

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 22 T2N-R66W

Gobbler 15N-27HZ

Plan A Rev 0

Plan: Plan A Rev 0 Permit

Sperry Drilling Services

Proposal Report

09 October, 2012

Well Coordinates: 1,286,739.25 N, 3,206,631.10 E (40° 07' 05.26" N, 104° 45' 40.13" W)

Ground Level: 5,048.00 ft

Local Coordinate Origin:	Centered on Well Gobbler 15N-27HZ
Viewing Datum:	RKB=17 @ 5065.00ft (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. 22 T2N-R66W
 Well: Gobbler 15N-27HZ
 Wellbore: Plan A Rev 0
 Design: Plan A Rev 0 Permit

Anadarko Petroleum Corp.



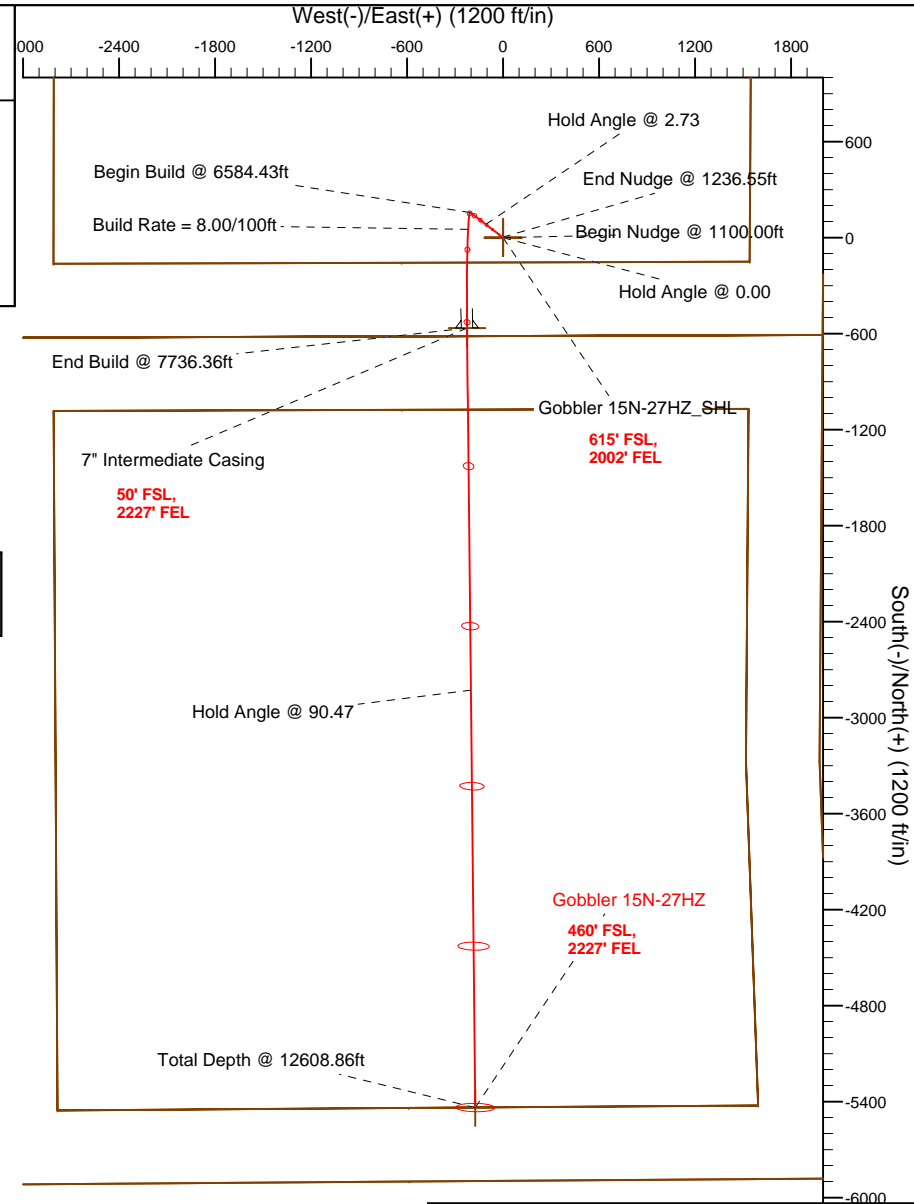
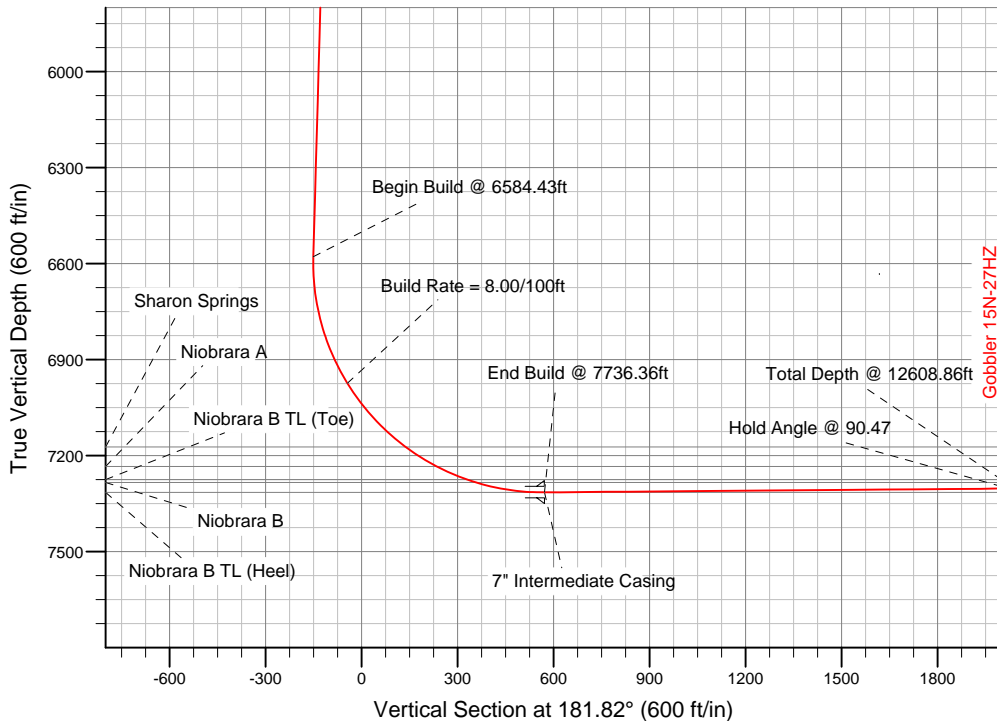
SECTION DETAILS

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	1236.55	2.73	307.48	1236.50	1.98	-2.58	2.00	307.48	-1.90	
4	6584.43	2.73	307.48	6578.30	157.02	-204.79	0.00	0.00	-150.42	
5	7736.36	90.47	179.39	7315.00	-565.00	-225.00	8.00	-128.04	571.88	Gobbler 15N-27HZ_Casing Point
6	12608.86	90.47	179.39	7275.00	-5437.06	-173.16	0.00	0.00	5439.82	Gobbler 15N-27HZ_BHL

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
Gobbler 15N-27HZ_22 Setback Line	0.00	0.00	0.00	40.118129	-104.761148	Polygon
Gobbler 15N-27HZ_27 Setback Line	0.00	0.00	0.00	40.118129	-104.761148	Polygon
Gobbler 15N-27HZ_Sec 22/27 Line	0.00	0.00	0.00	40.118129	-104.761148	Polygon
Gobbler 15N-27HZ_Section Line	0.00	0.00	0.00	40.118129	-104.761148	Polygon
Gobbler 15N-27HZ_SHL	0.00	0.00	0.00	40.118129	-104.761148	Point
Gobbler 15N-27HZ_BHL	7275.00	-5437.06	-173.16	40.103204	-104.761767	Point
Gobbler 15N-27HZ_Casing Point	7315.00	-565.00	-225.00	40.116578	-104.761952	Point

Target Line:
7319.61' TVDkb @ 0' VS Drilling 90.47°



WELL DETAILS: Gobbler 15N-27HZ

Ground Level 5048.00 RKB=17 @ 5065.00ft (Drilling Rig)

Plan: Plan A Rev 0 Permit (Gobbler 15N-27HZ/Plan A Rev 0)

Created By: Fred Hartmann Date: 10/08/2012
 Reviewed: _____ Date: _____

Plan Report for Gobbler 15N-27HZ - 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
Hold Angle @ 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	307.48	1,199.98	1.06	-1.38	-1.02	2.00	2.00	0.00	307.48
1,236.55	2.73	307.48	1,236.50	1.98	-2.58	-1.90	2.00	2.00	0.00	0.00
End Nudge @ 1236.55ft										
1,300.00	2.73	307.48	1,299.88	3.82	-4.98	-3.66	0.00	0.00	0.00	0.00
1,400.00	2.73	307.48	1,399.76	6.72	-8.76	-6.44	0.00	0.00	0.00	0.00
1,500.00	2.73	307.48	1,499.65	9.62	-12.54	-9.21	0.00	0.00	0.00	0.00
1,600.00	2.73	307.48	1,599.54	12.52	-16.32	-11.99	0.00	0.00	0.00	0.00
1,700.00	2.73	307.48	1,699.42	15.42	-20.11	-14.77	0.00	0.00	0.00	0.00
1,800.00	2.73	307.48	1,799.31	18.31	-23.89	-17.54	0.00	0.00	0.00	0.00
1,900.00	2.73	307.48	1,899.19	21.21	-27.67	-20.32	0.00	0.00	0.00	0.00
2,000.00	2.73	307.48	1,999.08	24.11	-31.45	-23.10	0.00	0.00	0.00	0.00
2,100.00	2.73	307.48	2,098.97	27.01	-35.23	-25.88	0.00	0.00	0.00	0.00
2,200.00	2.73	307.48	2,198.85	29.91	-39.01	-28.65	0.00	0.00	0.00	0.00
2,300.00	2.73	307.48	2,298.74	32.81	-42.79	-31.43	0.00	0.00	0.00	0.00
2,400.00	2.73	307.48	2,398.63	35.71	-46.57	-34.21	0.00	0.00	0.00	0.00
2,500.00	2.73	307.48	2,498.51	38.61	-50.36	-36.99	0.00	0.00	0.00	0.00
2,600.00	2.73	307.48	2,598.40	41.51	-54.14	-39.76	0.00	0.00	0.00	0.00
2,700.00	2.73	307.48	2,698.29	44.41	-57.92	-42.54	0.00	0.00	0.00	0.00
2,800.00	2.73	307.48	2,798.17	47.31	-61.70	-45.32	0.00	0.00	0.00	0.00
2,900.00	2.73	307.48	2,898.06	50.20	-65.48	-48.09	0.00	0.00	0.00	0.00
3,000.00	2.73	307.48	2,997.95	53.10	-69.26	-50.87	0.00	0.00	0.00	0.00
3,100.00	2.73	307.48	3,097.83	56.00	-73.04	-53.65	0.00	0.00	0.00	0.00
3,200.00	2.73	307.48	3,197.72	58.90	-76.82	-56.43	0.00	0.00	0.00	0.00
3,300.00	2.73	307.48	3,297.60	61.80	-80.60	-59.20	0.00	0.00	0.00	0.00
3,400.00	2.73	307.48	3,397.49	64.70	-84.39	-61.98	0.00	0.00	0.00	0.00
3,500.00	2.73	307.48	3,497.38	67.60	-88.17	-64.76	0.00	0.00	0.00	0.00
3,600.00	2.73	307.48	3,597.26	70.50	-91.95	-67.54	0.00	0.00	0.00	0.00
3,700.00	2.73	307.48	3,697.15	73.40	-95.73	-70.31	0.00	0.00	0.00	0.00
3,800.00	2.73	307.48	3,797.04	76.30	-99.51	-73.09	0.00	0.00	0.00	0.00
3,900.00	2.73	307.48	3,896.92	79.20	-103.29	-75.87	0.00	0.00	0.00	0.00
4,000.00	2.73	307.48	3,996.81	82.09	-107.07	-78.64	0.00	0.00	0.00	0.00
Hold Angle @ 2.73										
4,100.00	2.73	307.48	4,096.70	84.99	-110.85	-81.42	0.00	0.00	0.00	0.00
4,199.42	2.73	307.48	4,196.00	87.88	-114.61	-84.18	0.00	0.00	0.00	0.00
Parkman										
4,200.00	2.73	307.48	4,196.58	87.89	-114.63	-84.20	0.00	0.00	0.00	0.00
4,300.00	2.73	307.48	4,296.47	90.79	-118.42	-86.98	0.00	0.00	0.00	0.00
4,400.00	2.73	307.48	4,396.36	93.69	-122.20	-89.75	0.00	0.00	0.00	0.00
4,500.00	2.73	307.48	4,496.24	96.59	-125.98	-92.53	0.00	0.00	0.00	0.00
4,585.86	2.73	307.48	4,582.00	99.08	-129.22	-94.92	0.00	0.00	0.00	0.00
Sussex										
4,600.00	2.73	307.48	4,596.13	99.49	-129.76	-95.31	0.00	0.00	0.00	0.00
4,700.00	2.73	307.48	4,696.01	102.39	-133.54	-98.09	0.00	0.00	0.00	0.00
4,800.00	2.73	307.48	4,795.90	105.29	-137.32	-100.86	0.00	0.00	0.00	0.00

Plan Report for Gobbler 15N-27HZ - 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 (°)
4,900.00	2.73	307.48	4,895.79	108.19	-141.10	-103.64	0.00	0.00	0.00	0.00
5,000.00	2.73	307.48	4,995.67	111.09	-144.88	-106.42	0.00	0.00	0.00	0.00
5,100.00	2.73	307.48	5,095.56	113.98	-148.67	-109.19	0.00	0.00	0.00	0.00
5,200.00	2.73	307.48	5,195.45	116.88	-152.45	-111.97	0.00	0.00	0.00	0.00
5,300.00	2.73	307.48	5,295.33	119.78	-156.23	-114.75	0.00	0.00	0.00	0.00
5,400.00	2.73	307.48	5,395.22	122.68	-160.01	-117.53	0.00	0.00	0.00	0.00
5,500.00	2.73	307.48	5,495.11	125.58	-163.79	-120.30	0.00	0.00	0.00	0.00
5,600.00	2.73	307.48	5,594.99	128.48	-167.57	-123.08	0.00	0.00	0.00	0.00
5,700.00	2.73	307.48	5,694.88	131.38	-171.35	-125.86	0.00	0.00	0.00	0.00
5,800.00	2.73	307.48	5,794.77	134.28	-175.13	-128.63	0.00	0.00	0.00	0.00
5,900.00	2.73	307.48	5,894.65	137.18	-178.91	-131.41	0.00	0.00	0.00	0.00
6,000.00	2.73	307.48	5,994.54	140.08	-182.70	-134.19	0.00	0.00	0.00	0.00
6,100.00	2.73	307.48	6,094.42	142.98	-186.48	-136.97	0.00	0.00	0.00	0.00
6,200.00	2.73	307.48	6,194.31	145.87	-190.26	-139.74	0.00	0.00	0.00	0.00
6,300.00	2.73	307.48	6,294.20	148.77	-194.04	-142.52	0.00	0.00	0.00	0.00
6,400.00	2.73	307.48	6,394.08	151.67	-197.82	-145.30	0.00	0.00	0.00	0.00
6,500.00	2.73	307.48	6,493.97	154.57	-201.60	-148.08	0.00	0.00	0.00	0.00
6,584.43	2.73	307.48	6,578.30	157.02	-204.79	-150.42	0.00	0.00	0.00	0.00
Begin Build @ 6584.43ft										
6,600.00	2.19	280.92	6,593.86	157.30	-205.38	-150.68	8.00	-3.44	-170.56	-128.04
6,700.00	7.86	195.19	6,693.52	151.06	-209.06	-144.32	8.00	5.67	-85.73	-101.51
6,800.00	15.71	187.08	6,791.34	130.99	-212.53	-124.16	8.00	7.85	-8.11	-15.93
6,900.00	23.65	184.33	6,885.42	97.50	-215.71	-90.59	8.00	7.95	-2.76	-7.97
7,000.00	31.63	182.90	6,973.94	51.24	-218.56	-44.25	8.00	7.97	-1.42	-5.37
Build Rate = 8.00/100ft										
7,100.00	39.61	182.01	7,055.17	-6.90	-221.01	13.94	8.00	7.98	-0.90	-4.10
7,200.00	47.60	181.37	7,127.52	-75.79	-223.01	82.85	8.00	7.99	-0.64	-3.37
7,271.46	53.31	181.01	7,173.00	-130.86	-224.15	137.93	8.00	7.99	-0.51	-2.91
Sharon Springs										
7,300.00	55.59	180.88	7,189.59	-154.07	-224.54	161.14	8.00	7.99	-0.45	-2.68
7,386.38	62.49	180.53	7,234.00	-228.10	-225.44	235.16	8.00	7.99	-0.41	-2.61
Niobrara A										
7,400.00	63.58	180.48	7,240.17	-240.23	-225.55	247.29	8.00	7.99	-0.38	-2.42
7,500.00	71.58	180.12	7,278.29	-332.60	-226.02	339.62	8.00	7.99	-0.35	-2.40
7,518.83	73.08	180.06	7,284.00	-350.53	-226.05	357.55	8.00	7.99	-0.33	-2.27
Niobrara B										
7,600.00	79.57	179.80	7,303.18	-429.36	-225.96	436.34	8.00	7.99	-0.32	-2.25
7,700.00	87.56	179.50	7,314.38	-528.65	-225.35	535.56	8.00	7.99	-0.30	-2.19
7,736.36	90.47	179.39	7,315.00	-565.00	-225.00	571.88	8.00	7.99	-0.30	-2.15
End Build @ 7736.36ft - Niobrara B TL (Heel) - 7" Intermediate Casing - Gobbler 15N-27HZ_Casing Point										
7,800.00	90.47	179.39	7,314.48	-628.64	-224.32	635.46	0.00	0.00	0.00	-2.15
7,900.00	90.47	179.39	7,313.66	-728.63	-223.26	735.36	0.00	0.00	0.00	0.00
8,000.00	90.47	179.39	7,312.84	-828.62	-222.20	835.27	0.00	0.00	0.00	0.00
8,100.00	90.47	179.39	7,312.01	-928.61	-221.13	935.18	0.00	0.00	0.00	0.00
8,200.00	90.47	179.39	7,311.19	-1,028.60	-220.07	1,035.08	0.00	0.00	0.00	0.00
8,300.00	90.47	179.39	7,310.37	-1,128.59	-219.00	1,134.99	0.00	0.00	0.00	0.00
8,400.00	90.47	179.39	7,309.55	-1,228.58	-217.94	1,234.90	0.00	0.00	0.00	0.00
8,500.00	90.47	179.39	7,308.73	-1,328.57	-216.88	1,334.80	0.00	0.00	0.00	0.00
8,600.00	90.47	179.39	7,307.91	-1,428.56	-215.81	1,434.71	0.00	0.00	0.00	0.00
8,700.00	90.47	179.39	7,307.09	-1,528.55	-214.75	1,534.62	0.00	0.00	0.00	0.00
8,800.00	90.47	179.39	7,306.27	-1,628.55	-213.68	1,634.52	0.00	0.00	0.00	0.00
8,900.00	90.47	179.39	7,305.45	-1,728.54	-212.62	1,734.43	0.00	0.00	0.00	0.00
9,000.00	90.47	179.39	7,304.63	-1,828.53	-211.56	1,834.34	0.00	0.00	0.00	0.00
9,100.00	90.47	179.39	7,303.81	-1,928.52	-210.49	1,934.24	0.00	0.00	0.00	0.00
9,200.00	90.47	179.39	7,302.98	-2,028.51	-209.43	2,034.15	0.00	0.00	0.00	0.00
9,300.00	90.47	179.39	7,302.16	-2,128.50	-208.36	2,134.05	0.00	0.00	0.00	0.00
9,400.00	90.47	179.39	7,301.34	-2,228.49	-207.30	2,233.96	0.00	0.00	0.00	0.00
9,500.00	90.47	179.39	7,300.52	-2,328.48	-206.24	2,333.87	0.00	0.00	0.00	0.00
9,600.00	90.47	179.39	7,299.70	-2,428.47	-205.17	2,433.77	0.00	0.00	0.00	0.00

Plan Report for Gobbler 15N-27HZ - 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)	Tooface Azimuth (°)
9,700.00	90.47	179.39	7,298.88	-2,528.46	-204.11	2,533.68	0.00	0.00	0.00	0.00
9,800.00	90.47	179.39	7,298.06	-2,628.46	-203.04	2,633.59	0.00	0.00	0.00	0.00
9,900.00	90.47	179.39	7,297.24	-2,728.45	-201.98	2,733.49	0.00	0.00	0.00	0.00
10,000.00	90.47	179.39	7,296.42	-2,828.44	-200.92	2,833.40	0.00	0.00	0.00	0.00
Hold Angle @ 90.47										
10,100.00	90.47	179.39	7,295.60	-2,928.43	-199.85	2,933.31	0.00	0.00	0.00	0.00
10,200.00	90.47	179.39	7,294.78	-3,028.42	-198.79	3,033.21	0.00	0.00	0.00	0.00
10,300.00	90.47	179.39	7,293.95	-3,128.41	-197.72	3,133.12	0.00	0.00	0.00	0.00
10,400.00	90.47	179.39	7,293.13	-3,228.40	-196.66	3,233.03	0.00	0.00	0.00	0.00
10,500.00	90.47	179.39	7,292.31	-3,328.39	-195.60	3,332.93	0.00	0.00	0.00	0.00
10,600.00	90.47	179.39	7,291.49	-3,428.38	-194.53	3,432.84	0.00	0.00	0.00	0.00
10,700.00	90.47	179.39	7,290.67	-3,528.37	-193.47	3,532.74	0.00	0.00	0.00	0.00
10,800.00	90.47	179.39	7,289.85	-3,628.36	-192.40	3,632.65	0.00	0.00	0.00	0.00
10,900.00	90.47	179.39	7,289.03	-3,728.36	-191.34	3,732.56	0.00	0.00	0.00	0.00
11,000.00	90.47	179.39	7,288.21	-3,828.35	-190.28	3,832.46	0.00	0.00	0.00	0.00
11,100.00	90.47	179.39	7,287.39	-3,928.34	-189.21	3,932.37	0.00	0.00	0.00	0.00
11,200.00	90.47	179.39	7,286.57	-4,028.33	-188.15	4,032.28	0.00	0.00	0.00	0.00
11,300.00	90.47	179.39	7,285.74	-4,128.32	-187.09	4,132.18	0.00	0.00	0.00	0.00
11,400.00	90.47	179.39	7,284.92	-4,228.31	-186.02	4,232.09	0.00	0.00	0.00	0.00
11,500.00	90.47	179.39	7,284.10	-4,328.30	-184.96	4,332.00	0.00	0.00	0.00	0.00
11,600.00	90.47	179.39	7,283.28	-4,428.29	-183.89	4,431.90	0.00	0.00	0.00	0.00
11,700.00	90.47	179.39	7,282.46	-4,528.28	-182.83	4,531.81	0.00	0.00	0.00	0.00
11,800.00	90.47	179.39	7,281.64	-4,628.27	-181.77	4,631.72	0.00	0.00	0.00	0.00
11,900.00	90.47	179.39	7,280.82	-4,728.27	-180.70	4,731.62	0.00	0.00	0.00	0.00
12,000.00	90.47	179.39	7,280.00	-4,828.26	-179.64	4,831.53	0.00	0.00	0.00	0.00
12,100.00	90.47	179.39	7,279.18	-4,928.25	-178.57	4,931.43	0.00	0.00	0.00	0.00
12,200.00	90.47	179.39	7,278.36	-5,028.24	-177.51	5,031.34	0.00	0.00	0.00	0.00
12,300.00	90.47	179.39	7,277.54	-5,128.23	-176.45	5,131.25	0.00	0.00	0.00	0.00
12,400.00	90.47	179.39	7,276.71	-5,228.22	-175.38	5,231.15	0.00	0.00	0.00	0.00
12,500.00	90.47	179.39	7,275.89	-5,328.21	-174.32	5,331.06	0.00	0.00	0.00	0.00
12,600.00	90.47	179.39	7,275.07	-5,428.20	-173.25	5,430.97	0.00	0.00	0.00	0.00
12,608.85	90.47	179.39	7,275.00	-5,437.05	-173.16	5,439.81	0.00	0.00	0.00	0.00
Niobrara B TL (Toe)										
12,608.86	90.47	179.39	7,275.00	-5,437.06	-173.16	5,439.82	0.00	0.00	0.00	0.00
Total Depth @ 12608.86ft - Gobbler 15N-27HZ_BHL										

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
600.00	600.00	0.00	0.00	Hold Angle @ 0.00
1,100.00	1,100.00	0.00	0.00	Begin Nudge @ 1100.00ft
1,236.55	1,236.50	1.98	-2.58	End Nudge @ 1236.55ft
4,000.00	3,996.81	82.09	-107.07	Hold Angle @ 2.73
6,584.43	6,578.30	157.02	-204.79	Begin Build @ 6584.43ft
7,000.00	6,973.94	51.24	-218.56	Build Rate = 8.00/100ft
7,736.36	7,315.00	-565.00	-225.00	End Build @ 7736.36ft
10,000.00	7,296.42	-2,828.44	-200.92	Hold Angle @ 90.47
12,608.86	7,275.00	-5,437.06	-173.16	Total Depth @ 12608.86ft

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/_S (ft)	+E/-W (ft)	
Target	Gobbler 15N-27HZ_BHL	181.82	Slot	0.00	0.00	7,275.00

Plan Report for Gobbler 15N-27HZ - Plan A Rev 0 Permit**Survey tool program**

From (ft)	To (ft)	Survey/Plan	Survey Tool
0.00	7,736.36	Plan A Rev 0 Permit	MWD
7,736.36	12,608.86	Plan A Rev 0 Permit	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,736.36	7,315.00	7" Intermediate Casing	7	8-3/4

Formation Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,199.42	4,196.00	Parkman		0.00	
4,585.86	4,582.00	Sussex		0.00	
7,271.46	7,173.00	Sharon Springs		0.00	
7,386.38	7,234.00	Niobrara A		0.00	
7,518.83	7,284.00	Niobrara B		0.00	
7,736.36	7,315.00	Niobrara B TL (Heel)		0.00	
12,608.85	7,275.00	Niobrara B TL (Toe)		0.00	

Targets associated with this wellbore

Target Name	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Shape
Gobbler 15N-27HZ_Section Line	0.00	0.00	0.00	Point
Gobbler 15N-27HZ_SHL	0.00	0.00	0.00	Point
Gobbler 15N-27HZ_27 Setback Line	0.00	0.00	0.00	Point
Gobbler 15N-27HZ_22 Setback Line	0.00	0.00	0.00	Point
Gobbler 15N-27HZ_BHL	7,275.00	-5,437.06	-173.16	Point
Gobbler 15N-27HZ_Casing Point	7,315.00	-565.00	-225.00	Point
Gobbler 15N-27HZ_Sec 22/27 Line	0.00	0.00	0.00	Point

North Reference Sheet for Sec. 22 T2N-R66W - Gobbler 15N-27HZ - 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 @ 5065.00ft (Drilling Rig). Northing and Easting are relative to Gobbler 15N-27HZ
 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: 0.99995951

Grid Coordinates of Well: 1,286,739.25 ft N, 3,206,631.10 ft E
 Geographical Coordinates of Well: 40° 07' 05.26" N, 104° 45' 40.13" W
 Grid Convergence at Surface is: 0.48°

Based upon Minimum Curvature type calculations, at a Measured Depth of 12,608.86ft
 the Bottom Hole Displacement is 5,439.82ft in the Direction of 181.82° (True).

Magnetic Convergence at surface is: -8.23° (9 October 2012, , BGGM2012)

Magnetic Model: BGGM 2012
 Date: 09-Oct-12
 Declination: 8.71°
 Inclination/Dip: 66.76°
 Field Strength: 52763

Grid North is 0.48° East of True North (Grid Convergence)
 Magnetic North is 8.71° East of True North (Magnetic Declination)
 Magnetic North is 8.23° East of Grid North (Magnetic Convergence)

To convert a True Direction to a Grid Direction, Subtract 0.48°
 To convert a Magnetic Direction to a True Direction, Add 8.71° East
 To convert a Magnetic Direction to a Grid Direction, Add 8.23°