

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 10-T2N-R66W

Cannon 35N-10HZ

Plan A Rev 0

Plan: Plan A Rev 0 Permit

Sperry Drilling Services

Proposal Report

14 December, 2012

Well Coordinates: 1,301,523.33 N, 3,204,476.99 E (40° 09' 31.54" N, 104° 46' 06.29" W)

Ground Level: 4,950.00 ft

Local Coordinate Origin:	Centered on Well Cannon 35N-10HZ
Viewing Datum:	RKB=17 @ 4967.00ft (Drilling Rig)
TVDs to System:	N
North Reference:	True
Unit System:	API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 10-T2N-R66W
 Well: Cannon 35N-10HZ
 Wellbore: Plan A Rev 0
 Design: Plan A Rev 0 Permit

Anadarko Petroleum Corp.

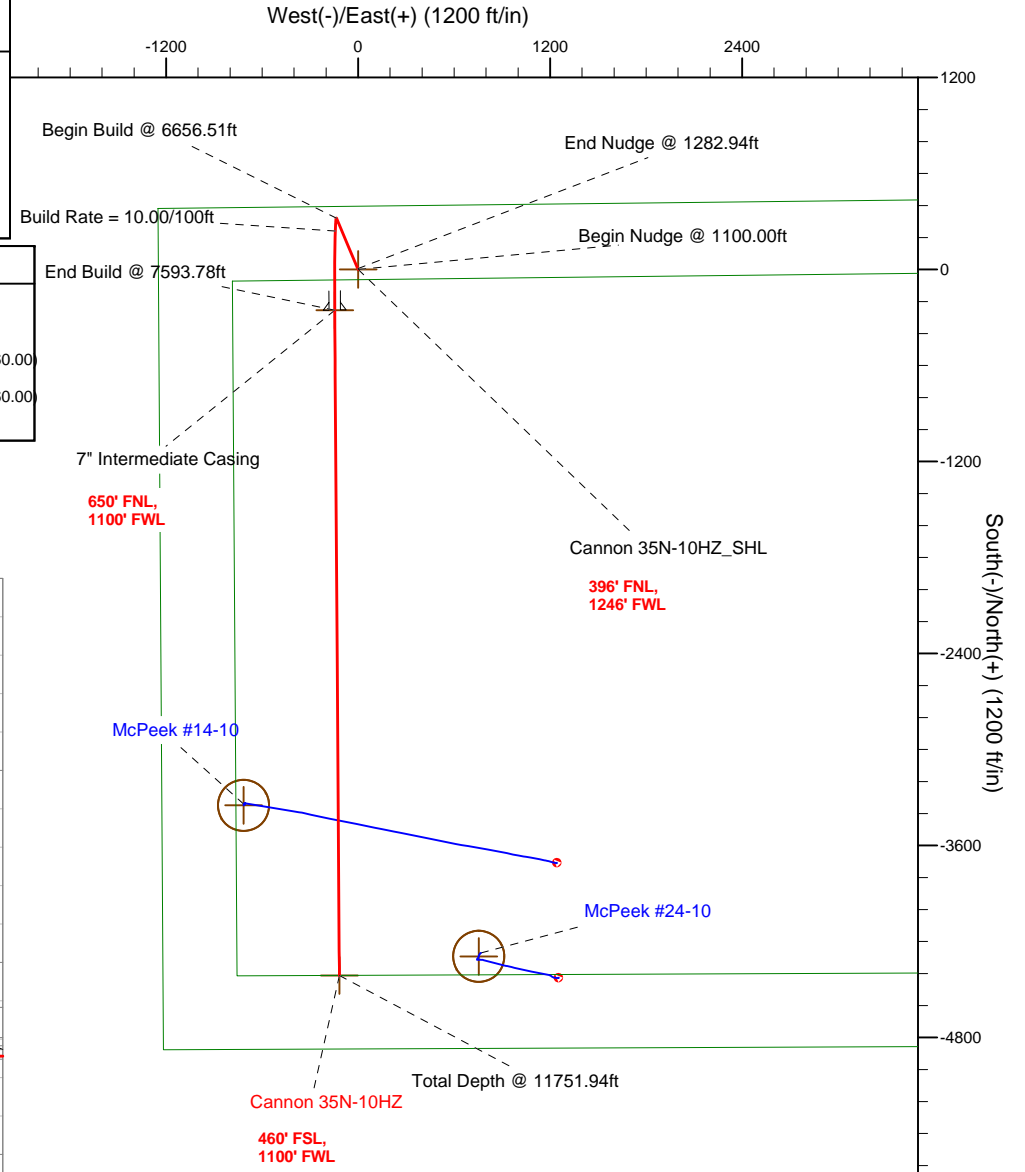
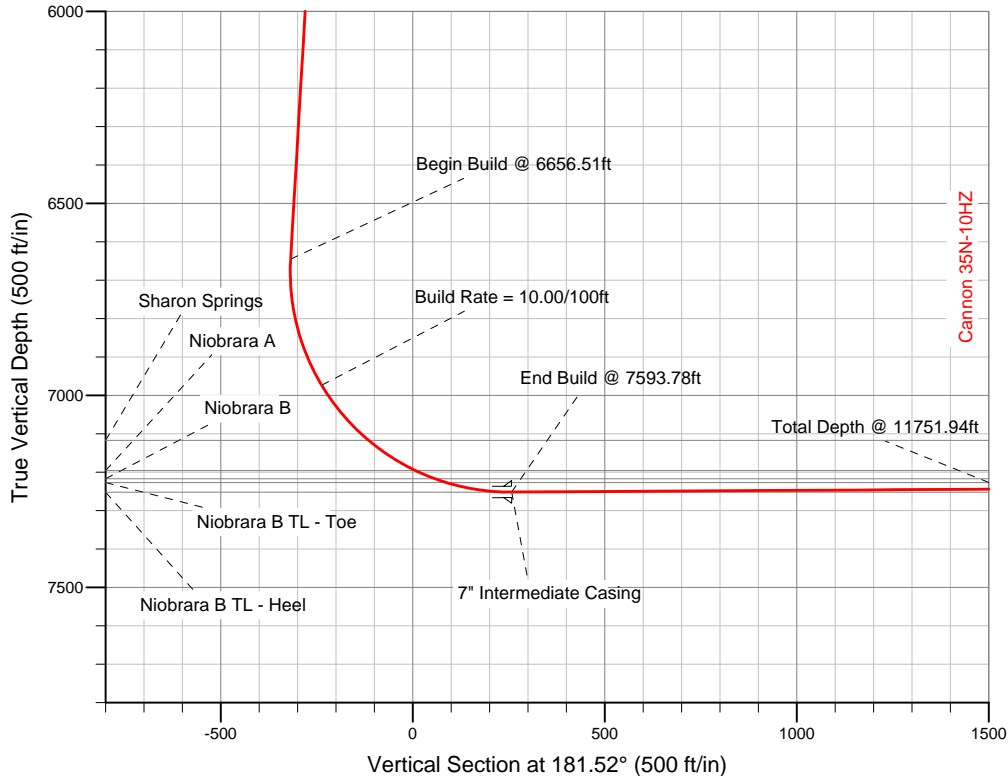


SECTION DETAILS

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	1282.94	3.66	337.20	1282.82	5.38	-2.26	2.00	337.20	-5.32	
4	6656.51	3.66	337.20	6645.43	321.49	-135.16	0.00	0.00	-317.80	
5	7593.78	90.34	179.60	7252.00	-254.00	-146.00	10.00	-157.55	257.78	Cannon 35N-10HZ_CP
6	11751.94	90.34	179.60	7227.00	-4411.99	-116.86	0.00	0.00	4413.53	Cannon 35N-10HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Cannon 35N-10HZ_SHL	0.00	0.00	0.00	40.158761	-104.768414	Point
Cannon 35N-10HZ_BHL	7227.00	-4411.99	-116.86	40.146650	-104.768832	Point
-McPeek 24-10 - 160'	7230.13	-4292.49	753.98	40.146978	-104.765717	Circle (Radius: 160.00)
Cannon 35N-10HZ_CP	7252.00	-254.00	-146.00	40.158064	-104.768936	Point
-McPeek 14-10 - 160'	7410.55	-3348.96	-715.93	40.149568	-104.770975	Circle (Radius: 160.00)



WELL DETAILS: Cannon 35N-10HZ	
Ground Level: 4950.00	RKB=17 @ 4967.00ft (Drilling Rig)
Plan: Plan A Rev 0 Permit (Cannon 35N-10HZ/Plan A Rev 0)	
Created By: Fred Hartmann	Date: 12/14/2012
Reviewed: _____	Date: _____

Plan Report for Cannon 35N-10HZ - 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
Begin Nudge @ 1100.00ft										
1,200.00	2.00	337.20	1,199.98	1.61	-0.68	-1.59	2.00	2.00	0.00	337.20
1,282.94	3.66	337.20	1,282.82	5.38	-2.26	-5.32	2.00	2.00	0.00	0.00
End Nudge @ 1282.94ft										
1,300.00	3.66	337.20	1,299.84	6.39	-2.68	-6.31	0.00	0.00	0.00	0.00
1,400.00	3.66	337.20	1,399.64	12.27	-5.16	-12.13	0.00	0.00	0.00	0.00
1,500.00	3.66	337.20	1,499.43	18.15	-7.63	-17.94	0.00	0.00	0.00	0.00
1,600.00	3.66	337.20	1,599.23	24.03	-10.10	-23.76	0.00	0.00	0.00	0.00
1,700.00	3.66	337.20	1,699.03	29.92	-12.58	-29.57	0.00	0.00	0.00	0.00
1,800.00	3.66	337.20	1,798.82	35.80	-15.05	-35.39	0.00	0.00	0.00	0.00
1,900.00	3.66	337.20	1,898.62	41.68	-17.52	-41.20	0.00	0.00	0.00	0.00
2,000.00	3.66	337.20	1,998.41	47.57	-20.00	-47.02	0.00	0.00	0.00	0.00
2,100.00	3.66	337.20	2,098.21	53.45	-22.47	-52.83	0.00	0.00	0.00	0.00
2,200.00	3.66	337.20	2,198.01	59.33	-24.94	-58.65	0.00	0.00	0.00	0.00
2,300.00	3.66	337.20	2,297.80	65.21	-27.42	-64.46	0.00	0.00	0.00	0.00
2,400.00	3.66	337.20	2,397.60	71.10	-29.89	-70.28	0.00	0.00	0.00	0.00
2,500.00	3.66	337.20	2,497.40	76.98	-32.36	-76.09	0.00	0.00	0.00	0.00
2,600.00	3.66	337.20	2,597.19	82.86	-34.84	-81.91	0.00	0.00	0.00	0.00
2,700.00	3.66	337.20	2,696.99	88.74	-37.31	-87.73	0.00	0.00	0.00	0.00
2,800.00	3.66	337.20	2,796.78	94.63	-39.78	-93.54	0.00	0.00	0.00	0.00
2,900.00	3.66	337.20	2,896.58	100.51	-42.26	-99.36	0.00	0.00	0.00	0.00
3,000.00	3.66	337.20	2,996.38	106.39	-44.73	-105.17	0.00	0.00	0.00	0.00
3,100.00	3.66	337.20	3,096.17	112.27	-47.20	-110.99	0.00	0.00	0.00	0.00
3,200.00	3.66	337.20	3,195.97	118.16	-49.68	-116.80	0.00	0.00	0.00	0.00
3,300.00	3.66	337.20	3,295.76	124.04	-52.15	-122.62	0.00	0.00	0.00	0.00
3,400.00	3.66	337.20	3,395.56	129.92	-54.62	-128.43	0.00	0.00	0.00	0.00
3,500.00	3.66	337.20	3,495.36	135.81	-57.10	-134.25	0.00	0.00	0.00	0.00
3,600.00	3.66	337.20	3,595.15	141.69	-59.57	-140.06	0.00	0.00	0.00	0.00
3,700.00	3.66	337.20	3,694.95	147.57	-62.04	-145.88	0.00	0.00	0.00	0.00
3,800.00	3.66	337.20	3,794.75	153.45	-64.52	-151.69	0.00	0.00	0.00	0.00
3,900.00	3.66	337.20	3,894.54	159.34	-66.99	-157.51	0.00	0.00	0.00	0.00
4,000.00	3.66	337.20	3,994.34	165.22	-69.46	-163.32	0.00	0.00	0.00	0.00
4,089.85	3.66	337.20	4,084.00	170.50	-71.68	-168.55	0.00	0.00	0.00	0.00
Parkman										
4,100.00	3.66	337.20	4,094.13	171.10	-71.93	-169.14	0.00	0.00	0.00	0.00
4,200.00	3.66	337.20	4,193.93	176.98	-74.41	-174.95	0.00	0.00	0.00	0.00
4,300.00	3.66	337.20	4,293.73	182.87	-76.88	-180.77	0.00	0.00	0.00	0.00
4,400.00	3.66	337.20	4,393.52	188.75	-79.35	-186.58	0.00	0.00	0.00	0.00
4,497.68	3.66	337.20	4,491.00	194.50	-81.77	-192.26	0.00	0.00	0.00	0.00
Sussex										
4,500.00	3.66	337.20	4,493.32	194.63	-81.83	-192.40	0.00	0.00	0.00	0.00
4,600.00	3.66	337.20	4,593.11	200.52	-84.30	-198.21	0.00	0.00	0.00	0.00
4,700.00	3.66	337.20	4,692.91	206.40	-86.77	-204.03	0.00	0.00	0.00	0.00
4,800.00	3.66	337.20	4,792.71	212.28	-89.25	-209.84	0.00	0.00	0.00	0.00
4,900.00	3.66	337.20	4,892.50	218.16	-91.72	-215.66	0.00	0.00	0.00	0.00
5,000.00	3.66	337.20	4,992.30	224.05	-94.19	-221.47	0.00	0.00	0.00	0.00

Plan Report for Cannon 35N-10HZ - 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 (°)
5,100.00	3.66	337.20	5,092.10	229.93	-96.67	-227.29	0.00	0.00	0.00	0.00
5,200.00	3.66	337.20	5,191.89	235.81	-99.14	-233.10	0.00	0.00	0.00	0.00
5,300.00	3.66	337.20	5,291.69	241.69	-101.61	-238.92	0.00	0.00	0.00	0.00
5,400.00	3.66	337.20	5,391.48	247.58	-104.09	-244.73	0.00	0.00	0.00	0.00
5,500.00	3.66	337.20	5,491.28	253.46	-106.56	-250.55	0.00	0.00	0.00	0.00
5,600.00	3.66	337.20	5,591.08	259.34	-109.03	-256.36	0.00	0.00	0.00	0.00
5,700.00	3.66	337.20	5,690.87	265.23	-111.51	-262.18	0.00	0.00	0.00	0.00
5,800.00	3.66	337.20	5,790.67	271.11	-113.98	-267.99	0.00	0.00	0.00	0.00
5,900.00	3.66	337.20	5,890.47	276.99	-116.45	-273.81	0.00	0.00	0.00	0.00
6,000.00	3.66	337.20	5,990.26	282.87	-118.93	-279.63	0.00	0.00	0.00	0.00
6,100.00	3.66	337.20	6,090.06	288.76	-121.40	-285.44	0.00	0.00	0.00	0.00
6,200.00	3.66	337.20	6,189.85	294.64	-123.87	-291.26	0.00	0.00	0.00	0.00
6,300.00	3.66	337.20	6,289.65	300.52	-126.35	-297.07	0.00	0.00	0.00	0.00
6,400.00	3.66	337.20	6,389.45	306.40	-128.82	-302.89	0.00	0.00	0.00	0.00
6,500.00	3.66	337.20	6,489.24	312.29	-131.29	-308.70	0.00	0.00	0.00	0.00
6,600.00	3.66	337.20	6,589.04	318.17	-133.76	-314.52	0.00	0.00	0.00	0.00
6,656.51	3.66	337.20	6,645.43	321.49	-135.16	-317.80	0.00	0.00	0.00	0.00
Begin Build @ 6656.51ft										
6,700.00	1.70	234.90	6,688.89	322.40	-136.23	-318.68	10.00	-4.51	-235.22	-157.55
6,800.00	11.05	186.77	6,788.19	312.00	-138.58	-308.23	10.00	9.36	-48.12	-55.30
6,900.00	21.01	183.25	6,884.18	284.51	-140.73	-280.69	10.00	9.96	-3.53	-7.30
7,000.00	31.00	181.93	6,973.95	240.77	-142.62	-236.91	10.00	9.98	-1.31	-3.90
Build Rate = 10.00/100ft										
7,100.00	40.99	181.21	7,054.76	182.10	-144.18	-178.22	10.00	9.99	-0.72	-2.71
7,188.77	49.86	180.78	7,117.00	118.94	-145.27	-115.05	10.00	9.99	-0.48	-2.13
Sharon Springs										
7,200.00	50.98	180.74	7,124.16	110.29	-145.38	-106.40	10.00	9.99	-0.41	-1.83
7,300.00	60.98	180.38	7,180.03	27.51	-146.18	-23.63	10.00	10.00	-0.36	-1.80
7,334.84	64.46	180.27	7,196.00	-3.44	-146.35	7.31	10.00	10.00	-0.31	-1.60
Niobrara A										
7,388.97	69.87	180.12	7,217.00	-53.31	-146.52	57.17	10.00	10.00	-0.29	-1.55
Niobrara B										
7,400.00	70.97	180.09	7,220.70	-63.71	-146.54	67.56	10.00	10.00	-0.27	-1.49
7,500.00	80.97	179.83	7,244.91	-160.60	-146.47	164.42	10.00	10.00	-0.26	-1.48
7,593.78	90.34	179.60	7,252.00	-254.00	-146.00	257.78	10.00	10.00	-0.25	-1.41
End Build @ 7593.78ft - Niobrara B TL - Heel - 7" Intermediate Casing - Cannon 35N-10HZ_CP										
7,600.00	90.34	179.60	7,251.96	-260.22	-145.96	264.00	0.01	0.01	0.00	-1.40
7,700.00	90.34	179.60	7,251.36	-360.22	-145.26	363.94	0.00	0.00	0.00	0.00
7,800.00	90.34	179.60	7,250.76	-460.22	-144.55	463.88	0.00	0.00	0.00	0.00
7,900.00	90.34	179.60	7,250.16	-560.21	-143.85	563.82	0.00	0.00	0.00	0.00
8,000.00	90.34	179.60	7,249.56	-660.21	-143.15	663.77	0.00	0.00	0.00	0.00
8,100.00	90.34	179.60	7,248.96	-760.20	-142.45	763.71	0.00	0.00	0.00	0.00
8,200.00	90.34	179.60	7,248.36	-860.20	-141.75	863.65	0.00	0.00	0.00	0.00
8,300.00	90.34	179.60	7,247.75	-960.19	-141.05	963.59	0.00	0.00	0.00	0.00
8,400.00	90.34	179.60	7,247.15	-1,060.19	-140.35	1,063.53	0.00	0.00	0.00	0.00
8,500.00	90.34	179.60	7,246.55	-1,160.19	-139.65	1,163.48	0.00	0.00	0.00	0.00
8,600.00	90.34	179.60	7,245.95	-1,260.18	-138.95	1,263.42	0.00	0.00	0.00	0.00
8,700.00	90.34	179.60	7,245.35	-1,360.18	-138.25	1,363.36	0.00	0.00	0.00	0.00
8,800.00	90.34	179.60	7,244.75	-1,460.17	-137.55	1,463.30	0.00	0.00	0.00	0.00
8,900.00	90.34	179.60	7,244.15	-1,560.17	-136.85	1,563.25	0.00	0.00	0.00	0.00
9,000.00	90.34	179.60	7,243.55	-1,660.16	-136.14	1,663.19	0.00	0.00	0.00	0.00
9,100.00	90.34	179.60	7,242.94	-1,760.16	-135.44	1,763.13	0.00	0.00	0.00	0.00
9,200.00	90.34	179.60	7,242.34	-1,860.16	-134.74	1,863.07	0.00	0.00	0.00	0.00
9,300.00	90.34	179.60	7,241.74	-1,960.15	-134.04	1,963.01	0.00	0.00	0.00	0.00
9,400.00	90.34	179.60	7,241.14	-2,060.15	-133.34	2,062.96	0.00	0.00	0.00	0.00
9,500.00	90.34	179.60	7,240.54	-2,160.14	-132.64	2,162.90	0.00	0.00	0.00	0.00
9,600.00	90.34	179.60	7,239.94	-2,260.14	-131.94	2,262.84	0.00	0.00	0.00	0.00
9,700.00	90.34	179.60	7,239.34	-2,360.14	-131.24	2,362.78	0.00	0.00	0.00	0.00
9,800.00	90.34	179.60	7,238.74	-2,460.13	-130.54	2,462.72	0.00	0.00	0.00	0.00

Plan Report for Cannon 35N-10HZ - 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)	Toothface Azimuth (°)
9,900.00	90.34	179.60	7,238.13	-2,560.13	-129.84	2,562.67	0.00	0.00	0.00	0.00
10,000.00	90.34	179.60	7,237.53	-2,660.12	-129.14	2,662.61	0.00	0.00	0.00	0.00
10,100.00	90.34	179.60	7,236.93	-2,760.12	-128.43	2,762.55	0.00	0.00	0.00	0.00
10,200.00	90.34	179.60	7,236.33	-2,860.11	-127.73	2,862.49	0.00	0.00	0.00	0.00
10,300.00	90.34	179.60	7,235.73	-2,960.11	-127.03	2,962.44	0.00	0.00	0.00	0.00
10,400.00	90.34	179.60	7,235.13	-3,060.11	-126.33	3,062.38	0.00	0.00	0.00	0.00
10,500.00	90.34	179.60	7,234.53	-3,160.10	-125.63	3,162.32	0.00	0.00	0.00	0.00
10,600.00	90.34	179.60	7,233.93	-3,260.10	-124.93	3,262.26	0.00	0.00	0.00	0.00
10,700.00	90.34	179.60	7,233.32	-3,360.09	-124.23	3,362.20	0.00	0.00	0.00	0.00
10,800.00	90.34	179.60	7,232.72	-3,460.09	-123.53	3,462.15	0.00	0.00	0.00	0.00
10,900.00	90.34	179.60	7,232.12	-3,560.08	-122.83	3,562.09	0.00	0.00	0.00	0.00
11,000.00	90.34	179.60	7,231.52	-3,660.08	-122.13	3,662.03	0.00	0.00	0.00	0.00
11,100.00	90.34	179.60	7,230.92	-3,760.08	-121.43	3,761.97	0.00	0.00	0.00	0.00
11,200.00	90.34	179.60	7,230.32	-3,860.07	-120.73	3,861.91	0.00	0.00	0.00	0.00
11,300.00	90.34	179.60	7,229.72	-3,960.07	-120.02	3,961.86	0.00	0.00	0.00	0.00
11,400.00	90.34	179.60	7,229.12	-4,060.06	-119.32	4,061.80	0.00	0.00	0.00	0.00
11,500.00	90.34	179.60	7,228.51	-4,160.06	-118.62	4,161.74	0.00	0.00	0.00	0.00
11,600.00	90.34	179.60	7,227.91	-4,260.05	-117.92	4,261.68	0.00	0.00	0.00	0.00
11,700.00	90.34	179.60	7,227.31	-4,360.05	-117.22	4,361.62	0.00	0.00	0.00	0.00
11,751.93	90.34	179.60	7,227.00	-4,411.98	-116.86	4,413.52	0.00	0.00	0.00	0.00
Niobrara B TL - Toe										
11,751.94	90.34	179.60	7,227.00	-4,411.99	-116.86	4,413.53	0.01	0.00	0.00	0.00
Cannon 35N-10HZ_BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,100.00	1,100.00	0.00	0.00	Begin Nudge @ 1100.00ft
1,282.94	1,282.82	5.38	-2.26	End Nudge @ 1282.94ft
6,656.51	6,645.43	321.49	-135.16	Begin Build @ 6656.51ft
7,000.00	6,973.95	240.77	-142.62	Build Rate = 10.00/100ft
7,593.78	7,252.00	-254.00	-146.00	End Build @ 7593.78ft
11,751.94	7,227.00	-4,411.99	-116.86	Total Depth @ 11751.94ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
Target	Cannon 35N-10HZ_BHL	181.52	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	11,751.94	Plan A Rev 0 Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,593.78	7,252.00	7" Intermediate Casing	7	8-3/4

Plan Report for Cannon 35N-10HZ - Plan A Rev 0 Permit**Formation Details**

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,089.85	4,084.00	Parkman		0.00	
4,497.68	4,491.00	Sussex		0.00	
7,188.77	7,117.00	Sharon Springs		0.00	
7,334.84	7,196.00	Niobrara A		0.00	
7,388.97	7,217.00	Niobrara B		0.00	
7,593.78	7,252.00	Niobrara B TL - Heel		0.00	
11,751.93	7,227.00	Niobrara B TL - Toe		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
-McPeek 14-10 - 160'	7,410.55	-3,348.96	-715.93	Circle
-McPeek 24-10 - 160'	7,230.13	-4,292.49	753.98	Circle
Cannon 35N-10HZ_SHL	0.00	0.00	0.00	Point
Cannon 35N-10HZ_BHL	7,227.00	-4,411.99	-116.86	Point
Cannon 35N-10HZ_CP	7,252.00	-254.00	-146.00	Point

North Reference Sheet for Sec. 10-T2N-R66W - Cannon 35N-10HZ - 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 @ 4967.00ft (Drilling Rig). Northing and Easting are relative to Cannon 35N-10HZ
 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: 0.99995813

Grid Coordinates of Well: 1,301,523.33 ft N, 3,204,476.99 ft E
 Geographical Coordinates of Well: 40° 09' 31.54" N, 104° 46' 06.29" W
 Grid Convergence at Surface is: 0.47°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,751.94ft
 the Bottom Hole Displacement is 4,413.53ft in the Direction of 181.52° (True).

Magnetic Convergence at surface is: -8.22° (13 December 2012, , BGGM2012)

