

# Chesapeake Appalachia, LLC

**HALLIBURTON**

**Sperry Drilling Services**

103-02841

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

### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
12550.00	92.42	127.59	7025.84	-4459.11	2761.42	0.00	0.00	5553.64	Tie-in
12592.00	92.42	127.59	7024.06	-4484.71	2794.67	0.00	0.00	5595.44	Start Dr
13090.29	90.50	137.37	7011.32	-4820.71	3161.56	2.00	100.93	5592.93	End Dro
13122.85	90.50	137.37	7011.03	-4844.67	3183.61	0.00	0.00	5525.38	Start Dro
13357.38	90.00	132.71	7010.00	-5010.58	3349.28	2.00	-96.16	5559.65	End Dro
13420.38	90.00	132.71	7010.00	-5053.31	3395.57	0.00	0.00	5522.65	TD

### Surface Location:

US State Plane 1927 (Exact solution)  
 West Virginia North 4701  
 Elevation: GL 1320' + KB 17' @ 1337.00ft (Nomac 25)

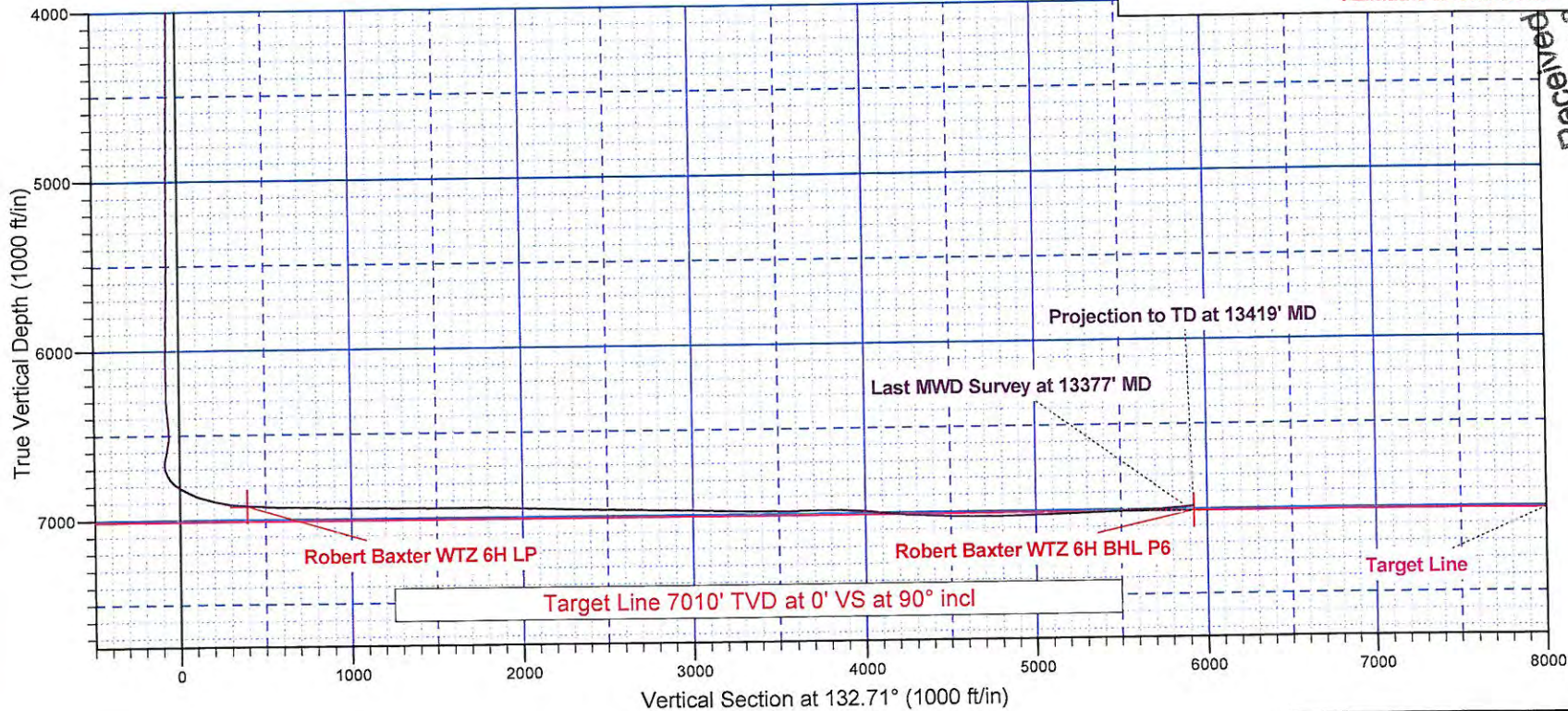
Northing	Easting	Latitude	Longitude
444332.93	1654620.54	39° 42' 48.485 N	80° 43' 39.871 W

### WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
Robert Baxter WTZ 6H LP	6922.31	-1302.99	-667.19	443029.94	1653953.35
Robert Baxter WTZ 6H BHL P6	7010.00	-5053.31	3395.57	439279.62	1658016.11

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

Magnetic Model: BGGM2012 Date: 03-Jun-13  
 Azimuths to Grid North



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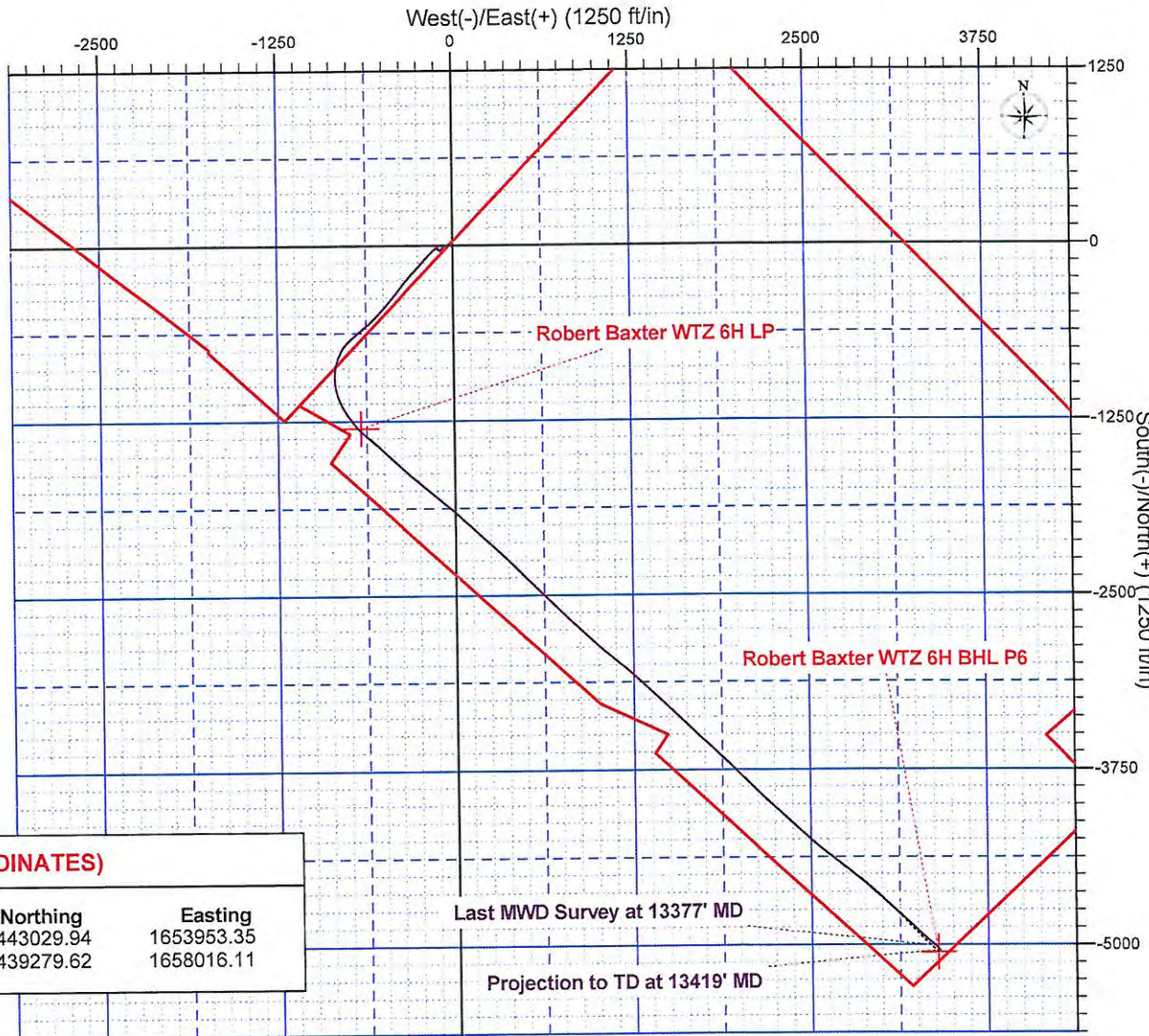
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Northing	Easting	Latitude	Longitude
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12550.00	92.42	127.59	7025.84	-4459.11	2761.42	0.00	0.00	5053.64	Tie-On
12592.00	92.42	127.59	7024.06	-4484.71	2794.67	0.00	0.00	5095.44	Start Drop
13090.29	90.50	137.37	7011.32	-4820.71	3161.56	2.00	100.93	5592.93	End Drop
13122.85	90.50	137.37	7011.03	-4844.67	3183.61	0.00	0.00	5625.38	Start Drop
13357.38	90.00	132.71	7010.00	-5010.58	3349.28	2.00	-96.16	5859.65	End Drop
13420.38	90.00	132.71	7010.00	-5053.31	3395.57	0.00	0.00	5922.65	TD

Created By: Tim Aitken Date: 11 July 2013

103.02841

# Chesapeake Appalachia, LLC

Wetzel County, WV

Wileyville

Robert Baxter WTZ 6H

Wellbore #1

Design: Surveys

## Sperry Drilling Services

### Combo Report

11 July, 2013

Well Coordinates: 444,332.93 N, 1,654,620.54 E (39° 42' 48.48" N, 080° 43' 39.87" W)

Ground Level: 1,320.00 ft

Local Coordinate Origin:	Centered on Well Robert Baxter WTZ 6H
Viewing Datum:	GL 1320' + KB 17' @ 1337.00ft (Nomac 25)
TVDs to System:	N
North Reference:	Grid
Unit System:	API-US Survey Feet

Version: 2003.16 Build: 43I

**HALLIBURTON**

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Design Report for Robert Baxter WTZ 6H - Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing	Easting	Northing	Easting			
0.00	0.00	0.00	-1,337.00	0.00	0.00 N	0.00 E	444,332.93	1,654,620.54	0.00	0.00	
100.00	0.17	62.17	-1,237.00	100.00	0.07 N	0.13 E	444,333.00	1,654,620.67	0.17	0.05	
200.00	0.22	70.44	-1,137.00	200.00	0.20 N	0.44 E	444,333.13	1,654,620.98	0.06	0.19	
300.00	0.11	103.24	-1,037.00	300.00	0.25 N	0.72 E	444,333.17	1,654,621.26	0.14	0.36	
400.00	0.14	21.86	-937.00	400.00	0.34 N	0.86 E	444,333.26	1,654,621.39	0.16	0.40	
500.00	0.14	196.16	-837.00	500.00	0.33 N	0.87 E	444,333.26	1,654,621.41	0.28	0.41	
600.00	0.14	163.95	-737.00	600.00	0.10 N	0.87 E	444,333.02	1,654,621.41	0.08	0.57	
700.00	0.09	157.95	-637.00	700.00	0.09 S	0.93 E	444,332.83	1,654,621.47	0.05	0.75	
800.00	0.19	62.89	-537.00	800.00	0.09 S	1.11 E	444,332.84	1,654,621.65	0.22	0.88	
900.00	0.05	54.43	-437.00	900.00	0.01 N	1.29 E	444,332.94	1,654,621.83	0.14	0.94	
1,000.00	0.18	57.30	-337.00	1,000.00	0.12 N	1.46 E	444,333.05	1,654,622.00	0.13	0.99	
1,016.00	0.20	56.59	-321.00	1,016.00	0.15 N	1.50 E	444,333.08	1,654,622.04	0.13	1.00	
1,099.00	0.46	302.04	-238.00	1,099.00	0.41 N	1.34 E	444,333.33	1,654,621.88	0.69	0.71	
1,129.00	0.26	335.23	-208.00	1,129.00	0.53 N	1.21 E	444,333.46	1,654,621.75	0.94	0.53	
1,192.00	1.97	284.87	-145.02	1,191.98	0.94 N	0.10 E	444,333.87	1,654,620.64	2.88	-0.56	
1,255.00	3.09	279.34	-82.08	1,254.92	1.49 N	2.62 W	444,334.42	1,654,617.92	1.82	-2.94	
1,318.00	3.93	280.68	-19.20	1,317.80	2.17 N	6.41 W	444,335.10	1,654,614.12	1.34	-6.18	
1,381.00	3.83	280.51	43.66	1,380.66	2.95 N	10.60 W	444,335.88	1,654,609.93	0.16	-9.80	
1,444.00	4.43	270.52	106.49	1,443.49	3.36 N	15.11 W	444,336.29	1,654,605.43	1.48	-13.38	
1,507.00	4.73	266.88	169.29	1,506.29	3.24 N	20.13 W	444,336.17	1,654,600.40	0.66	-16.99	
1,570.00	5.67	253.57	232.03	1,569.03	2.22 N	25.71 W	444,335.15	1,654,594.83	2.42	-20.40	
1,633.00	5.60	252.55	294.73	1,631.73	0.42 N	31.63 W	444,333.34	1,654,588.91	0.19	-23.52	
1,696.00	5.91	248.62	357.41	1,694.41	1.69 S	37.58 W	444,331.24	1,654,582.96	0.80	-26.47	
1,758.00	5.97	249.22	419.08	1,756.08	4.00 S	43.57 W	444,328.93	1,654,576.97	0.14	-29.30	
1,821.00	5.76	246.87	481.75	1,818.75	6.40 S	49.54 W	444,326.53	1,654,571.00	0.51	-32.06	
1,883.00	5.43	246.12	543.45	1,880.45	8.81 S	55.08 W	444,324.12	1,654,565.45	0.55	-34.50	
1,946.00	5.20	242.55	606.18	1,943.18	11.33 S	60.34 W	444,321.59	1,654,560.20	0.64	-36.65	
2,008.00	4.36	235.61	667.97	2,004.97	13.96 S	64.78 W	444,318.97	1,654,555.76	1.64	-38.13	
2,070.00	4.16	229.95	729.80	2,068.80	16.74 S	68.45 W	444,316.19	1,654,552.09	0.75	-38.94	
2,133.00	3.20	213.94	792.67	2,129.67	19.67 S	71.18 W	444,313.26	1,654,549.36	2.22	-38.96	
2,195.00	3.28	217.47	854.57	2,191.57	22.51 S	73.22 W	444,310.42	1,654,547.31	0.35	-38.54	
2,258.00	2.93	218.93	917.48	2,254.48	25.19 S	75.33 W	444,307.73	1,654,545.21	0.57	-38.27	
2,321.00	2.86	215.16	980.40	2,317.40	27.73 S	77.25 W	444,305.20	1,654,543.29	0.32	-37.95	
2,383.00	2.67	218.64	1,042.32	2,379.32	30.12 S	79.04 W	444,302.80	1,654,541.50	0.41	-37.65	
2,446.00	2.72	215.58	1,105.25	2,442.25	32.48 S	80.83 W	444,300.44	1,654,539.71	0.24	-37.36	
2,509.00	2.43	217.48	1,168.19	2,505.19	34.76 S	82.51 W	444,298.17	1,654,538.03	0.48	-37.05	
2,567.00	2.31	222.56	1,226.14	2,563.14	36.60 S	84.05 W	444,296.33	1,654,536.49	0.42	-36.94	
2,787.00	2.39	94.80	1,446.06	2,783.06	40.25 S	82.47 W	444,292.68	1,654,538.06	1.92	-33.30	
2,850.00	0.91	262.56	1,509.04	2,846.04	40.42 S	81.66 W	444,292.50	1,654,538.88	5.21	-32.59	
2,913.00	0.57	279.12	1,572.04	2,909.04	40.44 S	82.47 W	444,292.49	1,654,538.07	0.63	-33.17	

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Design Report for Robert Baxter WTZ 6H - Surveys

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					Northing	Easting	Northing	Easting			
2,976.00	0.71	276.59	1,635.03	2,972.03	40.34 S	83.16 W	444,292.58	1,654,537.37	0.23	-33.74	
3,039.00	0.72	287.82	1,698.03	3,035.03	40.18 S	83.93 W	444,292.75	1,654,536.61	0.22	-34.42	
3,165.00	0.59	307.90	1,824.02	3,161.02	39.54 S	85.19 W	444,293.39	1,654,535.34	0.21	-35.78	
3,228.00	0.70	309.21	1,887.02	3,224.02	39.09 S	85.75 W	444,293.83	1,654,534.79	0.18	-36.49	
3,291.00	0.91	300.14	1,950.01	3,287.01	38.60 S	86.48 W	444,294.33	1,654,534.06	0.39	-37.36	
3,354.00	1.08	302.77	2,013.00	3,350.00	38.03 S	87.41 W	444,294.90	1,654,533.13	0.28	-38.44	
3,418.00	1.02	309.17	2,076.99	3,413.99	37.34 S	88.36 W	444,295.59	1,654,532.18	0.21	-39.60	
3,481.00	0.88	299.62	2,139.98	3,476.98	36.75 S	89.22 W	444,296.18	1,654,531.32	0.33	-40.63	
3,543.00	0.95	290.49	2,201.97	3,538.97	36.33 S	90.11 W	444,296.60	1,654,530.43	0.26	-41.57	
3,609.00	1.07	297.93	2,267.96	3,604.96	35.85 S	91.17 W	444,297.08	1,654,529.37	0.27	-42.67	
3,671.00	0.95	294.00	2,329.95	3,666.95	35.37 S	92.15 W	444,297.56	1,654,528.39	0.22	-43.72	
3,735.00	0.98	303.98	2,393.94	3,730.94	34.85 S	93.09 W	444,298.08	1,654,527.45	0.27	-44.76	
3,796.00	0.93	296.03	2,454.94	3,791.94	34.34 S	93.96 W	444,298.59	1,654,526.57	0.23	-45.75	
3,859.00	1.08	294.59	2,517.93	3,854.93	33.87 S	94.96 W	444,299.06	1,654,525.57	0.24	-46.81	
3,921.00	0.91	300.83	2,579.92	3,916.92	33.37 S	95.92 W	444,299.55	1,654,524.62	0.32	-47.84	
3,985.00	0.78	320.98	2,643.91	3,980.91	32.78 S	96.63 W	444,300.15	1,654,523.91	0.50	-48.77	
4,047.00	1.17	295.73	2,705.90	4,042.90	32.17 S	97.46 W	444,300.75	1,654,523.07	0.92	-49.79	
4,109.00	0.95	305.59	2,767.89	4,104.89	31.60 S	98.45 W	444,301.33	1,654,522.08	0.46	-50.91	
4,172.00	0.87	321.76	2,830.88	4,167.88	30.92 S	99.17 W	444,302.01	1,654,521.36	0.43	-51.90	
4,235.00	0.99	318.17	2,893.87	4,230.87	30.14 S	99.83 W	444,302.79	1,654,520.71	0.21	-52.91	
4,297.00	0.90	299.13	2,955.87	4,292.87	29.50 S	100.62 W	444,303.43	1,654,519.92	0.52	-53.92	
4,360.00	0.64	282.74	3,018.86	4,355.86	29.18 S	101.39 W	444,303.74	1,654,519.15	0.54	-54.71	
4,422.00	0.50	301.66	3,080.86	4,417.86	28.96 S	101.96 W	444,303.96	1,654,518.58	0.38	-55.27	
4,485.00	0.74	321.94	3,143.85	4,480.85	28.50 S	102.44 W	444,304.43	1,654,518.09	0.51	-55.94	
4,551.00	0.77	321.18	3,209.85	4,546.85	27.82 S	102.98 W	444,305.11	1,654,517.55	0.05	-56.80	
4,613.00	0.88	330.00	3,271.84	4,608.84	27.08 S	103.48 W	444,305.84	1,654,517.05	0.27	-57.67	
4,676.00	0.86	333.69	3,334.83	4,671.83	26.24 S	103.93 W	444,306.69	1,654,516.60	0.09	-58.57	
4,739.00	0.96	356.19	3,397.83	4,734.83	25.29 S	104.18 W	444,307.64	1,654,516.36	0.58	-59.40	
4,801.00	0.77	356.64	3,459.82	4,796.82	24.36 S	104.24 W	444,308.57	1,654,516.30	0.31	-60.07	
4,865.00	0.71	8.68	3,523.81	4,860.81	23.53 S	104.20 W	444,309.39	1,654,516.33	0.26	-60.61	
4,928.00	1.11	352.08	3,586.81	4,923.81	22.54 S	104.23 W	444,310.38	1,654,516.31	0.75	-61.30	
4,990.00	0.82	1.30	3,648.80	4,985.80	21.51 S	104.30 W	444,311.42	1,654,516.24	0.53	-62.05	
5,053.00	0.77	2.08	3,711.79	5,048.79	20.63 S	104.28 W	444,312.30	1,654,516.26	0.08	-62.63	
5,116.00	0.79	354.61	3,774.78	5,111.78	19.78 S	104.30 W	444,313.15	1,654,516.24	0.16	-63.23	
5,179.00	0.78	347.52	3,837.78	5,174.78	18.92 S	104.43 W	444,314.00	1,654,516.10	0.15	-63.90	
5,242.00	0.65	349.84	3,900.77	5,237.77	18.15 S	104.59 W	444,314.77	1,654,515.95	0.21	-64.54	
5,305.00	0.61	351.56	3,963.77	5,300.77	17.47 S	104.70 W	444,315.46	1,654,515.84	0.07	-65.08	
5,366.00	0.54	336.14	4,024.77	5,361.77	16.89 S	104.87 W	444,316.04	1,654,515.87	0.28	-65.60	
5,428.00	0.82	350.40	4,086.76	5,423.76	16.18 S	105.06 W	444,316.74	1,654,515.48	0.52	-66.22	

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**Design Report for Robert Baxter WTZ 6H - Surveys**

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					Northing (ft)	Easting (ft)	Northing (ft)	Easting (ft)			
5,490.00	0.67	357.11	4,148.76	5,485.76	15.38 S	105.15 W	444,317.54	1,654,515.39	0.28	-66.83	
5,553.00	0.79	8.10	4,211.75	5,548.75	14.58 S	105.11 W	444,318.34	1,654,515.43	0.29	-67.34	
5,563.00	0.81	9.24	4,221.75	5,558.75	14.45 S	105.09 W	444,318.48	1,654,515.45	0.26	-67.42	
5,677.00	0.75	6.80	4,335.74	5,672.74	12.91 S	104.87 W	444,320.02	1,654,515.67	0.06	-68.30	
5,709.00	1.17	300.03	4,367.74	5,704.74	12.54 S	105.13 W	444,320.39	1,654,515.41	3.48	-68.74	
5,740.00	3.56	247.72	4,398.71	5,735.71	12.75 S	106.29 W	444,320.18	1,654,514.25	9.65	-69.46	
5,772.00	7.24	238.65	4,430.56	5,767.56	14.17 S	108.94 W	444,318.75	1,654,511.60	11.77	-70.43	
5,803.00	9.72	234.90	4,461.22	5,798.22	16.69 S	112.74 W	444,316.23	1,654,507.79	8.19	-71.52	
5,834.00	12.56	226.84	4,491.64	5,828.64	20.50 S	117.35 W	444,312.42	1,654,503.19	10.43	-72.32	
5,866.00	15.16	228.30	4,522.70	5,859.70	25.67 S	123.01 W	444,307.26	1,654,497.53	8.20	-72.98	
5,897.00	18.00	230.60	4,552.41	5,889.41	31.41 S	129.74 W	444,301.52	1,654,490.80	9.40	-74.03	
5,929.00	19.26	231.65	4,582.73	5,919.73	37.82 S	137.70 W	444,295.11	1,654,482.84	4.07	-75.53	
5,993.00	19.16	219.18	4,643.20	5,980.20	52.52 S	152.62 W	444,280.41	1,654,467.92	6.40	-76.52	
6,024.00	21.12	220.14	4,672.30	6,009.30	60.73 S	159.43 W	444,272.20	1,654,461.11	6.41	-75.96	
6,055.00	24.04	222.75	4,700.92	6,037.92	69.64 S	167.32 W	444,263.29	1,654,453.22	9.96	-75.71	
6,087.00	27.23	223.61	4,729.77	6,066.77	79.73 S	176.80 W	444,253.20	1,654,443.74	10.04	-75.83	
6,118.00	30.10	223.52	4,756.97	6,093.97	90.50 S	187.04 W	444,242.42	1,654,433.49	9.26	-76.05	
6,149.00	32.32	222.46	4,783.48	6,120.48	102.26 S	197.99 W	444,230.67	1,654,422.54	7.38	-76.13	
6,181.00	35.27	222.29	4,810.07	6,147.07	115.40 S	209.99 W	444,217.52	1,654,410.55	9.22	-76.02	
6,212.00	38.23	222.57	4,834.90	6,171.90	129.09 S	222.50 W	444,203.84	1,654,398.04	9.56	-75.93	
6,244.00	41.84	223.65	4,859.40	6,196.40	144.11 S	236.57 W	444,188.82	1,654,383.97	11.49	-76.08	
6,275.00	45.63	223.99	4,881.80	6,218.80	159.57 S	251.41 W	444,173.36	1,654,369.13	12.25	-76.50	
6,307.00	48.43	222.84	4,903.61	6,240.61	176.58 S	267.49 W	444,156.35	1,654,353.04	9.14	-76.78	
6,338.00	50.74	221.82	4,923.70	6,260.70	194.03 S	283.38 W	444,138.90	1,654,337.15	7.86	-76.62	
6,370.00	53.05	220.77	4,943.45	6,280.45	212.95 S	300.00 W	444,119.98	1,654,320.54	7.67	-76.00	
6,401.00	53.51	220.18	4,961.98	6,298.98	231.85 S	316.13 W	444,101.08	1,654,304.41	2.13	-75.03	
6,433.00	53.45	219.84	4,981.03	6,318.03	251.55 S	332.66 W	444,081.38	1,654,287.88	0.87	-73.82	
6,464.00	55.88	220.10	4,998.95	6,335.95	270.93 S	348.91 W	444,062.00	1,654,271.63	7.87	-72.61	
6,496.00	56.38	220.22	5,016.79	6,353.79	291.23 S	366.04 W	444,041.69	1,654,254.50	1.59	-71.43	
6,527.00	56.61	219.57	5,033.90	6,370.90	311.06 S	382.62 W	444,021.86	1,654,237.92	1.90	-70.16	
6,590.00	59.73	219.15	5,067.12	6,404.12	352.45 S	416.56 W	443,980.48	1,654,203.98	4.98	-67.03	
6,653.00	60.94	218.50	5,098.30	6,435.30	395.09 S	450.88 W	443,937.83	1,654,169.66	2.12	-63.32	
6,716.00	61.07	221.64	5,128.85	6,465.85	437.25 S	486.34 W	443,895.67	1,654,134.20	4.36	-60.78	
6,779.00	61.97	222.22	5,158.89	6,495.89	478.45 S	523.35 W	443,854.48	1,654,097.19	1.64	-60.03	
6,842.00	61.09	224.45	5,188.92	6,525.92	518.73 S	561.35 W	443,814.20	1,654,059.19	3.41	-60.63	
6,904.00	60.21	229.38	5,219.33	6,556.33	555.64 S	600.79 W	443,777.29	1,654,019.75	7.07	-64.58	
6,967.00	60.79	228.89	5,250.35	6,587.35	591.51 S	642.26 W	443,741.41	1,653,978.28	1.14	-70.71	
7,029.00	59.13	229.96	5,281.39	6,618.39	626.42 S	683.02 W	443,706.50	1,653,937.52	3.07	-76.98	
7,092.00	59.92	229.31	5,313.34	6,650.34	661.59 S	724.39 W	443,671.34	1,653,896.15	1.54	-83.53	

103.0284

**Design Report for Robert Baxter WTZ 6H - Surveys**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing	Easting	Northing	Easting			
7,123.00	60.08	224.75	5,328.84	6,665.84	679.88 S	744.02 W	443,653.04	1,653,876.52	12.75	-85.55	
7,155.00	60.84	220.95	5,344.63	6,681.63	700.29 S	762.95 W	443,632.64	1,653,857.59	10.60	-85.61	
7,186.00	60.05	217.51	5,359.92	6,696.92	721.17 S	780.00 W	443,611.76	1,653,840.54	9.98	-83.98	
7,217.00	59.02	211.33	5,375.65	6,712.65	743.19 S	795.10 W	443,589.73	1,653,825.44	17.50	-80.14	
7,248.00	58.83	205.66	5,391.66	6,728.66	766.51 S	807.76 W	443,566.41	1,653,812.78	15.68	-73.62	
7,279.00	59.91	201.65	5,407.46	6,744.46	790.94 S	818.45 W	443,541.99	1,653,802.08	11.66	-64.91	
7,311.00	60.21	200.63	5,423.43	6,760.43	816.80 S	828.45 W	443,516.12	1,653,792.08	2.92	-54.72	
7,343.00	62.30	193.55	5,438.83	6,775.83	843.60 S	836.67 W	443,489.33	1,653,783.86	20.46	-42.58	
7,374.00	64.75	189.67	5,452.66	6,789.66	870.77 S	842.25 W	443,462.15	1,653,778.29	13.71	-28.25	
7,405.00	66.73	185.83	5,465.40	6,802.40	898.77 S	846.05 W	443,434.16	1,653,774.49	12.97	-12.05	
7,437.00	67.96	181.37	5,477.73	6,814.73	928.23 S	847.90 W	443,404.69	1,653,772.64	13.42	6.58	
7,469.00	68.92	178.26	5,489.49	6,826.49	957.99 S	847.80 W	443,374.94	1,653,772.74	9.52	26.83	
7,500.00	69.51	173.72	5,500.49	6,837.49	986.89 S	845.77 W	443,346.04	1,653,774.77	13.82	47.93	
7,532.00	69.28	168.88	5,511.76	6,848.76	1,016.49 S	841.24 W	443,316.44	1,653,779.29	14.18	71.33	
7,563.00	70.03	164.66	5,522.54	6,859.54	1,044.77 S	834.59 W	443,288.15	1,653,785.95	12.99	95.40	
7,594.00	72.39	161.31	5,532.53	6,869.53	1,072.83 S	826.00 W	443,260.10	1,653,794.54	12.75	120.75	
7,626.00	74.59	159.01	5,541.62	6,878.62	1,101.68 S	815.58 W	443,231.24	1,653,804.95	9.73	147.97	
7,658.00	76.80	156.17	5,549.53	6,886.53	1,130.34 S	803.76 W	443,202.58	1,653,816.78	11.03	176.10	
7,689.00	77.25	151.47	5,556.50	6,893.50	1,157.44 S	790.44 W	443,175.48	1,653,830.10	14.85	204.27	
7,721.00	77.72	148.46	5,563.43	6,900.43	1,184.48 S	774.80 W	443,148.44	1,653,845.74	9.30	234.10	
7,752.00	79.78	145.86	5,569.48	6,906.48	1,210.02 S	758.31 W	443,122.90	1,653,862.22	10.57	263.54	
7,783.00	81.65	143.41	5,574.48	6,911.48	1,234.97 S	740.61 W	443,097.96	1,653,879.93	9.86	293.47	
7,815.00	83.75	142.70	5,578.55	6,915.55	1,260.33 S	721.53 W	443,072.59	1,653,899.01	6.92	324.69	
7,847.00	85.50	139.66	5,581.55	6,918.55	1,285.15 S	701.56 W	443,047.78	1,653,918.98	10.93	356.20	
7,878.00	86.40	136.91	5,583.74	6,920.74	1,308.23 S	680.99 W	443,024.70	1,653,939.55	9.31	386.97	
7,910.00	86.33	133.13	5,585.77	6,922.77	1,330.82 S	658.42 W	443,002.11	1,653,962.12	11.79	418.88	
7,972.00	86.47	130.29	5,589.66	6,926.66	1,371.98 S	612.23 W	442,960.94	1,654,008.31	4.58	480.74	
8,036.00	88.19	131.54	5,592.64	6,929.64	1,413.85 S	563.92 W	442,919.07	1,654,056.62	3.32	544.63	
8,097.00	89.53	132.91	5,593.86	6,930.86	1,454.84 S	518.76 W	442,878.09	1,654,101.78	3.14	605.62	
8,161.00	90.03	134.38	5,594.10	6,931.10	1,499.01 S	472.45 W	442,833.92	1,654,148.09	2.43	669.60	
8,223.00	88.48	130.88	5,594.91	6,931.91	1,540.99 S	426.85 W	442,791.94	1,654,193.69	6.17	731.59	
8,285.00	87.84	130.44	5,596.90	6,933.90	1,581.36 S	379.84 W	442,751.56	1,654,240.70	1.25	793.52	
8,347.00	88.08	130.31	5,599.10	6,936.10	1,621.50 S	332.64 W	442,711.43	1,654,287.90	0.44	855.42	
8,409.00	88.19	129.75	5,601.12	6,938.12	1,661.36 S	285.19 W	442,671.57	1,654,335.35	0.92	917.32	
8,471.00	88.66	130.22	5,602.83	6,939.83	1,701.18 S	237.70 W	442,631.75	1,654,382.84	1.07	979.23	
8,535.00	89.30	130.63	5,603.97	6,940.97	1,742.68 S	188.99 W	442,590.25	1,654,431.55	1.19	1,043.17	
8,598.00	89.76	130.76	5,604.48	6,941.48	1,783.75 S	141.22 W	442,549.17	1,654,479.31	0.76	1,106.13	
8,661.00	90.10	130.24	5,604.56	6,941.56	1,824.67 S	93.32 W	442,508.26	1,654,527.22	0.99	1,169.08	
8,724.00	90.60	130.10	5,604.18	6,941.18	1,865.30 S	45.18 W	442,467.62	1,654,575.36	0.82	1,232.02	

103.02841

**Design Report for Robert Baxter WTZ 6H - Surveys**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing	Easting	Northing	Easting			
8,786.00	88.95	132.41	5,604.42	6,941.42	1,906.18 S	1.43 E	442,426.74	1,654,621.96	4.58	1,293.99	
8,849.00	89.02	130.84	5,605.53	6,942.53	1,948.02 S	48.51 E	442,384.90	1,654,669.05	2.49	1,356.97	
8,911.00	89.36	132.22	5,606.41	6,943.41	1,989.13 S	94.92 E	442,343.80	1,654,715.46	2.29	1,418.95	
8,974.00	89.70	132.97	5,606.93	6,943.93	2,031.76 S	141.29 E	442,301.16	1,654,761.83	1.31	1,481.94	
9,037.00	89.73	133.35	5,607.24	6,944.24	2,074.86 S	187.25 E	442,258.07	1,654,807.79	0.61	1,544.94	
9,099.00	89.90	133.39	5,607.44	6,944.44	2,117.43 S	232.32 E	442,215.49	1,654,852.86	0.28	1,606.94	
9,161.00	90.34	133.21	5,607.31	6,944.31	2,159.95 S	277.44 E	442,172.97	1,654,897.98	0.77	1,668.93	
9,221.00	90.74	132.76	5,606.75	6,943.75	2,200.86 S	321.33 E	442,132.07	1,654,941.87	1.00	1,728.93	
9,284.00	88.86	133.13	5,606.97	6,943.97	2,243.78 S	367.44 E	442,089.15	1,654,987.98	3.04	1,791.92	
9,347.00	89.06	134.70	5,608.11	6,945.11	2,287.47 S	412.82 E	442,045.46	1,655,033.36	2.51	1,854.90	
9,410.00	87.34	134.76	5,610.09	6,947.09	2,331.78 S	457.55 E	442,001.15	1,655,078.09	2.73	1,917.83	
9,473.00	87.21	135.19	5,613.08	6,950.08	2,376.26 S	502.07 E	441,956.67	1,655,122.61	0.71	1,980.71	
9,536.00	87.57	135.09	5,615.95	6,952.95	2,420.87 S	546.46 E	441,912.06	1,655,167.00	0.59	2,043.58	
9,599.00	88.16	134.89	5,618.30	6,955.30	2,465.38 S	590.99 E	441,867.55	1,655,211.52	0.99	2,106.49	
9,661.00	88.96	135.66	5,619.86	6,956.86	2,509.41 S	634.60 E	441,823.51	1,655,255.14	1.79	2,168.41	
9,723.00	87.85	133.64	5,621.58	6,958.58	2,552.97 S	678.69 E	441,779.96	1,655,299.23	3.72	2,230.34	
9,787.00	87.55	132.94	5,624.15	6,961.15	2,596.81 S	725.24 E	441,736.11	1,655,345.77	1.19	2,294.29	
9,850.00	88.21	133.77	5,626.48	6,963.48	2,640.03 S	771.01 E	441,692.89	1,655,391.55	1.68	2,357.24	
9,913.00	89.03	135.11	5,628.00	6,965.00	2,684.13 S	815.98 E	441,648.80	1,655,436.52	2.49	2,420.19	
9,975.00	89.23	134.27	5,628.94	6,965.94	2,727.73 S	860.05 E	441,605.20	1,655,480.59	1.39	2,482.15	
10,038.00	89.13	132.98	5,629.84	6,966.84	2,771.19 S	905.65 E	441,561.74	1,655,526.19	2.05	2,545.13	
10,101.00	90.10	133.34	5,630.27	6,967.27	2,814.28 S	951.60 E	441,518.65	1,655,572.14	1.64	2,608.13	
10,165.00	88.08	131.40	5,631.28	6,968.28	2,857.40 S	998.87 E	441,475.53	1,655,619.41	4.38	2,672.11	
10,227.00	88.08	130.63	5,633.36	6,970.36	2,898.07 S	1,045.63 E	441,434.86	1,655,666.17	1.24	2,734.05	
10,289.00	88.76	129.59	5,635.07	6,972.07	2,937.99 S	1,093.03 E	441,394.93	1,655,713.57	2.00	2,795.96	
10,352.00	89.43	129.79	5,636.06	6,973.06	2,978.22 S	1,141.50 E	441,354.70	1,655,762.04	1.11	2,858.86	
10,415.00	89.56	129.35	5,636.62	6,973.62	3,018.35 S	1,190.06 E	441,314.57	1,655,810.60	0.73	2,921.77	
10,478.00	87.57	131.94	5,638.20	6,975.20	3,059.37 S	1,237.84 E	441,273.56	1,655,858.38	5.18	2,984.70	
10,541.00	87.91	132.49	5,640.68	6,977.68	3,101.67 S	1,284.47 E	441,231.26	1,655,905.00	1.03	3,047.65	
10,604.00	88.19	132.15	5,642.83	6,979.83	3,144.06 S	1,331.02 E	441,188.87	1,655,951.56	0.70	3,110.61	
10,667.00	89.03	133.36	5,644.35	6,981.35	3,186.81 S	1,377.26 E	441,146.11	1,655,997.80	2.34	3,173.59	
10,731.00	88.01	133.70	5,646.01	6,983.01	3,230.88 S	1,423.65 E	441,102.05	1,656,044.19	1.68	3,237.56	
10,793.00	88.49	133.84	5,647.90	6,984.90	3,273.75 S	1,468.40 E	441,059.18	1,656,088.94	0.81	3,299.52	
10,856.00	89.33	134.32	5,649.10	6,986.10	3,317.57 S	1,513.65 E	441,015.36	1,656,134.19	1.54	3,362.49	
10,919.00	89.66	134.13	5,649.65	6,986.65	3,361.51 S	1,558.79 E	440,971.42	1,656,179.33	0.60	3,425.46	
10,982.00	90.27	133.12	5,649.69	6,986.69	3,404.97 S	1,604.40 E	440,927.96	1,656,224.93	1.87	3,488.45	
11,045.00	89.73	133.59	5,649.69	6,986.69	3,448.22 S	1,650.20 E	440,884.71	1,656,270.74	1.14	3,551.45	
11,107.00	90.47	133.67	5,649.58	6,986.58	3,491.00 S	1,695.08 E	440,841.93	1,656,315.62	1.20	3,613.44	
11,170.00	90.71	132.32	5,648.94	6,985.94	3,533.96 S	1,741.16 E	440,798.97	1,656,361.69	2.18	3,676.44	



103-02841

Design Report for Robert Baxter Wtz 6H - Surveys

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing	Easting	Northing	Easting			
11,232.00	91.69	132.60	5,647.64	6,984.64	3,575.80 S	1,786.88 E	440,757.12	1,656,407.42	1.64	3,738.42	
11,295.00	88.48	132.10	5,647.54	6,984.54	3,618.24 S	1,833.44 E	440,714.69	1,656,453.98	5.16	3,801.41	
11,358.00	89.09	134.50	5,648.88	6,985.88	3,661.43 S	1,879.27 E	440,671.49	1,656,499.81	3.93	3,864.39	
11,421.00	88.02	133.99	5,650.47	6,987.47	3,705.37 S	1,924.39 E	440,627.55	1,656,544.93	1.88	3,927.35	
11,484.00	83.89	133.48	5,654.91	6,991.91	3,748.81 S	1,969.79 E	440,584.12	1,656,590.32	6.61	3,990.16	
11,547.00	84.23	133.89	5,661.43	6,998.43	3,792.09 S	2,015.10 E	440,540.84	1,656,635.64	0.84	4,052.82	
11,610.00	84.74	134.27	5,667.49	7,004.49	3,835.71 S	2,060.15 E	440,497.21	1,656,680.69	1.01	4,115.51	
11,669.00	84.91	134.29	5,672.81	7,009.81	3,876.74 S	2,102.22 E	440,456.19	1,656,722.75	0.29	4,174.24	
11,732.00	85.36	134.12	5,678.15	7,015.15	3,920.50 S	2,147.21 E	440,412.42	1,656,767.75	0.76	4,237.00	
11,794.00	86.88	132.43	5,682.35	7,019.35	3,962.90 S	2,192.25 E	440,370.02	1,656,812.79	3.66	4,298.85	
11,858.00	87.42	132.55	5,685.53	7,022.53	4,006.08 S	2,239.38 E	440,326.85	1,656,859.92	0.86	4,362.77	
11,890.00	87.08	132.30	5,687.06	7,024.06	4,027.64 S	2,262.98 E	440,305.28	1,656,883.52	1.32	4,394.73	
11,920.00	87.24	132.97	5,688.55	7,025.55	4,047.94 S	2,285.02 E	440,284.99	1,656,905.56	2.29	4,424.69	
11,952.00	87.49	132.71	5,690.02	7,027.02	4,069.67 S	2,308.46 E	440,263.25	1,656,929.00	1.13	4,456.66	
11,984.00	87.75	132.24	5,691.35	7,028.35	4,091.26 S	2,332.04 E	440,241.66	1,656,952.58	1.68	4,488.63	
12,015.00	88.25	132.55	5,692.43	7,029.43	4,112.15 S	2,354.92 E	440,220.77	1,656,975.46	1.90	4,519.61	
12,046.00	89.29	133.25	5,693.10	7,030.10	4,133.25 S	2,377.62 E	440,199.68	1,656,998.16	4.04	4,550.60	
12,078.00	89.33	133.39	5,693.48	7,030.48	4,155.20 S	2,400.90 E	440,177.72	1,657,021.44	0.45	4,582.60	
12,109.00	89.46	133.76	5,693.81	7,030.81	4,176.57 S	2,423.36 E	440,156.36	1,657,043.90	1.27	4,613.59	
12,140.00	89.90	133.32	5,693.98	7,030.98	4,197.92 S	2,445.83 E	440,135.00	1,657,066.37	2.01	4,644.59	
12,172.00	89.80	132.57	5,694.07	7,031.07	4,219.72 S	2,469.26 E	440,113.20	1,657,089.79	2.36	4,676.59	
12,204.00	89.50	132.95	5,694.26	7,031.26	4,241.45 S	2,492.75 E	440,091.48	1,657,113.29	1.51	4,708.59	
12,235.00	89.53	132.08	5,694.52	7,031.52	4,262.40 S	2,515.60 E	440,070.53	1,657,136.14	2.81	4,739.59	
12,267.00	89.83	130.83	5,694.70	7,031.70	4,283.58 S	2,539.58 E	440,049.34	1,657,160.12	4.02	4,771.58	
12,298.00	89.73	129.80	5,694.82	7,031.82	4,303.64 S	2,563.22 E	440,029.29	1,657,183.76	3.34	4,802.55	
12,361.00	91.11	127.94	5,694.36	7,031.36	4,343.17 S	2,612.26 E	439,989.76	1,657,232.80	3.68	4,865.40	
12,424.00	91.48	128.14	5,692.94	7,029.94	4,381.98 S	2,661.87 E	439,950.94	1,657,282.41	0.67	4,928.18	
12,487.00	91.78	127.67	5,691.14	7,028.14	4,420.67 S	2,711.56 E	439,912.26	1,657,332.10	0.88	4,990.93	
12,550.00	92.42	127.59	5,688.84	7,025.84	4,459.11 S	2,761.42 E	439,873.82	1,657,381.96	1.02	5,053.64	
12,612.00	91.61	130.09	5,686.66	7,023.66	4,497.97 S	2,809.68 E	439,834.96	1,657,430.21	4.24	5,115.46	
12,676.00	92.08	129.03	5,684.60	7,021.60	4,538.71 S	2,858.99 E	439,794.22	1,657,479.53	1.81	5,179.32	
12,739.00	91.78	131.03	5,682.47	7,019.47	4,579.20 S	2,907.20 E	439,753.73	1,657,527.74	3.21	5,242.22	
12,801.00	91.51	132.06	5,680.69	7,017.69	4,620.30 S	2,953.58 E	439,712.62	1,657,574.12	1.72	5,304.18	
12,865.00	91.81	132.41	5,678.84	7,015.84	4,663.30 S	3,000.95 E	439,669.62	1,657,621.49	0.72	5,368.15	
12,928.00	91.25	133.00	5,677.16	7,014.16	4,706.02 S	3,047.23 E	439,626.91	1,657,667.77	1.29	5,431.12	
12,990.00	91.95	132.38	5,675.43	7,012.43	4,748.04 S	3,092.78 E	439,584.89	1,657,713.32	1.51	5,493.10	
13,053.00	92.19	133.15	5,673.15	7,010.15	4,790.79 S	3,139.00 E	439,542.14	1,657,759.54	1.28	5,556.06	
13,115.00	92.79	132.78	5,670.46	7,007.46	4,833.00 S	3,184.33 E	439,499.93	1,657,804.87	1.14	5,618.00	
13,178.00	93.12	132.28	5,667.21	7,004.21	4,875.53 S	3,230.69 E	439,457.40	1,657,851.23	0.95	5,680.91	

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**Design Report for Robert Baxter WTZ 6H - Surveys**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	TVD below System (ft)	Vertical Depth (ft)	Local Coordinates (ft)		Map Coordinates (ft)		Dogleg Rate (°/100ft)	Vertical Section (ft)	Comments
					Northing	Easting	Northing	Easting			
13,241.00	93.83	132.36	5,663.39	7,000.39	4,917.87 S	3,277.19 E	439,415.06	1,657,897.73	1.13	5,743.80	
13,307.00	94.48	132.71	5,658.61	6,995.61	4,962.37 S	3,325.69 E	439,370.56	1,657,946.23	1.12	5,809.62	
13,370.00	95.12	132.58	5,653.34	6,990.34	5,004.90 S	3,371.87 E	439,328.03	1,657,992.41	1.04	5,872.40	
13,377.00	95.11	132.02	5,652.71	6,989.71	5,009.59 S	3,377.03 E	439,323.34	1,657,997.57	7.97	5,879.37	Last MWD Survey at 13377' MD
13,419.00	95.11	132.02	5,648.97	6,985.97	5,037.59 S	3,408.11 E	439,295.33	1,658,028.64	0.00	5,921.20	Projection to TD at 13419' 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	1,016.00	VES Gyro	NSG-CT_csg+cent
1,099.00	13,419.00	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
2,610.00	2,606.12	9 5/8"	9-5/8	12-1/4

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**Design Report for Robert Baxter WTZ 6H - 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
Robert Baxter WTZ (	0.00	0.00	6,922.31	-1,302.99	-667.19	443,029.94	1,653,953.35	39° 42' 35.518 N	0° 43' 48.180 W
- actual wellpath misses target center by 13.68ft at 7884.13ft MD (6921.12 TVD, -1312.67 N, -676.78 E)									
- Point									
Robert Baxter WTZ (	0.00	360.00	7,010.00	-5,053.31	3,395.57	439,279.62	1,658,016.11	39° 41' 59.001 N	0° 42' 55.548 W
- actual wellpath misses target center by 31.31ft at 13418.06ft MD (6986.06 TVD, -5036.97 N, 3407.41 E)									
- Point									