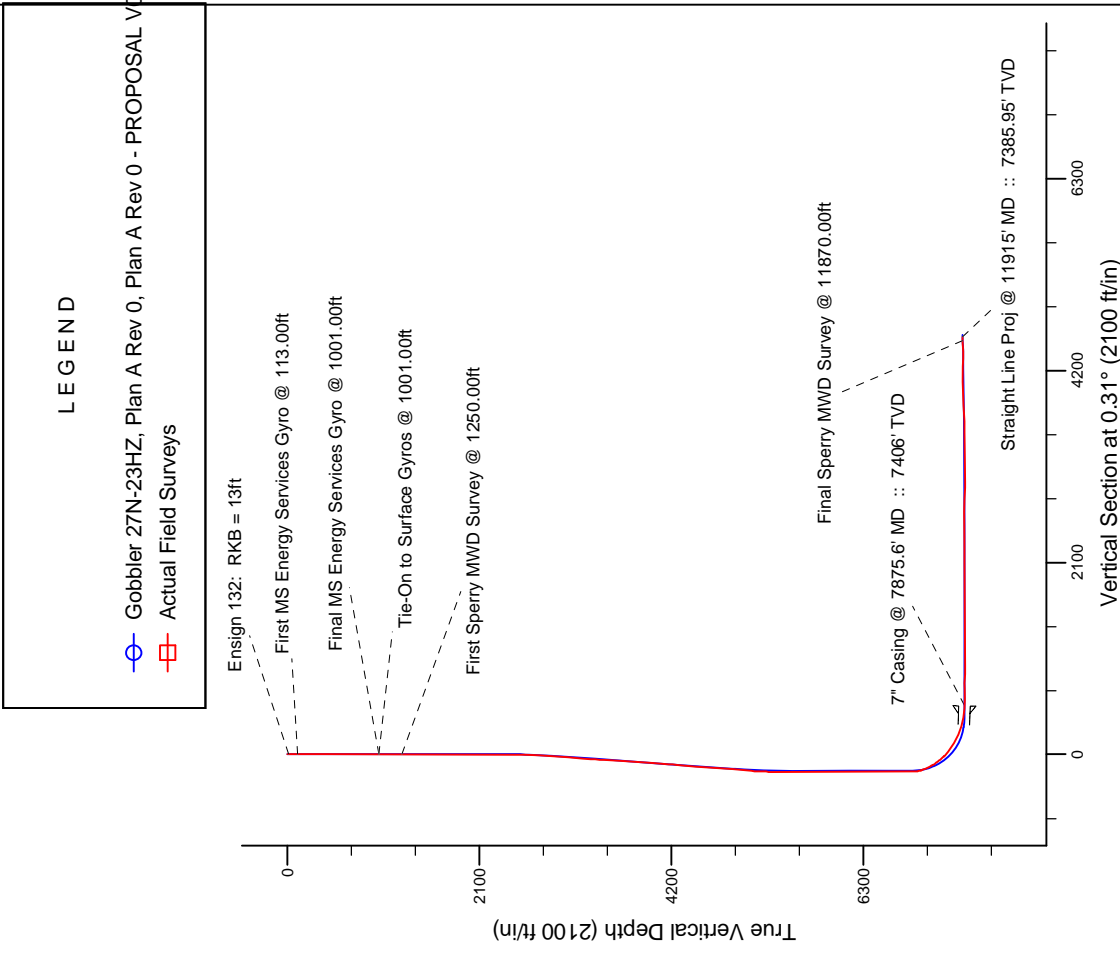
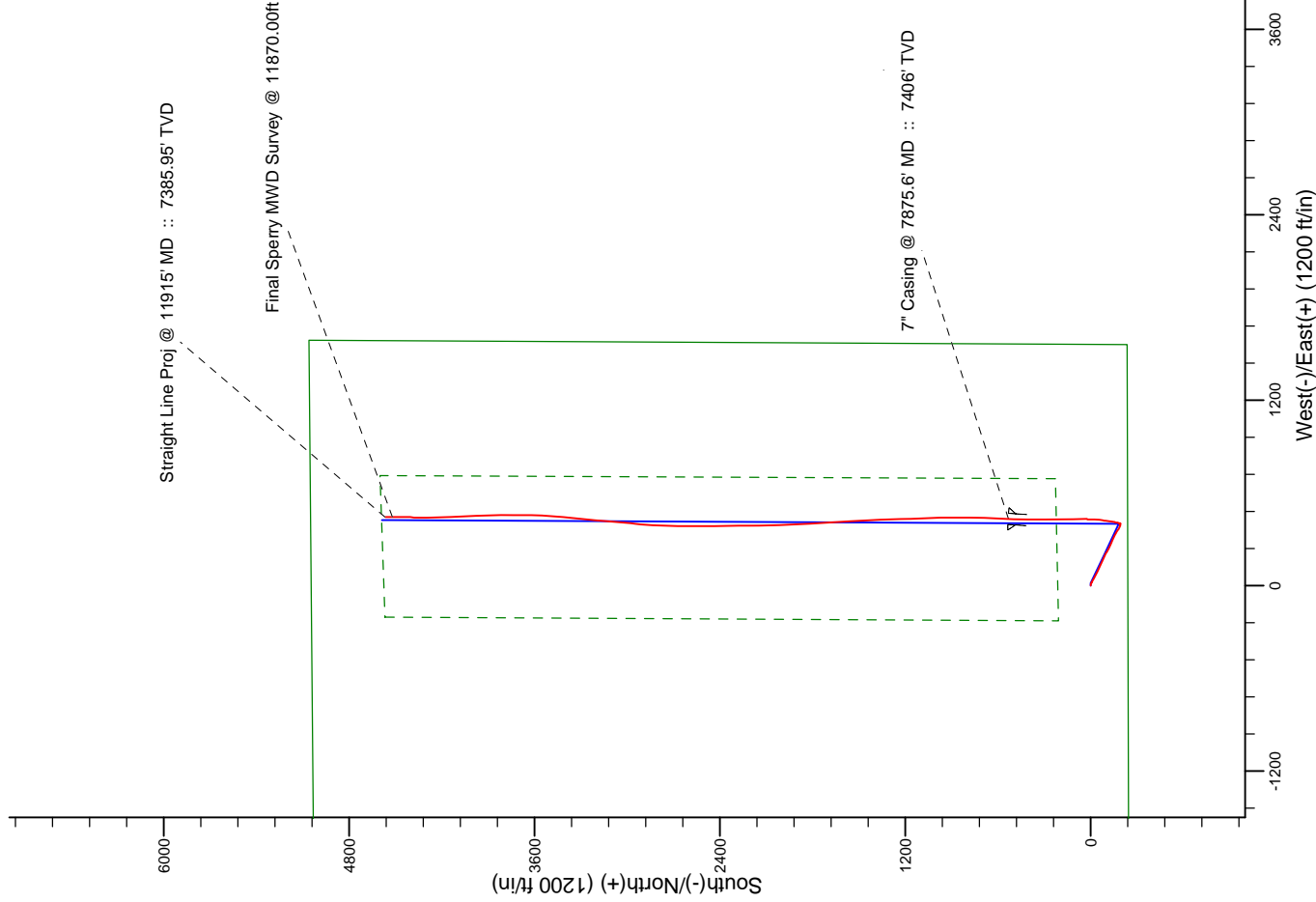


Project: Weld County, CO (NAD 83)
Site: Sec. 23-T2N-R66W
Well: Gobbler 27N-23HZ
Wellbore: Plan A Rev 0
Design: Actual Field Surveys



LEGEND

- Gobbler 27N-23HZ, Plan A Rev 0, Plan A Rev 0 - PROPOSAL VD
- Actual Field Surveys

7" Casing: ~771.54' FSL, ~1130.16' FEL
Lat/Long: 40.118609 N, -104.739005 E
State Planes - CO Northern: 1,286,966.64' N, 3,212,822.13' E
Location: Sec. 23-T2N-R66W

BHL: ~483.46' FNL, ~1138.07' FEL
Lat/Long: 40.129682 N, -104.738954 E
State Planes - CO Northern: 1,291,000.15' N, 3,212,801.62' E
Location: Sec. 23-T2N-R66W

WELL DETAILS: Gobbler 27N-23HZ
Ground Level: 5083.00
RKB=13 @ 5106.00ft (Ensign 132)

Design: Actual Field Surveys (Gobbler 27N-23HZ/Plan A Rev 0)
Created By: Fred Hartmann Date: 06/03/2013
Reviewed: _____

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 23-T2N-R66W

Gobbler 27N-23HZ

Plan A Rev 0

Design: Actual Field Surveys

Sperry Drilling Services Standard Report

03 June, 2013

Well Coordinates: 1,286,430.22 N, 3,212,394.57 E (40° 07' 01.73" N, 104° 44' 25.98" W)

Ground Level: 5,093.00 ft

Local Coordinate Origin:

Centered on Well Gobbler 27N-23HZ

Viewing Datum:

RKB=13 @ 5106.00ft (Ensign 132)

TVDs to System:

N

North Reference:

True

Unit System:

API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 43I

HALLIBURTON

Design Report for Gobbler 27N-23HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13.00	0.00	0.00	13.00	0.00	0.00	0.00	0.00
Ensign 132: RKB = 13ft							
113.00	0.14	199.69	113.00	-0.12	-0.04	-0.12	0.14
First MS Energy Services Gyro @ 113.00ft							
213.00	0.08	247.63	213.00	-0.26	-0.15	-0.26	0.10
313.00	0.22	263.07	313.00	-0.31	-0.40	-0.31	0.14
413.00	0.23	44.40	413.00	-0.19	-0.45	-0.19	0.42
513.00	0.35	43.71	513.00	0.18	-0.10	0.18	0.12
613.00	0.43	55.32	613.00	0.61	0.42	0.61	0.11
713.00	0.57	67.30	712.99	1.02	1.19	1.02	0.17
813.00	0.64	81.68	812.99	1.29	2.20	1.30	0.17
913.00	0.56	88.59	912.98	1.38	3.24	1.40	0.11
1,001.00	0.36	99.08	1,000.98	1.35	3.94	1.37	0.25
Final MS Energy Services Gyro @ 1001.00ft - Tie-On to Surface Gyros @ 1001.00ft							
1,250.00	0.34	139.06	1,249.97	0.67	5.20	0.70	0.10
First Sperry MWD Survey @ 1250.00ft							
1,527.00	0.92	98.32	1,526.96	-0.27	7.94	-0.23	0.25
1,804.00	0.74	116.56	1,803.93	-1.40	11.74	-1.33	0.11
2,087.00	0.58	122.45	2,086.91	-2.98	14.58	-2.90	0.06
2,372.00	0.13	214.37	2,371.90	-4.02	15.62	-3.94	0.21
2,564.00	1.51	122.39	2,563.88	-5.56	17.63	-5.46	0.79
2,660.00	4.08	119.13	2,659.76	-7.90	21.68	-7.78	2.68
2,755.00	5.96	117.18	2,754.39	-11.80	29.02	-11.64	1.99
2,851.00	6.80	117.84	2,849.80	-16.73	38.48	-16.52	0.88
2,946.00	8.03	113.11	2,944.00	-21.96	49.56	-21.69	1.44
3,042.00	9.95	118.73	3,038.82	-28.58	63.00	-28.24	2.20
3,138.00	9.39	118.35	3,133.45	-36.28	77.16	-35.86	0.59
3,233.00	9.48	118.17	3,227.17	-43.66	90.88	-43.16	0.10
3,329.00	8.98	116.84	3,321.93	-50.77	104.54	-50.20	0.57
3,425.00	7.87	113.36	3,416.89	-56.76	117.26	-56.12	1.27
3,520.00	9.44	114.08	3,510.80	-62.52	130.34	-61.81	1.66
3,614.00	9.24	112.65	3,603.56	-68.57	144.34	-67.79	0.33
3,710.00	7.06	110.18	3,698.58	-73.57	156.99	-72.72	2.30
3,804.00	8.12	115.43	3,791.76	-78.42	168.41	-77.50	1.35
3,900.00	9.11	122.26	3,886.68	-85.39	180.96	-84.41	1.48
3,996.00	10.53	117.34	3,981.27	-93.47	195.18	-92.41	1.72
4,091.00	9.71	111.63	4,074.79	-100.41	210.34	-99.27	1.36
4,187.00	9.82	118.97	4,169.41	-107.36	225.03	-106.14	1.30
4,282.00	11.50	116.48	4,262.76	-115.51	240.59	-114.20	1.83
4,378.00	11.54	117.25	4,356.83	-124.17	257.70	-122.78	0.17
4,474.00	9.82	114.92	4,451.16	-132.02	273.66	-130.54	1.85
4,569.00	9.33	110.20	4,544.84	-138.09	288.23	-136.53	0.97
4,665.00	9.31	113.63	4,639.58	-143.89	302.65	-142.25	0.58
4,759.00	10.19	118.40	4,732.22	-150.89	316.93	-149.18	1.27
4,854.00	9.65	118.64	4,825.80	-158.71	331.31	-156.91	0.57
4,949.00	11.03	121.93	4,919.25	-167.33	346.01	-165.46	1.58
5,045.00	10.46	125.32	5,013.57	-177.23	360.92	-175.27	0.89
5,141.00	7.96	114.88	5,108.33	-185.06	374.06	-183.04	3.12
5,236.00	6.29	112.26	5,202.60	-189.80	384.85	-187.72	1.79

Design Report for Gobbler 27N-23HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
5,332.00	4.13	101.97	5,298.20	-192.51	393.10	-190.38	2.44
5,427.00	1.94	78.72	5,393.06	-192.91	398.02	-190.75	2.60
5,808.00	0.52	323.91	5,773.99	-190.25	403.33	-188.06	0.58
6,190.00	0.48	292.29	6,155.98	-188.24	400.83	-186.07	0.07
6,573.00	0.37	125.73	6,538.97	-188.35	400.35	-186.18	0.22
6,803.00	0.61	152.95	6,768.96	-189.88	401.51	-187.70	0.14
6,859.00	0.81	46.46	6,824.96	-189.87	401.93	-187.69	2.04
6,907.00	7.32	20.38	6,872.82	-186.77	403.24	-184.58	13.75
6,955.00	13.49	12.90	6,920.01	-178.43	405.56	-176.24	13.13
7,003.00	20.59	14.33	6,965.87	-164.78	408.90	-162.57	14.82
7,050.00	27.20	11.10	7,008.82	-146.21	413.02	-143.97	14.33
7,098.00	31.23	8.66	7,050.71	-123.13	417.01	-120.88	8.75
7,146.00	35.47	8.66	7,090.79	-97.05	420.98	-94.77	8.83
7,194.00	38.68	6.07	7,129.09	-68.36	424.66	-66.06	7.44
7,241.00	42.16	4.65	7,164.86	-38.03	427.50	-35.71	7.66
7,289.00	48.84	1.31	7,198.49	-3.86	429.22	-1.54	14.77
7,337.00	53.15	0.06	7,228.70	33.43	429.65	35.75	9.20
7,385.00	56.58	359.87	7,256.32	72.67	429.62	75.00	7.15
7,432.00	60.14	359.72	7,280.97	112.68	429.48	115.00	7.58
7,480.00	61.69	359.71	7,304.30	154.63	429.27	156.95	3.23
7,528.00	62.95	359.80	7,326.60	197.13	429.09	199.45	2.63
7,576.00	68.31	359.03	7,346.40	240.84	428.64	243.15	11.26
7,624.00	71.82	358.31	7,362.76	285.94	427.59	288.25	7.45
7,672.00	75.13	359.11	7,376.41	331.94	426.55	334.24	7.08
7,719.00	78.24	0.27	7,387.24	377.67	426.31	379.97	7.04
7,767.00	80.44	1.69	7,396.11	424.83	427.12	427.13	5.43
7,838.00	86.33	3.20	7,404.29	495.26	430.13	497.58	8.56
7,875.60	88.47	2.97	7,406.00	532.76	432.15	535.09	5.72
7" Casing @ 7875.6' MD :: 7406' TVD							
7,933.00	91.73	2.63	7,405.90	590.09	434.96	592.43	5.72
8,028.00	89.94	1.22	7,404.51	685.02	438.15	687.38	2.40
8,123.00	87.99	0.20	7,406.23	779.99	439.33	782.35	2.32
8,220.00	87.99	0.88	7,409.63	876.92	440.24	879.29	0.70
8,315.00	89.17	358.27	7,411.99	971.88	439.54	974.25	3.01
8,411.00	90.03	358.21	7,412.66	1,067.83	436.59	1,070.18	0.90
8,507.00	90.80	358.41	7,411.96	1,163.79	433.76	1,166.12	0.83
8,603.00	90.62	358.64	7,410.77	1,259.75	431.29	1,262.07	0.30
8,698.00	89.94	356.97	7,410.31	1,354.68	427.65	1,356.97	1.90
8,794.00	90.86	357.17	7,409.64	1,450.55	422.74	1,452.81	0.98
8,889.00	90.31	356.28	7,408.67	1,545.39	417.31	1,547.62	1.10
8,985.00	91.08	357.03	7,407.50	1,641.21	411.71	1,643.42	1.12
9,080.00	90.92	356.32	7,405.84	1,736.04	406.20	1,738.21	0.77
9,175.00	90.74	355.56	7,404.47	1,830.79	399.48	1,832.92	0.82
9,272.00	90.09	358.43	7,403.77	1,927.64	394.39	1,929.75	3.03
9,367.00	89.69	358.12	7,403.95	2,022.60	391.53	2,024.69	0.53
9,462.00	90.06	359.20	7,404.16	2,117.57	389.31	2,119.65	1.20
9,558.00	90.71	358.62	7,403.51	2,213.55	387.49	2,215.61	0.91
9,654.00	89.07	0.08	7,403.69	2,309.54	386.40	2,311.60	2.29
9,749.00	89.48	358.68	7,404.90	2,404.52	385.37	2,406.57	1.54
9,845.00	91.32	359.69	7,404.23	2,500.51	384.00	2,502.55	2.19
9,940.00	90.74	0.74	7,402.52	2,595.49	384.36	2,597.53	1.26

Design Report for Gobbler 27N-23HZ - Actual Field Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)
10,035.00	89.63	0.96	7,402.21	2,690.48	385.77	2,692.52	1.19
10,131.00	87.81	2.95	7,404.36	2,786.39	389.04	2,788.45	2.81
10,227.00	87.87	4.54	7,407.98	2,882.11	395.31	2,884.21	1.66
10,323.00	90.34	5.91	7,409.47	2,977.69	404.05	2,979.83	2.94
10,417.00	89.23	4.79	7,409.83	3,071.28	412.81	3,073.47	1.68
10,513.00	89.91	4.47	7,410.55	3,166.96	420.56	3,169.19	0.78
10,608.00	91.45	5.72	7,409.42	3,261.57	429.00	3,263.85	2.09
10,703.00	90.52	6.19	7,407.79	3,356.05	438.85	3,358.37	1.10
10,799.00	89.44	3.18	7,407.82	3,451.71	446.69	3,454.08	3.33
10,894.00	91.73	4.33	7,406.85	3,546.50	452.91	3,548.89	2.70
10,989.00	92.43	0.18	7,403.40	3,641.34	456.65	3,643.76	4.43
11,084.00	92.40	359.42	7,399.40	3,736.25	456.32	3,738.67	0.80
11,180.00	92.37	359.09	7,395.40	3,832.16	455.07	3,834.57	0.34
11,276.00	92.40	358.35	7,391.41	3,928.05	452.93	3,930.45	0.77
11,372.00	92.99	357.89	7,386.89	4,023.89	449.78	4,026.27	0.78
11,467.00	88.39	356.26	7,385.75	4,118.74	444.94	4,121.08	5.14
11,562.00	88.46	359.10	7,388.36	4,213.61	441.09	4,215.94	2.99
11,658.00	89.48	359.93	7,390.09	4,309.59	440.28	4,311.91	1.37
11,754.00	91.48	2.44	7,389.28	4,405.55	442.26	4,407.88	3.34
11,870.00	91.02	0.81	7,386.75	4,521.48	445.55	4,523.82	1.46
Final Sperry MWD Survey @ 11870.00ft							
11,915.00	91.02	0.81	7,385.95	4,566.46	446.19	4,568.81	0.00
Straight Line Proj @ 11915' MD :: 7385.95' TVD							

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
13.00	13.00	0.00	0.00	Ensign 132: RKB = 13ft
113.00	113.00	-0.12	-0.04	First MS Energy Services Gyro @ 113.00ft
1,001.00	1,000.98	1.35	3.94	Final MS Energy Services Gyro @ 1001.00ft
1,001.00	1,000.98	1.35	3.94	Tie-On to Surface Gyros @ 1001.00ft
1,250.00	1,249.97	0.67	5.20	First Sperry MWD Survey @ 1250.00ft
11,870.00	7,386.75	4,521.48	445.55	Final Sperry MWD Survey @ 11870.00ft
11,915.00	7,385.95	4,566.46	446.19	Straight Line Proj @ 11915' MD :: 7385.95' TVD

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin		Start TVD (ft)
				+N/-S (ft)	+E/-W (ft)	
User	No Target (Freehand)	0.31	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
13.00	1,001.00	MS Energy Services - Surface Gyros	NS-GYRO-MS
1,250.00	7,838.00	Sperry MWD Surveys - Vert/Build	MWD+IFR1+SC
7,933.00	11,870.00	Sperry MWD - Lateral	MWD+IFR1+SC