

Project: Weld County, CO (NAD 83)  
Site: Sec. 13-T1N-R66W  
Well: Lochbuie 4C-13HZ  
Wellbore: Plan B  
Design: Rev B0 - PERMIT



**HALLIBURTON**  
Sperry Drilling

#### SECTION DETAILS

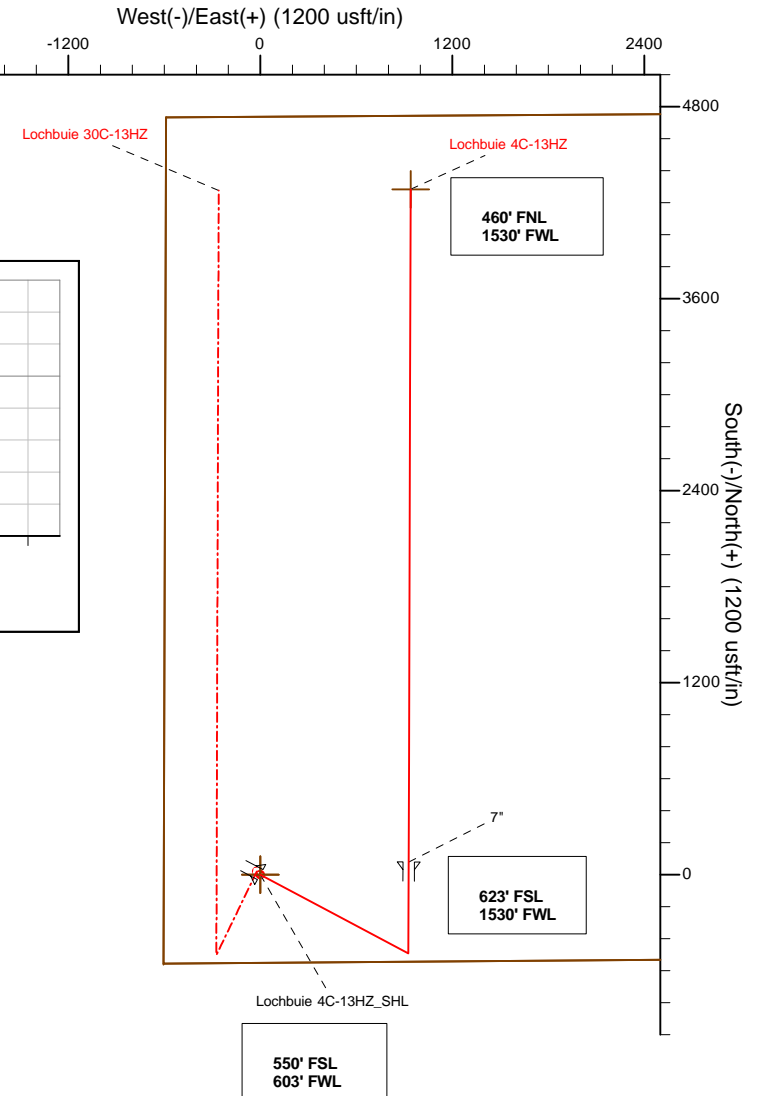
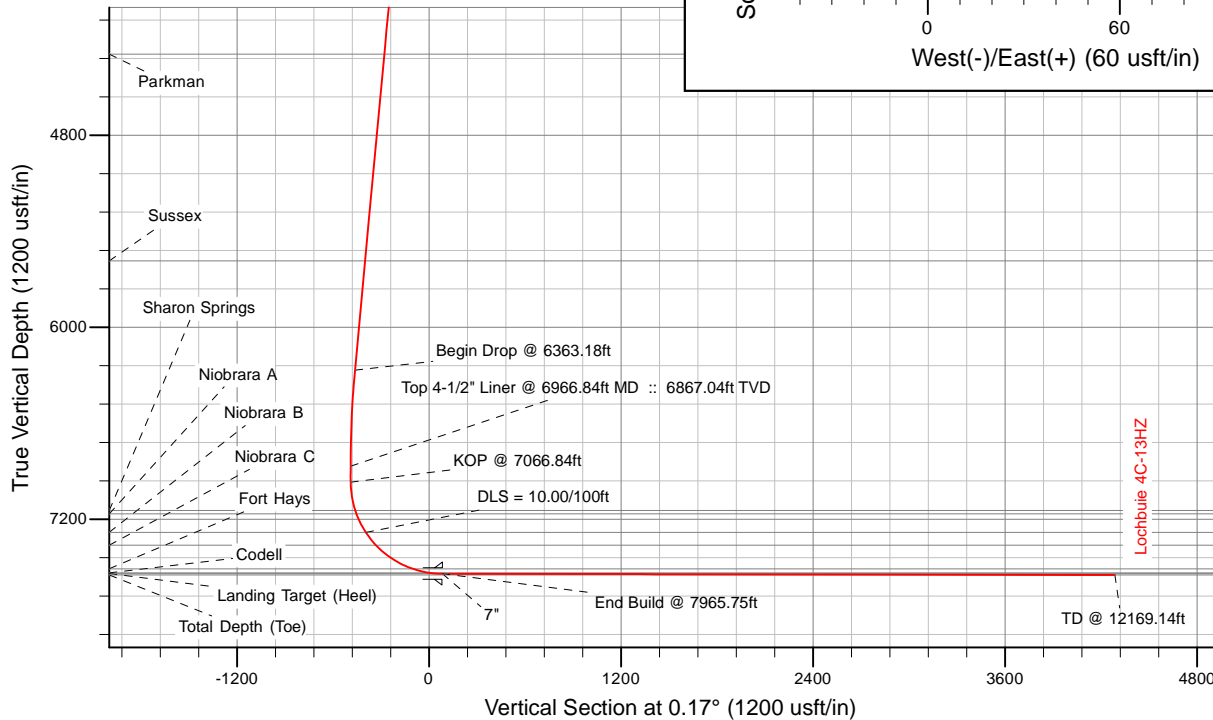
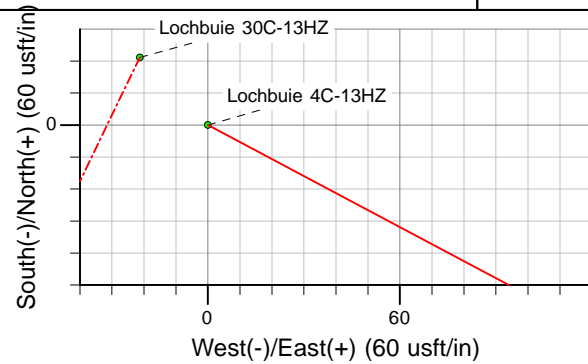
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
1563.50	11.27	118.00	1559.87	-25.93	48.78	2.00	118.00	-25.79	
6363.18	11.27	118.00	6267.00	-466.31	876.99	0.00	0.00	-463.70	
6926.68	0.00	0.00	6826.87	-492.24	925.77	2.00	180.00	-489.49	
7066.84	0.00	0.00	6967.04	-492.24	925.77	0.00	0.00	-489.49	
7965.75	89.89	0.17	7540.00	79.63	927.44	10.00	0.17	82.38	
12169.14	89.89	0.17	7548.00	4282.99	939.72	0.00	0.00	4285.76	Lochbuie 4C-13HZ_BHL

#### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Lochbuie 4C-13HZ_Sec	0.00	0.00	0.00	40.045512	-104.732801	Polygon
Lochbuie 4C-13HZ_SHL	0.00	0.00	0.00	40.045512	-104.732801	Point
Lochbuie 4C-13HZ_BHL	4282.99	7548.00	939.72	40.057269	-104.729444	Point

TVD MD Annotation

6867.04 6966.84 Top 4-1/2" Liner @ 6966.84ft MD :: 6867.04ft TVD  
6967.04 7066.84 KOP @ 7066.84ft



WELL DETAILS: Lochbuie 4C-13HZ	
Ground Level:	5078.00
RKB=17 @ 5095.00usft (Drilling Rig)	
Plan: Rev B0 - PERMIT (Lochbuie 4C-13HZ/Plan B)	
Created By: Fred Hartmann	Date: 09/24/2013

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 13-T1N-R66W

Lochbuie 4C-13HZ

Plan B

Plan: Rev B0 - PERMIT

## Sperry Drilling Services

### Proposal Report

24 September, 2013

Well Coordinates: 1,260,354.84 N, 3,214,787.44 E (40° 02' 43.84" N, 104° 43' 58.08" W)

Ground Level: 5,078.00 usft

Local Coordinate Origin:

Centered on Well Lochbuie 4C-13HZ

Viewing Datum:

RKB=17 @ 5095.00usft (Drilling Rig)

TVDs to System:

N

North Reference:

True

Unit System:

Custom API - US Survey Feet

Geodetic Scale Factor Applied

Version: 5000.1 Build: 58

**HALLIBURTON**

**Plan Report for Lochbuie 4C-13HZ - Rev B0 - PERMIT**

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
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
<b>9 5/8"</b>										
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
<b>Begin Nudge @ 1000.00ft</b>										
1,100.00	2.00	118.00	1,099.98	-0.82	1.54	-0.81	2.00	2.00	0.00	118.00
1,200.00	4.00	118.00	1,199.84	-3.28	6.16	-3.26	2.00	2.00	0.00	0.00
1,300.00	6.00	118.00	1,299.45	-7.37	13.86	-7.33	2.00	2.00	0.00	0.00
1,400.00	8.00	118.00	1,398.70	-13.09	24.62	-13.02	2.00	2.00	0.00	0.00
1,500.00	10.00	118.00	1,497.47	-20.43	38.43	-20.32	2.00	2.00	0.00	0.00
1,563.50	11.27	118.00	1,559.87	-25.93	48.78	-25.79	2.00	2.00	0.00	0.00
1,600.00	11.27	118.00	1,595.67	-29.28	55.07	-29.12	0.00	0.00	0.00	0.00
1,700.00	11.27	118.00	1,693.74	-38.46	72.33	-38.24	0.00	0.00	0.00	0.00
1,800.00	11.27	118.00	1,791.81	-47.63	89.58	-47.37	0.00	0.00	0.00	0.00
1,900.00	11.27	118.00	1,889.88	-56.81	106.84	-56.49	0.00	0.00	0.00	0.00
2,000.00	11.27	118.00	1,987.96	-65.98	124.10	-65.61	0.00	0.00	0.00	0.00
2,100.00	11.27	118.00	2,086.03	-75.16	141.35	-74.74	0.00	0.00	0.00	0.00
2,200.00	11.27	118.00	2,184.10	-84.33	158.61	-83.86	0.00	0.00	0.00	0.00
2,300.00	11.27	118.00	2,282.17	-93.51	175.86	-92.99	0.00	0.00	0.00	0.00
2,400.00	11.27	118.00	2,380.24	-102.68	193.12	-102.11	0.00	0.00	0.00	0.00
2,500.00	11.27	118.00	2,478.31	-111.86	210.37	-111.23	0.00	0.00	0.00	0.00
2,600.00	11.27	118.00	2,576.39	-121.03	227.63	-120.36	0.00	0.00	0.00	0.00
2,700.00	11.27	118.00	2,674.46	-130.21	244.89	-129.48	0.00	0.00	0.00	0.00
2,800.00	11.27	118.00	2,772.53	-139.38	262.14	-138.60	0.00	0.00	0.00	0.00
2,900.00	11.27	118.00	2,870.60	-148.56	279.40	-147.73	0.00	0.00	0.00	0.00
3,000.00	11.27	118.00	2,968.67	-157.73	296.65	-156.85	0.00	0.00	0.00	0.00
3,100.00	11.27	118.00	3,066.75	-166.91	313.91	-165.98	0.00	0.00	0.00	0.00
3,200.00	11.27	118.00	3,164.82	-176.08	331.16	-175.10	0.00	0.00	0.00	0.00
3,300.00	11.27	118.00	3,262.89	-185.26	348.42	-184.22	0.00	0.00	0.00	0.00
3,400.00	11.27	118.00	3,360.96	-194.43	365.68	-193.35	0.00	0.00	0.00	0.00
3,500.00	11.27	118.00	3,459.03	-203.61	382.93	-202.47	0.00	0.00	0.00	0.00
3,600.00	11.27	118.00	3,557.10	-212.78	400.19	-211.59	0.00	0.00	0.00	0.00
3,700.00	11.27	118.00	3,655.18	-221.96	417.44	-220.72	0.00	0.00	0.00	0.00
3,800.00	11.27	118.00	3,753.25	-231.13	434.70	-229.84	0.00	0.00	0.00	0.00
3,900.00	11.27	118.00	3,851.32	-240.31	451.95	-238.97	0.00	0.00	0.00	0.00
4,000.00	11.27	118.00	3,949.39	-249.48	469.21	-248.09	0.00	0.00	0.00	0.00
4,100.00	11.27	118.00	4,047.46	-258.66	486.47	-257.21	0.00	0.00	0.00	0.00
4,200.00	11.27	118.00	4,145.53	-267.83	503.72	-266.34	0.00	0.00	0.00	0.00
4,300.00	11.27	118.00	4,243.61	-277.01	520.98	-275.46	0.00	0.00	0.00	0.00
4,349.35	11.27	118.00	4,292.00	-281.54	529.49	-279.96	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,400.00	11.27	118.00	4,341.68	-286.18	538.23	-284.59	0.00	0.00	0.00	0.00
4,500.00	11.27	118.00	4,439.75	-295.36	555.49	-293.71	0.00	0.00	0.00	0.00
4,600.00	11.27	118.00	4,537.82	-304.53	572.74	-302.83	0.00	0.00	0.00	0.00
4,700.00	11.27	118.00	4,635.89	-313.71	590.00	-311.96	0.00	0.00	0.00	0.00
4,800.00	11.27	118.00	4,733.96	-322.88	607.26	-321.08	0.00	0.00	0.00	0.00
4,900.00	11.27	118.00	4,832.04	-332.06	624.51	-330.20	0.00	0.00	0.00	0.00
5,000.00	11.27	118.00	4,930.11	-341.23	641.77	-339.33	0.00	0.00	0.00	0.00
5,100.00	11.27	118.00	5,028.18	-350.41	659.02	-348.45	0.00	0.00	0.00	0.00
5,200.00	11.27	118.00	5,126.25	-359.58	676.28	-357.58	0.00	0.00	0.00	0.00

**Plan Report for Lochbuie 4C-13HZ - Rev B0 - PERMIT**

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 (°)
5,300.00	11.27	118.00	5,224.32	-368.76	693.53	-366.70	0.00	0.00	0.00	0.00
5,400.00	11.27	118.00	5,322.39	-377.93	710.79	-375.82	0.00	0.00	0.00	0.00
5,500.00	11.27	118.00	5,420.47	-387.11	728.05	-384.95	0.00	0.00	0.00	0.00
5,600.00	11.27	118.00	5,518.54	-396.28	745.30	-394.07	0.00	0.00	0.00	0.00
5,667.77	11.27	118.00	5,585.00	-402.50	756.99	-400.25	0.00	0.00	0.00	0.00
<b>Sussex</b>										
5,700.00	11.27	118.00	5,616.61	-405.46	762.56	-403.19	0.00	0.00	0.00	0.00
5,800.00	11.27	118.00	5,714.68	-414.63	779.81	-412.32	0.00	0.00	0.00	0.00
5,900.00	11.27	118.00	5,812.75	-423.81	797.07	-421.44	0.00	0.00	0.00	0.00
6,000.00	11.27	118.00	5,910.82	-432.98	814.32	-430.57	0.00	0.00	0.00	0.00
6,100.00	11.27	118.00	6,008.90	-442.16	831.58	-439.69	0.00	0.00	0.00	0.00
6,200.00	11.27	118.00	6,106.97	-451.33	848.83	-448.81	0.00	0.00	0.00	0.00
6,300.00	11.27	118.00	6,205.04	-460.51	866.09	-457.94	0.00	0.00	0.00	0.00
6,363.18	11.27	118.00	6,267.00	-466.31	876.99	-463.70	0.00	0.00	0.00	0.00
<b>Begin Drop @ 6363.18ft</b>										
6,400.00	10.53	118.00	6,303.16	-469.57	883.14	-466.95	2.00	-2.00	0.00	180.00
6,500.00	8.53	118.00	6,401.77	-477.35	897.76	-474.68	2.00	-2.00	0.00	180.00
6,600.00	6.53	118.00	6,500.90	-483.50	909.34	-480.80	2.00	-2.00	0.00	180.00
6,700.00	4.53	118.00	6,600.43	-488.03	917.85	-485.31	2.00	-2.00	0.00	180.00
6,800.00	2.53	118.00	6,700.24	-490.92	923.30	-488.18	2.00	-2.00	0.00	180.00
6,900.00	0.53	118.00	6,800.20	-492.18	925.66	-489.43	2.00	-2.00	0.00	180.00
6,926.68	0.00	0.00	6,826.87	-492.24	925.77	-489.49	2.00	-2.00	0.00	-180.00
6,966.84	0.00	0.00	6,867.04	-492.24	925.77	-489.49	0.00	0.00	0.00	0.00
<b>Top 4-1/2" Liner @ 6966.84ft MD :: 6867.04ft TVD</b>										
7,000.00	0.00	0.00	6,900.20	-492.24	925.77	-489.49	0.00	0.00	0.00	0.00
7,066.84	0.00	0.00	6,967.04	-492.24	925.77	-489.49	0.00	0.00	0.00	0.00
<b>KOP @ 7066.84ft</b>										
7,100.00	3.32	0.17	7,000.18	-491.28	925.77	-488.53	10.00	10.00	0.00	0.17
7,200.00	13.32	0.17	7,099.00	-476.84	925.81	-474.09	10.00	10.00	0.00	0.00
7,247.80	18.10	0.17	7,145.00	-463.90	925.85	-461.15	10.00	10.00	0.00	0.00
<b>Sharon Springs</b>										
7,268.97	20.21	0.17	7,165.00	-456.95	925.87	-454.21	10.00	10.00	0.00	0.00
<b>Niobrara A</b>										
7,300.00	23.32	0.17	7,193.81	-445.45	925.90	-442.70	10.00	10.00	0.00	0.00
7,399.12	33.23	0.17	7,281.00	-398.56	926.04	-395.81	10.00	10.00	0.00	0.00
<b>Niobrara B</b>										
7,400.00	33.32	0.17	7,281.74	-398.08	926.04	-395.33	10.00	10.00	0.00	0.00
<b>DLS = 10.00/100ft</b>										
7,500.00	43.32	0.17	7,360.10	-336.16	926.22	-333.41	10.00	10.00	0.00	0.00
7,502.62	43.58	0.17	7,362.00	-334.36	926.23	-331.61	10.00	10.00	0.00	0.00
<b>Niobrara C</b>										
7,600.00	53.32	0.17	7,426.52	-261.57	926.44	-258.82	10.00	10.00	0.00	0.00
7,700.00	63.32	0.17	7,478.97	-176.59	926.69	-173.83	10.00	10.00	0.00	0.00
7,777.51	71.07	0.17	7,509.00	-105.19	926.90	-102.44	10.00	10.00	0.00	0.00
<b>Fort Hays</b>										
7,800.00	73.32	0.17	7,515.88	-83.78	926.96	-81.03	10.00	10.00	0.00	0.00
7,891.11	82.43	0.17	7,535.00	5.20	927.22	7.96	10.00	10.00	0.00	0.00
<b>Codell</b>										
7,900.00	83.32	0.17	7,536.10	14.02	927.25	16.77	10.00	10.00	0.00	0.00
7,965.75	89.89	0.17	7,540.00	79.62	927.44	82.37	10.00	10.00	0.00	0.00
<b>End Build @ 7965.75ft - Landing Target (Heel) - 7"</b>										
8,000.00	89.89	0.17	7,540.06	113.87	927.54	116.62	0.00	0.00	0.00	0.00
8,100.00	89.89	0.17	7,540.25	213.87	927.83	216.62	0.00	0.00	0.00	0.00
8,200.00	89.89	0.17	7,540.44	313.87	928.12	316.62	0.00	0.00	0.00	0.00
8,300.00	89.89	0.17	7,540.63	413.87	928.42	416.62	0.00	0.00	0.00	0.00
8,400.00	89.89	0.17	7,540.82	513.87	928.71	516.62	0.00	0.00	0.00	0.00
8,500.00	89.89	0.17	7,541.01	613.87	929.00	616.62	0.00	0.00	0.00	0.00
8,600.00	89.89	0.17	7,541.20	713.87	929.29	716.62	0.00	0.00	0.00	0.00

**Plan Report for Lochbuie 4C-13HZ - Rev B0 - PERMIT**

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 (°)
8,700.00	89.89	0.17	7,541.39	813.87	929.58	816.62	0.00	0.00	0.00	0.00
8,800.00	89.89	0.17	7,541.59	913.87	929.88	916.62	0.00	0.00	0.00	0.00
8,900.00	89.89	0.17	7,541.78	1,013.87	930.17	1,016.62	0.00	0.00	0.00	0.00
9,000.00	89.89	0.17	7,541.97	1,113.86	930.46	1,116.62	0.00	0.00	0.00	0.00
9,100.00	89.89	0.17	7,542.16	1,213.86	930.75	1,216.62	0.00	0.00	0.00	0.00
9,200.00	89.89	0.17	7,542.35	1,313.86	931.04	1,316.62	0.00	0.00	0.00	0.00
9,300.00	89.89	0.17	7,542.54	1,413.86	931.34	1,416.62	0.00	0.00	0.00	0.00
9,400.00	89.89	0.17	7,542.73	1,513.86	931.63	1,516.62	0.00	0.00	0.00	0.00
9,500.00	89.89	0.17	7,542.92	1,613.86	931.92	1,616.62	0.00	0.00	0.00	0.00
9,600.00	89.89	0.17	7,543.11	1,713.86	932.21	1,716.62	0.00	0.00	0.00	0.00
9,700.00	89.89	0.17	7,543.30	1,813.86	932.51	1,816.62	0.00	0.00	0.00	0.00
9,800.00	89.89	0.17	7,543.49	1,913.86	932.80	1,916.62	0.00	0.00	0.00	0.00
9,900.00	89.89	0.17	7,543.68	2,013.86	933.09	2,016.62	0.00	0.00	0.00	0.00
10,000.00	89.89	0.17	7,543.87	2,113.86	933.38	2,116.62	0.00	0.00	0.00	0.00
10,100.00	89.89	0.17	7,544.06	2,213.86	933.67	2,216.62	0.00	0.00	0.00	0.00
10,200.00	89.89	0.17	7,544.25	2,313.86	933.97	2,316.62	0.00	0.00	0.00	0.00
10,300.00	89.89	0.17	7,544.44	2,413.86	934.26	2,416.62	0.00	0.00	0.00	0.00
10,400.00	89.89	0.17	7,544.63	2,513.86	934.55	2,516.62	0.00	0.00	0.00	0.00
10,500.00	89.89	0.17	7,544.82	2,613.86	934.84	2,616.62	0.00	0.00	0.00	0.00
10,600.00	89.89	0.17	7,545.01	2,713.86	935.14	2,716.62	0.00	0.00	0.00	0.00
10,700.00	89.89	0.17	7,545.20	2,813.85	935.43	2,816.62	0.00	0.00	0.00	0.00
10,800.00	89.89	0.17	7,545.39	2,913.85	935.72	2,916.62	0.00	0.00	0.00	0.00
10,900.00	89.89	0.17	7,545.58	3,013.85	936.01	3,016.62	0.00	0.00	0.00	0.00
11,000.00	89.89	0.17	7,545.77	3,113.85	936.30	3,116.62	0.00	0.00	0.00	0.00
11,100.00	89.89	0.17	7,545.96	3,213.85	936.60	3,216.62	0.00	0.00	0.00	0.00
11,200.00	89.89	0.17	7,546.15	3,313.85	936.89	3,316.62	0.00	0.00	0.00	0.00
11,300.00	89.89	0.17	7,546.35	3,413.85	937.18	3,416.62	0.00	0.00	0.00	0.00
11,400.00	89.89	0.17	7,546.54	3,513.85	937.47	3,516.62	0.00	0.00	0.00	0.00
11,500.00	89.89	0.17	7,546.73	3,613.85	937.77	3,616.62	0.00	0.00	0.00	0.00
11,600.00	89.89	0.17	7,546.92	3,713.85	938.06	3,716.62	0.00	0.00	0.00	0.00
11,700.00	89.89	0.17	7,547.11	3,813.85	938.35	3,816.62	0.00	0.00	0.00	0.00
11,800.00	89.89	0.17	7,547.30	3,913.85	938.64	3,916.62	0.00	0.00	0.00	0.00
11,900.00	89.89	0.17	7,547.49	4,013.85	938.93	4,016.62	0.00	0.00	0.00	0.00
12,000.00	89.89	0.17	7,547.68	4,113.85	939.23	4,116.62	0.00	0.00	0.00	0.00
12,100.00	89.89	0.17	7,547.87	4,213.85	939.52	4,216.61	0.00	0.00	0.00	0.00
12,169.14	89.89	0.17	7,548.00	4,282.99	939.72	4,285.75	0.00	0.00	0.00	0.00

TD @ 12169.14ft

**Plan Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
1,000.00	1,000.00	0.00	0.00	Begin Nudge @ 1000.00ft
6,363.18	6,267.00	-466.31	876.99	Begin Drop @ 6363.18ft
6,966.84	6,867.04	-492.24	925.77	Top 4-1/2" Liner @ 6966.84ft MD :: 6867.04ft TVD
7,066.84	6,967.04	-492.24	925.77	KOP @ 7066.84ft
7,400.00	7,281.74	-398.08	926.04	DLS = 10.00/100ft
7,965.75	7,540.00	79.62	927.44	End Build @ 7965.75ft
12,169.14	7,548.00	4,282.99	939.72	TD @ 12169.14ft

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (usft)	+E/-W (usft)	Start TVD (usft)
User	No Target (Freehand)	0.17	Slot	0.00	0.00	0.00

## Plan Report for Lochbuie 4C-13HZ - Rev B0 - PERMIT

Survey tool program

From (usft)	To (usft)	Survey/Plan	Survey Tool
0.00	12,169.14	Rev B0 - PERMIT	BLIND

Casing Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
500.00	500.00	9 5/8"	9-5/8	13-1/2
7,965.75	7,540.00	7"	7	8-3/4

Formation Details

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,349.35	4,292.00	Parkman		0.00	
5,667.77	5,585.00	Sussex		0.00	
7,247.80	7,145.00	Sharon Springs		0.00	
7,268.97	7,165.00	Niobrara A		0.00	
7,399.12	7,281.00	Niobrara B		0.00	
7,502.62	7,362.00	Niobrara C		0.00	
7,777.51	7,509.00	Fort Hays		0.00	
7,891.11	7,535.00	Codell		0.00	
7,965.75	7,540.00	Landing Target (Heel)		0.00	
12,169.14	7,548.00	Total Depth (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Shape
Lochbuie 4C-13HZ_SHL	0.00	0.00	0.00	Point
Lochbuie 4C-13HZ_BHL	7,548.00	4,282.99	939.72	Point
Lochbuie 4C-13HZ_Sec	0.00	0.00	0.00	Polygon

**North Reference Sheet for Sec. 13-T1N-R66W - Lochbuie 4C-13HZ - Plan B**

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 @ 5095.00usft (Drilling Rig). Northing and Easting are relative to Lochbuie 4C-13HZ  
 Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980  
 Projection method is Lambert Conformal Conic (2 parallel)  
 Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°  
 False Easting: 3,000,000.00usft, False Northing: 1,000,000.00usft, Scale Reduction: 0.99996323  
 Grid Coordinates of Well: 1,260,354.84 usft N, 3,214,787.44 usft E  
 Geographical Coordinates of Well: 40° 02' 43.84" N, 104° 43' 58.08" W  
 Grid Convergence at Surface is: 0.50°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,169.14usft  
 the Bottom Hole Displacement is 4,384.86usft in the Direction of 12.38° ( True).  
 Magnetic Convergence at surface is: -8.05° (24 September 2013, , BGGM2013)

