

Chesapeake Appalachia, LLC

HALLIBURTON

Sperry Drilling Services

Project: Wetzel County, WV
 Site: Wileyville
 Well: Robert Baxter WTZ 210H
 Wellbore: Wellbore #1
 Design: Plan #4
 Rig: Nomac 25

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	HSec	Annotation
12240.00	88.19	132.28	7032.52	-1950.96	4437.38	0.00	0.00	4583.88	Tie-On
12287.00	88.19	132.28	7034.01	-1982.56	4472.14	0.00	0.00	4630.86	Start Build
12453.60	91.50	132.66	7034.46	-2095.03	4595.01	2.00	6.00	4797.43	End Build
12578.45	91.50	132.66	7031.19	-2179.61	4686.79	0.00	0.00	4922.24	Start Drop
12668.51	89.70	132.71	7030.25	-2240.66	4752.99	2.00	178.36	5012.99	End Drop
13080.01	89.70	132.71	7032.40	-2519.77	5055.35	0.00	0.00	423.78	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
444344.47	1654628.29	39° 42' 48.600 N	80° 43' 39.774 W

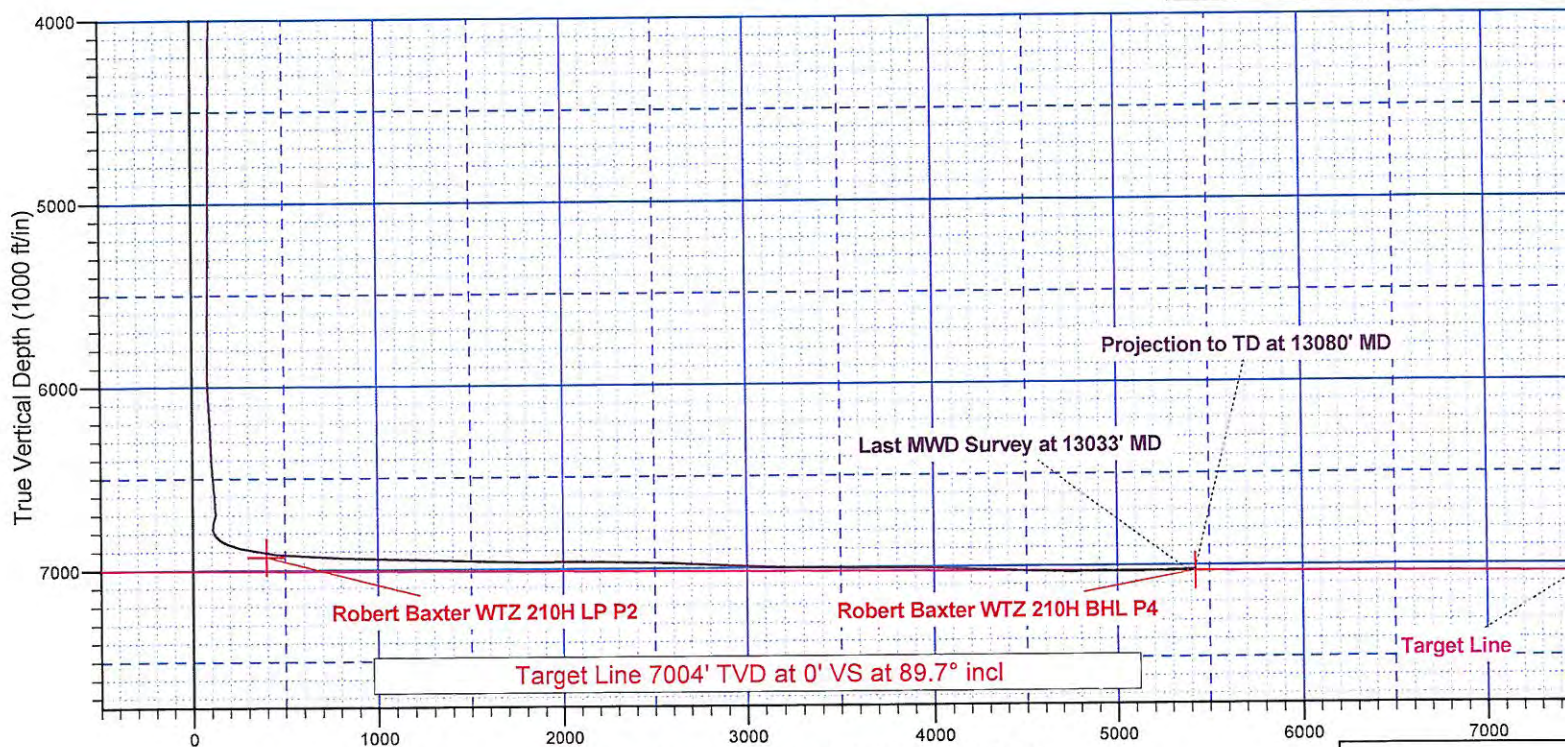
WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
Robert Baxter WTZ 210H LP P2	6928.32	889.57	1361.73	445234.04	1655990.03
Robert Baxter WTZ 210H BHL P4	7032.40	-2519.77	5055.35	441824.70	1659683.65



To convert a Magnetic Direction to a Grid Direction, Subtract 7.74°

Magnetic Model: BGM2012 Date: 02-Jun-13
 Azimuths to Grid North



Vertical Section at 132.71° (1000 ft/in)

Created By: Tim Aitken Date: 10 June 2013

Chesapeake Appalachia, LLC

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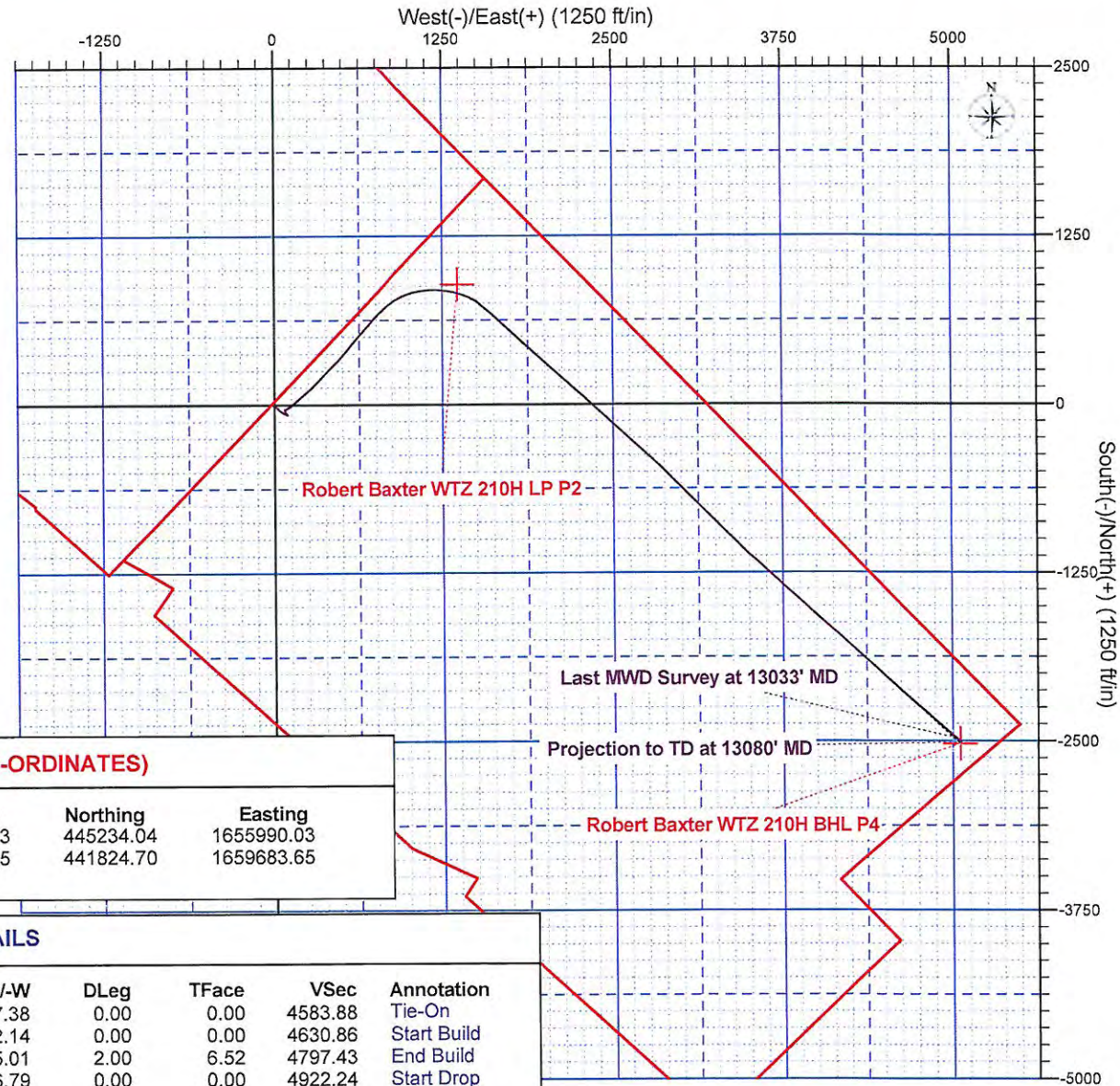
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12578.45	91.50	132.66	7031.19	-2179.61	4686.79	0.00	0.00	4922.24	Start Drop
12668.51	89.70	132.71	7030.25	-2240.66	4752.99	2.00	178.36	5012.29	End Drop
13080.01	89.70	132.71	7032.40	-2519.77	5055.35	0.00	0.00	5423.78	TD



Chesapeake Appalachia, LLC

Wetzel County, WV
Wileyville
Robert Baxter WTZ 210H

Wellbore #1

Design: Surveys

Sperry Drilling Services Combo Report

10 June, 2013

Well Coordinates: 444,344.47 N, 1,654,628.29 E (39° 42' 48.60" N, 080° 43' 39.77" W)
Ground Level: 1,320.00 ft

Local Coordinate Origin:	Centered on Well Robert Baxter WTZ 210H
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

04/08/2016

Design Report for Robert Baxter WTZ 210H - 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	444,344.47	1,654,628.29	0.00	0.00
100.00	0.42	51.21	-1,238.00	100.00	0.23 N	0.29 E	444,344.70	1,654,628.58	0.42	0.05
200.00	0.28	89.74	-1,138.00	200.00	0.46 N	0.82 E	444,344.93	1,654,629.11	0.27	0.29
300.00	0.16	74.82	-1,038.00	300.00	0.50 N	1.19 E	444,344.97	1,654,629.49	0.13	0.54
400.00	0.22	69.73	-938.00	400.00	0.60 N	1.51 E	444,345.07	1,654,629.80	0.06	0.70
500.00	0.29	87.48	-838.00	500.00	0.68 N	1.94 E	444,345.15	1,654,630.23	0.10	0.97
600.00	0.34	112.04	-738.01	599.99	0.58 N	2.47 E	444,345.05	1,654,630.76	0.14	1.42
700.00	0.12	126.21	-638.01	699.99	0.41 N	2.83 E	444,344.87	1,654,631.12	0.23	1.80
800.00	0.04	240.86	-538.01	799.99	0.33 N	2.88 E	444,344.80	1,654,631.18	0.14	1.90
900.00	0.26	4.65	-438.01	899.99	0.54 N	2.87 E	444,345.00	1,654,631.16	0.28	1.75
990.00	0.31	28.16	-348.01	989.99	0.95 N	3.00 E	444,345.42	1,654,631.30	0.14	1.56
1,029.00	0.19	52.22	-309.01	1,028.99	1.09 N	3.10 E	444,345.56	1,654,631.40	0.40	1.54
1,144.00	2.65	144.20	-194.05	1,143.95	0.95 S	4.81 E	444,343.52	1,654,633.10	2.32	4.18
1,166.00	2.41	132.08	-172.07	1,165.93	1.68 S	5.45 E	444,342.79	1,654,633.74	2.66	5.14
1,198.00	3.29	137.16	-140.11	1,197.89	2.80 S	6.57 E	444,341.67	1,654,634.87	2.86	6.73
1,261.00	4.08	146.18	-77.24	1,260.76	5.99 S	9.05 E	444,338.48	1,654,637.34	1.55	10.71
1,321.00	3.72	148.81	-17.38	1,320.62	9.43 S	11.25 E	444,335.04	1,654,639.54	0.67	14.66
1,383.00	3.73	146.85	44.49	1,382.49	12.84 S	13.39 E	444,331.63	1,654,641.68	0.21	18.55
1,447.00	5.22	142.09	108.29	1,446.29	16.88 S	16.32 E	444,327.59	1,654,644.61	2.40	23.44
1,510.00	6.46	137.56	170.96	1,508.96	21.75 S	20.47 E	444,322.72	1,654,648.76	2.10	29.80
1,573.00	7.15	133.61	233.52	1,571.52	27.07 S	25.70 E	444,317.40	1,654,653.99	1.32	37.25
1,637.00	7.14	132.92	297.02	1,635.02	32.53 S	31.50 E	444,311.94	1,654,659.79	0.14	45.21
1,700.00	6.91	131.92	359.55	1,697.55	37.73 S	37.19 E	444,306.74	1,654,665.48	0.41	52.91
1,763.00	6.88	133.77	422.09	1,760.09	42.87 S	42.73 E	444,301.60	1,654,671.02	0.36	60.48
1,825.00	6.30	130.13	483.68	1,821.68	47.63 S	48.01 E	444,296.84	1,654,676.31	1.15	67.59
1,888.00	5.12	120.72	546.37	1,884.37	51.29 S	53.07 E	444,293.18	1,654,681.37	2.39	73.79
1,951.00	5.04	119.83	609.13	1,947.13	54.11 S	57.89 E	444,290.36	1,654,686.18	0.18	79.24
2,013.00	5.13	119.59	670.88	2,008.88	56.83 S	62.66 E	444,287.64	1,654,690.96	0.15	84.59
2,076.00	3.82	121.93	733.69	2,071.69	59.33 S	66.89 E	444,285.14	1,654,695.19	2.10	89.40
2,139.00	3.59	119.32	796.56	2,134.56	61.41 S	70.39 E	444,283.06	1,654,698.69	0.45	93.38
2,201.00	3.48	116.11	858.44	2,196.44	63.18 S	73.78 E	444,281.28	1,654,702.07	0.37	97.07
2,264.00	3.52	116.28	921.32	2,259.32	64.88 S	77.23 E	444,279.59	1,654,705.52	0.07	100.76
2,327.00	3.24	118.40	984.21	2,322.21	66.59 S	80.53 E	444,277.88	1,654,708.82	0.49	104.34
2,390.00	3.35	112.66	1,047.11	2,385.11	68.14 S	83.79 E	444,276.33	1,654,712.08	0.55	107.79
2,452.00	3.47	114.60	1,109.00	2,447.00	69.62 S	87.17 E	444,274.85	1,654,715.46	0.27	111.28
2,514.00	2.92	110.88	1,170.90	2,508.90	70.96 S	90.35 E	444,273.50	1,654,718.64	0.95	114.52
2,545.00	2.73	110.90	1,201.86	2,539.86	71.51 S	91.78 E	444,272.96	1,654,720.07	0.61	115.94
2,669.00	1.81	111.31	1,325.76	2,663.76	73.27 S	96.36 E	444,271.19	1,654,724.65	0.74	120.51
2,735.00	0.88	108.43	1,391.75	2,729.75	73.81 S	97.81 E	444,270.66	1,654,726.11	1.41	121.94
2,797.00	0.31	117.58	1,453.74	2,791.74	74.04 S	98.41 E	444,270.43	1,654,726.71	0.93	122.54
2,860.00	0.19	358.83	1,516.74	2,854.74	74.02 S	98.56 E	444,270.45	1,654,726.86	0.69	122.63
2,922.00	0.47	328.03	1,578.74	2,916.74	73.70 S	98.43 E	444,270.77	1,654,726.72	0.52	122.31
3,048.00	0.98	308.14	1,704.73	3,042.73	72.59 S	97.31 E	444,271.87	1,654,725.60	0.45	120.74
3,111.00	1.01	313.22	1,767.72	3,105.72	71.88 S	96.48 E	444,272.59	1,654,724.77	0.15	119.65
3,174.00	1.07	317.63	1,830.71	3,168.71	71.07 S	95.68 E	444,273.40	1,654,723.97	0.16	118.51

Design Report for Robert Baxter WTZ 210H - 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)		
3,236.00	1.05	319.09	1,892.70	3,230.70	70.21 S	94.91 E	444,274.26	1,654,723.21	0.05	117.36
3,298.00	1.20	319.56	1,954.69	3,292.69	69.29 S	94.12 E	444,275.18	1,654,722.41	0.24	116.16
3,361.00	1.21	317.80	2,017.67	3,355.67	68.29 S	93.25 E	444,276.18	1,654,721.54	0.06	114.84
3,423.00	1.00	320.19	2,079.66	3,417.66	67.39 S	92.46 E	444,277.08	1,654,720.75	0.35	113.65
3,486.00	1.04	313.00	2,142.65	3,480.65	66.58 S	91.69 E	444,277.89	1,654,719.98	0.21	112.53
3,549.00	0.88	307.34	2,205.64	3,543.64	65.89 S	90.89 E	444,278.57	1,654,719.18	0.29	111.48
3,611.00	0.86	312.01	2,267.64	3,605.64	65.29 S	90.16 E	444,279.17	1,654,718.46	0.12	110.54
3,674.00	1.03	317.20	2,330.63	3,668.63	64.56 S	89.43 E	444,279.91	1,654,717.72	0.30	109.50
3,736.00	0.96	314.23	2,392.62	3,730.62	63.79 S	88.68 E	444,280.68	1,654,716.97	0.14	108.43
3,799.00	1.11	310.82	2,455.61	3,793.61	63.02 S	87.84 E	444,281.44	1,654,716.13	0.26	107.29
3,862.00	1.08	311.09	2,518.60	3,856.60	62.24 S	86.93 E	444,282.23	1,654,715.22	0.05	106.09
3,925.00	1.12	309.51	2,581.59	3,919.59	61.45 S	86.00 E	444,283.02	1,654,714.30	0.08	104.88
3,987.00	1.06	303.82	2,643.57	3,981.57	60.75 S	85.06 E	444,283.72	1,654,713.35	0.20	103.71
4,052.00	0.90	315.10	2,708.56	4,046.56	60.05 S	84.20 E	444,284.42	1,654,712.49	0.38	102.60
4,115.00	0.87	313.97	2,771.56	4,109.56	59.37 S	83.51 E	444,285.10	1,654,711.80	0.06	101.63
4,178.00	1.02	325.74	2,834.55	4,172.55	58.57 S	82.85 E	444,285.89	1,654,711.14	0.39	100.61
4,302.00	0.72	333.85	2,958.53	4,296.53	56.96 S	81.88 E	444,287.51	1,654,710.18	0.26	98.80
4,365.00	0.59	359.98	3,021.53	4,359.53	56.28 S	81.71 E	444,288.19	1,654,710.00	0.51	98.22
4,428.00	0.88	337.10	3,084.52	4,422.52	55.51 S	81.52 E	444,288.96	1,654,709.81	0.65	97.55
4,554.00	0.86	354.43	3,210.51	4,548.51	53.68 S	81.05 E	444,290.79	1,654,709.34	0.21	95.97
4,617.00	0.78	347.38	3,273.50	4,611.50	52.79 S	80.91 E	444,291.68	1,654,709.20	0.20	95.26
4,680.00	0.89	351.26	3,336.50	4,674.50	51.89 S	80.74 E	444,292.58	1,654,709.04	0.20	94.53
4,743.00	0.68	358.96	3,399.49	4,737.49	51.03 S	80.66 E	444,293.44	1,654,708.96	0.37	93.89
4,865.00	0.68	348.49	3,521.48	4,859.48	49.60 S	80.51 E	444,294.87	1,654,708.80	0.10	92.80
4,928.00	0.57	359.49	3,584.48	4,922.48	48.92 S	80.43 E	444,295.55	1,654,708.72	0.26	92.28
4,991.00	0.75	4.89	3,647.47	4,985.47	48.20 S	80.46 E	444,296.27	1,654,708.75	0.30	91.81
5,180.00	0.69	3.88	3,836.46	5,174.46	45.83 S	80.64 E	444,298.64	1,654,708.93	0.03	90.34
5,306.00	0.52	335.54	3,962.45	5,300.45	44.55 S	80.46 E	444,299.92	1,654,708.75	0.27	89.34
5,459.00	0.83	338.36	4,115.44	5,453.44	42.89 S	79.76 E	444,301.58	1,654,708.05	0.20	87.70
5,620.00	0.95	330.12	4,276.42	5,614.42	40.65 S	78.67 E	444,303.82	1,654,706.96	0.11	85.37
5,734.00	0.71	328.57	4,390.41	5,728.41	39.22 S	77.83 E	444,305.24	1,654,706.12	0.21	83.79
5,837.00	0.54	317.88	4,493.40	5,831.40	38.32 S	77.17 E	444,306.15	1,654,705.46	0.20	82.70
5,868.00	0.95	11.29	4,524.40	5,862.40	37.96 S	77.12 E	444,306.51	1,654,705.41	2.46	82.42
5,900.00	1.98	43.45	4,556.39	5,894.39	37.30 S	77.55 E	444,307.17	1,654,705.85	4.00	82.28
5,931.00	3.38	53.79	4,587.36	5,925.36	36.37 S	78.66 E	444,308.10	1,654,706.95	4.76	82.47
5,962.00	4.64	61.41	4,618.28	5,956.28	35.23 S	80.50 E	444,309.24	1,654,708.79	4.40	83.05
5,994.00	5.98	63.14	4,650.14	5,988.14	33.86 S	83.12 E	444,310.61	1,654,711.41	4.22	84.04
6,025.00	6.59	58.71	4,680.96	6,018.96	32.20 S	86.08 E	444,312.27	1,654,714.37	2.51	85.10
6,056.00	7.63	58.49	4,711.72	6,049.72	30.20 S	89.36 E	444,314.26	1,654,717.65	3.36	86.15
6,088.00	8.93	60.74	4,743.38	6,081.38	27.88 S	93.33 E	444,316.59	1,654,721.63	4.19	87.49
6,119.00	10.97	61.53	4,773.92	6,111.92	25.30 S	98.03 E	444,319.17	1,654,726.32	6.60	89.19
6,150.00	11.95	59.01	4,804.30	6,142.30	22.24 S	103.37 E	444,322.23	1,654,731.66	3.55	91.04
6,182.00	13.69	57.32	4,835.50	6,173.50	18.49 S	109.40 E	444,325.98	1,654,737.69	5.56	92.93
6,212.00	14.67	54.76	4,864.58	6,202.58	14.38 S	115.49 E	444,330.09	1,654,743.78	3.88	94.61
6,244.00	16.18	51.09	4,895.43	6,233.43	9.24 S	122.27 E	444,335.23	1,654,750.56	5.62	96.11

Design Report for Robert Baxter WTZ 210H - 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)		
6,275.00	17.25	48.89	4,925.12	6,263.12	3.50 S	129.09 E	444,340.96	1,654,757.39	4.01	97.24
6,307.00	18.17	48.49	4,955.61	6,293.61	2.92 N	136.41 E	444,347.39	1,654,764.70	2.90	98.25
6,338.00	19.92	47.79	4,984.91	6,322.91	9.67 N	143.94 E	444,354.14	1,654,772.23	5.69	99.20
6,370.00	22.12	47.90	5,014.78	6,352.78	17.38 N	152.45 E	444,361.84	1,654,780.74	6.88	100.23
6,402.00	24.11	48.01	5,044.21	6,382.21	25.79 N	161.77 E	444,370.26	1,654,790.07	6.22	101.38
6,431.00	26.10	49.23	5,070.46	6,408.46	33.92 N	171.01 E	444,378.39	1,654,799.30	7.09	102.65
6,464.00	27.90	49.74	5,099.87	6,437.87	43.65 N	182.40 E	444,388.12	1,654,810.69	5.50	104.42
6,495.00	31.36	49.94	5,126.81	6,464.81	53.53 N	194.11 E	444,398.00	1,654,822.40	11.17	106.32
6,526.00	33.72	50.23	5,152.94	6,490.94	64.23 N	206.90 E	444,408.70	1,654,835.19	7.63	108.47
6,558.00	37.54	49.01	5,178.95	6,516.95	76.31 N	221.09 E	444,420.78	1,654,849.38	12.14	110.70
6,589.00	41.69	48.22	5,202.82	6,540.82	89.38 N	235.92 E	444,433.85	1,654,864.21	13.49	112.73
6,620.00	47.21	46.98	5,224.94	6,562.94	104.02 N	251.93 E	444,448.49	1,654,880.22	18.02	114.56
6,651.00	50.81	47.32	5,245.27	6,583.27	119.93 N	269.09 E	444,464.40	1,654,897.38	11.64	116.38
6,683.00	56.16	46.36	5,264.31	6,602.31	137.52 N	287.83 E	444,481.99	1,654,916.13	16.89	118.22
6,715.00	60.82	44.02	5,281.03	6,619.03	156.75 N	307.17 E	444,501.22	1,654,935.46	15.84	119.39
6,747.00	67.04	42.46	5,295.09	6,633.09	177.68 N	326.84 E	444,522.15	1,654,955.14	19.92	119.64
6,778.00	71.70	42.93	5,306.01	6,644.01	199.00 N	346.51 E	444,543.47	1,654,974.81	15.10	119.64
6,809.00	73.05	43.67	5,315.39	6,653.39	220.50 N	366.78 E	444,564.97	1,654,995.07	4.91	119.94
6,841.00	75.03	44.48	5,324.19	6,662.19	242.60 N	388.18 E	444,587.07	1,655,016.47	6.65	120.68
6,872.00	76.38	44.56	5,331.84	6,669.84	264.02 N	409.24 E	444,608.49	1,655,037.53	4.36	121.62
6,903.00	77.24	45.04	5,338.92	6,676.92	285.44 N	430.51 E	444,629.91	1,655,058.80	3.16	122.73
6,935.00	78.82	44.20	5,345.56	6,683.56	307.72 N	452.49 E	444,652.19	1,655,080.78	5.57	123.77
6,966.00	79.81	42.65	5,351.30	6,689.30	329.84 N	473.43 E	444,674.31	1,655,101.72	5.86	124.15
7,029.00	78.82	39.96	5,362.99	6,700.99	376.34 N	514.29 E	444,720.81	1,655,142.58	4.48	122.63
7,092.00	79.06	39.69	5,375.07	6,713.07	423.83 N	553.89 E	444,768.30	1,655,182.18	0.57	119.52
7,155.00	79.50	39.81	5,386.79	6,724.79	471.42 N	593.47 E	444,815.89	1,655,221.76	0.72	116.32
7,217.00	78.67	40.39	5,398.53	6,736.53	517.98 N	632.68 E	444,862.45	1,655,260.98	1.62	113.55
7,281.00	77.67	41.40	5,411.65	6,749.65	565.33 N	673.69 E	444,909.80	1,655,301.98	2.20	111.57
7,344.00	78.68	41.10	5,424.56	6,762.56	611.70 N	714.35 E	444,956.16	1,655,342.64	1.67	109.99
7,406.00	77.66	42.31	5,437.27	6,775.27	657.00 N	754.72 E	445,001.47	1,655,383.01	2.52	108.93
7,438.00	75.12	46.28	5,444.80	6,782.80	679.26 N	776.43 E	445,023.73	1,655,404.72	14.43	109.78
7,469.00	74.16	49.45	5,453.02	6,791.02	699.31 N	798.59 E	445,043.78	1,655,426.88	10.34	112.47
7,500.00	73.46	52.37	5,461.66	6,799.66	718.08 N	821.69 E	445,062.55	1,655,449.98	9.32	116.71
7,532.00	73.88	52.77	5,470.66	6,808.66	736.74 N	846.08 E	445,081.21	1,655,474.37	1.78	121.97
7,563.00	74.93	55.30	5,478.99	6,816.99	754.28 N	870.24 E	445,098.75	1,655,498.54	8.56	127.83
7,594.00	75.55	58.77	5,486.89	6,824.89	770.58 N	895.39 E	445,115.05	1,655,523.68	11.01	135.25
7,626.00	75.25	62.19	5,494.96	6,832.96	785.84 N	922.33 E	445,130.31	1,655,550.62	10.38	144.70
7,656.00	76.62	64.50	5,502.25	6,840.25	798.89 N	948.34 E	445,143.36	1,655,576.63	8.75	154.96
7,688.00	77.52	67.83	5,509.42	6,847.42	811.49 N	976.86 E	445,155.96	1,655,605.16	10.52	167.37
7,720.00	78.47	72.24	5,516.08	6,854.08	822.18 N	1,006.27 E	445,166.64	1,655,634.57	13.80	181.74
7,751.00	77.73	76.40	5,522.47	6,860.47	830.37 N	1,035.47 E	445,174.84	1,655,663.76	13.35	197.63
7,782.00	77.94	79.22	5,529.00	6,867.00	836.77 N	1,065.09 E	445,181.24	1,655,693.38	8.92	215.05
7,813.00	79.10	81.38	5,535.18	6,873.18	841.89 N	1,095.03 E	445,186.36	1,655,723.32	7.79	233.58
7,845.00	80.53	84.47	5,540.83	6,878.83	845.76 N	1,126.28 E	445,190.23	1,655,754.58	10.50	253.92
7,875.00	81.85	88.08	5,545.43	6,883.43	847.69 N	1,155.86 E	445,192.16	1,655,784.15	12.68	274.35

Design Report for Robert Baxter WTZ 210H - 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)		
7,907.00	82.50	90.76	5,549.79	6,887.79	848.01 N	1,187.56 E	445,192.48	1,655,815.85	8.54	297.42
7,939.00	81.79	93.04	5,554.16	6,892.16	846.96 N	1,219.24 E	445,191.43	1,655,847.53	7.40	321.41
7,970.00	81.85	94.97	5,558.57	6,896.57	844.82 N	1,249.85 E	445,189.28	1,655,878.14	6.17	345.36
8,001.00	81.05	98.10	5,563.18	6,901.18	841.33 N	1,280.30 E	445,185.80	1,655,908.59	10.31	370.10
8,033.00	81.94	101.23	5,567.92	6,905.92	836.01 N	1,311.49 E	445,180.48	1,655,939.79	10.07	396.62
8,064.00	82.91	103.91	5,572.00	6,910.00	829.33 N	1,341.48 E	445,173.80	1,655,969.78	9.12	423.19
8,095.00	84.35	106.66	5,575.44	6,913.44	821.20 N	1,371.20 E	445,165.67	1,655,999.49	9.96	450.54
8,127.00	85.65	109.45	5,578.23	6,916.23	811.33 N	1,401.50 E	445,155.79	1,656,029.79	9.59	479.51
8,158.00	86.37	112.35	5,580.39	6,918.39	800.29 N	1,430.39 E	445,144.76	1,656,058.68	9.62	508.22
8,190.00	87.04	117.13	5,582.23	6,920.23	786.93 N	1,459.40 E	445,131.40	1,656,087.69	15.06	538.59
8,222.00	87.08	121.51	5,583.87	6,921.87	771.28 N	1,487.25 E	445,115.75	1,656,115.54	13.67	569.68
8,253.00	86.88	126.47	5,585.51	6,923.51	753.98 N	1,512.91 E	445,098.45	1,656,141.20	15.99	600.27
8,284.00	85.65	130.13	5,587.53	6,925.53	734.81 N	1,537.18 E	445,079.28	1,656,165.48	12.43	631.10
8,345.00	85.66	130.65	5,592.15	6,930.15	695.40 N	1,583.51 E	445,039.87	1,656,211.80	0.85	691.88
8,408.00	86.78	131.92	5,596.30	6,934.30	653.92 N	1,630.75 E	444,998.39	1,656,259.04	2.68	754.72
8,470.00	88.45	134.47	5,598.88	6,936.88	611.53 N	1,675.90 E	444,956.00	1,656,304.19	4.91	816.66
8,533.00	88.96	134.50	5,600.31	6,938.31	567.39 N	1,720.84 E	444,911.86	1,656,349.13	0.81	879.61
8,596.00	88.12	132.87	5,601.91	6,939.91	523.89 N	1,766.38 E	444,868.36	1,656,394.67	2.91	942.58
8,659.00	87.92	132.34	5,604.09	6,942.09	481.27 N	1,812.72 E	444,825.74	1,656,441.01	0.90	1,005.54
8,723.00	88.25	132.40	5,606.23	6,944.23	438.17 N	1,859.98 E	444,782.64	1,656,488.27	0.52	1,069.50
8,785.00	88.43	132.70	5,608.02	6,946.02	396.26 N	1,905.63 E	444,740.73	1,656,533.93	0.56	1,131.47
8,848.00	88.89	132.97	5,609.50	6,947.50	353.44 N	1,951.82 E	444,697.91	1,656,580.11	0.85	1,194.46
8,911.00	87.84	131.29	5,611.29	6,949.29	311.19 N	1,998.52 E	444,655.66	1,656,626.81	3.14	1,257.43
8,975.00	87.78	130.77	5,613.74	6,951.74	269.21 N	2,046.76 E	444,613.68	1,656,675.06	0.82	1,321.35
9,038.00	88.72	132.81	5,615.66	6,953.66	227.25 N	2,093.71 E	444,571.72	1,656,722.00	3.56	1,384.31
9,101.00	88.55	132.34	5,617.17	6,955.17	184.64 N	2,140.09 E	444,529.11	1,656,768.38	0.79	1,447.29
9,164.00	88.12	130.74	5,619.00	6,957.00	142.88 N	2,187.22 E	444,487.35	1,656,815.52	2.63	1,510.25
9,227.00	88.39	132.10	5,620.91	6,958.91	101.22 N	2,234.44 E	444,445.69	1,656,862.74	2.20	1,573.20
9,291.00	88.92	133.17	5,622.42	6,960.42	57.89 N	2,281.51 E	444,402.36	1,656,909.81	1.87	1,637.18
9,353.00	88.39	131.96	5,623.87	6,961.87	15.96 N	2,327.16 E	444,360.43	1,656,955.46	2.13	1,699.16
9,417.00	89.23	133.04	5,625.20	6,963.20	27.27 S	2,374.34 E	444,317.20	1,657,002.63	2.14	1,763.15
9,479.00	89.90	133.07	5,625.67	6,963.67	69.59 S	2,419.64 E	444,274.88	1,657,047.93	1.08	1,825.15
9,542.00	90.27	132.23	5,625.58	6,963.58	112.28 S	2,465.98 E	444,232.19	1,657,094.27	1.46	1,888.15
9,605.00	90.67	132.09	5,625.06	6,963.06	154.56 S	2,512.67 E	444,189.91	1,657,140.97	0.67	1,951.14
9,669.00	89.70	132.74	5,624.85	6,962.85	197.73 S	2,559.92 E	444,146.74	1,657,188.21	1.82	2,015.14
9,732.00	89.73	132.78	5,625.17	6,963.17	240.50 S	2,606.18 E	444,103.97	1,657,234.47	0.08	2,078.14
9,794.00	89.83	132.89	5,625.41	6,963.41	282.65 S	2,651.64 E	444,061.82	1,657,279.93	0.24	2,140.14
9,857.00	88.52	132.11	5,626.31	6,964.31	325.21 S	2,698.08 E	444,019.26	1,657,326.38	2.42	2,203.13
9,920.00	88.22	130.42	5,628.11	6,966.11	366.74 S	2,745.42 E	443,977.73	1,657,373.71	2.72	2,266.08
9,983.00	89.06	132.18	5,629.60	6,967.60	408.31 S	2,792.73 E	443,936.16	1,657,421.02	3.09	2,329.04
10,046.00	87.98	134.88	5,631.23	6,969.23	451.68 S	2,838.39 E	443,892.79	1,657,466.68	4.61	2,392.01
10,110.00	88.16	135.03	5,633.38	6,971.38	496.87 S	2,883.65 E	443,847.60	1,657,511.95	0.37	2,455.92
10,169.00	88.62	135.23	5,635.04	6,973.04	538.67 S	2,925.26 E	443,805.80	1,657,553.55	0.85	2,514.84
10,232.00	88.95	135.83	5,636.38	6,974.38	583.62 S	2,969.38 E	443,760.85	1,657,597.68	1.09	2,577.75
10,295.00	87.58	135.27	5,638.28	6,976.28	628.57 S	3,013.48 E	443,715.90	1,657,641.77	2.35	2,640.65

Design Report for Robert Baxter WTZ 210H - 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)		
10,358.00	87.45	135.47	5,641.02	6,979.02	673.36 S	3,057.70 E	443,671.11	1,657,685.99	0.38	2,703.52
10,420.00	87.58	135.63	5,643.70	6,981.70	717.58 S	3,101.08 E	443,626.89	1,657,729.37	0.33	2,765.38
10,483.00	86.43	134.17	5,647.00	6,985.00	761.99 S	3,145.64 E	443,582.48	1,657,773.93	2.95	2,828.25
10,546.00	86.94	134.80	5,650.64	6,988.64	806.06 S	3,190.51 E	443,538.41	1,657,818.80	1.29	2,891.11
10,609.00	87.41	134.73	5,653.74	6,991.74	850.37 S	3,235.18 E	443,494.10	1,657,863.48	0.75	2,954.00
10,671.00	87.25	134.49	5,656.63	6,994.63	893.86 S	3,279.27 E	443,450.61	1,657,907.57	0.46	3,015.89
10,734.00	87.58	134.47	5,659.47	6,997.47	937.96 S	3,324.18 E	443,406.51	1,657,952.47	0.52	3,078.80
10,797.00	88.22	134.95	5,661.78	6,999.78	982.25 S	3,368.92 E	443,362.22	1,657,997.21	1.27	3,141.72
10,859.00	89.06	135.11	5,663.25	7,001.25	1,026.10 S	3,412.73 E	443,318.37	1,658,041.02	1.38	3,203.65
10,922.00	88.59	133.54	5,664.55	7,002.55	1,070.11 S	3,457.78 E	443,274.36	1,658,086.08	2.60	3,266.61
10,986.00	89.23	132.68	5,665.76	7,003.76	1,113.84 S	3,504.50 E	443,230.63	1,658,132.79	1.67	3,330.60
11,045.00	89.53	132.63	5,666.40	7,004.40	1,153.81 S	3,547.89 E	443,190.65	1,658,176.18	0.52	3,389.59
11,108.00	89.50	132.94	5,666.94	7,004.94	1,196.61 S	3,594.12 E	443,147.86	1,658,222.41	0.49	3,452.59
11,172.00	89.46	132.33	5,667.52	7,005.52	1,239.95 S	3,641.20 E	443,104.52	1,658,269.49	0.96	3,516.59
11,235.00	89.90	132.64	5,667.87	7,005.87	1,282.50 S	3,687.66 E	443,061.97	1,658,315.95	0.85	3,579.58
11,298.00	89.36	131.24	5,668.27	7,006.27	1,324.61 S	3,734.52 E	443,019.86	1,658,362.81	2.38	3,642.58
11,361.00	89.60	131.24	5,668.85	7,006.85	1,366.13 S	3,781.89 E	442,978.33	1,658,410.18	0.38	3,705.55
11,424.00	90.60	131.80	5,668.74	7,006.74	1,407.90 S	3,829.06 E	442,936.57	1,658,457.35	1.82	3,768.54
11,486.00	89.33	131.86	5,668.77	7,006.77	1,449.24 S	3,875.26 E	442,895.23	1,658,503.55	2.05	3,830.53
11,549.00	89.40	132.37	5,669.47	7,007.47	1,491.49 S	3,921.99 E	442,852.98	1,658,550.28	0.82	3,893.52
11,612.00	89.66	131.89	5,669.99	7,007.99	1,533.75 S	3,968.71 E	442,810.72	1,658,597.00	0.87	3,956.52
11,675.00	88.79	131.69	5,670.84	7,008.84	1,575.73 S	4,015.68 E	442,768.74	1,658,643.97	1.42	4,019.50
11,737.00	86.71	131.45	5,673.28	7,011.28	1,616.83 S	4,062.02 E	442,727.63	1,658,690.32	3.38	4,081.44
11,801.00	87.14	131.50	5,676.71	7,014.71	1,659.16 S	4,109.91 E	442,685.31	1,658,738.20	0.68	4,145.33
11,864.00	87.61	130.81	5,679.59	7,017.59	1,700.58 S	4,157.29 E	442,643.89	1,658,785.58	1.32	4,208.24
11,927.00	88.35	131.38	5,681.81	7,019.81	1,741.96 S	4,204.74 E	442,602.51	1,658,833.03	1.48	4,271.18
11,990.00	87.25	131.60	5,684.23	7,022.23	1,783.67 S	4,251.89 E	442,560.80	1,658,880.19	1.78	4,334.11
12,052.00	87.42	132.18	5,687.12	7,025.12	1,825.02 S	4,298.00 E	442,519.45	1,658,926.29	0.97	4,396.04
12,115.00	87.78	131.92	5,689.75	7,027.75	1,867.18 S	4,344.74 E	442,477.29	1,658,973.03	0.70	4,458.98
12,177.00	87.64	132.15	5,692.23	7,030.23	1,908.66 S	4,390.75 E	442,435.81	1,659,019.04	0.43	4,520.93
12,240.00	88.19	132.28	5,694.52	7,032.52	1,950.96 S	4,437.38 E	442,393.51	1,659,065.67	0.90	4,583.88
12,303.00	88.95	132.01	5,696.10	7,034.10	1,993.22 S	4,484.08 E	442,351.25	1,659,112.37	1.28	4,646.86
12,365.00	89.76	132.81	5,696.79	7,034.79	2,035.03 S	4,529.85 E	442,309.44	1,659,158.14	1.84	4,708.85
12,429.00	90.30	132.22	5,696.76	7,034.76	2,078.28 S	4,577.02 E	442,266.19	1,659,205.32	1.25	4,772.85
12,491.00	90.98	132.26	5,696.07	7,034.07	2,119.96 S	4,622.92 E	442,224.51	1,659,251.21	1.10	4,834.85
12,554.00	89.63	132.12	5,695.73	7,033.73	2,162.27 S	4,669.60 E	442,182.20	1,659,297.89	2.15	4,897.84
12,617.00	89.66	132.04	5,696.12	7,034.12	2,204.49 S	4,716.36 E	442,139.98	1,659,344.65	0.14	4,960.84
12,681.00	90.13	131.66	5,696.24	7,034.24	2,247.19 S	4,764.03 E	442,097.28	1,659,392.32	0.94	5,024.83
12,743.00	90.37	130.90	5,695.97	7,033.97	2,288.09 S	4,810.62 E	442,056.38	1,659,438.91	1.29	5,086.81
12,806.00	90.94	130.79	5,695.25	7,033.25	2,329.29 S	4,858.28 E	442,015.18	1,659,486.57	0.92	5,149.77
12,869.00	91.32	131.25	5,694.01	7,032.01	2,370.63 S	4,905.80 E	441,973.84	1,659,534.09	0.95	5,212.73
12,932.00	91.72	131.57	5,692.34	7,030.34	2,412.28 S	4,953.03 E	441,932.18	1,659,581.32	0.81	5,275.69
12,994.00	92.63	131.35	5,689.98	7,027.98	2,453.30 S	4,999.46 E	441,891.16	1,659,627.75	1.51	5,337.63
13,033.00	92.99	131.44	5,688.07	7,026.07	2,479.06 S	5,028.68 E	441,865.41	1,659,656.97	0.95	5,376.58
Last MWD Survey at 13033' MD										
13,080.00	92.99	131.44	5,685.62	7,023.62	2,510.13 S	5,063.87 E	441,834.34	1,659,692.16	0.00	5,423.50

Design Report for Robert Baxter WTZ 210H - Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates Northing (ft)	Local Coordinates Easting (ft)	Map Coordinates Northing (ft)	Map Coordinates Easting (ft)	Dogleg Rate (°/100ft)	Vertical Section (ft)
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Projection to TD at 13080' MD

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
13,033.00	7,026.07	-2,479.06	5,028.68	Last MWD Survey at 13033' MD
13,080.00	7,023.62	-2,510.13	5,063.87	Projection to TD at 13080' 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)	132.71	Slot	0.00	0.00	0.00

Survey tool program

From (ft)	To (ft)	Survey/Plan	Survey Tool
100.00	990.00	MS Gyro	NSG-CT_csg+cent
1,029.00	13,080.00	Sperry MWD	MWD

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Robert Baxter WTZ : - hit/miss target - Shape	0.00	360.00	7,032.40	-2,519.77	5,055.35	441,824.70	1,659,683.65	39° 42' 24.376 N	80° 42' 34.654 W
- actual wellpath misses target center by 15.57ft at 13079.54ft MD (7023.64 TVD, -2509.82 N, 5063.52 E)									
- Point									
Robert Baxter WTZ : - actual wellpath misses target center by 65.78ft at 8069.66ft MD (6910.69 TVD, 827.95 N, 1346.93 E)	0.00	0.00	6,928.32	889.57	1,361.73	445,234.04	1,655,990.03	39° 42' 57.575 N	80° 43' 22.505 W
- Point									