

# US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Bane Pad

BANE 28N1-9HZ

Plan A

Plan: Permit Rev-1

## Sperry Drilling Services Proposal Report

28 October, 2014

Well Coordinates: 14,548,919.18 N, 1,734,015.07 E (40° 03' 37.59" N, 104° 39' 55.75" W)

Ground Level: 4,964.00 usft

Local Coordinate Origin:

Centered on Well BANE 28N1-9HZ

Viewing Datum:

RKB = 17' @ 4981.00usft (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: Bane Pad  
Well: BANE 28N1-9HZ  
Wellbore: Plan A  
Design: Permit Rev-1

# US ROCKIES WATTENBERG PLANNING

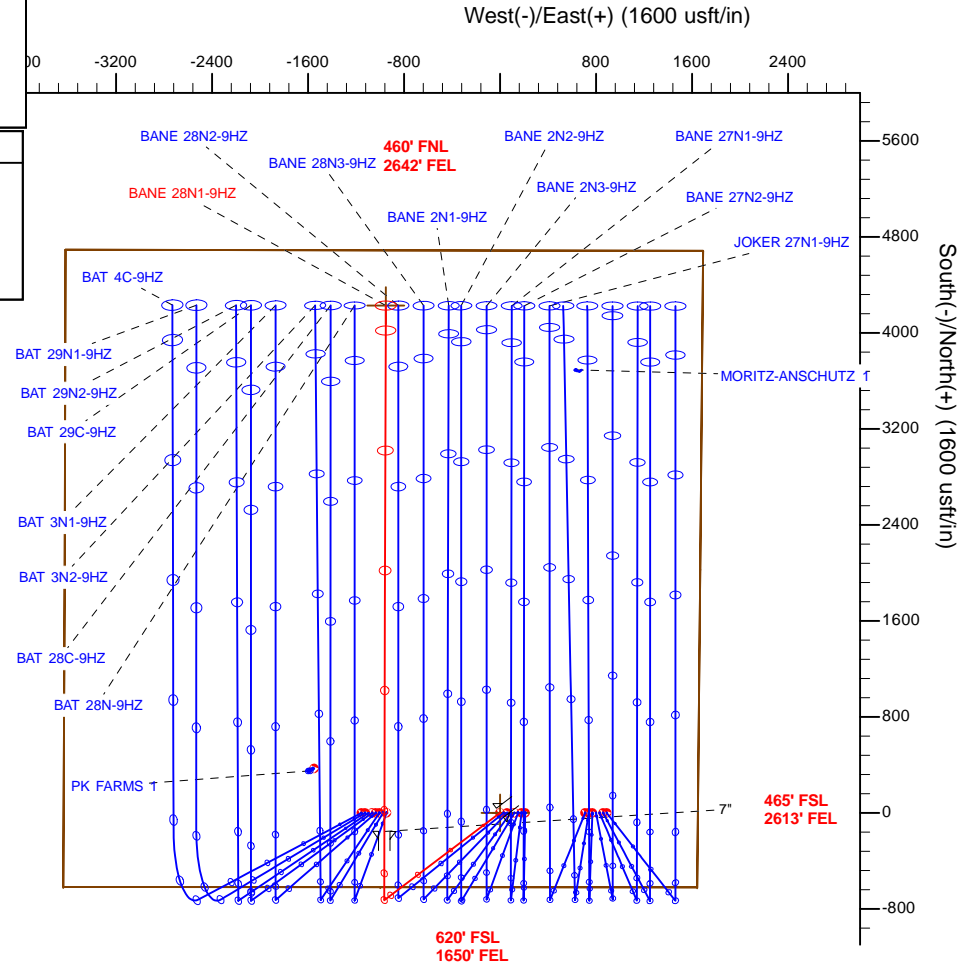
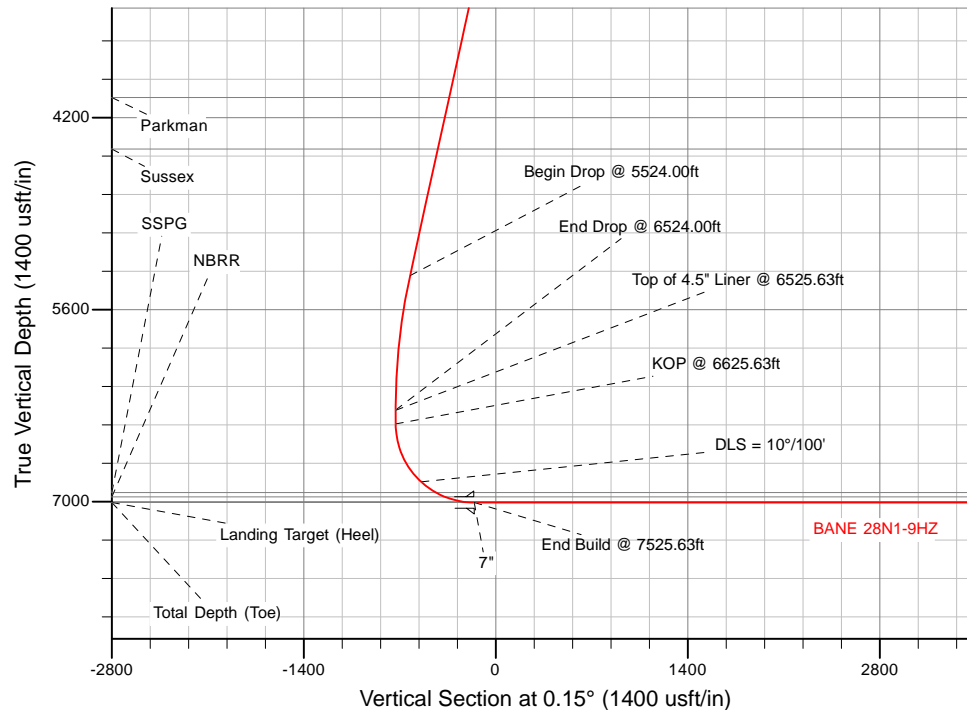
**HALLIBURTON**  
Sperry Drilling

## 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	2000.00	0.00	0.00	2000.00	0.00	0.00	0.00	0.00	0.00	
3	3000.00	20.00	233.00	2979.82	-103.97	-137.98	2.00	233.00	-104.34	
4	5524.00	20.00	233.00	5351.60	-623.50	-827.41	0.00	0.00	-625.66	
5	6524.00	0.00	0.00	6331.42	-727.47	-965.39	2.00	180.00	-730.00	
6	6625.63	0.00	0.00	6433.05	-727.47	-965.39	0.00	0.00	-730.00	
7	7525.63	90.00	0.15	7006.00	-154.51	-963.87	10.00	0.15	-157.04	
8	11907.94	90.00	0.15	7006.00	4227.78	-952.30	0.00	0.00	4225.27	BANE 28N1-9HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
1N-R65W-Sec. 9 Section lines	0.00	0.00	88.98	40.060443	-104.665168	Polygon
BANE 28N1-9HZ_SHL	0.00	0.00	0.00	40.060443	-104.665486	
BANE 28N1-9HZ_BHL	7006.00	4227.78	-952.30	40.072053	-104.668890	



TVD MD

6333.05 6525.63 Top of 4.5" Liner @ 6525.63ft  
6433.05 6625.63 KOP @ 6625.63ft

WELL DETAILS: BANE 28N1-9HZ

Ground Level: 4964.00

RKB = 17' @ 4981.00usft (D Rig)

Plan: Permit Rev-1 (BANE 28N1-9HZ/Plan A)

Created By: Clint Eshelman

Reviewed:

Date: 10/28/2014

Date:

## Plan Report for BANE 28N1-9HZ - 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>1N-R65W-Sec. 9_Section lines - BANE 28N1-9HZ_SHL</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
977.00	0.00	0.00	977.00	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
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,509.00	0.00	0.00	1,509.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Surface Csg Setting Depth - 9 5/8"</b>										
1,600.00	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
<b>Begin Nudge @ 2000.00ft</b>										
2,100.00	2.00	233.00	2,099.98	-1.05	-1.39	-1.05	2.00	2.00	0.00	233.00
2,200.00	4.00	233.00	2,199.84	-4.20	-5.57	-4.21	2.00	2.00	0.00	0.00
2,300.00	6.00	233.00	2,299.45	-9.44	-12.53	-9.48	2.00	2.00	0.00	0.00
2,400.00	8.00	233.00	2,398.70	-16.78	-22.27	-16.84	2.00	2.00	0.00	0.00
2,500.00	10.00	233.00	2,497.47	-26.19	-34.76	-26.28	2.00	2.00	0.00	0.00
2,600.00	12.00	233.00	2,595.62	-37.68	-50.00	-37.81	2.00	2.00	0.00	0.00
2,700.00	14.00	233.00	2,693.06	-51.21	-67.96	-51.39	2.00	2.00	0.00	0.00
2,800.00	16.00	233.00	2,789.64	-66.79	-88.63	-67.02	2.00	2.00	0.00	0.00
2,900.00	18.00	233.00	2,885.27	-84.38	-111.98	-84.68	2.00	2.00	0.00	0.00
3,000.00	20.00	233.00	2,979.82	-103.97	-137.98	-104.34	2.00	2.00	0.00	0.00
<b>End Nudge @ 3000.00ft</b>										
3,100.00	20.00	233.00	3,073.78	-124.56	-165.29	-124.99	0.00	0.00	0.00	0.00
3,200.00	20.00	233.00	3,167.75	-145.14	-192.61	-145.64	0.00	0.00	0.00	0.00
3,300.00	20.00	233.00	3,261.72	-165.72	-219.92	-166.30	0.00	0.00	0.00	0.00
3,400.00	20.00	233.00	3,355.69	-186.31	-247.24	-186.95	0.00	0.00	0.00	0.00
3,500.00	20.00	233.00	3,449.66	-206.89	-274.55	-207.61	0.00	0.00	0.00	0.00
3,600.00	20.00	233.00	3,543.63	-227.47	-301.87	-228.26	0.00	0.00	0.00	0.00
3,700.00	20.00	233.00	3,637.60	-248.06	-329.18	-248.92	0.00	0.00	0.00	0.00
3,800.00	20.00	233.00	3,731.57	-268.64	-356.50	-269.57	0.00	0.00	0.00	0.00
3,900.00	20.00	233.00	3,825.54	-289.22	-383.81	-290.23	0.00	0.00	0.00	0.00
4,000.00	20.00	233.00	3,919.51	-309.81	-411.13	-310.88	0.00	0.00	0.00	0.00
4,100.00	20.00	233.00	4,013.48	-330.39	-438.44	-331.54	0.00	0.00	0.00	0.00
4,142.06	20.00	233.00	4,053.00	-339.05	-449.93	-340.22	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,200.00	20.00	233.00	4,107.45	-350.97	-465.76	-352.19	0.00	0.00	0.00	0.00
4,300.00	20.00	233.00	4,201.42	-371.56	-493.07	-372.85	0.00	0.00	0.00	0.00
4,400.00	20.00	233.00	4,295.39	-392.14	-520.39	-393.50	0.00	0.00	0.00	0.00
4,500.00	20.00	233.00	4,389.35	-412.72	-547.70	-414.16	0.00	0.00	0.00	0.00
4,541.13	20.00	233.00	4,428.00	-421.19	-558.94	-422.65	0.00	0.00	0.00	0.00
<b>Sussex</b>										

## Plan Report for BANE 28N1-9HZ - 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 (°)
4,600.00	20.00	233.00	4,483.32	-433.31	-575.02	-434.81	0.00	0.00	0.00	0.00
4,700.00	20.00	233.00	4,577.29	-453.89	-602.33	-455.47	0.00	0.00	0.00	0.00
4,800.00	20.00	233.00	4,671.26	-474.47	-629.65	-476.12	0.00	0.00	0.00	0.00
4,900.00	20.00	233.00	4,765.23	-495.06	-656.96	-496.77	0.00	0.00	0.00	0.00
5,000.00	20.00	233.00	4,859.20	-515.64	-684.28	-517.43	0.00	0.00	0.00	0.00
5,100.00	20.00	233.00	4,953.17	-536.22	-711.59	-538.08	0.00	0.00	0.00	0.00
5,200.00	20.00	233.00	5,047.14	-556.81	-738.91	-558.74	0.00	0.00	0.00	0.00
5,300.00	20.00	233.00	5,141.11	-577.39	-766.22	-579.39	0.00	0.00	0.00	0.00
5,400.00	20.00	233.00	5,235.08	-597.97	-793.54	-600.05	0.00	0.00	0.00	0.00
5,500.00	20.00	233.00	5,329.05	-618.56	-820.85	-620.70	0.00	0.00	0.00	0.00
5,524.00	20.00	233.00	5,351.60	-623.50	-827.41	-625.66	0.00	0.00	0.00	0.00
<b>Begin Drop @ 5524.00ft</b>										
5,600.00	18.48	233.00	5,423.35	-638.57	-847.41	-640.78	2.00	-2.00	0.00	180.00
5,700.00	16.48	233.00	5,518.73	-656.64	-871.40	-658.92	2.00	-2.00	0.00	180.00
5,800.00	14.48	233.00	5,615.10	-672.71	-892.71	-675.04	2.00	-2.00	0.00	180.00
5,900.00	12.48	233.00	5,712.34	-686.73	-911.33	-689.12	2.00	-2.00	0.00	180.00
6,000.00	10.48	233.00	5,810.33	-698.71	-927.22	-701.14	2.00	-2.00	0.00	180.00
6,100.00	8.48	233.00	5,908.96	-708.62	-940.37	-711.08	2.00	-2.00	0.00	180.00
6,200.00	6.48	233.00	6,008.11	-716.46	-950.77	-718.94	2.00	-2.00	0.00	180.00
6,300.00	4.48	233.00	6,107.64	-722.20	-958.40	-724.71	2.00	-2.00	0.00	180.00
6,400.00	2.48	233.00	6,207.45	-725.86	-963.24	-728.38	2.00	-2.00	0.00	180.00
6,500.00	0.48	233.00	6,307.42	-727.41	-965.31	-729.93	2.00	-2.00	0.00	-180.00
6,524.00	0.00	0.00	6,331.42	-727.47	-965.39	-730.00	2.00	-2.00	529.17	180.00
<b>End Drop @ 6524.00ft</b>										
6,525.63	0.00	0.00	6,333.05	-727.47	-965.39	-730.00	0.00	0.00	0.00	180.00
<b>Top of 4.5" Liner @ 6525.63ft</b>										
6,600.00	0.00	0.00	6,407.42	-727.47	-965.39	-730.00	0.00	0.00	0.00	0.00
6,625.63	0.00	0.00	6,433.05	-727.47	-965.39	-730.00	0.00	0.00	0.00	0.00
<b>KOP @ 6625.63ft</b>										
6,700.00	7.44	0.15	6,507.21	-722.65	-965.37	-725.18	10.00	10.00	0.00	0.15
6,800.00	17.44	0.15	6,604.74	-701.14	-965.32	-703.67	10.00	10.00	0.00	0.00
6,900.00	27.44	0.15	6,697.05	-663.02	-965.22	-665.55	10.00	10.00	0.00	0.00
7,000.00	37.44	0.15	6,781.34	-609.45	-965.07	-611.98	10.00	10.00	0.00	0.00
7,100.00	47.44	0.15	6,855.05	-542.06	-964.90	-544.59	10.00	10.00	0.00	0.00
<b>DLS = 10°/100'</b>										
7,200.00	57.44	0.15	6,915.93	-462.90	-964.69	-465.42	10.00	10.00	0.00	0.00
7,233.24	60.76	0.15	6,933.00	-434.38	-964.61	-436.91	10.00	10.00	0.00	0.00
<b>SSPG</b>										
7,300.00	67.44	0.15	6,962.15	-374.36	-964.45	-376.88	10.00	10.00	0.00	0.00
7,307.55	68.19	0.15	6,965.00	-367.36	-964.44	-369.89	10.00	10.00	0.00	0.00
<b>NBRR</b>										
7,400.00	77.44	0.15	6,992.29	-279.14	-964.20	-281.66	10.00	10.00	0.00	0.00
7,500.00	87.44	0.15	7,005.43	-180.14	-963.94	-182.66	10.00	10.00	0.00	0.00
7,525.63	90.00	0.15	7,006.00	-154.52	-963.87	-157.04	10.00	10.00	0.00	0.00
<b>End Build @ 7525.63ft - Landing Target (Heel) - 7"</b>										
7,600.00	90.00	0.15	7,006.00	-80.15	-963.68	-82.67	0.00	0.00	0.00	0.00
7,700.00	90.00	0.15	7,006.00	19.85	-963.41	17.33	0.00	0.00	0.00	0.00
7,800.00	90.00	0.15	7,006.00	119.85	-963.15	117.33	0.00	0.00	0.00	0.00
7,900.00	90.00	0.15	7,006.00	219.85	-962.88	217.33	0.00	0.00	0.00	0.00
8,000.00	90.00	0.15	7,006.00	319.85	-962.62	317.33	0.00	0.00	0.00	0.00
8,100.00	90.00	0.15	7,006.00	419.85	-962.36	417.33	0.00	0.00	0.00	0.00
8,200.00	90.00	0.15	7,006.00	519.85	-962.09	517.33	0.00	0.00	0.00	0.00
8,300.00	90.00	0.15	7,006.00	619.85	-961.83	617.33	0.00	0.00	0.00	0.00
8,400.00	90.00	0.15	7,006.00	719.85	-961.56	717.33	0.00	0.00	0.00	0.00
8,500.00	90.00	0.15	7,006.00	819.85	-961.30	817.33	0.00	0.00	0.00	0.00
8,600.00	90.00	0.15	7,006.00	919.85	-961.04	917.33	0.00	0.00	0.00	0.00
8,700.00	90.00	0.15	7,006.00	1,019.85	-960.77	1,017.33	0.00	0.00	0.00	0.00
8,800.00	90.00	0.15	7,006.00	1,119.85	-960.51	1,117.33	0.00	0.00	0.00	0.00
8,900.00	90.00	0.15	7,006.00	1,219.85	-960.24	1,217.33	0.00	0.00	0.00	0.00

## Plan Report for BANE 28N1-9HZ - 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 (°)
9,000.00	90.00	0.15	7,006.00	1,319.85	-959.98	1,317.33	0.00	0.00	0.00	0.00
9,100.00	90.00	0.15	7,006.00	1,419.85	-959.72	1,417.33	0.00	0.00	0.00	0.00
9,200.00	90.00	0.15	7,006.00	1,519.85	-959.45	1,517.33	0.00	0.00	0.00	0.00
9,300.00	90.00	0.15	7,006.00	1,619.85	-959.19	1,617.33	0.00	0.00	0.00	0.00
9,400.00	90.00	0.15	7,006.00	1,719.85	-958.92	1,717.33	0.00	0.00	0.00	0.00
9,500.00	90.00	0.15	7,006.00	1,819.85	-958.66	1,817.33	0.00	0.00	0.00	0.00
9,600.00	90.00	0.15	7,006.00	1,919.85	-958.40	1,917.33	0.00	0.00	0.00	0.00
9,700.00	90.00	0.15	7,006.00	2,019.85	-958.13	2,017.33	0.00	0.00	0.00	0.00
9,800.00	90.00	0.15	7,006.00	2,119.85	-957.87	2,117.33	0.00	0.00	0.00	0.00
9,900.00	90.00	0.15	7,006.00	2,219.85	-957.60	2,217.33	0.00	0.00	0.00	0.00
10,000.00	90.00	0.15	7,006.00	2,319.85	-957.34	2,317.33	0.00	0.00	0.00	0.00
10,100.00	90.00	0.15	7,006.00	2,419.85	-957.08	2,417.33	0.00	0.00	0.00	0.00
10,200.00	90.00	0.15	7,006.00	2,519.85	-956.81	2,517.33	0.00	0.00	0.00	0.00
10,300.00	90.00	0.15	7,006.00	2,619.85	-956.55	2,617.33	0.00	0.00	0.00	0.00
10,400.00	90.00	0.15	7,006.00	2,719.84	-956.28	2,717.33	0.00	0.00	0.00	0.00
10,500.00	90.00	0.15	7,006.00	2,819.84	-956.02	2,817.33	0.00	0.00	0.00	0.00
10,600.00	90.00	0.15	7,006.00	2,919.84	-955.75	2,917.33	0.00	0.00	0.00	0.00
10,700.00	90.00	0.15	7,006.00	3,019.84	-955.49	3,017.33	0.00	0.00	0.00	0.00
10,800.00	90.00	0.15	7,006.00	3,119.84	-955.23	3,117.33	0.00	0.00	0.00	0.00
10,900.00	90.00	0.15	7,006.00	3,219.84	-954.96	3,217.33	0.00	0.00	0.00	0.00
11,000.00	90.00	0.15	7,006.00	3,319.84	-954.70	3,317.33	0.00	0.00	0.00	0.00
11,100.00	90.00	0.15	7,006.00	3,419.84	-954.43	3,417.33	0.00	0.00	0.00	0.00
11,200.00	90.00	0.15	7,006.00	3,519.84	-954.17	3,517.33	0.00	0.00	0.00	0.00
11,300.00	90.00	0.15	7,006.00	3,619.84	-953.91	3,617.33	0.00	0.00	0.00	0.00
11,400.00	90.00	0.15	7,006.00	3,719.84	-953.64	3,717.33	0.00	0.00	0.00	0.00
11,500.00	90.00	0.15	7,006.00	3,819.84	-953.38	3,817.33	0.00	0.00	0.00	0.00
11,600.00	90.00	0.15	7,006.00	3,919.84	-953.11	3,917.33	0.00	0.00	0.00	0.00
11,700.00	90.00	0.15	7,006.00	4,019.84	-952.85	4,017.33	0.00	0.00	0.00	0.00
11,800.00	90.00	0.15	7,006.00	4,119.84	-952.59	4,117.33	0.00	0.00	0.00	0.00
11,900.00	90.00	0.15	7,006.00	4,219.84	-952.32	4,217.33	0.00	0.00	0.00	0.00
11,907.93	90.00	0.15	7,006.00	4,227.77	-952.30	4,225.26	0.00	0.00	0.00	0.00
Total Depth (Toe)										
11,907.94	90.00	0.15	7,006.00	4,227.78	-952.30	4,225.27	0.00	0.00	0.00	0.00
TD Well @ 11907.94ft - BANE 28N1-9HZ_BHL										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,000.00	2,000.00	0.00	0.00	Begin Nudge @ 2000.00ft
3,000.00	2,979.82	-103.97	-137.98	End Nudge @ 3000.00ft
5,524.00	5,351.60	-623.50	-827.41	Begin Drop @ 5524.00ft
6,524.00	6,331.42	-727.47	-965.39	End Drop @ 6524.00ft
6,525.63	6,333.05	-727.47	-965.39	Top of 4.5" Liner @ 6525.63ft
6,625.63	6,433.05	-727.47	-965.39	KOP @ 6625.63ft
7,100.00	6,855.05	-542.06	-964.90	DLS = 10°/100'
7,525.63	7,006.00	-154.52	-963.87	End Build @ 7525.63ft
11,907.94	7,006.00	4,227.78	-952.30	TD Well @ 11907.94ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	0.15	Slot	0.00	0.00	0.00

## Plan Report for BANE 28N1-9HZ - Permit Rev-1

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,525.63	Permit Rev-1	MWD+IFR1
7,525.63	11,907.94	Permit Rev-1	MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,509.00	1,509.00	9 5/8"	9-5/8	13-1/2
7,525.63	7,006.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
977.00	977.00	Base Fox Hills		0.00	
1,509.00	1,509.00	Surface Csg Setting Depth		0.00	
4,142.06	4,053.00	Parkman		0.00	
4,541.13	4,428.00	Sussex		0.00	
7,233.24	6,933.00	SSPG		0.00	
7,307.55	6,965.00	NBRR		0.00	
7,525.63	7,006.00	Landing Target (Heel)		0.00	
11,907.93	7,006.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
1N-R65W-Sec. 9_Section lines	0.00	0.00	88.98	Polygon
BANE 28N1-9HZ_BHL	7,006.00	4,227.78	-952.30	Point
BANE 28N1-9HZ_SHL	0.00	0.00	0.00	Point

**North Reference Sheet for Bane Pad - BANE 28N1-9HZ - 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' @ 4981.00usft (D Rig). Northing and Easting are relative to BANE 28N1-9HZ

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: 0.99961002

Grid Coordinates of Well: 14,548,919.18 usft N, 1,734,015.07 usft E

Geographical Coordinates of Well: 40° 03' 37.59" N, 104° 39' 55.75" W

Grid Convergence at Surface is: 0.22°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,907.94usft the Bottom Hole Displacement is 4,333.70usft in the Direction of 347.31° ( True).

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

