

# Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 34-T3N-R66W

Rattler 35N-3HZ

Plan A Rev 0

Plan: Plan A Rev 0 Permit

## Sperry Drilling Services

## Proposal Report

26 October, 2012

Well Coordinates: 1,307,412.43 N, 3,204,998.19 E (40° 10' 29.69" N, 104° 45' 58.95" W)

Ground Level: 4,991.00 ft

Local Coordinate Origin:

Centered on Well Rattler 35N-3HZ

Viewing Datum:

RKB=17 @ 5008.00ft (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. 34-T3N-R66W

Well: Rattler 35N-3HZ

Wellbore: Plan A Rev 0

Design: Plan A Rev 0 Permit

# Anadarko Petroleum Corp.

HALLIBURTON

Sperry Drilling

## SECTION DETAILS

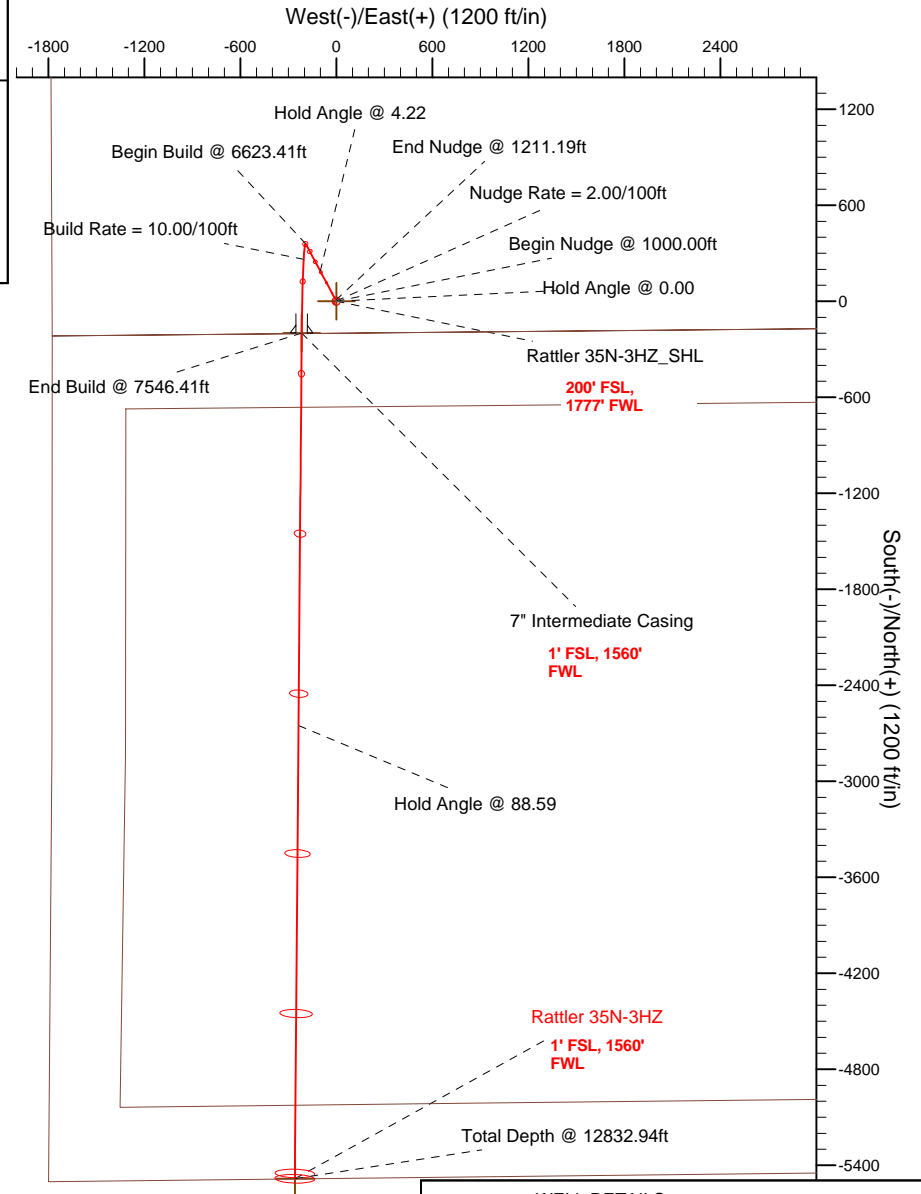
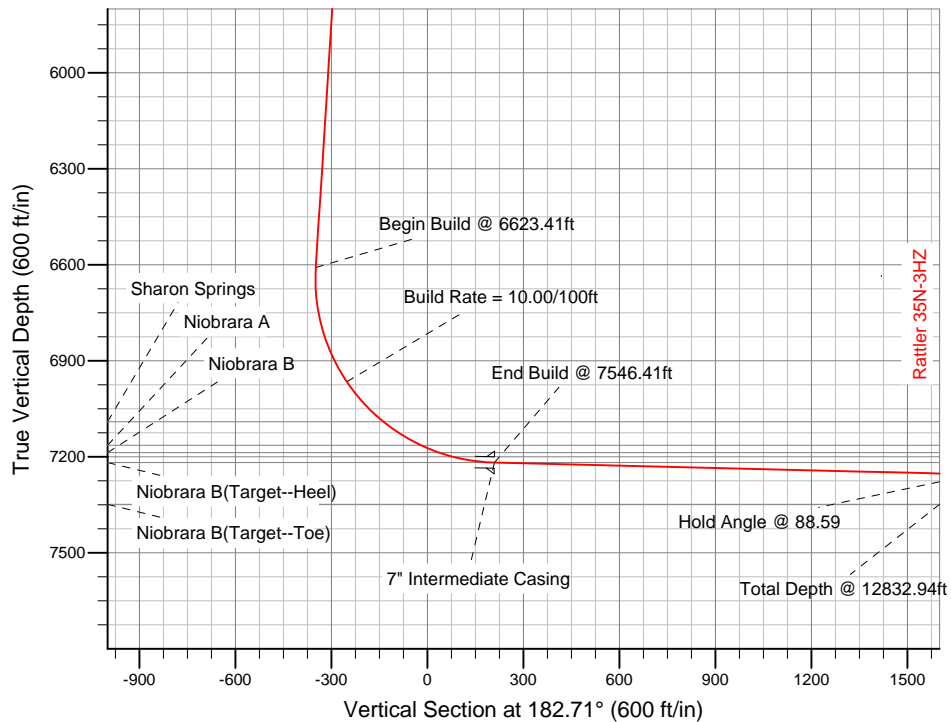
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	
3	1211.19	4.22	331.89	1211.00	6.86	-3.67	2.00	331.89	-6.68	
4	6623.41	4.22	331.89	6608.52	358.49	-191.46	0.00	0.00	-349.02	
5	7546.41	88.59	180.47	7218.00	-199.00	-217.00	10.00	-151.41	209.05	Rattler 35N-3HZ_Casing Point
6	12832.94	88.59	180.47	7348.00	-5483.75	-259.94	0.00	0.00	5489.91	Rattler 35N-3HZ_BHL

## WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Rattler 35N-3HZ_SHL	0.00	0.00	0.00	40.174915	-104.766375	Point
Rattler 35N-3HZ_Casing Point	7218.00	-199.00	-217.00	40.174369	-104.767152	Point
Rattler 35N-3HZ_BHL	7348.00	-5483.75	-259.94	40.159862	-104.767305	Point

Target Line:

7212.87' TVDkb @ 0° VS Drilling 88.59°



## WELL DETAILS: Rattler 35N-3HZ

Ground Level: 4991.00 RKB=17 @ 5008.00ft (Drilling Rig)

Plan: Plan A Rev 0 Permit (Rattler 35N-3HZ/Plan A Rev 0)

Created By: Fred Hartmann Date: 10/25/2012  
Reviewed: Date:

**Plan Report for Rattler 35N-3HZ - 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
<b>Hold Angle @ 0.00</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	331.89	1,099.98	1.54	-0.82	-1.50	2.00	2.00	0.00	331.89
<b>Nudge Rate = 2.00/100ft</b>										
1,200.00	4.00	331.89	1,199.84	6.16	-3.29	-5.99	2.00	2.00	0.00	0.00
1,211.19	4.22	331.89	1,211.00	6.86	-3.67	-6.68	2.00	2.00	0.00	0.00
<b>End Nudge @ 1211.19ft</b>										
1,300.00	4.22	331.89	1,299.57	12.63	-6.75	-12.30	0.00	0.00	0.00	0.00
1,400.00	4.22	331.89	1,399.30	19.13	-10.22	-18.62	0.00	0.00	0.00	0.00
1,500.00	4.22	331.89	1,499.02	25.63	-13.69	-24.95	0.00	0.00	0.00	0.00
1,600.00	4.22	331.89	1,598.75	32.12	-17.16	-31.28	0.00	0.00	0.00	0.00
1,700.00	4.22	331.89	1,698.48	38.62	-20.63	-37.60	0.00	0.00	0.00	0.00
1,800.00	4.22	331.89	1,798.21	45.12	-24.10	-43.93	0.00	0.00	0.00	0.00
1,900.00	4.22	331.89	1,897.94	51.61	-27.57	-50.25	0.00	0.00	0.00	0.00
2,000.00	4.22	331.89	1,997.67	58.11	-31.04	-56.58	0.00	0.00	0.00	0.00
2,100.00	4.22	331.89	2,097.39	64.61	-34.51	-62.90	0.00	0.00	0.00	0.00
2,200.00	4.22	331.89	2,197.12	71.10	-37.98	-69.23	0.00	0.00	0.00	0.00
2,300.00	4.22	331.89	2,296.85	77.60	-41.45	-75.55	0.00	0.00	0.00	0.00
2,400.00	4.22	331.89	2,396.58	84.10	-44.92	-81.88	0.00	0.00	0.00	0.00
2,500.00	4.22	331.89	2,496.31	90.60	-48.38	-88.20	0.00	0.00	0.00	0.00
2,600.00	4.22	331.89	2,596.04	97.09	-51.85	-94.53	0.00	0.00	0.00	0.00
2,700.00	4.22	331.89	2,695.76	103.59	-55.32	-100.85	0.00	0.00	0.00	0.00
2,800.00	4.22	331.89	2,795.49	110.09	-58.79	-107.18	0.00	0.00	0.00	0.00
2,900.00	4.22	331.89	2,895.22	116.58	-62.26	-113.50	0.00	0.00	0.00	0.00
3,000.00	4.22	331.89	2,994.95	123.08	-65.73	-119.83	0.00	0.00	0.00	0.00
3,100.00	4.22	331.89	3,094.68	129.58	-69.20	-126.15	0.00	0.00	0.00	0.00
3,200.00	4.22	331.89	3,194.41	136.07	-72.67	-132.48	0.00	0.00	0.00	0.00
3,300.00	4.22	331.89	3,294.14	142.57	-76.14	-138.81	0.00	0.00	0.00	0.00
3,400.00	4.22	331.89	3,393.86	149.07	-79.61	-145.13	0.00	0.00	0.00	0.00
3,500.00	4.22	331.89	3,493.59	155.56	-83.08	-151.46	0.00	0.00	0.00	0.00
3,600.00	4.22	331.89	3,593.32	162.06	-86.55	-157.78	0.00	0.00	0.00	0.00
3,700.00	4.22	331.89	3,693.05	168.56	-90.02	-164.11	0.00	0.00	0.00	0.00
3,800.00	4.22	331.89	3,792.78	175.05	-93.49	-170.43	0.00	0.00	0.00	0.00
3,900.00	4.22	331.89	3,892.51	181.55	-96.96	-176.76	0.00	0.00	0.00	0.00
4,000.00	4.22	331.89	3,992.23	188.05	-100.43	-183.08	0.00	0.00	0.00	0.00
<b>Hold Angle @ 4.22</b>										
4,100.00	4.22	331.89	4,091.96	194.55	-103.90	-189.41	0.00	0.00	0.00	0.00
4,151.18	4.22	331.89	4,143.00	197.87	-105.68	-192.64	0.00	0.00	0.00	0.00
<b>Parkman</b>										
4,200.00	4.22	331.89	4,191.69	201.04	-107.37	-195.73	0.00	0.00	0.00	0.00
4,300.00	4.22	331.89	4,291.42	207.54	-110.84	-202.06	0.00	0.00	0.00	0.00
4,400.00	4.22	331.89	4,391.15	214.04	-114.31	-208.38	0.00	0.00	0.00	0.00
4,412.89	4.22	331.89	4,404.00	214.87	-114.76	-209.20	0.00	0.00	0.00	0.00
<b>Sussex</b>										
4,500.00	4.22	331.89	4,490.88	220.53	-117.78	-214.71	0.00	0.00	0.00	0.00
4,600.00	4.22	331.89	4,590.60	227.03	-121.25	-221.03	0.00	0.00	0.00	0.00

**Plan Report for Rattler 35N-3HZ - 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 (°)
4,700.00	4.22	331.89	4,690.33	233.53	-124.72	-227.36	0.00	0.00	0.00	0.00
4,800.00	4.22	331.89	4,790.06	240.02	-128.19	-233.68	0.00	0.00	0.00	0.00
4,900.00	4.22	331.89	4,889.79	246.52	-131.66	-240.01	0.00	0.00	0.00	0.00
5,000.00	4.22	331.89	4,989.52	253.02	-135.13	-246.34	0.00	0.00	0.00	0.00
5,100.00	4.22	331.89	5,089.25	259.51	-138.60	-252.66	0.00	0.00	0.00	0.00
5,200.00	4.22	331.89	5,188.97	266.01	-142.07	-258.99	0.00	0.00	0.00	0.00
5,300.00	4.22	331.89	5,288.70	272.51	-145.54	-265.31	0.00	0.00	0.00	0.00
5,400.00	4.22	331.89	5,388.43	279.00	-149.01	-271.64	0.00	0.00	0.00	0.00
5,500.00	4.22	331.89	5,488.16	285.50	-152.48	-277.96	0.00	0.00	0.00	0.00
5,600.00	4.22	331.89	5,587.89	292.00	-155.95	-284.29	0.00	0.00	0.00	0.00
5,700.00	4.22	331.89	5,687.62	298.50	-159.42	-290.61	0.00	0.00	0.00	0.00
5,800.00	4.22	331.89	5,787.34	304.99	-162.89	-296.94	0.00	0.00	0.00	0.00
5,900.00	4.22	331.89	5,887.07	311.49	-166.36	-303.26	0.00	0.00	0.00	0.00
6,000.00	4.22	331.89	5,986.80	317.99	-169.83	-309.59	0.00	0.00	0.00	0.00
6,100.00	4.22	331.89	6,086.53	324.48	-173.30	-315.91	0.00	0.00	0.00	0.00
6,200.00	4.22	331.89	6,186.26	330.98	-176.77	-322.24	0.00	0.00	0.00	0.00
6,300.00	4.22	331.89	6,285.99	337.48	-180.24	-328.56	0.00	0.00	0.00	0.00
6,400.00	4.22	331.89	6,385.72	343.97	-183.71	-334.89	0.00	0.00	0.00	0.00
6,500.00	4.22	331.89	6,485.44	350.47	-187.18	-341.21	0.00	0.00	0.00	0.00
6,600.00	4.22	331.89	6,585.17	356.97	-190.65	-347.54	0.00	0.00	0.00	0.00
6,623.41	4.22	331.89	6,608.52	358.49	-191.46	-349.02	0.00	0.00	0.00	0.00
<b>Begin Build @ 6623.41ft</b>										
6,700.00	4.43	207.46	6,685.00	358.35	-194.16	-348.75	10.00	0.28	-162.46	-151.41
6,800.00	14.09	188.49	6,783.60	342.84	-197.75	-333.09	10.00	9.66	-18.97	-27.12
6,900.00	24.03	184.95	6,878.00	310.43	-201.31	-300.55	10.00	9.94	-3.54	-8.32
7,000.00	34.00	183.41	6,965.34	262.11	-204.74	-252.13	10.00	9.97	-1.54	-4.97
<b>Build Rate = 10.00/100ft</b>										
7,100.00	43.99	182.51	7,042.97	199.35	-207.94	-189.28	10.00	9.98	-0.90	-3.61
7,169.61	50.94	182.06	7,090.00	148.13	-209.97	-138.03	10.00	9.99	-0.65	-2.91
<b>Sharon Springs</b>										
7,200.00	53.97	181.89	7,108.52	124.06	-210.79	-113.94	10.00	9.99	-0.56	-2.60
7,300.00	63.97	181.40	7,160.00	38.51	-213.23	-28.37	10.00	9.99	-0.48	-2.50
7,309.27	64.89	181.36	7,164.00	30.15	-213.43	-20.01	10.00	9.99	-0.43	-2.25
<b>Niobrara A</b>										
7,370.58	71.02	181.11	7,187.00	-26.64	-214.66	36.77	10.00	9.99	-0.41	-2.23
<b>Niobrara B</b>										
7,400.00	73.96	181.00	7,195.85	-54.69	-215.17	64.81	10.00	9.99	-0.39	-2.14
7,500.00	83.95	180.63	7,214.98	-152.70	-216.56	162.78	10.00	9.99	-0.37	-2.10
7,546.41	88.59	180.47	7,218.00	-199.00	-217.00	209.05	10.00	9.99	-0.35	-2.03
<b>End Build @ 7546.41ft - Niobrara B(Target--Heel) - 7" Intermediate Casing - Rattler 35N-3HZ_Casing Point</b>										
7,600.00	88.59	180.47	7,219.32	-252.57	-217.44	262.58	0.00	0.00	0.00	-2.02
7,700.00	88.59	180.47	7,221.78	-352.54	-218.25	362.47	0.00	0.00	0.00	0.00
7,800.00	88.59	180.47	7,224.24	-452.50	-219.06	462.37	0.00	0.00	0.00	0.00
7,900.00	88.59	180.47	7,226.70	-552.47	-219.87	562.26	0.00	0.00	0.00	0.00
8,000.00	88.59	180.47	7,229.15	-652.44	-220.68	662.15	0.00	0.00	0.00	0.00
8,100.00	88.59	180.47	7,231.61	-752.40	-221.50	762.05	0.00	0.00	0.00	0.00
8,200.00	88.59	180.47	7,234.07	-852.37	-222.31	861.94	0.00	0.00	0.00	0.00
8,300.00	88.59	180.47	7,236.53	-952.33	-223.12	961.83	0.00	0.00	0.00	0.00
8,400.00	88.59	180.47	7,238.99	-1,052.30	-223.93	1,061.72	0.00	0.00	0.00	0.00
8,500.00	88.59	180.47	7,241.45	-1,152.27	-224.75	1,161.62	0.00	0.00	0.00	0.00
8,600.00	88.59	180.47	7,243.91	-1,252.23	-225.56	1,261.51	0.00	0.00	0.00	0.00
8,700.00	88.59	180.47	7,246.37	-1,352.20	-226.37	1,361.40	0.00	0.00	0.00	0.00
8,800.00	88.59	180.47	7,248.83	-1,452.17	-227.18	1,461.30	0.00	0.00	0.00	0.00
8,900.00	88.59	180.47	7,251.29	-1,552.13	-228.00	1,561.19	0.00	0.00	0.00	0.00
9,000.00	88.59	180.47	7,253.74	-1,652.10	-228.81	1,661.08	0.00	0.00	0.00	0.00
9,100.00	88.59	180.47	7,256.20	-1,752.07	-229.62	1,760.97	0.00	0.00	0.00	0.00
9,200.00	88.59	180.47	7,258.66	-1,852.03	-230.43	1,860.87	0.00	0.00	0.00	0.00
9,300.00	88.59	180.47	7,261.12	-1,952.00	-231.24	1,960.76	0.00	0.00	0.00	0.00
9,400.00	88.59	180.47	7,263.58	-2,051.97	-232.06	2,060.65	0.00	0.00	0.00	0.00

**Plan Report for Rattler 35N-3HZ - 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	88.59	180.47	7,266.04	-2,151.93	-232.87	2,160.54	0.00	0.00	0.00	0.00
9,600.00	88.59	180.47	7,268.50	-2,251.90	-233.68	2,260.44	0.00	0.00	0.00	0.00
9,700.00	88.59	180.47	7,270.96	-2,351.87	-234.49	2,360.33	0.00	0.00	0.00	0.00
9,800.00	88.59	180.47	7,273.42	-2,451.83	-235.31	2,460.22	0.00	0.00	0.00	0.00
9,900.00	88.59	180.47	7,275.88	-2,551.80	-236.12	2,560.12	0.00	0.00	0.00	0.00
10,000.00	88.59	180.47	7,278.34	-2,651.76	-236.93	2,660.01	0.00	0.00	0.00	0.00
<b>Hold Angle @ 88.59</b>										
10,100.00	88.59	180.47	7,280.79	-2,751.73	-237.74	2,759.90	0.00	0.00	0.00	0.00
10,200.00	88.59	180.47	7,283.25	-2,851.70	-238.56	2,859.79	0.00	0.00	0.00	0.00
10,300.00	88.59	180.47	7,285.71	-2,951.66	-239.37	2,959.69	0.00	0.00	0.00	0.00
10,400.00	88.59	180.47	7,288.17	-3,051.63	-240.18	3,059.58	0.00	0.00	0.00	0.00
10,500.00	88.59	180.47	7,290.63	-3,151.60	-240.99	3,159.47	0.00	0.00	0.00	0.00
10,600.00	88.59	180.47	7,293.09	-3,251.56	-241.80	3,259.37	0.00	0.00	0.00	0.00
10,700.00	88.59	180.47	7,295.55	-3,351.53	-242.62	3,359.26	0.00	0.00	0.00	0.00
10,800.00	88.59	180.47	7,298.01	-3,451.50	-243.43	3,459.15	0.00	0.00	0.00	0.00
10,900.00	88.59	180.47	7,300.47	-3,551.46	-244.24	3,559.04	0.00	0.00	0.00	0.00
11,000.00	88.59	180.47	7,302.93	-3,651.43	-245.05	3,658.94	0.00	0.00	0.00	0.00
11,100.00	88.59	180.47	7,305.39	-3,751.40	-245.87	3,758.83	0.00	0.00	0.00	0.00
11,200.00	88.59	180.47	7,307.84	-3,851.36	-246.68	3,858.72	0.00	0.00	0.00	0.00
11,300.00	88.59	180.47	7,310.30	-3,951.33	-247.49	3,958.62	0.00	0.00	0.00	0.00
11,400.00	88.59	180.47	7,312.76	-4,051.30	-248.30	4,058.51	0.00	0.00	0.00	0.00
11,500.00	88.59	180.47	7,315.22	-4,151.26	-249.12	4,158.40	0.00	0.00	0.00	0.00
11,600.00	88.59	180.47	7,317.68	-4,251.23	-249.93	4,258.29	0.00	0.00	0.00	0.00
11,700.00	88.59	180.47	7,320.14	-4,351.19	-250.74	4,358.19	0.00	0.00	0.00	0.00
11,800.00	88.59	180.47	7,322.60	-4,451.16	-251.55	4,458.08	0.00	0.00	0.00	0.00
11,900.00	88.59	180.47	7,325.06	-4,551.13	-252.36	4,557.97	0.00	0.00	0.00	0.00
12,000.00	88.59	180.47	7,327.52	-4,651.09	-253.18	4,657.86	0.00	0.00	0.00	0.00
12,100.00	88.59	180.47	7,329.98	-4,751.06	-253.99	4,757.76	0.00	0.00	0.00	0.00
12,200.00	88.59	180.47	7,332.44	-4,851.03	-254.80	4,857.65	0.00	0.00	0.00	0.00
12,300.00	88.59	180.47	7,334.89	-4,950.99	-255.61	4,957.54	0.00	0.00	0.00	0.00
12,400.00	88.59	180.47	7,337.35	-5,050.96	-256.43	5,057.44	0.00	0.00	0.00	0.00
12,500.00	88.59	180.47	7,339.81	-5,150.93	-257.24	5,157.33	0.00	0.00	0.00	0.00
12,600.00	88.59	180.47	7,342.27	-5,250.89	-258.05	5,257.22	0.00	0.00	0.00	0.00
12,700.00	88.59	180.47	7,344.73	-5,350.86	-258.86	5,357.11	0.00	0.00	0.00	0.00
12,800.00	88.59	180.47	7,347.19	-5,450.83	-259.68	5,457.01	0.00	0.00	0.00	0.00
12,832.94	88.59	180.47	7,348.00	-5,483.75	-259.94	5,489.91	0.00	0.00	0.00	0.00
<b>Niobrara B(Target--Toe) - Rattler 35N-3HZ_BHL</b>										

**Plan Annotations**

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
500.00	500.00	0.00	0.00	Hold Angle @ 0.00
1,000.00	1,000.00	0.00	0.00	Begin Nudge @ 1000.00ft
1,100.00	1,099.98	1.54	-0.82	Nudge Rate = 2.00/100ft
1,211.19	1,211.00	6.86	-3.67	End Nudge @ 1211.19ft
4,000.00	3,992.23	188.05	-100.43	Hold Angle @ 4.22
6,623.41	6,608.52	358.49	-191.46	Begin Build @ 6623.41ft
7,000.00	6,965.34	262.11	-204.74	Build Rate = 10.00/100ft
7,546.41	7,218.00	-199.00	-217.00	End Build @ 7546.41ft
10,000.00	7,278.34	-2,651.76	-236.93	Hold Angle @ 88.59
12,832.94	7,348.00	-5,483.75	-259.94	Total Depth @ 12832.94ft

## Plan Report for Rattler 35N-3HZ - Plan A Rev 0 Permit

### Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/-W (ft)	Start TVD (ft)
Target	Rattler 35N-3HZ_BHL	182.71	Slot	0.00	0.00	7,348.00

### Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,546.41	Plan A Rev 0 Permit	MWD
7,546.41	12,832.94	Plan A Rev 0 Permit	MWD

### Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,546.41	7,218.00	7" Intermediate Casing	7	8-3/4

### Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,151.18	4,143.00	Parkman			
4,412.89	4,404.00	Sussex			
7,169.61	7,090.00	Sharon Springs			
7,309.27	7,164.00	Niobrara A			
7,370.58	7,187.00	Niobrara B			
7,546.41	7,218.00	Niobrara B(Target--Heel)			
12,832.94	7,348.00	Niobrara B(Target--Toe)			

### Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Rattler 35N-3HZ_Casing Point	7,218.00	-199.00	-217.00	Point
Rattler 35N-3HZ_BHL	7,348.00	-5,483.75	-259.94	Point
Rattler 35N-3HZ_SHL	0.00	0.00	0.00	Point

## North Reference Sheet for Sec. 34-T3N-R66W - Rattler 35N-3HZ - 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 @ 5008.00ft (Drilling Rig). Northing and Easting are relative to Rattler 35N-3HZ

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: 0.99995772

Grid Coordinates of Well: 1,307,412.43 ft N, 3,204,998.19 ft E

Geographical Coordinates of Well: 40° 10' 29.69" N, 104° 45' 58.95" W

Grid Convergence at Surface is: 0.47°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,832.94ft  
the Bottom Hole Displacement is 5,489.91ft in the Direction of 182.71° (True).

Magnetic Convergence at surface is: -8.23° (26 October 2012, , BGGM2012)

