

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Bat Pad

BAT 4C-9HZ

Plan A

Plan: Permit Rev-1

Sperry Drilling Services Proposal Report

29 October, 2014

Well Coordinates: 14,548,915.23 N, 1,732,860.32 E (40° 03' 37.60" N, 104° 40' 10.61" W)

Ground Level: 4,930.00 usft

Local Coordinate Origin:

Centered on Well BAT 4C-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 4C-9HZ

Wellbore: Plan A

Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

HALLIBURTON

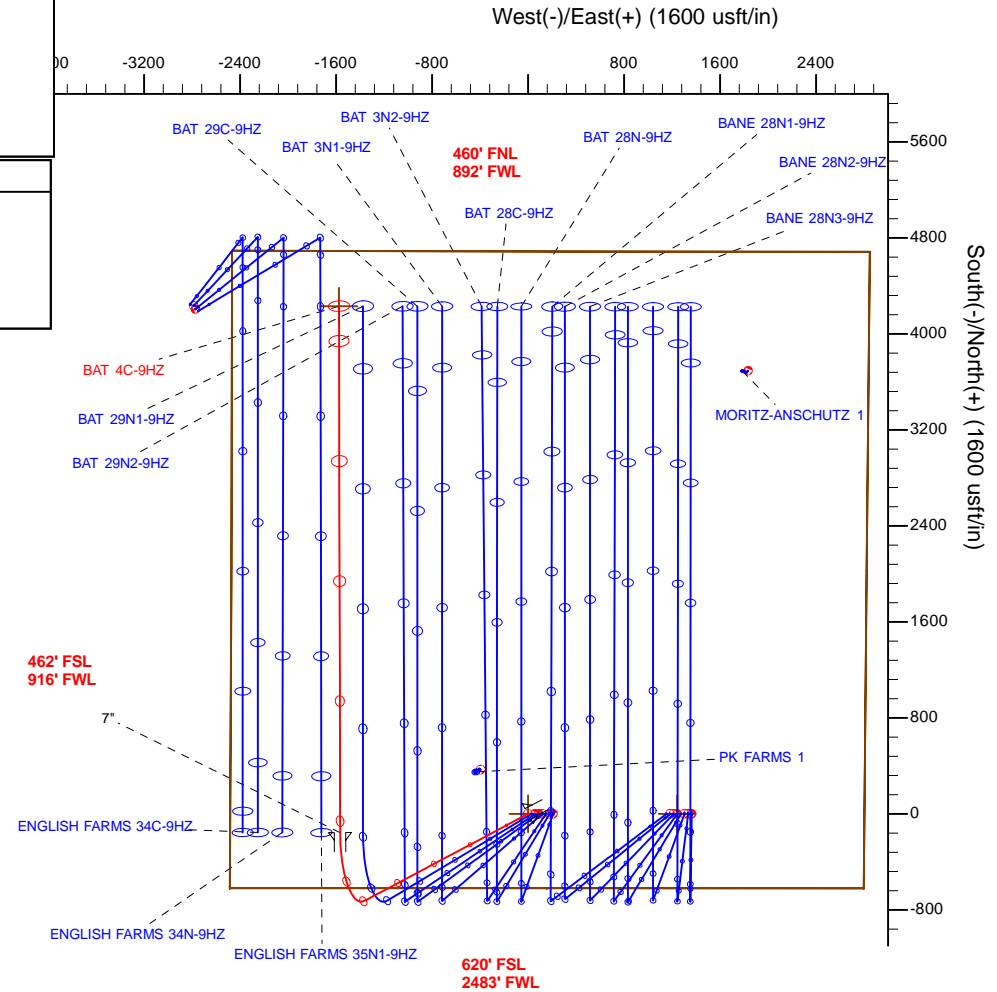
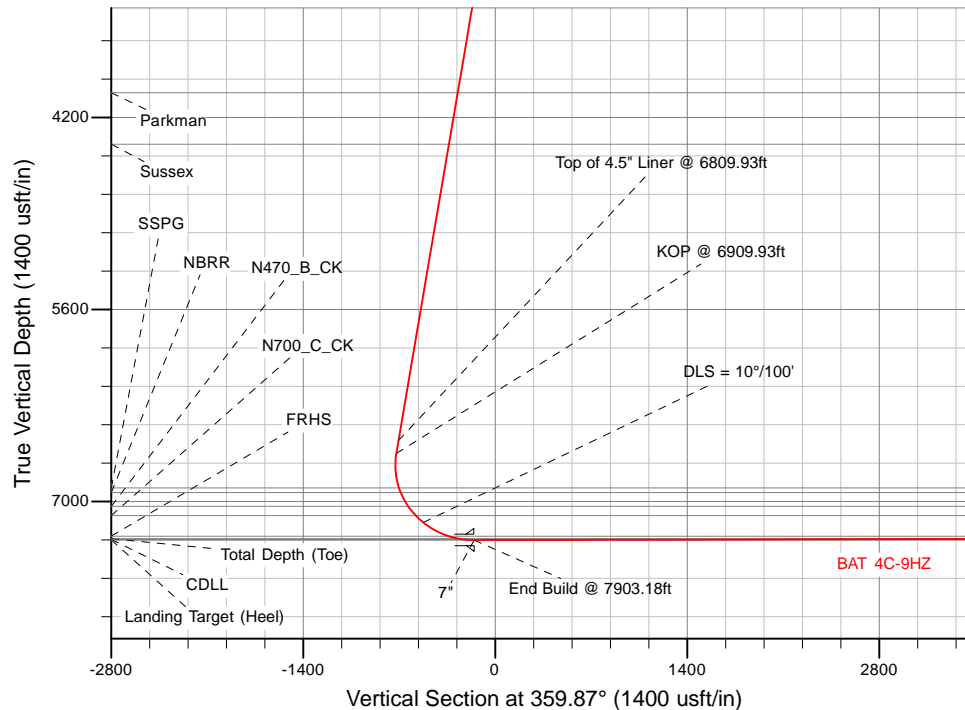
Sperry Drilling

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1909.93	0.00	0.00	1909.93	0.00	0.00	0.00	0.00	0.00	
3	2909.93	20.00	242.00	2889.75	-81.11	-152.55	2.00	242.00	-80.76	
4	6909.93	20.00	242.00	6648.52	-723.38	-1360.49	0.00	0.00	-720.30	
5	7903.18	90.13	359.87	7281.00	-157.01	-1565.76	10.00	116.38	-153.46	
6	12290.94	90.13	359.87	7271.00	4230.72	-1575.60	0.00	0.00	4234.29	BAT 4C-9HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
1N-R65W-Sec. 9 Section lines	-34.00	-0.33	1243.74	40.060443	-104.665168	
BAT 4C-9HZ_SHL	0.00	0.00	0.00	40.060444	-104.669613	
BAT 4C-9HZ_BHL	7271.00	4230.72	-1575.60	40.072062	-104.675245	



WELL DETAILS: BAT 4C-9HZ

Ground Level: 4930.00

RKB = 17' @ 4947.00usft (D Rig)

Plan: Permit Rev-1 (BAT 4C-9HZ/Plan A)

Created By: Clint Eshelman

Reviewed:

Date: 10/29/2014

Date:

TVD MD

6554.55 6809.93 Top of 4.5" Liner @ 6809.93ft
6648.52 6909.93 KOP @ 6909.93ft

Plan Report for BAT 4C-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
BAT 4C-9HZ_SHL - 1N-R65W-Sec. 9_Section lines										
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
Base Fox Hills										
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
Surface Csg Setting Depth - 9 5/8"										
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
1,909.93	0.00	0.00	1,909.93	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1909.93ft										
2,000.00	1.80	242.00	1,999.99	-0.66	-1.25	-0.66	2.00	2.00	0.00	242.00
2,100.00	3.80	242.00	2,099.86	-2.96	-5.57	-2.95	2.00	2.00	0.00	0.00
2,200.00	5.80	242.00	2,199.50	-6.89	-12.96	-6.86	2.00	2.00	0.00	0.00
2,300.00	7.80	242.00	2,298.80	-12.45	-23.41	-12.39	2.00	2.00	0.00	0.00
2,400.00	9.80	242.00	2,397.61	-19.63	-36.92	-19.55	2.00	2.00	0.00	0.00
2,500.00	11.80	242.00	2,495.84	-28.43	-53.47	-28.31	2.00	2.00	0.00	0.00
2,600.00	13.80	242.00	2,593.35	-38.83	-73.03	-38.66	2.00	2.00	0.00	0.00
2,700.00	15.80	242.00	2,690.02	-50.82	-95.58	-50.61	2.00	2.00	0.00	0.00
2,800.00	17.80	242.00	2,785.75	-64.39	-121.11	-64.12	2.00	2.00	0.00	0.00
2,900.00	19.80	242.00	2,880.41	-79.52	-149.56	-79.18	2.00	2.00	0.00	0.00
2,909.93	20.00	242.00	2,889.75	-81.11	-152.55	-80.76	2.00	2.00	0.00	0.00
End Nudge @ 2909.93ft										
3,000.00	20.00	242.00	2,974.38	-95.57	-179.74	-95.16	0.00	0.00	0.00	0.00
3,100.00	20.00	242.00	3,068.35	-111.63	-209.94	-111.15	0.00	0.00	0.00	0.00
3,200.00	20.00	242.00	3,162.32	-127.69	-240.14	-127.14	0.00	0.00	0.00	0.00
3,300.00	20.00	242.00	3,256.29	-143.74	-270.34	-143.13	0.00	0.00	0.00	0.00
3,400.00	20.00	242.00	3,350.26	-159.80	-300.54	-159.12	0.00	0.00	0.00	0.00
3,500.00	20.00	242.00	3,444.23	-175.86	-330.74	-175.11	0.00	0.00	0.00	0.00
3,600.00	20.00	242.00	3,538.20	-191.91	-360.94	-191.09	0.00	0.00	0.00	0.00
3,700.00	20.00	242.00	3,632.17	-207.97	-391.13	-207.08	0.00	0.00	0.00	0.00
3,800.00	20.00	242.00	3,726.14	-224.03	-421.33	-223.07	0.00	0.00	0.00	0.00
3,900.00	20.00	242.00	3,820.11	-240.08	-451.53	-239.06	0.00	0.00	0.00	0.00
4,000.00	20.00	242.00	3,914.08	-256.14	-481.73	-255.05	0.00	0.00	0.00	0.00
4,100.00	20.00	242.00	4,008.05	-272.20	-511.93	-271.04	0.00	0.00	0.00	0.00
4,111.66	20.00	242.00	4,019.00	-274.07	-515.45	-272.90	0.00	0.00	0.00	0.00
Parkman										
4,200.00	20.00	242.00	4,102.01	-288.25	-542.13	-287.02	0.00	0.00	0.00	0.00
4,300.00	20.00	242.00	4,195.98	-304.31	-572.33	-303.01	0.00	0.00	0.00	0.00
4,400.00	20.00	242.00	4,289.95	-320.37	-602.53	-319.00	0.00	0.00	0.00	0.00
4,500.00	20.00	242.00	4,383.92	-336.43	-632.72	-334.99	0.00	0.00	0.00	0.00
4,510.72	20.00	242.00	4,394.00	-338.15	-635.96	-336.70	0.00	0.00	0.00	0.00

Plan Report for BAT 4C-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 (°)
Sussex										
4,600.00	20.00	242.00	4,477.89	-352.48	-662.92	-350.98	0.00	0.00	0.00	0.00
4,700.00	20.00	242.00	4,571.86	-368.54	-693.12	-366.97	0.00	0.00	0.00	0.00
4,800.00	20.00	242.00	4,665.83	-384.60	-723.32	-382.95	0.00	0.00	0.00	0.00
4,900.00	20.00	242.00	4,759.80	-400.65	-753.52	-398.94	0.00	0.00	0.00	0.00
5,000.00	20.00	242.00	4,853.77	-416.71	-783.72	-414.93	0.00	0.00	0.00	0.00
5,100.00	20.00	242.00	4,947.74	-432.77	-813.92	-430.92	0.00	0.00	0.00	0.00
5,200.00	20.00	242.00	5,041.71	-448.82	-844.11	-446.91	0.00	0.00	0.00	0.00
5,300.00	20.00	242.00	5,135.68	-464.88	-874.31	-462.90	0.00	0.00	0.00	0.00
5,400.00	20.00	242.00	5,229.65	-480.94	-904.51	-478.88	0.00	0.00	0.00	0.00
5,500.00	20.00	242.00	5,323.62	-496.99	-934.71	-494.87	0.00	0.00	0.00	0.00
5,600.00	20.00	242.00	5,417.58	-513.05	-964.91	-510.86	0.00	0.00	0.00	0.00
5,700.00	20.00	242.00	5,511.55	-529.11	-995.11	-526.85	0.00	0.00	0.00	0.00
5,800.00	20.00	242.00	5,605.52	-545.16	-1,025.31	-542.84	0.00	0.00	0.00	0.00
5,900.00	20.00	242.00	5,699.49	-561.22	-1,055.50	-558.83	0.00	0.00	0.00	0.00
6,000.00	20.00	242.00	5,793.46	-577.28	-1,085.70	-574.81	0.00	0.00	0.00	0.00
6,100.00	20.00	242.00	5,887.43	-593.34	-1,115.90	-590.80	0.00	0.00	0.00	0.00
6,200.00	20.00	242.00	5,981.40	-609.39	-1,146.10	-606.79	0.00	0.00	0.00	0.00
6,300.00	20.00	242.00	6,075.37	-625.45	-1,176.30	-622.78	0.00	0.00	0.00	0.00
6,400.00	20.00	242.00	6,169.34	-641.51	-1,206.50	-638.77	0.00	0.00	0.00	0.00
6,500.00	20.00	242.00	6,263.31	-657.56	-1,236.70	-654.75	0.00	0.00	0.00	0.00
6,600.00	20.00	242.00	6,357.28	-673.62	-1,266.89	-670.74	0.00	0.00	0.00	0.00
6,700.00	20.00	242.00	6,451.25	-689.68	-1,297.09	-686.73	0.00	0.00	0.00	0.00
6,800.00	20.00	242.00	6,545.22	-705.73	-1,327.29	-702.72	0.00	0.00	0.00	0.00
6,809.93	20.00	242.00	6,554.55	-707.33	-1,330.29	-704.31	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6809.93ft										
6,900.00	20.00	242.00	6,639.18	-721.79	-1,357.49	-718.71	0.00	0.00	0.00	0.00
6,909.93	20.00	242.00	6,648.52	-723.38	-1,360.49	-720.30	0.00	0.00	0.00	0.00
KOP @ 6909.93ft										
7,000.00	17.84	269.24	6,733.88	-730.81	-1,387.94	-727.66	10.00	-2.39	30.24	116.38
7,100.00	20.29	299.29	6,828.61	-722.51	-1,418.46	-719.29	10.00	2.45	30.05	90.56
7,177.24	24.82	315.73	6,900.00	-704.33	-1,441.49	-701.05	10.00	5.87	21.28	62.08
SSPG										
7,200.00	26.42	319.46	6,920.52	-697.06	-1,448.12	-693.77	10.00	7.05	16.41	46.88
7,215.13	27.54	321.71	6,934.00	-691.76	-1,452.47	-688.46	10.00	7.37	14.89	43.51
NBRR										
7,300.00	34.32	331.70	7,006.81	-655.22	-1,476.02	-651.87	10.00	7.99	11.77	41.50
7,334.76	37.28	334.82	7,035.00	-637.06	-1,485.15	-633.69	10.00	8.52	8.97	32.91
N470_B_CK										
7,400.00	43.02	339.65	7,084.86	-598.27	-1,501.31	-594.86	10.00	8.79	7.41	30.38
7,423.87	45.16	341.16	7,102.00	-582.62	-1,506.87	-579.20	10.00	8.98	6.33	26.69
N700_C_CK										
7,500.00	52.11	345.32	7,152.29	-527.93	-1,523.22	-524.48	10.00	9.12	5.46	25.60
DLS = 10°/100'										
7,600.00	61.41	349.73	7,207.07	-446.36	-1,541.10	-442.86	10.00	9.30	4.40	22.85
7,700.00	70.83	353.40	7,247.52	-356.01	-1,554.39	-352.49	10.00	9.42	3.68	20.42
7,717.41	72.48	354.00	7,253.00	-339.58	-1,556.20	-336.05	10.00	9.46	3.40	18.93
FRHS										
7,800.00	80.31	356.68	7,272.41	-259.65	-1,562.69	-256.10	10.00	9.49	3.25	18.74
7,824.16	82.61	357.44	7,276.00	-235.79	-1,563.91	-232.24	10.00	9.51	3.13	18.11
CDLL										
7,900.00	89.83	359.77	7,281.00	-160.19	-1,565.75	-156.64	10.00	9.52	3.08	18.00
7,903.18	90.13	359.87	7,281.00	-157.01	-1,565.76	-153.46	10.00	9.51	3.06	17.84
End Build @ 7903.18ft - Landing Target (Heel) - 7"										
8,000.00	90.13	359.87	7,280.78	-60.19	-1,565.97	-56.64	0.00	0.00	0.00	0.00
8,100.00	90.13	359.87	7,280.55	39.81	-1,566.20	43.36	0.00	0.00	0.00	0.00
8,200.00	90.13	359.87	7,280.32	139.81	-1,566.42	143.36	0.00	0.00	0.00	0.00
8,300.00	90.13	359.87	7,280.10	239.81	-1,566.65	243.36	0.00	0.00	0.00	0.00

Plan Report for BAT 4C-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 (°)
8,400.00	90.13	359.87	7,279.87	339.80	-1,566.87	343.36	0.00	0.00	0.00	0.00
8,500.00	90.13	359.87	7,279.64	439.80	-1,567.10	443.36	0.00	0.00	0.00	0.00
8,600.00	90.13	359.87	7,279.41	539.80	-1,567.32	543.36	0.00	0.00	0.00	0.00
8,700.00	90.13	359.87	7,279.18	639.80	-1,567.54	643.36	0.00	0.00	0.00	0.00
8,800.00	90.13	359.87	7,278.96	739.80	-1,567.77	743.36	0.00	0.00	0.00	0.00
8,900.00	90.13	359.87	7,278.73	839.80	-1,567.99	843.36	0.00	0.00	0.00	0.00
9,000.00	90.13	359.87	7,278.50	939.80	-1,568.22	943.36	0.00	0.00	0.00	0.00
9,100.00	90.13	359.87	7,278.27	1,039.80	-1,568.44	1,043.36	0.00	0.00	0.00	0.00
9,200.00	90.13	359.87	7,278.04	1,139.80	-1,568.67	1,143.36	0.00	0.00	0.00	0.00
9,300.00	90.13	359.87	7,277.82	1,239.80	-1,568.89	1,243.36	0.00	0.00	0.00	0.00
9,400.00	90.13	359.87	7,277.59	1,339.80	-1,569.12	1,343.36	0.00	0.00	0.00	0.00
9,500.00	90.13	359.87	7,277.36	1,439.80	-1,569.34	1,443.36	0.00	0.00	0.00	0.00
9,600.00	90.13	359.87	7,277.13	1,539.80	-1,569.56	1,543.36	0.00	0.00	0.00	0.00
9,700.00	90.13	359.87	7,276.90	1,639.80	-1,569.79	1,643.36	0.00	0.00	0.00	0.00
9,800.00	90.13	359.87	7,276.68	1,739.80	-1,570.01	1,743.36	0.00	0.00	0.00	0.00
9,900.00	90.13	359.87	7,276.45	1,839.80	-1,570.24	1,843.35	0.00	0.00	0.00	0.00
10,000.00	90.13	359.87	7,276.22	1,939.80	-1,570.46	1,943.35	0.00	0.00	0.00	0.00
10,100.00	90.13	359.87	7,275.99	2,039.80	-1,570.69	2,043.35	0.00	0.00	0.00	0.00
10,200.00	90.13	359.87	7,275.77	2,139.80	-1,570.91	2,143.35	0.00	0.00	0.00	0.00
10,300.00	90.13	359.87	7,275.54	2,239.79	-1,571.14	2,243.35	0.00	0.00	0.00	0.00
10,400.00	90.13	359.87	7,275.31	2,339.79	-1,571.36	2,343.35	0.00	0.00	0.00	0.00
10,500.00	90.13	359.87	7,275.08	2,439.79	-1,571.58	2,443.35	0.00	0.00	0.00	0.00
10,600.00	90.13	359.87	7,274.85	2,539.79	-1,571.81	2,543.35	0.00	0.00	0.00	0.00
10,700.00	90.13	359.87	7,274.63	2,639.79	-1,572.03	2,643.35	0.00	0.00	0.00	0.00
10,800.00	90.13	359.87	7,274.40	2,739.79	-1,572.26	2,743.35	0.00	0.00	0.00	0.00
10,900.00	90.13	359.87	7,274.17	2,839.79	-1,572.48	2,843.35	0.00	0.00	0.00	0.00
11,000.00	90.13	359.87	7,273.94	2,939.79	-1,572.71	2,943.35	0.00	0.00	0.00	0.00
11,100.00	90.13	359.87	7,273.71	3,039.79	-1,572.93	3,043.35	0.00	0.00	0.00	0.00
11,200.00	90.13	359.87	7,273.49	3,139.79	-1,573.16	3,143.35	0.00	0.00	0.00	0.00
11,300.00	90.13	359.87	7,273.26	3,239.79	-1,573.38	3,243.35	0.00	0.00	0.00	0.00
11,400.00	90.13	359.87	7,273.03	3,339.79	-1,573.60	3,343.35	0.00	0.00	0.00	0.00
11,500.00	90.13	359.87	7,272.80	3,439.79	-1,573.83	3,443.35	0.00	0.00	0.00	0.00
11,600.00	90.13	359.87	7,272.57	3,539.79	-1,574.05	3,543.35	0.00	0.00	0.00	0.00
11,700.00	90.13	359.87	7,272.35	3,639.79	-1,574.28	3,643.35	0.00	0.00	0.00	0.00
11,800.00	90.13	359.87	7,272.12	3,739.79	-1,574.50	3,743.35	0.00	0.00	0.00	0.00
11,900.00	90.13	359.87	7,271.89	3,839.79	-1,574.73	3,843.35	0.00	0.00	0.00	0.00
12,000.00	90.13	359.87	7,271.66	3,939.79	-1,574.95	3,943.35	0.00	0.00	0.00	0.00
12,100.00	90.13	359.87	7,271.44	4,039.79	-1,575.18	4,043.35	0.00	0.00	0.00	0.00
12,200.00	90.13	359.87	7,271.21	4,139.79	-1,575.40	4,143.35	0.00	0.00	0.00	0.00
12,290.94	90.13	359.87	7,271.00	4,230.72	-1,575.60	4,234.29	0.00	0.00	0.00	0.00

TD Well @ 12290.94ft - BAT 4C-9HZ_BHL

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,909.93	1,909.93	0.00	0.00	Begin Nudge @ 1909.93ft
2,909.93	2,889.75	-81.11	-152.55	End Nudge @ 2909.93ft
6,809.93	6,554.55	-707.33	-1,330.29	Top of 4.5" Liner @ 6809.93ft
6,909.93	6,648.52	-723.38	-1,360.49	KOP @ 6909.93ft
7,500.00	7,152.29	-527.93	-1,523.22	DLS = 10°/100'
7,903.18	7,281.00	-157.01	-1,565.76	End Build @ 7903.18ft
12,290.94	7,271.00	4,230.72	-1,575.60	TD Well @ 12290.94ft

Plan Report for BAT 4C-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)	359.87	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,903.18	Permit Rev-1	MWD+IFR1
7,903.18	12,290.71	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
7,903.18	7,281.00	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	
4,111.66	4,019.00	Parkman		0.00	
4,510.72	4,394.00	Sussex		0.00	
7,177.24	6,900.00	SSPG		0.00	
7,215.13	6,934.00	NBRR		0.00	
7,334.76	7,035.00	N470_B_CK		0.00	
7,423.87	7,102.00	N700_C_CK		0.00	
7,717.41	7,253.00	FRHS		0.00	
7,824.16	7,276.00	CDLL		0.00	
7,903.18	7,281.00	Landing Target (Heel)		0.00	
12,290.94	7,271.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
BAT 4C-9HZ_SHL	0.00	0.00	0.00	Point
1N-R65W-Sec. 9_Section lines	-34.00	-0.33	1,243.74	Polygon
BAT 4C-9HZ_BHL	7,271.00	4,230.72	-1,575.60	Point

North Reference Sheet for Bat Pad - BAT 4C-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 4C-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: 0.99960977

Grid Coordinates of Well: 14,548,915.23 usft N, 1,732,860.32 usft E

Geographical Coordinates of Well: 40° 03' 37.60" N, 104° 40' 10.61" W

Grid Convergence at Surface is: 0.21°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,290.94usft
the Bottom Hole Displacement is 4,514.59usft in the Direction of 339.57° (True).

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

