

US ROCKIES WATTENBERG PLANNING

WELD-NAD83-UTMFT13N

Green Pad

Green 1C-8HZ

Plan A

Plan: Permit Rev-1

Sperry Drilling Services Proposal Report

27 October, 2014

Well Coordinates: 14,553,210.99 N, 1,726,001.45 E (40° 04' 20.31" N, 104° 41' 38.66" W)

Ground Level: 4,972.00 usft

Local Coordinate Origin:

Centered on Well Green 1C-8HZ

Viewing Datum:

RKB = 17' @ 4989.00usft (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: Green Pad
Well: Green 1C-8HZ
Wellbore: Plan A
Design: Permit Rev-1

US ROCKIES WATTENBERG PLANNING

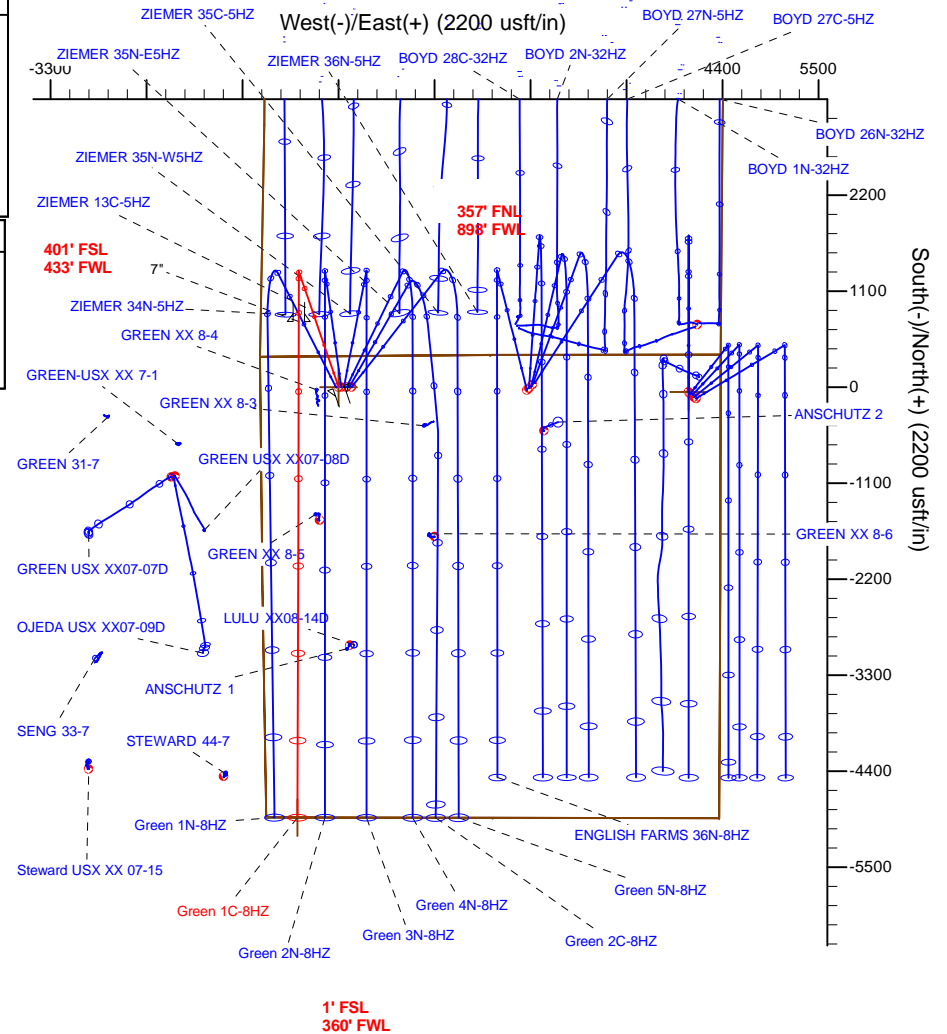
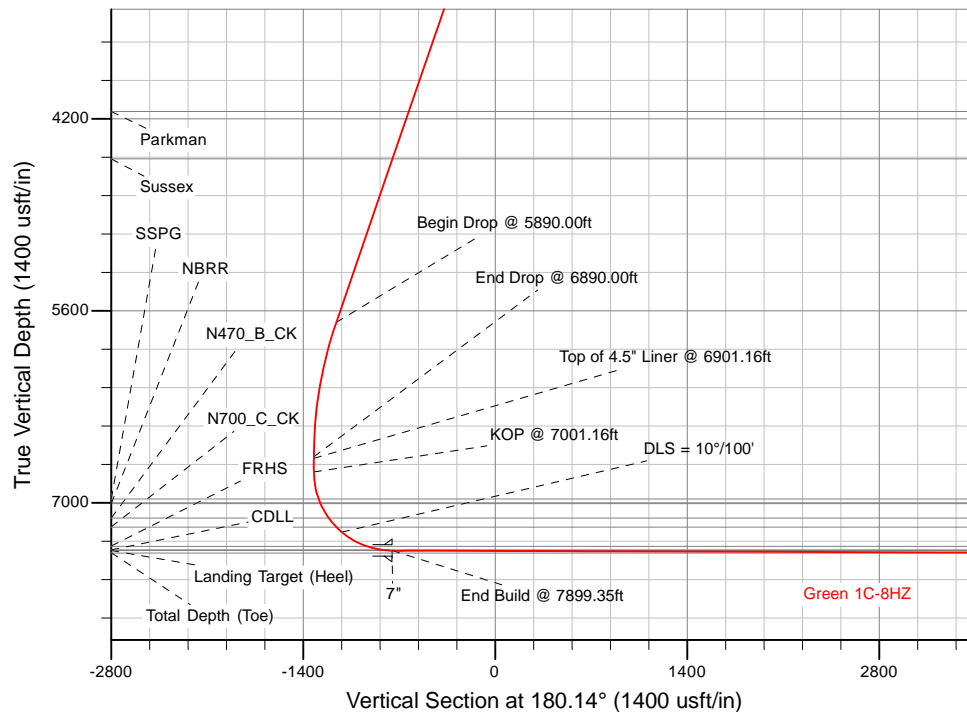
HALLIBURTON
Sperry Drilling

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	1810.00	0.00	0.00	1810.00	0.00	0.00	0.00	0.00	0.00	
3	2810.00	20.00	341.00	2789.82	163.36	-56.25	2.00	341.00	-163.22	
4	5890.00	20.00	341.00	5684.07	1159.39	-399.21	0.00	0.00	-1158.41	
5	6890.00	0.00	0.00	6663.88	1322.74	-455.46	2.00	180.00	-1321.62	
6	7001.16	0.00	0.00	6775.04	1322.74	-455.46	0.00	0.00	-1321.62	
7	7899.35	89.82	180.14	7348.00	751.60	-456.87	10.00	180.14	-750.48	
8	13583.00	89.82	180.14	7366.00	-4932.01	-470.93	0.00	0.00	4933.15	Green 1C-8HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Polygon
Green 1C-8HZ_SHL	0.00	0.00	0.00	40.072308	-104.694073	Polygon
1N-R65W-Sec. 8 Section lines	8.00	-4319.31	8087.80	40.060443	-104.665168	Polygon
1N-R65W-Sec. 5 Section Lines	40.00	-53.21	4010.06	40.072161	-104.679739	Polygon
Green 1C-8HZ_BHL	7366.00	-4932.61	-470.93	40.058764	-104.695756	Polygon



TVD MD

6675.04 6901.16 Top of 4.5" Liner @ 6901.16ft
6775.04 7001.16 KOP @ 7001.16ft

WELL DETAILS: Green 1C-8HZ

Ground Level: 4972.00

RKB = 17" @ 4989.00usft (D Rig)

Plan: Permit Rev-1 (Green 1C-8HZ/Plan A)

Created By: Clint Eshelman

Reviewed:

Date: 10/27/2014

Date:

Plan Report for Green 1C-8HZ - 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
Green 1C-8HZ_SHL										
8.00	0.00	0.00	8.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1N-R65W-Sec. 8_Section lines										
40.00	0.00	0.00	40.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1N-R65W-Sec. 5_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
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1,022.00	0.00	0.00	1,022.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Base Fox Hills										
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
1,498.00	0.00	0.00	1,498.00	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
1,810.00	0.00	0.00	1,810.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Begin Nudge @ 1810.00ft										
1,900.00	1.80	341.00	1,899.99	1.34	-0.46	-1.34	2.00	2.00	0.00	341.00
2,000.00	3.80	341.00	1,999.86	5.96	-2.05	-5.95	2.00	2.00	0.00	0.00
2,100.00	5.80	341.00	2,099.50	13.87	-4.77	-13.85	2.00	2.00	0.00	0.00
2,200.00	7.80	341.00	2,198.80	25.06	-8.63	-25.04	2.00	2.00	0.00	0.00
2,300.00	9.80	341.00	2,297.61	39.53	-13.61	-39.49	2.00	2.00	0.00	0.00
2,400.00	11.80	341.00	2,395.84	57.24	-19.71	-57.19	2.00	2.00	0.00	0.00
2,500.00	13.80	341.00	2,493.35	78.19	-26.92	-78.12	2.00	2.00	0.00	0.00
2,600.00	15.80	341.00	2,590.03	102.34	-35.24	-102.25	2.00	2.00	0.00	0.00
2,700.00	17.80	341.00	2,685.75	129.67	-44.65	-129.56	2.00	2.00	0.00	0.00
2,800.00	19.80	341.00	2,780.41	160.14	-55.14	-160.00	2.00	2.00	0.00	0.00
2,810.00	20.00	341.00	2,789.82	163.36	-56.25	-163.22	2.00	2.00	0.00	0.00
End Nudge @ 2810.00ft										
2,900.00	20.00	341.00	2,874.39	192.46	-66.27	-192.30	0.00	0.00	0.00	0.00
3,000.00	20.00	341.00	2,968.36	224.80	-77.40	-224.61	0.00	0.00	0.00	0.00
3,100.00	20.00	341.00	3,062.33	257.14	-88.54	-256.92	0.00	0.00	0.00	0.00
3,200.00	20.00	341.00	3,156.30	289.48	-99.67	-289.23	0.00	0.00	0.00	0.00
3,300.00	20.00	341.00	3,250.26	321.81	-110.81	-321.54	0.00	0.00	0.00	0.00
3,400.00	20.00	341.00	3,344.23	354.15	-121.94	-353.85	0.00	0.00	0.00	0.00
3,500.00	20.00	341.00	3,438.20	386.49	-133.08	-386.17	0.00	0.00	0.00	0.00
3,600.00	20.00	341.00	3,532.17	418.83	-144.21	-418.48	0.00	0.00	0.00	0.00
3,700.00	20.00	341.00	3,626.14	451.17	-155.35	-450.79	0.00	0.00	0.00	0.00
3,800.00	20.00	341.00	3,720.11	483.51	-166.49	-483.10	0.00	0.00	0.00	0.00
3,900.00	20.00	341.00	3,814.08	515.85	-177.62	-515.41	0.00	0.00	0.00	0.00
4,000.00	20.00	341.00	3,908.05	548.19	-188.76	-547.72	0.00	0.00	0.00	0.00
4,100.00	20.00	341.00	4,002.02	580.52	-199.89	-580.03	0.00	0.00	0.00	0.00
4,200.00	20.00	341.00	4,095.99	612.86	-211.03	-612.34	0.00	0.00	0.00	0.00
4,253.22	20.00	341.00	4,146.00	630.07	-216.95	-629.54	0.00	0.00	0.00	0.00
Parkman										

Plan Report for Green 1C-8HZ - 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 (°)
4,300.00	20.00	341.00	4,189.96	645.20	-222.16	-644.66	0.00	0.00	0.00	0.00
4,400.00	20.00	341.00	4,283.93	677.54	-233.30	-676.97	0.00	0.00	0.00	0.00
4,500.00	20.00	341.00	4,377.90	709.88	-244.43	-709.28	0.00	0.00	0.00	0.00
4,600.00	20.00	341.00	4,471.87	742.22	-255.57	-741.59	0.00	0.00	0.00	0.00
4,620.36	20.00	341.00	4,491.00	748.80	-257.83	-748.17	0.00	0.00	0.00	0.00
Sussex										
4,700.00	20.00	341.00	4,565.83	774.56	-266.70	-773.90	0.00	0.00	0.00	0.00
4,800.00	20.00	341.00	4,659.80	806.89	-277.84	-806.21	0.00	0.00	0.00	0.00
4,900.00	20.00	341.00	4,753.77	839.23	-288.97	-838.52	0.00	0.00	0.00	0.00
5,000.00	20.00	341.00	4,847.74	871.57	-300.11	-870.84	0.00	0.00	0.00	0.00
5,100.00	20.00	341.00	4,941.71	903.91	-311.24	-903.15	0.00	0.00	0.00	0.00
5,200.00	20.00	341.00	5,035.68	936.25	-322.38	-935.46	0.00	0.00	0.00	0.00
5,300.00	20.00	341.00	5,129.65	968.59	-333.51	-967.77	0.00	0.00	0.00	0.00
5,400.00	20.00	341.00	5,223.62	1,000.93	-344.65	-1,000.08	0.00	0.00	0.00	0.00
5,500.00	20.00	341.00	5,317.59	1,033.26	-355.78	-1,032.39	0.00	0.00	0.00	0.00
5,600.00	20.00	341.00	5,411.56	1,065.60	-366.92	-1,064.70	0.00	0.00	0.00	0.00
5,700.00	20.00	341.00	5,505.53	1,097.94	-378.05	-1,097.01	0.00	0.00	0.00	0.00
5,800.00	20.00	341.00	5,599.50	1,130.28	-389.19	-1,129.33	0.00	0.00	0.00	0.00
5,890.00	20.00	341.00	5,684.07	1,159.39	-399.21	-1,158.41	0.00	0.00	0.00	0.00
Begin Drop @ 5890.00ft										
5,900.00	19.80	341.00	5,693.47	1,162.60	-400.32	-1,161.62	2.00	-2.00	0.00	180.00
6,000.00	17.80	341.00	5,788.13	1,193.07	-410.81	-1,192.07	2.00	-2.00	0.00	180.00
6,100.00	15.80	341.00	5,883.86	1,220.40	-420.22	-1,219.37	2.00	-2.00	0.00	180.00
6,200.00	13.80	341.00	5,980.54	1,244.55	-428.53	-1,243.50	2.00	-2.00	0.00	180.00
6,300.00	11.80	341.00	6,078.05	1,265.50	-435.75	-1,264.43	2.00	-2.00	0.00	180.00
6,400.00	9.80	341.00	6,176.27	1,283.21	-441.85	-1,282.13	2.00	-2.00	0.00	180.00
6,500.00	7.80	341.00	6,275.09	1,297.68	-446.83	-1,296.58	2.00	-2.00	0.00	180.00
6,600.00	5.80	341.00	6,374.38	1,308.87	-450.68	-1,307.77	2.00	-2.00	0.00	180.00
6,700.00	3.80	341.00	6,474.02	1,316.79	-453.41	-1,315.67	2.00	-2.00	0.00	180.00
6,800.00	1.80	341.00	6,573.90	1,321.40	-455.00	-1,320.29	2.00	-2.00	0.00	180.00
6,890.00	0.00	0.00	6,663.88	1,322.74	-455.46	-1,321.62	2.00	-2.00	21.11	180.00
End Drop @ 6890.00ft										
6,900.00	0.00	0.00	6,673.88	1,322.74	-455.46	-1,321.62	0.00	0.00	0.00	180.00
6,901.16	0.00	0.00	6,675.04	1,322.74	-455.46	-1,321.62	0.00	0.00	0.00	0.00
Top of 4.5" Liner @ 6901.16ft										
7,000.00	0.00	0.00	6,773.88	1,322.74	-455.46	-1,321.62	0.00	0.00	0.00	0.00
7,001.16	0.00	0.00	6,775.04	1,322.74	-455.46	-1,321.62	0.00	0.00	0.00	0.00
KOP @ 7001.16ft										
7,100.00	9.88	180.14	6,873.39	1,314.24	-455.48	-1,313.12	10.00	10.00	0.00	180.14
7,200.00	19.88	180.14	6,969.92	1,288.58	-455.54	-1,287.47	10.00	10.00	0.00	0.00
7,202.22	20.11	180.14	6,972.00	1,287.82	-455.54	-1,286.71	10.00	10.00	0.00	0.00
SSPG										
7,238.88	23.77	180.14	7,006.00	1,274.13	-455.58	-1,273.01	10.00	10.00	0.00	0.00
NBRR										
7,300.00	29.88	180.14	7,060.52	1,246.56	-455.64	-1,245.44	10.00	10.00	0.00	0.00
7,358.91	35.78	180.14	7,110.00	1,214.63	-455.72	-1,213.52	10.00	10.00	0.00	0.00
N470_B_CK										
7,400.00	39.88	180.14	7,142.45	1,189.44	-455.79	-1,188.32	10.00	10.00	0.00	0.00
7,446.67	44.55	180.14	7,177.00	1,158.09	-455.86	-1,156.97	10.00	10.00	0.00	0.00
N700_C_CK										
7,500.00	49.88	180.14	7,213.21	1,118.96	-455.96	-1,117.84	10.00	10.00	0.00	0.00
DLS = 10°/100'										
7,600.00	59.88	180.14	7,270.66	1,037.27	-456.16	-1,036.15	10.00	10.00	0.00	0.00
7,700.00	69.88	180.14	7,313.05	946.84	-456.39	-945.72	10.00	10.00	0.00	0.00
7,711.82	71.07	180.14	7,317.00	935.70	-456.41	-934.58	10.00	10.00	0.00	0.00
FRHS										
7,800.00	79.88	180.14	7,339.10	850.42	-456.62	-849.30	10.00	10.00	0.00	0.00
7,825.39	82.42	180.14	7,343.00	825.33	-456.69	-824.21	10.00	10.00	0.00	0.00

Plan Report for Green 1C-8HZ - 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 (°)
CDLL										
7,899.35	89.82	180.14	7,348.00	751.59	-456.87	-750.48	10.00	10.00	0.00	0.00
End Build @ 7899.35ft - Landing Target (Heel) - 7"										
7,900.00	89.82	180.14	7,348.00	750.94	-456.87	-749.83	0.00	0.00	0.00	0.00
8,000.00	89.82	180.14	7,348.32	650.95	-457.12	-649.83	0.00	0.00	0.00	0.00
8,100.00	89.82	180.14	7,348.63	550.95	-457.37	-549.83	0.00	0.00	0.00	0.00
8,200.00	89.82	180.14	7,348.95	450.95	-457.61	-449.83	0.00	0.00	0.00	0.00
8,300.00	89.82	180.14	7,349.27	350.95	-457.86	-349.83	0.00	0.00	0.00	0.00
8,400.00	89.82	180.14	7,349.58	250.95	-458.11	-249.83	0.00	0.00	0.00	0.00
8,500.00	89.82	180.14	7,349.90	150.95	-458.35	-149.83	0.00	0.00	0.00	0.00
8,600.00	89.82	180.14	7,350.22	50.95	-458.60	-49.83	0.00	0.00	0.00	0.00
8,700.00	89.82	180.14	7,350.54	-49.05	-458.85	50.17	0.00	0.00	0.00	0.00
8,800.00	89.82	180.14	7,350.85	-149.05	-459.10	150.17	0.00	0.00	0.00	0.00
8,900.00	89.82	180.14	7,351.17	-249.05	-459.34	250.17	0.00	0.00	0.00	0.00
9,000.00	89.82	180.14	7,351.49	-349.05	-459.59	350.17	0.00	0.00	0.00	0.00
9,100.00	89.82	180.14	7,351.80	-449.05	-459.84	450.17	0.00	0.00	0.00	0.00
9,200.00	89.82	180.14	7,352.12	-549.04	-460.09	550.17	0.00	0.00	0.00	0.00
9,300.00	89.82	180.14	7,352.44	-649.04	-460.33	650.17	0.00	0.00	0.00	0.00
9,400.00	89.82	180.14	7,352.75	-749.04	-460.58	750.17	0.00	0.00	0.00	0.00
9,500.00	89.82	180.14	7,353.07	-849.04	-460.83	850.17	0.00	0.00	0.00	0.00
9,600.00	89.82	180.14	7,353.39	-949.04	-461.08	950.17	0.00	0.00	0.00	0.00
9,700.00	89.82	180.14	7,353.70	-1,049.04	-461.32	1,050.16	0.00	0.00	0.00	0.00
9,800.00	89.82	180.14	7,354.02	-1,149.04	-461.57	1,150.16	0.00	0.00	0.00	0.00
9,900.00	89.82	180.14	7,354.34	-1,249.04	-461.82	1,250.16	0.00	0.00	0.00	0.00
10,000.00	89.82	180.14	7,354.65	-1,349.04	-462.07	1,350.16	0.00	0.00	0.00	0.00
10,100.00	89.82	180.14	7,354.97	-1,449.04	-462.31	1,450.16	0.00	0.00	0.00	0.00
10,200.00	89.82	180.14	7,355.29	-1,549.04	-462.56	1,550.16	0.00	0.00	0.00	0.00
10,300.00	89.82	180.14	7,355.60	-1,649.04	-462.81	1,650.16	0.00	0.00	0.00	0.00
10,400.00	89.82	180.14	7,355.92	-1,749.04	-463.05	1,750.16	0.00	0.00	0.00	0.00
10,500.00	89.82	180.14	7,356.24	-1,849.03	-463.30	1,850.16	0.00	0.00	0.00	0.00
10,600.00	89.82	180.14	7,356.55	-1,949.03	-463.55	1,950.16	0.00	0.00	0.00	0.00
10,700.00	89.82	180.14	7,356.87	-2,049.03	-463.80	2,050.16	0.00	0.00	0.00	0.00
10,800.00	89.82	180.14	7,357.19	-2,149.03	-464.04	2,150.16	0.00	0.00	0.00	0.00
10,900.00	89.82	180.14	7,357.50	-2,249.03	-464.29	2,250.16	0.00	0.00	0.00	0.00
11,000.00	89.82	180.14	7,357.82	-2,349.03	-464.54	2,350.16	0.00	0.00	0.00	0.00
11,100.00	89.82	180.14	7,358.14	-2,449.03	-464.79	2,450.16	0.00	0.00	0.00	0.00
11,200.00	89.82	180.14	7,358.45	-2,549.03	-465.03	2,550.16	0.00	0.00	0.00	0.00
11,300.00	89.82	180.14	7,358.77	-2,649.03	-465.28	2,650.16	0.00	0.00	0.00	0.00
11,400.00	89.82	180.14	7,359.09	-2,749.03	-465.53	2,750.16	0.00	0.00	0.00	0.00
11,500.00	89.82	180.14	7,359.40	-2,849.03	-465.78	2,850.16	0.00	0.00	0.00	0.00
11,600.00	89.82	180.14	7,359.72	-2,949.03	-466.02	2,950.16	0.00	0.00	0.00	0.00
11,700.00	89.82	180.14	7,360.04	-3,049.02	-466.27	3,050.15	0.00	0.00	0.00	0.00
11,800.00	89.82	180.14	7,360.35	-3,149.02	-466.52	3,150.15	0.00	0.00	0.00	0.00
11,900.00	89.82	180.14	7,360.67	-3,249.02	-466.77	3,250.15	0.00	0.00	0.00	0.00
12,000.00	89.82	180.14	7,360.99	-3,349.02	-467.01	3,350.15	0.00	0.00	0.00	0.00
12,100.00	89.82	180.14	7,361.30	-3,449.02	-467.26	3,450.15	0.00	0.00	0.00	0.00
12,200.00	89.82	180.14	7,361.62	-3,549.02	-467.51	3,550.15	0.00	0.00	0.00	0.00
12,300.00	89.82	180.14	7,361.94	-3,649.02	-467.75	3,650.15	0.00	0.00	0.00	0.00
12,400.00	89.82	180.14	7,362.25	-3,749.02	-468.00	3,750.15	0.00	0.00	0.00	0.00
12,500.00	89.82	180.14	7,362.57	-3,849.02	-468.25	3,850.15	0.00	0.00	0.00	0.00
12,600.00	89.82	180.14	7,362.89	-3,949.02	-468.50	3,950.15	0.00	0.00	0.00	0.00
12,700.00	89.82	180.14	7,363.20	-4,049.02	-468.74	4,050.15	0.00	0.00	0.00	0.00
12,800.00	89.82	180.14	7,363.52	-4,149.02	-468.99	4,150.15	0.00	0.00	0.00	0.00
12,900.00	89.82	180.14	7,363.84	-4,249.01	-469.24	4,250.15	0.00	0.00	0.00	0.00
13,000.00	89.82	180.14	7,364.15	-4,349.01	-469.49	4,350.15	0.00	0.00	0.00	0.00
13,100.00	89.82	180.14	7,364.47	-4,449.01	-469.73	4,450.15	0.00	0.00	0.00	0.00
13,200.00	89.82	180.14	7,364.79	-4,549.01	-469.98	4,550.15	0.00	0.00	0.00	0.00
13,300.00	89.82	180.14	7,365.10	-4,649.01	-470.23	4,650.15	0.00	0.00	0.00	0.00
13,400.00	89.82	180.14	7,365.42	-4,749.01	-470.48	4,750.15	0.00	0.00	0.00	0.00
13,500.00	89.82	180.14	7,365.74	-4,849.01	-470.72	4,850.15	0.00	0.00	0.00	0.00

Plan Report for Green 1C-8HZ - 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 (°)
13,583.00	89.82	180.14	7,366.00	-4,932.01	-470.93	4,933.15	0.00	0.00	0.00	0.00
TD Well @ 13583.00ft - Green 1C-8HZ_BHL										

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,810.00	1,810.00	0.00	0.00	Begin Nudge @ 1810.00ft
2,810.00	2,789.82	163.36	-56.25	End Nudge @ 2810.00ft
5,890.00	5,684.07	1,159.39	-399.21	Begin Drop @ 5890.00ft
6,890.00	6,663.88	1,322.74	-455.46	End Drop @ 6890.00ft
6,901.16	6,675.04	1,322.74	-455.46	Top of 4.5" Liner @ 6901.16ft
7,001.16	6,775.04	1,322.74	-455.46	KOP @ 7001.16ft
7,500.00	7,213.21	1,118.96	-455.96	DLS = 10°/100'
7,899.35	7,348.00	751.59	-456.87	End Build @ 7899.35ft
13,583.00	7,366.00	-4,932.01	-470.93	TD Well @ 13583.00ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (usft)
				+N/_S (usft)	+E/-W (usft)	
User	No Target (Freehand)	180.14	Slot	0.00	0.00	0.00

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	7,899.35	Permit Rev-1	MWD+IFR1
7,899.35	13,583.00	Permit Rev-1	MWD+IFR1

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
1,498.00	1,498.00	9 5/8"	9-5/8	13-1/2
7,899.35	7,348.00	7"	7	8-3/4

Plan Report for Green 1C-8HZ - Permit Rev-1

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,022.00	1,022.00	Base Fox Hills		0.00	
1,498.00	1,498.00	Surface Csg Setting Depth		0.00	
4,253.22	4,146.00	Parkman		0.00	
4,620.36	4,491.00	Sussex		0.00	
7,202.22	6,972.00	SSPG		0.00	
7,238.88	7,006.00	NBRR		0.00	
7,358.91	7,110.00	N470_B_CK		0.00	
7,446.67	7,177.00	N700_C_CK		0.00	
7,711.82	7,317.00	FRHS		0.00	
7,825.39	7,343.00	CDLL		0.00	
7,899.35	7,348.00	Landing Target (Heel)		0.00	
13,583.00	7,366.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Green 1C-8HZ_SHL	0.00	0.00	0.00	Point
Green 1C-8HZ_BHL	7,366.00	-4,932.01	-470.93	Point
1N-R65W-Sec. 5_Section Lines	40.00	-53.21	4,010.06	Polygon
1N-R65W-Sec. 8_Section lines	8.00	-4,319.31	8,087.80	Polygon

North Reference Sheet for Green Pad - Green 1C-8HZ - 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' @ 4989.00usft (D Rig). Northing and Easting are relative to Green 1C-8HZ

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: 0.99960838

Grid Coordinates of Well: 14,553,210.99 usft N, 1,726,001.45 usft E

Geographical Coordinates of Well: 40° 04' 20.31" N, 104° 41' 38.66" W

Grid Convergence at Surface is: 0.20°

Based upon Minimum Curvature type calculations, at a Measured Depth of 13,583.00usft the Bottom Hole Displacement is 4,954.44usft in the Direction of 185.45° (True).

Magnetic Convergence at surface is: -8.15° (22 October 2014, , IGRF2010)

