83-UTMFT13N

Site: Bat Pad

Well: BAT 28N-9HZ

Wellbore: Plan A

Design: Permit Rev-1

# US ROCKIES WATTENBERG PLANNING

HALLIBURTON

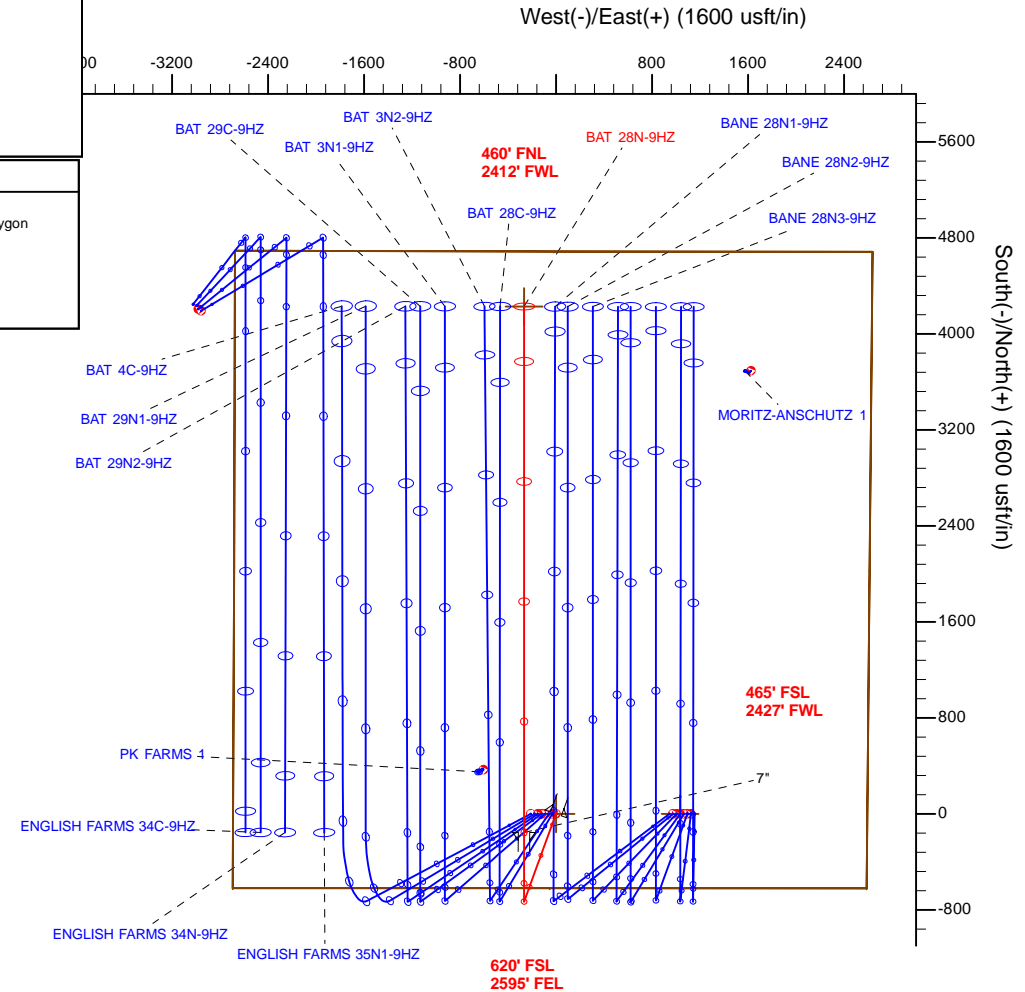
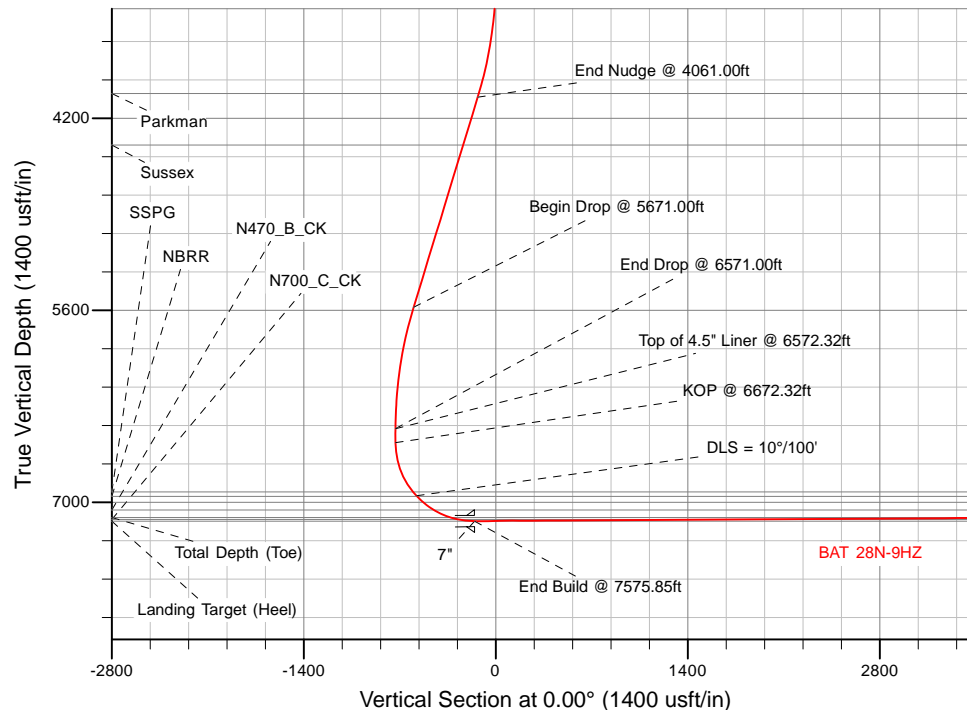
Sperry Drilling

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	3161.00	0.00	0.00	3161.00	0.00	0.00	0.00	0.00	0.00	
3	4061.00	18.00	200.00	4046.27	-131.76	-47.96	2.00	200.00	-131.76	
4	5671.00	18.00	200.00	5577.47	-599.27	-218.12	0.00	0.00	-599.27	
5	6571.00	0.00	0.00	6462.74	-731.03	-266.07	2.00	180.00	-731.03	
6	6672.32	0.00	0.00	6564.06	-731.03	-266.07	0.00	0.00	-731.03	
7	7575.85	90.35	0.00	7137.00	-154.54	-266.07	10.00	0.00	-154.54	
8	11958.23	90.35	0.00	7110.00	4227.76	-266.05	0.00	0.00	4227.76	BAT 28N-9HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
1N-R65W-Sec. 9 Section lines	-34.00	-0.34	1033.89	40.060443	-104.665168	
BAT 28N-9HZ_SHL	0.00	0.00	0.00	40.060444	-104.668863	
BAT 28N-9HZ_BHL	7110.00	4227.76	-266.05	40.072054	-104.669814	



WELL DETAILS: BAT 28N-9HZ		
Ground Level: 4930.00		
RKB = 17' @ 4947.00usft (D Rig)		
Plan: Permit Rev-1 (BAT 28N-9HZ/Plan A)		
Created By: Clint Eshelman Date: 10/29/2014		
Reviewed: _____ Date: _____		

TVD	MD	
6464.06	6572.32	Top of 4.5" Liner @ 6572.32ft
6564.06	6672.32	KOP @ 6672.32ft

## Plan Report for BAT 28N-9HZ - Permit Rev-1

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)	Toolface Azimuth (°)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>BAT 28N-9HZ_SHL - 1N-R65W-Sec. 9 Section lines</b>										
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
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
943.00	0.00	0.00	943.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Base Fox Hills</b>										
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,475.00	0.00	0.00	1,475.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Csg Setting Depth - 9 5/8"</b>										
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3,161.00	0.00	0.00	3,161.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 3161.00ft</b>										
3,200.00	0.78	200.00	3,200.00	-0.25	-0.09	-0.25	2.00	2.00	0.00	200.00
3,300.00	2.78	200.00	3,299.95	-3.17	-1.15	-3.17	2.00	2.00	0.00	0.00
3,400.00	4.78	200.00	3,399.72	-9.36	-3.41	-9.36	2.00	2.00	0.00	0.00
3,500.00	6.78	200.00	3,499.21	-18.83	-6.85	-18.83	2.00	2.00	0.00	0.00
3,600.00	8.78	200.00	3,598.28	-31.55	-11.48	-31.55	2.00	2.00	0.00	0.00
3,700.00	10.78	200.00	3,696.83	-47.51	-17.29	-47.51	2.00	2.00	0.00	0.00
3,800.00	12.78	200.00	3,794.71	-66.69	-24.27	-66.69	2.00	2.00	0.00	0.00
3,900.00	14.78	200.00	3,891.83	-89.07	-32.42	-89.07	2.00	2.00	0.00	0.00
4,000.00	16.78	200.00	3,988.06	-114.63	-41.72	-114.63	2.00	2.00	0.00	0.00
4,032.37	17.43	200.00	4,019.00	-123.57	-44.98	-123.57	2.00	2.00	0.00	0.00
<b>Parkman</b>										
4,061.00	18.00	200.00	4,046.27	-131.76	-47.96	-131.76	2.00	2.00	0.00	0.00
<b>End Nudge @ 4061.00ft</b>										
4,100.00	18.00	200.00	4,083.36	-143.08	-52.08	-143.08	0.00	0.00	0.00	0.00
4,200.00	18.00	200.00	4,178.47	-172.12	-62.65	-172.12	0.00	0.00	0.00	0.00
4,300.00	18.00	200.00	4,273.57	-201.16	-73.22	-201.16	0.00	0.00	0.00	0.00
4,400.00	18.00	200.00	4,368.68	-230.20	-83.78	-230.20	0.00	0.00	0.00	0.00
4,426.63	18.00	200.00	4,394.00	-237.93	-86.60	-237.93	0.00	0.00	0.00	0.00

## Plan Report for BAT 28N-9HZ - Permit Rev-1

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)	Toolface Azimuth (°)
<b>Sussex</b>										
4,500.00	18.00	200.00	4,463.78	-259.23	-94.35	-259.23	0.00	0.00	0.00	0.00
4,600.00	18.00	200.00	4,558.89	-288.27	-104.92	-288.27	0.00	0.00	0.00	0.00
4,700.00	18.00	200.00	4,653.99	-317.31	-115.49	-317.31	0.00	0.00	0.00	0.00
4,800.00	18.00	200.00	4,749.10	-346.35	-126.06	-346.35	0.00	0.00	0.00	0.00
4,900.00	18.00	200.00	4,844.20	-375.39	-136.63	-375.39	0.00	0.00	0.00	0.00
5,000.00	18.00	200.00	4,939.31	-404.42	-147.20	-404.42	0.00	0.00	0.00	0.00
5,100.00	18.00	200.00	5,034.42	-433.46	-157.77	-433.46	0.00	0.00	0.00	0.00
5,200.00	18.00	200.00	5,129.52	-462.50	-168.34	-462.50	0.00	0.00	0.00	0.00
5,300.00	18.00	200.00	5,224.63	-491.54	-178.91	-491.54	0.00	0.00	0.00	0.00
5,400.00	18.00	200.00	5,319.73	-520.58	-189.47	-520.58	0.00	0.00	0.00	0.00
5,500.00	18.00	200.00	5,414.84	-549.62	-200.04	-549.62	0.00	0.00	0.00	0.00
5,600.00	18.00	200.00	5,509.94	-578.65	-210.61	-578.65	0.00	0.00	0.00	0.00
5,671.00	18.00	200.00	5,577.47	-599.27	-218.12	-599.27	0.00	0.00	0.00	0.00
<b>Begin Drop @ 5671.00ft</b>										
5,700.00	17.42	200.00	5,605.09	-607.56	-221.13	-607.56	2.00	-2.00	0.00	-180.00
5,800.00	15.42	200.00	5,701.01	-634.12	-230.80	-634.12	2.00	-2.00	0.00	180.00
5,900.00	13.42	200.00	5,797.86	-657.52	-239.32	-657.52	2.00	-2.00	0.00	180.00
6,000.00	11.42	200.00	5,895.51	-677.73	-246.67	-677.73	2.00	-2.00	0.00	-180.00
6,100.00	9.42	200.00	5,993.86	-694.73	-252.86	-694.73	2.00	-2.00	0.00	180.00
6,200.00	7.42	200.00	6,092.77	-708.48	-257.87	-708.48	2.00	-2.00	0.00	180.00
6,300.00	5.42	200.00	6,192.14	-718.99	-261.69	-718.99	2.00	-2.00	0.00	180.00
6,400.00	3.42	200.00	6,291.84	-726.23	-264.33	-726.23	2.00	-2.00	0.00	180.00
6,500.00	1.42	200.00	6,391.75	-730.20	-265.77	-730.20	2.00	-2.00	0.00	180.00
6,571.00	0.00	0.00	6,462.74	-731.03	-266.07	-731.03	2.00	-2.00	225.35	180.00
<b>End Drop @ 6571.00ft</b>										
6,572.32	0.00	0.00	6,464.06	-731.03	-266.07	-731.03	0.00	0.00	0.00	180.00
<b>Top of 4.5" Liner @ 6572.32ft</b>										
6,600.00	0.00	0.00	6,491.74	-731.03	-266.07	-731.03	0.00	0.00	0.00	0.00
6,672.32	0.00	0.00	6,564.06	-731.03	-266.07	-731.03	0.00	0.00	0.00	0.00
<b>KOP @ 6672.32ft</b>										
6,700.00	2.77	0.00	6,591.73	-730.36	-266.07	-730.36	10.00	10.00	0.00	0.00
6,800.00	12.77	0.00	6,690.68	-716.86	-266.07	-716.86	10.00	10.00	0.00	0.00
6,900.00	22.77	0.00	6,785.79	-686.38	-266.07	-686.38	10.00	10.00	0.00	0.00
7,000.00	32.77	0.00	6,874.16	-639.85	-266.07	-639.85	10.00	10.00	0.00	0.00
7,061.51	38.92	0.00	6,924.00	-603.85	-266.07	-603.85	10.00	10.00	0.00	0.00
<b>SSPG</b>										
7,100.00	42.77	0.00	6,953.11	-578.68	-266.07	-578.68	10.00	10.00	0.00	0.00
<b>DLS = 10°/100'</b>										
7,105.32	43.30	0.00	6,957.00	-575.06	-266.07	-575.06	10.00	10.00	0.00	0.00
<b>NBRR</b>										
7,200.00	52.77	0.00	7,020.24	-504.73	-266.07	-504.73	10.00	10.00	0.00	0.00
7,263.92	59.16	0.00	7,056.00	-451.79	-266.07	-451.79	10.00	10.00	0.00	0.00
<b>N470_B_CK</b>										
7,300.00	62.77	0.00	7,073.51	-420.25	-266.07	-420.25	10.00	10.00	0.00	0.00
7,400.00	72.77	0.00	7,111.30	-327.80	-266.07	-327.80	10.00	10.00	0.00	0.00
7,449.96	77.76	0.00	7,124.00	-279.50	-266.07	-279.50	10.00	10.00	0.00	0.00
<b>N700_C_CK</b>										
7,500.00	82.77	0.00	7,132.46	-230.20	-266.07	-230.20	10.00	10.00	0.00	0.00
7,575.85	90.35	0.00	7,137.00	-154.54	-266.07	-154.54	10.00	10.00	0.00	0.00
<b>End Build @ 7575.85ft - Landing Target (Heel) - 7"</b>										
7,600.00	90.35	0.00	7,136.86	-130.39	-266.07	-130.39	0.00	0.00	0.00	0.00
7,700.00	90.35	0.00	7,136.24	-30.39	-266.07	-30.39	0.00	0.00	0.00	0.00
7,800.00	90.35	0.00	7,135.62	69.61	-266.07	69.61	0.00	0.00	0.00	0.00
7,900.00	90.35	0.00	7,135.01	169.60	-266.07	169.60	0.00	0.00	0.00	0.00
8,000.00	90.35	0.00	7,134.39	269.60	-266.07	269.60	0.00	0.00	0.00	0.00
8,100.00	90.35	0.00	7,133.78	369.60	-266.07	369.60	0.00	0.00	0.00	0.00
8,200.00	90.35	0.00	7,133.16	469.60	-266.07	469.60	0.00	0.00	0.00	0.00

## Plan Report for BAT 28N-9HZ - Permit Rev-1

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)	Toolface Azimuth (°)
8,300.00	90.35	0.00	7,132.54	569.60	-266.07	569.60	0.00	0.00	0.00	0.00
8,400.00	90.35	0.00	7,131.93	669.59	-266.07	669.59	0.00	0.00	0.00	0.00
8,500.00	90.35	0.00	7,131.31	769.59	-266.07	769.59	0.00	0.00	0.00	0.00
8,600.00	90.35	0.00	7,130.69	869.59	-266.07	869.59	0.00	0.00	0.00	0.00
8,700.00	90.35	0.00	7,130.08	969.59	-266.07	969.59	0.00	0.00	0.00	0.00
8,800.00	90.35	0.00	7,129.46	1,069.59	-266.06	1,069.59	0.00	0.00	0.00	0.00
8,900.00	90.35	0.00	7,128.85	1,169.59	-266.06	1,169.59	0.00	0.00	0.00	0.00
9,000.00	90.35	0.00	7,128.23	1,269.58	-266.06	1,269.58	0.00	0.00	0.00	0.00
9,100.00	90.35	0.00	7,127.61	1,369.58	-266.06	1,369.58	0.00	0.00	0.00	0.00
9,200.00	90.35	0.00	7,127.00	1,469.58	-266.06	1,469.58	0.00	0.00	0.00	0.00
9,300.00	90.35	0.00	7,126.38	1,569.58	-266.06	1,569.58	0.00	0.00	0.00	0.00
9,400.00	90.35	0.00	7,125.76	1,669.58	-266.06	1,669.58	0.00	0.00	0.00	0.00
9,500.00	90.35	0.00	7,125.15	1,769.57	-266.06	1,769.57	0.00	0.00	0.00	0.00
9,600.00	90.35	0.00	7,124.53	1,869.57	-266.06	1,869.57	0.00	0.00	0.00	0.00
9,700.00	90.35	0.00	7,123.92	1,969.57	-266.06	1,969.57	0.00	0.00	0.00	0.00
9,800.00	90.35	0.00	7,123.30	2,069.57	-266.06	2,069.57	0.00	0.00	0.00	0.00
9,900.00	90.35	0.00	7,122.68	2,169.57	-266.06	2,169.57	0.00	0.00	0.00	0.00
10,000.00	90.35	0.00	7,122.07	2,269.56	-266.06	2,269.56	0.00	0.00	0.00	0.00
10,100.00	90.35	0.00	7,121.45	2,369.56	-266.06	2,369.56	0.00	0.00	0.00	0.00
10,200.00	90.35	0.00	7,120.83	2,469.56	-266.06	2,469.56	0.00	0.00	0.00	0.00
10,300.00	90.35	0.00	7,120.22	2,569.56	-266.06	2,569.56	0.00	0.00	0.00	0.00
10,400.00	90.35	0.00	7,119.60	2,669.56	-266.06	2,669.56	0.00	0.00	0.00	0.00
10,500.00	90.35	0.00	7,118.99	2,769.56	-266.06	2,769.56	0.00	0.00	0.00	0.00
10,600.00	90.35	0.00	7,118.37	2,869.55	-266.06	2,869.55	0.00	0.00	0.00	0.00
10,700.00	90.35	0.00	7,117.75	2,969.55	-266.06	2,969.55	0.00	0.00	0.00	0.00
10,800.00	90.35	0.00	7,117.14	3,069.55	-266.06	3,069.55	0.00	0.00	0.00	0.00
10,900.00	90.35	0.00	7,116.52	3,169.55	-266.06	3,169.55	0.00	0.00	0.00	0.00
11,000.00	90.35	0.00	7,115.90	3,269.55	-266.06	3,269.55	0.00	0.00	0.00	0.00
11,100.00	90.35	0.00	7,115.29	3,369.54	-266.06	3,369.54	0.00	0.00	0.00	0.00
11,200.00	90.35	0.00	7,114.67	3,469.54	-266.05	3,469.54	0.00	0.00	0.00	0.00
11,300.00	90.35	0.00	7,114.06	3,569.54	-266.05	3,569.54	0.00	0.00	0.00	0.00
11,400.00	90.35	0.00	7,113.44	3,669.54	-266.05	3,669.54	0.00	0.00	0.00	0.00
11,500.00	90.35	0.00	7,112.82	3,769.54	-266.05	3,769.54	0.00	0.00	0.00	0.00
11,600.00	90.35	0.00	7,112.21	3,869.53	-266.05	3,869.53	0.00	0.00	0.00	0.00
11,700.00	90.35	0.00	7,111.59	3,969.53	-266.05	3,969.53	0.00	0.00	0.00	0.00
11,800.00	90.35	0.00	7,110.98	4,069.53	-266.05	4,069.53	0.00	0.00	0.00	0.00
11,900.00	90.35	0.00	7,110.36	4,169.53	-266.05	4,169.53	0.00	0.00	0.00	0.00
11,958.23	90.35	0.00	7,110.00	4,227.76	-266.05	4,227.76	0.00	0.00	0.00	0.00

TD Well @ 11958.23ft - Total Depth (Toe) - BAT 28N-9HZ\_BHL

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,161.00	3,161.00	0.00	0.00	Begin Nudge @ 3161.00ft
4,061.00	4,046.27	-131.76	-47.96	End Nudge @ 4061.00ft
5,671.00	5,577.47	-599.27	-218.12	Begin Drop @ 5671.00ft
6,571.00	6,462.74	-731.03	-266.07	End Drop @ 6571.00ft
6,572.32	6,464.06	-731.03	-266.07	Top of 4.5" Liner @ 6572.32ft
6,672.32	6,564.06	-731.03	-266.07	KOP @ 6672.32ft
7,100.00	6,953.11	-578.68	-266.07	DLS = 10°/100'
7,575.85	7,137.00	-154.54	-266.07	End Build @ 7575.85ft
11,958.23	7,110.00	4,227.76	-266.05	TD Well @ 11958.23ft

## Plan Report for BAT 28N-9HZ - Permit Rev-1

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (usft)	Origin +E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.00	Slot	0.00	0.00	0.00

**Survey tool program**

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,575.85	Permit Rev-1	MWD+IFR1
7,575.85	11,958.23	Permit Rev-1	MWD+IFR1

**Casing Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,475.00	1,475.00	9 5/8"	9-5/8	13-1/2
7,575.85	7,137.00	7"	7	8-3/4

**Formation Details**

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
943.00	943.00	Base Fox Hills		0.00	
1,475.00	1,475.00	Surface Csg Setting Depth		0.00	
4,032.37	4,019.00	Parkman		0.00	
4,426.63	4,394.00	Sussex		0.00	
7,061.51	6,924.00	SSPG		0.00	
7,105.32	6,957.00	NBRR		0.00	
7,263.92	7,056.00	N470_B_CK		0.00	
7,449.96	7,124.00	N700_C_CK		0.00	
7,575.85	7,137.00	Landing Target (Heel)		0.00	
11,958.23	7,110.00	Total Depth (Toe)		0.00	

**Targets associated with this wellbore**

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
BAT 28N-9HZ_SHL	0.00	0.00	0.00	Point
1N-R65W-Sec. 9_Section lines	-34.00	-0.34	1,033.89	Polygon
BAT 28N-9HZ_BHL	7,110.00	4,227.76	-266.05	Point

**North Reference Sheet for Bat Pad - BAT 28N-9HZ - Plan A**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.

Vertical Depths are relative to RKB = 17' @ 4947.00usft (D Rig). Northing and Easting are relative to BAT 28N-9HZ

Coordinate System is Universal Transverse Mercator (US Survey Feet), Zone 13N (108 W to 102 W) using datum North American Datum 1983, ellipsoid

Projection method is Transverse Mercator (Gauss-Kruger)

Central Meridian is -105.00°, Longitude Origin:0.000000°, Latitude Origin:0.000000°

False Easting: 1,640,416.67usft, False Northing: 0.00usft, Scale Reduction: 0.99960982

Grid Coordinates of Well: 14,548,916.01 usft N, 1,733,070.17 usft E

Geographical Coordinates of Well: 40° 03' 37.60" N, 104° 40' 07.91" W

Grid Convergence at Surface is: 0.21°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,958.23usft the Bottom Hole Displacement is 4,236.12usft in the Direction of 356.40° ( True).

Magnetic Convergence at surface is: -8.12° (20 October 2014, , IGRF2010)

