

Chesapeake Appalachia, LLC

HALLIBURTON
Sperry Drilling Services

Project: Wetzel County, WV
Site: Wileyville
Well: Robert Baxter WZ 205H
Wellbore: Wellbore #1
Design: Plan #6
Rig: Nomac 25

SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec	Annotation
10419.00	93.25	326.43	6861.65	3258.18	-500.70	0.00	0.00	2829.63	Tie-On
10461.00	93.25	326.43	6859.27	3293.12	-523.88	0.00	0.00	2871.33	Start Drop
10821.38	92.05	315.67	6842.57	3572.67	-749.86	3.00	-96.13	3230.77	End Drop
10968.02	92.05	315.67	6837.34	3677.50	-852.25	0.00	0.00	3376.81	Start Drop
11126.52	91.50	320.40	6832.43	3795.27	-958.15	3.00	96.51	3535.06	End Drop
11241.52	91.50	320.40	6829.42	3883.85	-1031.43	0.00	0.00	3650.02	TD

Surface Location:

US State Plane 1927 (Exact solution)
West Virginia North 4701

Elevation: GL 1320' + KB 18' @ 1338.00ft (Nomac 25)

Northing	Easting	Latitude	Longitude
444379.48	1654652.68	39° 42' 48.949 N	80° 43' 39.468 W

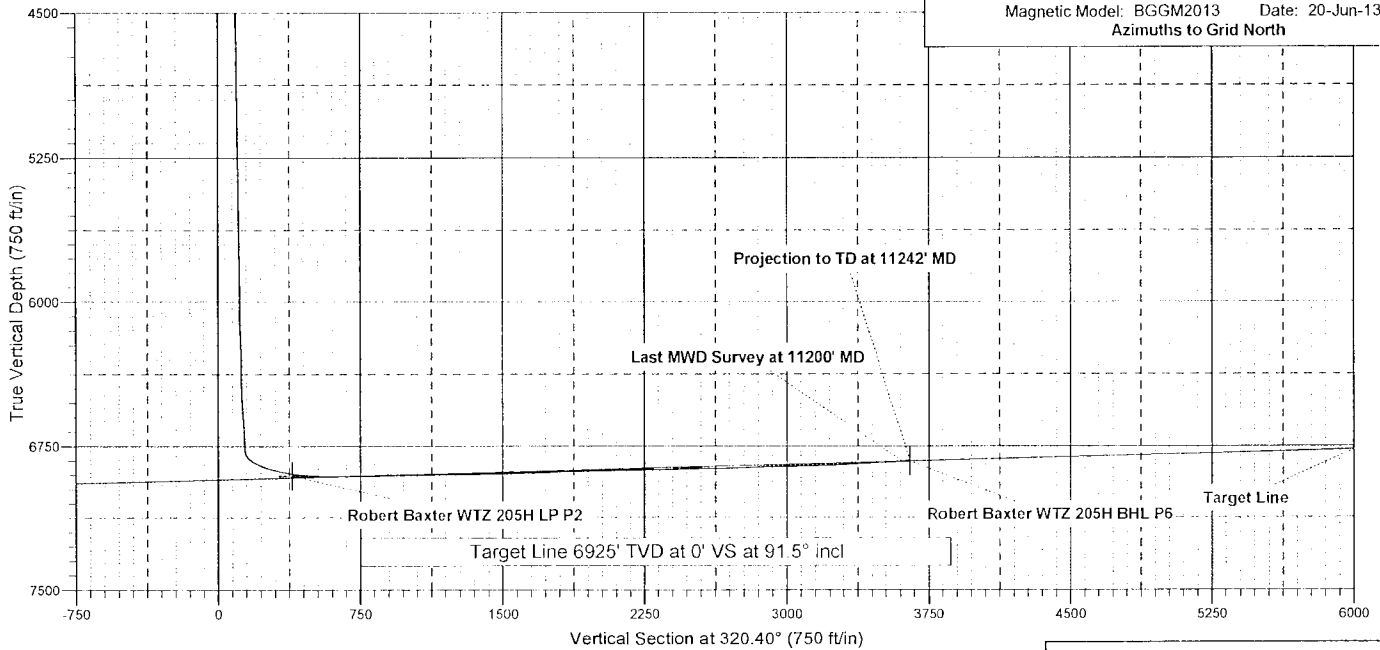
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
Robert Baxter WZ 205H BHL P6	6829.42	3883.85	-1031.43	448263.33	1653621.25
Robert Baxter WZ 205H LP P2	6905.17	1372.89	1045.62	445752.37	1655698.31



To convert a Magnetic Direction to a Grid Direction, Subtract 7 83°

Magnetic Model: BGGM2013 Date: 20-Jun-13
Azimuths to Grid North



Created By: Tim Aitken Date: 11 July 2013

Chesapeake Appalachia, LLC

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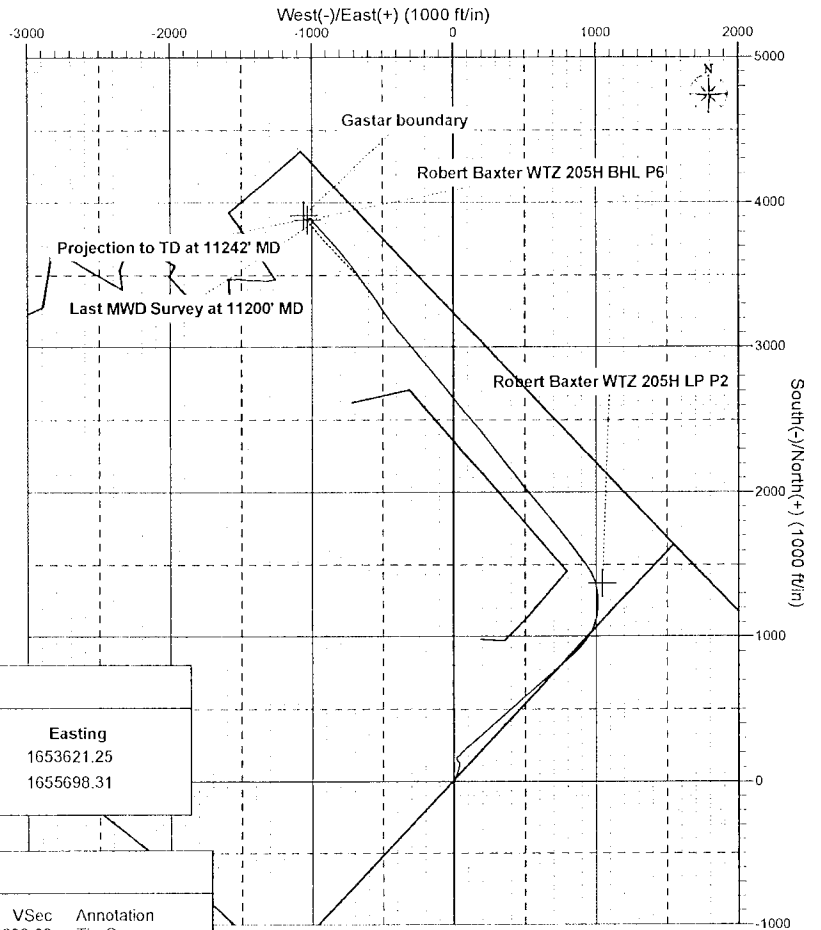
US State Plane 1927 (Exact solution)
West Virginia North 4701
Elevation: GL 1320' + KB 18' @ 1338.00ft (Nomac 25)

Northing	Easting	Latitude	Longitude
444379.48	1654652.68	39° 42' 48.949 N	80° 43' 39.468 W



To convert a Magnetic Direction to a Grid Direction, Subtract 7.83°

Magnetic Model: BGGM2013 Date: 20-Jun-13
Azimuths to Grid North



WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
Robert Baxter WTZ 205H BHL P6	6829.42	3883.85	-1031.43	448263.33	1653621.25
Robert Baxter WTZ 205H LP P2	6905.17	1372.89	1045.62	445752.37	1655698.31

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
10419.00	93.25	326.43	6861.65	3258.18	-500.70	0.00	0.00	2829.63	Tie-On
10461.00	93.25	326.43	6859.27	3293.12	-523.88	0.00	0.00	2871.33	Start Drop
10821.38	92.05	315.67	6842.57	3572.67	-749.86	3.00	-96.13	3230.77	End Drop
10968.02	92.05	315.67	6837.34	3677.50	-852.25	0.00	0.00	3376.81	Start Drop
11126.52	91.50	320.40	6832.43	3795.27	-958.15	3.00	96.51	3535.06	End Drop
11241.52	91.50	320.40	6829.42	3883.85	-1031.43	0.00	0.00	3650.02	TD

Created By: Tim Aitken Date: 11 July 2013

Chesapeake Appalachia, LLC

Wetzel County, WV

Wileyville

Robert Baxter WTZ 205H

Wellbore #1

Design: Surveys

Sperry Drilling Services Combo Report

30 July, 2013

Well Coordinates: 444,379.48 N, 1,654,652.68 E (39° 42' 48.95" N, 080° 43' 39.47" W)
Ground Level: 1,320.00 ft

Local Coordinate Origin:	Centered on Well Robert Baxter WTZ 205H
Viewing Datum:	GL 1320' + KB 18' @ 1338.00ft (Nomac 25)
TVDs to System:	N
North Reference:	Grid
Unit System:	API-US Survey Feet

Version: 2003.16 Build: 431

HALLIBURTON

HALLIBURTON**Design Report for Robert Baxter WTZ 205H - Surveys**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)		
0.00	0.00	0.00	-1,338.00	0.00	0.00 N	0.00 E	444,379.48	1,654,652.68	0.00	0.00
100.00	0.37	228.25	-1,238.00	100.00	0.22 S	0.24 W	444,379.26	1,654,652.44	0.37	-0.01
200.00	0.13	295.83	-1,138.00	200.00	0.38 S	0.58 W	444,379.10	1,654,652.10	0.34	0.08
300.00	0.14	307.31	-1,038.00	300.00	0.26 S	0.78 W	444,379.22	1,654,651.90	0.03	0.30
400.00	0.08	237.96	-938.00	400.00	0.22 S	0.94 W	444,379.26	1,654,651.75	0.13	0.43
500.00	0.10	151.19	-838.00	500.00	0.33 S	0.96 W	444,379.15	1,654,651.73	0.12	0.35
600.00	0.05	70.86	-738.00	600.00	0.40 S	0.87 W	444,379.08	1,654,651.81	0.10	0.25
700.00	0.02	136.46	-638.00	700.00	0.39 S	0.82 W	444,379.08	1,654,651.86	0.05	0.22
800.00	0.05	248.06	-538.00	800.00	0.42 S	0.85 W	444,379.06	1,654,651.84	0.06	0.21
900.00	0.08	255.47	-438.00	900.00	0.46 S	0.96 W	444,379.02	1,654,651.73	0.03	0.26
970.00	0.20	260.63	-368.00	970.00	0.49 S	1.12 W	444,378.99	1,654,651.56	0.17	0.34
1,027.00	0.12	358.53	-311.00	1,027.00	0.45 S	1.22 W	444,379.03	1,654,651.46	0.43	0.44
1,050.00	0.13	335.64	-288.00	1,050.00	0.40 S	1.24 W	444,379.08	1,654,651.45	0.22	0.48
1,082.00	0.57	6.67	-256.00	1,082.00	0.21 S	1.23 W	444,379.27	1,654,651.45	1.45	0.63
1,113.00	1.53	29.69	-225.01	1,112.99	0.31 N	1.01 W	444,379.79	1,654,651.68	3.32	0.88
1,144.00	2.51	37.72	-194.03	1,143.97	1.20 N	0.39 W	444,380.68	1,654,652.30	3.28	1.17
1,176.00	3.51	21.65	-162.07	1,175.93	2.67 N	0.40 E	444,382.15	1,654,653.09	4.06	1.80
1,238.00	4.43	31.19	-100.22	1,237.78	6.48 N	2.34 E	444,385.96	1,654,655.03	1.82	3.50
1,299.00	4.20	21.26	-39.39	1,298.61	10.58 N	4.37 E	444,390.06	1,654,657.06	1.28	5.36
1,362.00	3.93	19.22	23.45	1,361.45	14.77 N	5.92 E	444,394.24	1,654,658.60	0.49	7.60
1,424.00	4.38	23.24	85.29	1,423.29	18.95 N	7.55 E	444,398.43	1,654,660.24	0.86	9.79
1,487.00	5.11	22.11	148.07	1,486.07	23.76 N	9.56 E	444,403.24	1,654,662.24	1.17	12.21
1,550.00	4.85	20.96	210.83	1,548.83	28.84 N	11.57 E	444,408.32	1,654,664.25	0.44	14.85
1,613.00	5.87	19.86	273.55	1,611.55	34.36 N	13.61 E	444,413.84	1,654,666.30	1.63	17.80
1,676.00	6.57	20.44	336.18	1,674.18	40.77 N	15.97 E	444,420.25	1,654,668.65	1.12	21.23
1,738.00	7.43	20.20	397.72	1,735.72	47.85 N	18.59 E	444,427.33	1,654,671.27	1.39	25.02
1,801.00	7.08	20.50	460.22	1,798.22	55.31 N	21.36 E	444,434.79	1,654,674.04	0.56	29.01
1,864.00	7.02	21.99	522.74	1,860.74	62.52 N	24.16 E	444,442.00	1,654,676.84	0.31	32.77
1,927.00	6.93	21.91	585.27	1,923.27	69.62 N	27.02 E	444,449.09	1,654,679.70	0.14	36.42
1,990.00	6.26	18.65	647.86	1,985.86	76.40 N	29.53 E	444,455.88	1,654,682.22	1.22	40.04
2,052.00	5.26	15.94	709.54	2,047.54	82.33 N	31.40 E	444,461.81	1,654,684.08	1.67	43.43
2,115.00	5.05	16.55	772.29	2,110.29	87.77 N	32.98 E	444,467.25	1,654,685.66	0.34	46.60
2,178.00	3.99	15.78	835.09	2,173.09	92.53 N	34.36 E	444,472.01	1,654,687.05	1.69	49.39
2,241.00	3.67	13.79	897.95	2,235.95	96.60 N	35.44 E	444,476.08	1,654,688.13	0.55	51.84
2,304.00	3.53	15.43	960.83	2,298.83	100.43 N	36.44 E	444,479.91	1,654,689.12	0.28	54.16
2,367.00	3.37	17.03	1,023.71	2,361.71	104.07 N	37.50 E	444,483.55	1,654,690.18	0.30	56.29
2,430.00	3.40	17.44	1,086.60	2,424.60	107.62 N	38.60 E	444,487.10	1,654,691.28	0.06	58.32
2,493.00	3.37	17.13	1,149.49	2,487.49	111.17 N	39.70 E	444,490.65	1,654,692.39	0.06	60.35
2,554.00	3.19	15.40	1,210.39	2,548.39	114.52 N	40.68 E	444,494.00	1,654,693.37	0.34	62.31
2,667.00	2.42	7.82	1,323.26	2,661.26	119.92 N	41.84 E	444,499.40	1,654,694.53	0.75	65.73
2,730.00	1.85	3.60	1,386.21	2,724.21	122.25 N	42.09 E	444,501.73	1,654,694.77	0.94	67.37
2,793.00	1.47	355.16	1,449.19	2,787.19	124.07 N	42.08 E	444,503.55	1,654,694.77	0.72	68.77
2,855.00	1.24	352.40	1,511.17	2,849.17	125.53 N	41.93 E	444,505.01	1,654,694.61	0.39	70.00
2,919.00	1.14	343.99	1,575.16	2,913.16	126.83 N	41.66 E	444,506.31	1,654,694.34	0.31	71.17
2,984.00	1.01	332.42	1,640.14	2,978.14	127.96 N	41.22 E	444,507.44	1,654,693.90	0.39	72.32

HALLIBURTON**Design Report for Robert Baxter WTZ 205H - Surveys**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)		
3,047.00	0.97	337.44	1,703.13	3,041.13	128.94 N	40.75 E	444,508.42	1,654,693.44	0.15	73.37
3,110.00	1.03	331.76	1,766.12	3,104.12	129.93 N	40.28 E	444,509.41	1,654,692.97	0.18	74.44
3,173.00	0.99	329.13	1,829.11	3,167.11	130.90 N	39.73 E	444,510.38	1,654,692.42	0.10	75.53
3,236.00	1.08	319.23	1,892.10	3,230.10	131.81 N	39.07 E	444,511.29	1,654,691.75	0.32	76.66
3,299.00	1.06	317.78	1,955.09	3,293.09	132.70 N	38.29 E	444,512.18	1,654,690.97	0.05	77.84
3,362.00	1.10	316.55	2,018.08	3,356.08	133.57 N	37.48 E	444,513.05	1,654,690.17	0.07	79.02
3,425.00	1.09	321.82	2,081.07	3,419.07	134.48 N	36.69 E	444,513.96	1,654,689.38	0.16	80.23
3,488.00	0.86	329.96	2,144.06	3,482.06	135.36 N	36.09 E	444,514.84	1,654,688.77	0.43	81.29
3,551.00	0.85	320.54	2,207.05	3,545.05	136.13 N	35.55 E	444,515.61	1,654,688.24	0.22	82.23
3,615.00	0.91	313.87	2,271.05	3,609.05	136.85 N	34.89 E	444,516.32	1,654,687.57	0.19	83.20
3,678.00	0.90	313.93	2,334.04	3,672.04	137.54 N	34.17 E	444,517.01	1,654,686.85	0.02	84.19
3,740.00	0.89	316.52	2,396.03	3,734.03	138.22 N	33.49 E	444,517.70	1,654,686.17	0.07	85.16
3,803.00	0.91	312.17	2,459.02	3,797.02	138.91 N	32.78 E	444,518.39	1,654,685.46	0.11	86.14
3,864.00	1.01	304.43	2,520.02	3,858.02	139.54 N	31.98 E	444,519.02	1,654,684.66	0.27	87.14
3,926.00	0.96	303.14	2,582.01	3,920.01	140.14 N	31.09 E	444,519.61	1,654,683.78	0.09	88.16
3,989.00	1.01	300.70	2,645.00	3,983.00	140.71 N	30.17 E	444,520.19	1,654,682.86	0.10	89.19
4,014.00	0.89	300.15	2,669.99	4,007.99	140.92 N	29.81 E	444,520.40	1,654,682.50	0.48	89.57
4,117.00	0.88	300.88	2,772.98	4,110.98	141.73 N	28.44 E	444,521.20	1,654,681.13	0.01	91.07
4,179.00	0.72	313.61	2,834.98	4,172.98	142.24 N	27.75 E	444,521.72	1,654,680.44	0.38	91.91
4,241.00	0.71	311.37	2,896.97	4,234.97	142.76 N	27.18 E	444,522.24	1,654,679.87	0.05	92.67
4,303.00	0.72	294.01	2,958.97	4,296.97	143.17 N	26.54 E	444,522.65	1,654,679.22	0.35	93.40
4,366.00	0.61	278.86	3,021.96	4,359.96	143.39 N	25.85 E	444,522.87	1,654,678.53	0.33	94.01
4,428.00	0.50	311.53	3,083.96	4,421.96	143.62 N	25.32 E	444,523.10	1,654,678.00	0.53	94.52
4,554.00	0.69	325.66	3,209.95	4,547.95	144.61 N	24.48 E	444,524.09	1,654,677.16	0.19	95.82
4,617.00	0.56	333.95	3,272.95	4,610.95	145.20 N	24.13 E	444,524.68	1,654,676.81	0.25	96.50
4,677.00	0.51	342.16	3,332.95	4,670.95	145.71 N	23.92 E	444,525.19	1,654,676.60	0.15	97.03
4,739.00	0.55	345.98	3,394.94	4,732.94	146.27 N	23.76 E	444,525.75	1,654,676.45	0.09	97.55
4,802.00	0.69	356.30	3,457.94	4,795.94	146.94 N	23.66 E	444,526.42	1,654,676.35	0.28	98.13
4,864.00	0.90	357.96	3,519.93	4,857.93	147.80 N	23.62 E	444,527.28	1,654,676.31	0.34	98.82
4,927.00	0.99	350.28	3,582.92	4,920.92	148.83 N	23.51 E	444,528.31	1,654,676.20	0.25	99.69
5,053.00	1.05	345.64	3,708.90	5,046.90	151.02 N	23.04 E	444,530.50	1,654,675.73	0.08	101.67
5,177.00	1.02	348.07	3,832.88	5,170.88	153.20 N	22.53 E	444,532.68	1,654,675.22	0.04	103.68
5,303.00	0.86	337.65	3,958.87	5,296.87	155.17 N	21.94 E	444,534.65	1,654,674.63	0.19	105.58
5,430.00	0.86	335.95	4,085.85	5,423.85	156.92 N	21.19 E	444,536.40	1,654,673.87	0.02	107.40
5,493.00	0.89	332.74	4,148.85	5,486.85	157.79 N	20.77 E	444,537.27	1,654,673.46	0.09	108.34
5,556.00	0.67	339.35	4,211.84	5,549.84	158.57 N	20.42 E	444,538.05	1,654,673.10	0.38	109.16
5,618.00	1.06	336.76	4,273.83	5,611.83	159.44 N	20.06 E	444,538.92	1,654,672.75	0.63	110.06
5,680.00	0.93	337.53	4,335.82	5,673.82	160.43 N	19.65 E	444,539.91	1,654,672.33	0.21	111.09
5,743.00	0.95	337.54	4,398.82	5,736.82	161.38 N	19.25 E	444,540.86	1,654,671.94	0.03	112.08
5,806.00	0.68	332.85	4,461.81	5,799.81	162.20 N	18.88 E	444,541.68	1,654,671.57	0.44	112.94
5,900.00	0.57	319.15	4,555.80	5,893.80	163.05 N	18.32 E	444,542.53	1,654,671.01	0.20	113.95
5,931.00	0.85	318.61	4,586.80	5,924.80	163.34 N	18.07 E	444,542.82	1,654,670.75	0.90	114.34
5,963.00	3.34	37.82	4,618.78	5,956.78	164.25 N	18.48 E	444,543.73	1,654,671.17	10.28	114.78
5,994.00	8.01	46.05	4,649.62	5,987.62	166.47 N	20.59 E	444,545.94	1,654,673.28	15.25	115.14
6,025.00	10.56	55.19	4,680.21	6,018.21	169.59 N	24.48 E	444,549.07	1,654,677.17	9.48	115.06

HALLIBURTON**Design Report for Robert Baxter WTZ 205H - Surveys**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)		
6,056.00	12.42	53.66	4,710.59	6,048.59	173.18 N	29.50 E	444,552.66	1,654,682.18	6.08	114.64
6,088.00	14.45	51.00	4,741.71	6,079.71	177.74 N	35.37 E	444,557.22	1,654,688.06	6.63	114.40
6,119.00	16.37	47.03	4,771.60	6,109.60	183.15 N	41.58 E	444,562.63	1,654,694.26	7.06	114.62
6,151.00	18.42	41.16	4,802.14	6,140.14	190.03 N	48.21 E	444,569.51	1,654,700.89	8.43	115.69
6,183.00	20.93	40.26	4,832.27	6,170.27	198.20 N	55.23 E	444,577.68	1,654,707.91	7.90	117.51
6,214.00	24.04	44.86	4,860.91	6,198.91	206.90 N	63.26 E	444,586.38	1,654,715.95	11.52	119.10
6,245.00	24.86	45.89	4,889.13	6,227.13	215.92 N	72.40 E	444,595.39	1,654,725.08	2.98	120.22
6,277.00	27.14	47.01	4,917.89	6,255.89	225.58 N	82.57 E	444,605.05	1,654,735.25	7.29	121.18
6,309.00	29.51	47.07	4,946.05	6,284.05	235.92 N	93.68 E	444,615.40	1,654,746.36	7.41	122.07
6,340.00	31.16	49.97	4,972.81	6,310.81	246.28 N	105.41 E	444,625.76	1,654,758.09	7.12	122.57
6,371.00	33.66	51.03	4,998.98	6,336.98	256.84 N	118.23 E	444,636.32	1,654,770.92	8.27	122.54
6,402.00	36.99	50.28	5,024.27	6,362.27	268.21 N	132.09 E	444,647.69	1,654,784.77	10.83	122.46
6,434.00	39.91	49.62	5,049.33	6,387.33	281.02 N	147.32 E	444,660.49	1,654,800.00	9.21	122.62
6,465.00	42.28	49.80	5,072.69	6,410.69	294.19 N	162.86 E	444,673.67	1,654,815.54	7.65	122.87
6,493.00	43.85	49.01	5,093.14	6,431.14	306.63 N	177.37 E	444,686.11	1,654,830.06	5.93	123.20
6,525.00	46.98	49.00	5,115.60	6,453.60	321.58 N	194.57 E	444,701.06	1,654,847.26	9.78	123.76
6,556.00	50.72	48.31	5,136.00	6,474.00	337.00 N	212.09 E	444,716.48	1,654,864.78	12.18	124.47
6,588.00	53.70	48.09	5,155.61	6,493.61	353.86 N	230.94 E	444,733.33	1,654,883.63	9.33	125.44
6,619.00	56.97	48.45	5,173.24	6,511.24	370.82 N	249.97 E	444,750.30	1,654,902.65	10.59	126.39
6,651.00	59.55	48.57	5,190.07	6,528.07	388.85 N	270.35 E	444,768.33	1,654,923.04	8.07	127.29
6,683.00	60.37	48.61	5,206.09	6,544.09	407.17 N	291.13 E	444,786.65	1,654,943.81	2.56	128.16
6,715.00	63.60	48.51	5,221.12	6,559.12	425.87 N	312.30 E	444,805.35	1,654,964.99	10.10	129.07
6,746.00	66.81	48.28	5,234.11	6,572.11	444.55 N	333.34 E	444,824.03	1,654,986.03	10.38	130.05
6,777.00	69.45	48.56	5,245.66	6,583.66	463.64 N	354.86 E	444,843.12	1,655,007.55	8.56	131.05
6,809.00	70.10	48.41	5,256.72	6,594.72	483.55 N	377.34 E	444,863.03	1,655,030.03	2.08	132.05
6,840.00	70.54	48.26	5,267.16	6,605.16	502.95 N	399.15 E	444,882.43	1,655,051.84	1.49	133.10
6,903.00	71.32	49.00	5,287.75	6,625.75	542.30 N	443.83 E	444,921.78	1,655,096.52	1.66	134.94
6,966.00	72.13	49.69	5,307.50	6,645.50	581.28 N	489.22 E	444,960.75	1,655,141.90	1.65	136.04
7,029.00	73.08	49.79	5,326.34	6,664.34	620.13 N	535.10 E	444,999.61	1,655,187.78	1.52	136.73
7,092.00	73.70	49.54	5,344.35	6,682.35	659.20 N	581.11 E	445,038.68	1,655,233.80	1.06	137.51
7,155.00	73.99	49.68	5,361.87	6,699.87	698.41 N	627.20 E	445,077.89	1,655,279.89	0.51	138.34
7,218.00	74.06	49.65	5,379.21	6,717.21	737.62 N	673.37 E	445,117.09	1,655,326.06	0.12	139.12
7,281.00	74.41	49.43	5,396.33	6,734.33	776.96 N	719.50 E	445,156.44	1,655,372.19	0.65	140.03
7,344.00	74.82	49.81	5,413.04	6,751.04	816.31 N	765.77 E	445,195.79	1,655,418.46	0.87	140.86
7,406.00	75.29	49.83	5,429.03	6,767.03	854.96 N	811.54 E	445,234.44	1,655,464.23	0.76	141.46
7,469.00	75.39	46.83	5,444.98	6,782.98	895.48 N	857.06 E	445,274.96	1,655,509.75	4.61	143.66
7,500.00	75.62	46.44	5,452.74	6,790.74	916.09 N	878.88 E	445,295.56	1,655,531.57	1.43	145.63
7,532.00	75.60	42.14	5,460.70	6,798.70	938.27 N	900.52 E	445,317.75	1,655,553.21	13.02	148.93
7,563.00	75.09	37.44	5,468.54	6,806.54	961.30 N	919.71 E	445,340.78	1,655,572.40	14.76	154.45
7,595.00	74.26	34.00	5,477.00	6,815.00	986.35 N	937.73 E	445,365.83	1,655,590.41	10.69	162.27
7,626.00	74.74	30.42	5,485.29	6,823.29	1,011.63 N	953.65 E	445,391.10	1,655,606.33	11.24	171.59
7,658.00	74.70	26.30	5,493.73	6,831.73	1,038.78 N	968.30 E	445,418.26	1,655,620.99	12.42	183.18
7,689.00	75.24	21.43	5,501.77	6,839.77	1,066.15 N	980.41 E	445,445.63	1,655,633.10	15.27	196.55
7,721.00	76.07	17.08	5,509.70	6,847.70	1,095.41 N	990.63 E	445,474.89	1,655,643.32	13.42	212.58
7,752.00	77.04	13.91	5,516.91	6,854.91	1,124.46 N	998.68 E	445,503.94	1,655,651.37	10.43	229.83

HALLIBURTON**Design Report for Robert Baxter WTZ 205H - Surveys**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)		
7,784.00	77.88	10.75	5,523.86	6,861.86	1,154.98 N	1,005.35 E	445,534.46	1,655,658.04	9.99	249.09
7,815.00	79.16	6.56	5,530.03	6,868.03	1,185.00 N	1,009.92 E	445,564.48	1,655,662.60	13.87	269.31
7,847.00	79.83	2.62	5,535.87	6,873.87	1,216.36 N	1,012.44 E	445,595.84	1,655,665.12	12.29	291.87
7,878.00	79.97	359.10	5,541.31	6,879.31	1,246.87 N	1,012.89 E	445,626.35	1,655,665.58	11.19	315.09
7,908.00	79.64	356.57	5,546.62	6,884.62	1,276.37 N	1,011.78 E	445,655.85	1,655,664.46	8.37	338.53
7,942.00	80.41	352.18	5,552.51	6,890.51	1,309.69 N	1,008.49 E	445,689.17	1,655,661.18	12.92	366.29
7,973.00	82.34	348.12	5,557.16	6,895.16	1,339.88 N	1,003.25 E	445,719.36	1,655,655.94	14.37	392.90
8,004.00	84.92	343.30	5,560.60	6,898.60	1,369.72 N	995.65 E	445,749.20	1,655,648.33	17.55	420.74
8,035.00	86.20	338.82	5,563.00	6,901.00	1,398.95 N	985.62 E	445,778.42	1,655,638.30	14.99	449.65
8,067.00	86.53	334.32	5,565.03	6,903.03	1,428.24 N	972.92 E	445,807.72	1,655,625.61	14.07	480.32
8,098.00	87.54	330.93	5,566.64	6,904.64	1,455.73 N	958.69 E	445,835.21	1,655,611.37	11.40	510.57
8,130.00	87.45	327.61	5,568.04	6,906.04	1,483.20 N	942.35 E	445,862.68	1,655,595.04	10.37	542.15
8,161.00	88.72	324.70	5,569.07	6,907.07	1,508.93 N	925.10 E	445,888.41	1,655,577.78	10.24	572.97
8,192.00	89.46	322.33	5,569.56	6,907.56	1,533.85 N	906.67 E	445,913.33	1,655,559.36	8.01	603.92
8,223.00	89.46	322.25	5,569.86	6,907.86	1,558.38 N	887.71 E	445,937.86	1,655,540.39	0.26	634.90
8,285.00	90.78	321.22	5,569.73	6,907.73	1,607.05 N	849.31 E	445,986.53	1,655,502.00	2.70	696.88
8,348.00	90.94	321.99	5,568.78	6,906.78	1,656.42 N	810.19 E	446,035.90	1,655,462.88	1.25	759.86
8,411.00	90.97	320.73	5,567.73	6,905.73	1,705.62 N	770.86 E	446,085.10	1,655,423.54	2.00	822.84
8,474.00	91.01	320.44	5,566.64	6,904.64	1,754.29 N	730.86 E	446,133.77	1,655,383.55	0.46	885.83
8,537.00	91.28	320.16	5,565.38	6,903.38	1,802.75 N	690.63 E	446,182.23	1,655,343.31	0.62	948.82
8,600.00	91.78	319.89	5,563.70	6,901.70	1,851.01 N	650.17 E	446,230.49	1,655,302.85	0.90	1,011.80
8,663.00	90.81	320.44	5,562.28	6,900.28	1,899.38 N	609.82 E	446,278.86	1,655,262.51	1.77	1,074.78
8,724.00	90.17	320.82	5,561.76	6,899.76	1,946.53 N	571.13 E	446,326.01	1,655,223.82	1.22	1,135.77
8,786.00	90.70	318.91	5,561.29	6,899.29	1,993.93 N	531.17 E	446,373.41	1,655,183.86	3.20	1,197.77
8,849.00	90.91	321.78	5,560.40	6,898.40	2,042.42 N	490.97 E	446,421.90	1,655,143.66	4.57	1,260.75
8,912.00	90.71	322.24	5,559.51	6,897.51	2,092.07 N	452.20 E	446,471.55	1,655,104.89	0.80	1,323.72
8,974.00	90.81	322.12	5,558.69	6,896.69	2,141.04 N	414.19 E	446,520.52	1,655,066.87	0.25	1,385.69
9,036.00	90.67	321.76	5,557.89	6,895.89	2,189.85 N	375.97 E	446,569.33	1,655,028.65	0.62	1,447.66
9,099.00	91.68	321.80	5,556.59	6,894.59	2,239.34 N	337.00 E	446,618.82	1,654,989.68	1.60	1,510.63
9,163.00	91.61	321.59	5,554.76	6,892.76	2,289.54 N	297.35 E	446,669.02	1,654,950.03	0.35	1,574.59
9,226.00	91.71	321.66	5,552.93	6,890.93	2,338.91 N	258.25 E	446,718.39	1,654,910.94	0.19	1,637.54
9,289.00	91.88	321.40	5,550.96	6,888.96	2,388.21 N	219.08 E	446,767.69	1,654,871.76	0.49	1,700.50
9,352.00	92.32	320.92	5,548.65	6,886.65	2,437.25 N	179.59 E	446,816.73	1,654,832.28	1.03	1,763.45
9,415.00	92.96	321.02	5,545.75	6,883.75	2,486.13 N	139.96 E	446,865.61	1,654,792.65	1.03	1,826.38
9,475.00	90.84	320.06	5,543.76	6,881.76	2,532.43 N	101.85 E	446,911.91	1,654,754.54	3.88	1,886.35
9,538.00	91.04	319.95	5,542.73	6,880.73	2,580.69 N	61.37 E	446,960.17	1,654,714.05	0.36	1,949.34
9,601.00	91.38	320.03	5,541.40	6,879.40	2,628.93 N	20.87 E	447,008.41	1,654,673.56	0.55	2,012.32
9,663.00	91.92	319.28	5,539.61	6,877.61	2,676.16 N	19.25 W	447,055.64	1,654,633.44	1.49	2,074.29
9,726.00	90.47	319.21	5,538.30	6,876.30	2,723.87 N	60.37 W	447,103.35	1,654,592.32	2.30	2,137.26
9,790.00	90.54	319.41	5,537.73	6,875.73	2,772.40 N	102.09 W	447,151.88	1,654,550.60	0.33	2,201.25
9,853.00	90.57	319.64	5,537.12	6,875.12	2,820.32 N	142.98 W	447,199.80	1,654,509.70	0.37	2,264.24
9,916.00	91.04	318.69	5,536.24	6,874.24	2,867.98 N	184.17 W	447,247.46	1,654,468.51	1.68	2,327.21
9,979.00	91.61	319.38	5,534.78	6,872.78	2,915.54 N	225.46 W	447,295.02	1,654,427.22	1.42	2,390.18
10,041.00	92.31	319.81	5,532.66	6,870.66	2,962.72 N	265.63 W	447,342.20	1,654,387.06	1.32	2,452.14
10,104.00	90.77	319.27	5,530.97	6,868.97	3,010.64 N	306.49 W	447,390.12	1,654,346.19	2.59	2,515.10

HALLIBURTON**Design Report for Robert Baxter WTZ 205H - Surveys**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates		Map Coordinates		Dogleg Rate (°/100ft)	Vertical Section (ft)
					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)		
10,167.00	91.31	319.78	5,529.82	6,867.82	3,058.55 N	347.38 W	447,438.03	1,654,305.31	1.18	2,578.08
10,230.00	90.13	320.72	5,529.03	6,867.03	3,106.99 N	387.66 W	447,486.47	1,654,265.03	2.39	2,641.08
10,292.00	90.94	321.19	5,528.45	6,866.45	3,155.14 N	426.71 W	447,534.62	1,654,225.97	1.51	2,703.07
10,356.00	92.25	324.86	5,526.67	6,864.67	3,206.24 N	465.19 W	447,585.71	1,654,187.50	6.09	2,766.97
10,419.00	93.25	326.43	5,523.65	6,861.65	3,258.18 N	500.70 W	447,637.66	1,654,151.99	2.95	2,829.63
10,482.00	90.94	326.04	5,521.34	6,859.34	3,310.52 N	535.68 W	447,690.00	1,654,117.00	3.72	2,892.26
10,545.00	90.50	323.74	5,520.55	6,858.55	3,362.05 N	571.91 W	447,741.53	1,654,080.77	3.72	2,955.05
10,608.00	90.74	322.74	5,519.87	6,857.87	3,412.52 N	609.61 W	447,792.00	1,654,043.07	1.63	3,017.97
10,671.00	91.72	325.33	5,518.52	6,856.52	3,463.49 N	646.60 W	447,842.97	1,654,006.08	4.39	3,080.82
10,734.00	91.58	324.36	5,516.70	6,854.70	3,514.98 N	682.86 W	447,894.46	1,653,969.82	1.56	3,143.61
10,796.00	92.52	321.21	5,514.49	6,852.49	3,564.31 N	720.33 W	447,943.79	1,653,932.36	5.30	3,205.51
10,858.00	93.06	320.90	5,511.47	6,849.47	3,612.48 N	759.25 W	447,991.96	1,653,893.43	1.00	3,267.43
10,921.00	93.52	319.81	5,507.85	6,845.85	3,660.91 N	799.38 W	448,040.39	1,653,853.30	1.88	3,330.32
10,983.00	93.12	317.50	5,504.26	6,842.26	3,707.37 N	840.27 W	448,086.85	1,653,812.42	3.78	3,392.19
11,047.00	93.57	317.56	5,500.53	6,838.53	3,754.50 N	883.41 W	448,133.98	1,653,769.28	0.71	3,456.00
11,110.00	93.79	317.38	5,496.48	6,834.48	3,800.83 N	925.91 W	448,180.31	1,653,726.78	0.45	3,518.78
11,173.00	93.87	317.32	5,492.28	6,830.28	3,847.06 N	968.49 W	448,226.54	1,653,684.19	0.16	3,581.55
11,200.00	94.17	317.08	5,490.38	6,828.38	3,866.83 N	986.79 W	448,246.30	1,653,665.89	1.42	3,608.45
Last MWD Survey at 11200' MD										
11,242.00	94.17	317.08	5,487.33	6,825.33	3,897.50 N	1,015.32 W	448,276.98	1,653,637.37	0.00	3,650.26
Projection to TD at 11242' MD										

Vertical Section Information

Angle Type	Target	Azimuth (°)	Origin Type	Origin +N/_S (ft)	Origin +E/_W (ft)	Start TVD (ft)
User	No Target (Freehand)	320.40	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
100.00	970.00	VES Gyro	NSG-CT_csg+cent
1,027.00	11,242.00	Sperry MWD	MWD

Casing Details

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
1,000.00	1,000.00	13 3/8"	13-3/8	17-1/2
0.00	0.00	9 5/8"	9-5/8	12-1/4

HALLIBURTON**Design Report for Robert Baxter WTZ 205H - Surveys**Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Gastar boundary - actual wellpath misses target center by 4054.63ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E) - Point	0.00	360.00	0.00	3,914.52	-1,056.68	448,294.00	1,653,596.00	39° 43' 27.492 N	80° 43' 53.676 W
Robert Baxter WTZ : - actual wellpath misses target center by 21.51ft at 11242.00ft MD (6825.33 TVD, 3897.50 N, -1015.32 E) - Point	0.00	360.00	6,829.42	3,883.85	-1,031.43	448,263.33	1,653,621.25	39° 43' 27.192 N	80° 43' 53.347 W
Robert Baxter WTZ : - actual wellpath misses target center by 49.51ft at 7995.51ft MD (6897.80 TVD, 1361.60 N, 997.98 E) - Point	0.00	0.00	6,905.17	1,372.89	1,045.62	445,752.37	1,655,698.31	39° 43' 2.658 N	80° 43' 26.328 W

HALLIBURTON**North Reference Sheet for Wileyville - Robert Baxter WTZ 205H - Wellbore #1**

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to Grid North Reference.

Vertical Depths are relative to GL 1320' + KB 18' @ 1338.00ft (Nomac 25). Northing and Easting are relative to Robert Baxter WTZ 205H

Coordinate System is US State Plane 1927 (Exact solution), West Virginia North 4701 using datum NAD 1927 (NADCON CONUS), ellipsoid Clarke 1866

Projection method is Lambert Conformal Conic (2 parallel)

Central Meridian is 79° 30' 0.000 W°, Longitude Origin:0° 0' 0.000 E°, Latitude Origin:40° 15' 0.000 N°

False Easting: 2,000,000.00ft, False Northing: 0.00ft, Scale Reduction: 0.99994191

Grid Coordinates of Well: 444,379.48 ft N, 1,654,652.68 ft E

Geographical Coordinates of Well: 39° 42' 48.95" N, 080° 43' 39.47" W

Grid Convergence at Surface is: -0.78°

Based upon Minimum Curvature type calculations, at a Measured Depth of 11,242.00ft the Bottom Hole Displacement is 4,027.58ft in the Direction of 345.40° (Grid).

Magnetic Convergence at surface is: 7.83° (20 June 2013, , BGGM2013)

