

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 21-T1N-R67W

Howard 3C-21HZ

Plan A Rev 0

Plan: Plan A Rev 0 Permit

## Sperry Drilling Services Proposal Report

20 December, 2012

Well Coordinates: 1,254,589.43 N, 3,168,292.50 E (40° 01' 50.41" N, 104° 53' 56.44" W)

Ground Level: 5,024.00 ft

Local Coordinate Origin:

Centered on Well Howard 3C-21HZ

Viewing Datum:

RKB=17 @ 5041.00ft (Drilling Rig)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

**HALLIBURTON**

Project: Weld County, CO (NAD 83)  
 Site: Sec. 21-T1N-R67W  
 Well: Howard 3C-21HZ  
 Wellbore: Plan A Rev 0  
 Design: Plan A Rev 0 Permit

# Anadarko Petroleum Corp.

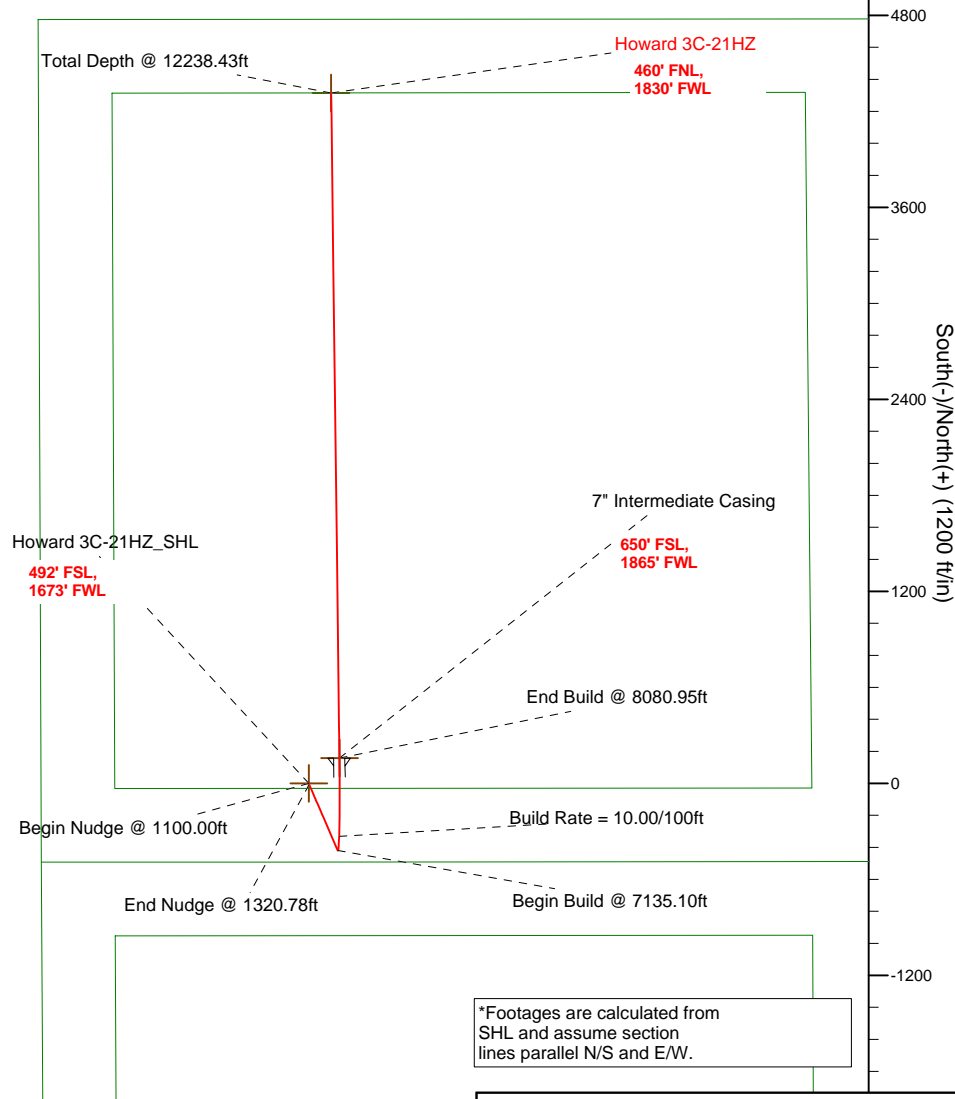
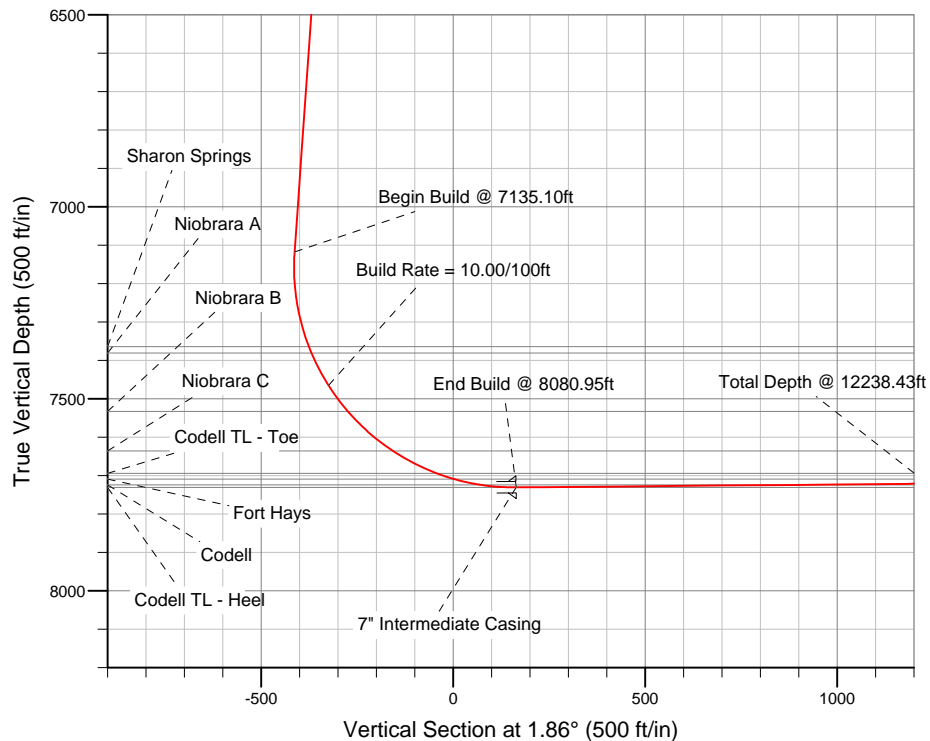
**HALLIBURTON**  
 Sperry Drilling

## 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	1100.00	0.00	0.00	1100.00	0.00	0.00	0.00	0.00	0.00	
3	1320.78	4.42	156.65	1320.56	-7.81	3.37	2.00	156.65	-7.69	
4	7135.10	4.42	156.65	7117.63	-418.79	180.78	0.00	0.00	-412.70	
5	8080.95	90.51	359.29	7731.00	158.00	192.00	10.00	-157.29	164.15	Howard 3C-21HZ_CP
6	12238.43	90.51	359.29	7694.00	4315.00	140.27	0.00	0.00	4317.27	Howard 3C-21HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Howard 3C-21HZ_SHL	0.00	0.00	0.00	40.030670	-104.899010	Point
Howard 3C-21HZ_BHL	7694.00	4315.00	140.27	40.042515	-104.898509	Point
Howard 3C-21HZ_CP	7731.00	158.00	192.00	40.031104	-104.898324	Point



\*Footages are calculated from  
 SHL and assume section  
 lines parallel N/S and E/W.

## WELL DETAILS: Howard 3C-21HZ

Ground Level 5024.00 RKB=17 @ 5041.00ft (Drilling Rig)

Plan: Plan A Rev 0 Permit (Howard 3C-21HZ/Plan A Rev 0)

Created By: Fred Hartmann Date: 12/20/2012  
 Reviewed: Date:

**Plan Report for Howard 3C-21HZ - Plan A Rev 0 Permit**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	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
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
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Begin Nudge @ 1100.00ft</b>										
1,200.00	2.00	156.65	1,199.98	-1.60	0.69	-1.58	2.00	2.00	0.00	156.65
1,300.00	4.00	156.65	1,299.84	-6.41	2.77	-6.31	2.00	2.00	0.00	0.00
1,320.78	4.42	156.65	1,320.56	-7.81	3.37	-7.69	2.00	2.00	0.00	0.00
<b>End Nudge @ 1320.78ft</b>										
1,400.00	4.42	156.65	1,399.55	-13.41	5.79	-13.21	0.00	0.00	0.00	0.00
1,500.00	4.42	156.65	1,499.25	-20.47	8.84	-20.18	0.00	0.00	0.00	0.00
1,600.00	4.42	156.65	1,598.95	-27.54	11.89	-27.14	0.00	0.00	0.00	0.00
1,700.00	4.42	156.65	1,698.66	-34.61	14.94	-34.11	0.00	0.00	0.00	0.00
1,800.00	4.42	156.65	1,798.36	-41.68	17.99	-41.07	0.00	0.00	0.00	0.00
1,900.00	4.42	156.65	1,898.06	-48.75	21.04	-48.04	0.00	0.00	0.00	0.00
2,000.00	4.42	156.65	1,997.77	-55.82	24.10	-55.00	0.00	0.00	0.00	0.00
2,100.00	4.42	156.65	2,097.47	-62.89	27.15	-61.97	0.00	0.00	0.00	0.00
2,200.00	4.42	156.65	2,197.17	-69.95	30.20	-68.94	0.00	0.00	0.00	0.00
2,300.00	4.42	156.65	2,296.88	-77.02	33.25	-75.90	0.00	0.00	0.00	0.00
2,400.00	4.42	156.65	2,396.58	-84.09	36.30	-82.87	0.00	0.00	0.00	0.00
2,500.00	4.42	156.65	2,496.28	-91.16	39.35	-89.83	0.00	0.00	0.00	0.00
2,600.00	4.42	156.65	2,595.98	-98.23	42.40	-96.80	0.00	0.00	0.00	0.00
2,700.00	4.42	156.65	2,695.69	-105.30	45.45	-103.76	0.00	0.00	0.00	0.00
2,800.00	4.42	156.65	2,795.39	-112.37	48.51	-110.73	0.00	0.00	0.00	0.00
2,900.00	4.42	156.65	2,895.09	-119.43	51.56	-117.70	0.00	0.00	0.00	0.00
3,000.00	4.42	156.65	2,994.80	-126.50	54.61	-124.66	0.00	0.00	0.00	0.00
3,100.00	4.42	156.65	3,094.50	-133.57	57.66	-131.63	0.00	0.00	0.00	0.00
3,200.00	4.42	156.65	3,194.20	-140.64	60.71	-138.59	0.00	0.00	0.00	0.00
3,300.00	4.42	156.65	3,293.91	-147.71	63.76	-145.56	0.00	0.00	0.00	0.00
3,400.00	4.42	156.65	3,393.61	-154.78	66.81	-152.52	0.00	0.00	0.00	0.00
3,500.00	4.42	156.65	3,493.31	-161.84	69.86	-159.49	0.00	0.00	0.00	0.00
3,600.00	4.42	156.65	3,593.02	-168.91	72.92	-166.45	0.00	0.00	0.00	0.00
3,700.00	4.42	156.65	3,692.72	-175.98	75.97	-173.42	0.00	0.00	0.00	0.00
3,800.00	4.42	156.65	3,792.42	-183.05	79.02	-180.39	0.00	0.00	0.00	0.00
3,900.00	4.42	156.65	3,892.13	-190.12	82.07	-187.35	0.00	0.00	0.00	0.00
4,000.00	4.42	156.65	3,991.83	-197.19	85.12	-194.32	0.00	0.00	0.00	0.00
4,100.00	4.42	156.65	4,091.53	-204.26	88.17	-201.28	0.00	0.00	0.00	0.00
4,200.00	4.42	156.65	4,191.24	-211.32	91.22	-208.25	0.00	0.00	0.00	0.00
4,300.00	4.42	156.65	4,290.94	-218.39	94.27	-215.21	0.00	0.00	0.00	0.00
4,400.00	4.42	156.65	4,390.64	-225.46	97.33	-222.18	0.00	0.00	0.00	0.00
4,500.00	4.42	156.65	4,490.35	-232.53	100.38	-229.14	0.00	0.00	0.00	0.00
4,600.00	4.42	156.65	4,590.05	-239.60	103.43	-236.11	0.00	0.00	0.00	0.00
4,700.00	4.42	156.65	4,689.75	-246.67	106.48	-243.08	0.00	0.00	0.00	0.00
4,751.40	4.42	156.65	4,741.00	-250.30	108.05	-246.66	0.00	0.00	0.00	0.00
<b>Sussex</b>										
4,800.00	4.42	156.65	4,789.45	-253.73	109.53	-250.04	0.00	0.00	0.00	0.00
4,900.00	4.42	156.65	4,889.16	-260.80	112.58	-257.01	0.00	0.00	0.00	0.00
5,000.00	4.42	156.65	4,988.86	-267.87	115.63	-263.97	0.00	0.00	0.00	0.00
5,100.00	4.42	156.65	5,088.56	-274.94	118.69	-270.94	0.00	0.00	0.00	0.00
5,200.00	4.42	156.65	5,188.27	-282.01	121.74	-277.90	0.00	0.00	0.00	0.00

**Plan Report for Howard 3C-21HZ - Plan A Rev 0 Permit**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
5,300.00	4.42	156.65	5,287.97	-289.08	124.79	-284.87	0.00	0.00	0.00	0.00
5,400.00	4.42	156.65	5,387.67	-296.15	127.84	-291.84	0.00	0.00	0.00	0.00
5,500.00	4.42	156.65	5,487.38	-303.21	130.89	-298.80	0.00	0.00	0.00	0.00
5,600.00	4.42	156.65	5,587.08	-310.28	133.94	-305.77	0.00	0.00	0.00	0.00
5,700.00	4.42	156.65	5,686.78	-317.35	136.99	-312.73	0.00	0.00	0.00	0.00
5,800.00	4.42	156.65	5,786.49	-324.42	140.04	-319.70	0.00	0.00	0.00	0.00
5,900.00	4.42	156.65	5,886.19	-331.49	143.10	-326.66	0.00	0.00	0.00	0.00
6,000.00	4.42	156.65	5,985.89	-338.56	146.15	-333.63	0.00	0.00	0.00	0.00
6,100.00	4.42	156.65	6,085.60	-345.62	149.20	-340.59	0.00	0.00	0.00	0.00
6,200.00	4.42	156.65	6,185.30	-352.69	152.25	-347.56	0.00	0.00	0.00	0.00
6,300.00	4.42	156.65	6,285.00	-359.76	155.30	-354.53	0.00	0.00	0.00	0.00
6,400.00	4.42	156.65	6,384.71	-366.83	158.35	-361.49	0.00	0.00	0.00	0.00
6,500.00	4.42	156.65	6,484.41	-373.90	161.40	-368.46	0.00	0.00	0.00	0.00
6,600.00	4.42	156.65	6,584.11	-380.97	164.45	-375.42	0.00	0.00	0.00	0.00
6,700.00	4.42	156.65	6,683.82	-388.04	167.51	-382.39	0.00	0.00	0.00	0.00
6,800.00	4.42	156.65	6,783.52	-395.10	170.56	-389.35	0.00	0.00	0.00	0.00
6,900.00	4.42	156.65	6,883.22	-402.17	173.61	-396.32	0.00	0.00	0.00	0.00
7,000.00	4.42	156.65	6,982.93	-409.24	176.66	-403.28	0.00	0.00	0.00	0.00
7,100.00	4.42	156.65	7,082.63	-416.31	179.71	-410.25	0.00	0.00	0.00	0.00
7,135.10	4.42	156.65	7,117.62	-418.79	180.78	-412.70	0.00	0.00	0.00	0.00
<b>Begin Build @ 7135.10ft</b>										
7,200.00	2.96	34.47	7,182.45	-419.71	182.72	-413.55	10.00	-2.25	-188.25	-157.29
7,300.00	12.53	6.99	7,281.45	-406.78	185.51	-400.54	10.00	9.57	-27.48	-35.21
7,386.32	21.11	3.72	7,364.00	-381.93	187.66	-375.63	10.00	9.94	-3.79	-7.88
<b>Sharon Springs</b>										
7,400.00	22.48	3.42	7,376.70	-376.86	187.98	-370.55	10.00	9.97	-2.16	-4.73
7,404.66	22.94	3.33	7,381.00	-375.06	188.08	-368.75	10.00	9.97	-1.99	-4.46
<b>Niobrara A</b>										
7,500.00	32.46	1.98	7,465.32	-330.84	190.05	-324.49	10.00	9.98	-1.41	-4.37
<b>Build Rate = 10.00/100ft</b>										
7,584.46	40.89	1.27	7,533.00	-280.46	191.45	-274.10	10.00	9.99	-0.84	-3.18
<b>Niobrara B</b>										
7,600.00	42.44	1.17	7,544.61	-270.14	191.67	-263.77	10.00	9.99	-0.67	-2.60
7,700.00	52.43	0.61	7,612.16	-196.58	192.78	-190.22	10.00	9.99	-0.55	-2.52
7,741.05	56.54	0.43	7,636.00	-163.18	193.09	-156.82	10.00	9.99	-0.45	-2.15
<b>Niobrara C</b>										
7,800.00	62.43	0.19	7,665.92	-112.42	193.36	-106.08	10.00	9.99	-0.40	-2.04
7,900.00	72.42	359.84	7,704.26	-20.20	193.37	-13.90	10.00	9.99	-0.35	-1.92
7,916.44	74.07	359.79	7,709.00	-4.46	193.32	1.83	10.00	10.00	-0.32	-1.79
<b>Fort Hays</b>										
7,986.03	81.02	359.57	7,724.00	63.45	192.94	69.69	10.00	10.00	-0.31	-1.77
<b>Codell</b>										
8,000.00	82.42	359.53	7,726.01	77.28	192.83	83.50	10.00	10.00	-0.30	-1.72
8,080.95	90.51	359.29	7,731.00	158.00	192.00	164.15	10.00	10.00	-0.30	-1.72
<b>End Build @ 8080.95ft - Codell TL - Heel - 7" Intermediate Casing - Howard 3C-21HZ_CP</b>										
8,100.00	90.51	359.29	7,730.83	177.05	191.76	183.19	0.00	0.00	0.00	-1.70
8,200.00	90.51	359.29	7,729.94	277.04	190.52	283.08	0.00	0.00	0.00	0.00
8,300.00	90.51	359.29	7,729.05	377.03	189.27	382.98	0.00	0.00	0.00	0.00
8,400.00	90.51	359.29	7,728.16	477.01	188.03	482.87	0.00	0.00	0.00	0.00
8,500.00	90.51	359.29	7,727.27	577.00	186.79	582.77	0.00	0.00	0.00	0.00
8,600.00	90.51	359.29	7,726.38	676.99	185.54	682.66	0.00	0.00	0.00	0.00
8,700.00	90.51	359.29	7,725.49	776.98	184.30	782.56	0.00	0.00	0.00	0.00
8,800.00	90.51	359.29	7,724.60	876.97	183.05	882.45	0.00	0.00	0.00	0.00
8,900.00	90.51	359.29	7,723.71	976.96	181.81	982.35	0.00	0.00	0.00	0.00
9,000.00	90.51	359.29	7,722.82	1,076.94	180.57	1,082.24	0.00	0.00	0.00	0.00
9,100.00	90.51	359.29	7,721.93	1,176.93	179.32	1,182.14	0.00	0.00	0.00	0.00
9,200.00	90.51	359.29	7,721.04	1,276.92	178.08	1,282.03	0.00	0.00	0.00	0.00
9,300.00	90.51	359.29	7,720.15	1,376.91	176.83	1,381.93	0.00	0.00	0.00	0.00
9,400.00	90.51	359.29	7,719.26	1,476.90	175.59	1,481.82	0.00	0.00	0.00	0.00

**Plan Report for Howard 3C-21HZ - Plan A Rev 0 Permit**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Toolface Azimuth (°)
9,500.00	90.51	359.29	7,718.37	1,576.89	174.34	1,581.72	0.00	0.00	0.00	0.00
9,600.00	90.51	359.29	7,717.48	1,676.87	173.10	1,681.61	0.00	0.00	0.00	0.00
9,700.00	90.51	359.29	7,716.59	1,776.86	171.86	1,781.51	0.00	0.00	0.00	0.00
9,800.00	90.51	359.29	7,715.70	1,876.85	170.61	1,881.40	0.00	0.00	0.00	0.00
9,900.00	90.51	359.29	7,714.81	1,976.84	169.37	1,981.30	0.00	0.00	0.00	0.00
10,000.00	90.51	359.29	7,713.92	2,076.83	168.12	2,081.19	0.00	0.00	0.00	0.00
10,100.00	90.51	359.29	7,713.03	2,176.82	166.88	2,181.09	0.00	0.00	0.00	0.00
10,200.00	90.51	359.29	7,712.14	2,276.80	165.64	2,280.98	0.00	0.00	0.00	0.00
10,300.00	90.51	359.29	7,711.25	2,376.79	164.39	2,380.88	0.00	0.00	0.00	0.00
10,400.00	90.51	359.29	7,710.36	2,476.78	163.15	2,480.77	0.00	0.00	0.00	0.00
10,500.00	90.51	359.29	7,709.47	2,576.77	161.90	2,580.67	0.00	0.00	0.00	0.00
10,600.00	90.51	359.29	7,708.58	2,676.76	160.66	2,680.56	0.00	0.00	0.00	0.00
10,700.00	90.51	359.29	7,707.69	2,776.75	159.41	2,780.46	0.00	0.00	0.00	0.00
10,800.00	90.51	359.29	7,706.80	2,876.73	158.17	2,880.35	0.00	0.00	0.00	0.00
10,900.00	90.51	359.29	7,705.91	2,976.72	156.93	2,980.25	0.00	0.00	0.00	0.00
11,000.00	90.51	359.29	7,705.02	3,076.71	155.68	3,080.14	0.00	0.00	0.00	0.00
11,100.00	90.51	359.29	7,704.13	3,176.70	154.44	3,180.04	0.00	0.00	0.00	0.00
11,200.00	90.51	359.29	7,703.24	3,276.69	153.19	3,279.93	0.00	0.00	0.00	0.00
11,300.00	90.51	359.29	7,702.35	3,376.68	151.95	3,379.83	0.00	0.00	0.00	0.00
11,400.00	90.51	359.29	7,701.46	3,476.66	150.71	3,479.72	0.00	0.00	0.00	0.00
11,500.00	90.51	359.29	7,700.57	3,576.65	149.46	3,579.62	0.00	0.00	0.00	0.00
11,600.00	90.51	359.29	7,699.68	3,676.64	148.22	3,679.52	0.00	0.00	0.00	0.00
11,700.00	90.51	359.29	7,698.79	3,776.63	146.97	3,779.41	0.00	0.00	0.00	0.00
11,800.00	90.51	359.29	7,697.90	3,876.62	145.73	3,879.31	0.00	0.00	0.00	0.00
11,900.00	90.51	359.29	7,697.01	3,976.61	144.49	3,979.20	0.00	0.00	0.00	0.00
12,000.00	90.51	359.29	7,696.12	4,076.59	143.24	4,079.10	0.00	0.00	0.00	0.00
12,100.00	90.51	359.29	7,695.23	4,176.58	142.00	4,178.99	0.00	0.00	0.00	0.00
12,200.00	90.51	359.29	7,694.34	4,276.57	140.75	4,278.89	0.00	0.00	0.00	0.00
12,238.42	90.51	359.29	7,694.00	4,314.99	140.27	4,317.27	0.00	0.00	0.00	0.00
<b>Codell TL - Toe</b>										
12,238.43	90.51	359.29	7,694.00	4,315.00	140.27	4,317.27	0.00	0.00	0.00	0.00
<b>Howard 3C-21HZ_BHL</b>										

**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
1,100.00	1,100.00	0.00	0.00	Begin Nudge @ 1100.00ft
1,320.78	1,320.56	-7.81	3.37	End Nudge @ 1320.78ft
7,135.10	7,117.62	-418.79	180.78	Begin Build @ 7135.10ft
7,500.00	7,465.32	-330.84	190.05	Build Rate = 10.00/100ft
8,080.95	7,731.00	158.00	192.00	End Build @ 8080.95ft
12,238.43	7,694.00	4,315.00	140.27	Total Depth @ 12238.43ft

**Vertical Section Information**

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/-S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Howard 3C-21HZ_BHL	1.86	Slot	0.00	0.00	0.00

**Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	8,080.95	Plan A Rev 0 Permit	MWD
8,080.95	12,238.43	Plan A Rev 0 Permit	MWD

**Plan Report for Howard 3C-21HZ - Plan A Rev 0 Permit****Casing Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
8,080.95	7,731.00	7" Intermediate Casing	7	8-3/4

**Formation Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,751.40	4,741.00	Sussex		0.00	
7,386.32	7,364.00	Sharon Springs		0.00	
7,404.66	7,381.00	Niobrara A		0.00	
7,584.46	7,533.00	Niobrara B		0.00	
7,741.05	7,636.00	Niobrara C		0.00	
7,916.44	7,709.00	Fort Hays		0.00	
7,986.03	7,724.00	Codell		0.00	
8,080.95	7,731.00	Codell TL - Heel		0.00	
12,238.42	7,694.00	Codell TL - Toe		0.00	

***Targets associated with this wellbore***

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Howard 3C-21HZ_CP	7,731.00	158.00	192.00	Point
Howard 3C-21HZ_BHL	7,694.00	4,315.00	140.27	Point
Howard 3C-21HZ_SHL	0.00	0.00	0.00	Point

## North Reference Sheet for Sec. 21-T1N-R67W - Howard 3C-21HZ - Plan A Rev 0

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 @ 5041.00ft (Drilling Rig). Northing and Easting are relative to Howard 3C-21HZ  
 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: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99996418

Grid Coordinates of Well: 1,254,589.43 ft N, 3,168,292.50 ft E  
 Geographical Coordinates of Well: 40° 01' 50.41" N, 104° 53' 56.44" W  
 Grid Convergence at Surface is: 0.39°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,238.43ft  
 the Bottom Hole Displacement is 4,317.27ft in the Direction of 1.86° (True).

Magnetic Convergence at surface is: -8.36° (19 December 2012, , BGGM2012)

