

ENGINEERING TECHNICAL STATEMENT PREPARED BY RYAN WILHOUR OF THE  
FIRM KESSLER AND GEHMAN ASSOCIATES, INC., TELECOMMUNICATIONS  
CONSULTING ENGINEERS IN CONNECTION WITH A REQUEST FOR SPECIAL  
TEMPORARY AUTHORITY TO OPERATE THE WEST VIRGINIA EDUCATIONAL  
BROADCASTING AUTHORITY DIGITAL TELEVISION STATION WPBY-TV AT  
REDUCED HEIGHT RELATIVE TO THE LICENSED FACILITY  
(FCC FILE NO: BLEDT-20040211AAL)  
HUNTINGTON, WEST VIRGINIA

**DISCUSSION**

West Virginia Educational Broadcasting Authority (“WVEBA”) currently has a license (FCC File No.: BLEDT-20040211AAL) to operate WPBY-TV on Channel 34 with an ERP of 60.1 kW. Pursuant to Section 73.1635, the request for the instant STA is justified by the need to repair a significant anomaly in the licensed WPBY-TV antenna. Beginning on or about May 26, 2009, the WPBY-TV transmitter plant began experiencing a significant unknown anomaly and an immediate STA was filed (FCC File No.: BDSTA-20090522AEB) to operate alternate facilities at a nearby tower site in order to shut down and trouble shoot the licensed facility. Subsequently it has been determined that the power divider in the licensed antenna has experienced irreparable damage and requires replacement. It was found that the licensed antenna may be brought back online using one of the three antenna sections while the replacement power divider is being fabricated by the antenna manufacturer. The antenna manufacturer has determined that the gain of the antenna using only one of the three sections is 12 dB and thus the proposed ERP has been calculated to be 29.1 kW. WVEBA filed for and is currently operating an STA (FCC File No.: BDSTA-20090827ABT) to use the licensed antenna at the reduced ERP of 29.1 kW.

The herein requested STA proposes to side mount a PSI PSILPD18D88C-34 antenna which has an identical azimuth pattern as the licensed (FCC File No.: BLEDT-20040211AAL) WPBY-TV facility which will allow WPBY-TV to once again operate at its licensed ERP of 60.1kW but at a slightly lower height while the licensed antenna is being further assessed for repair or replacement. Exhibit 21.1 compares the STA parameters to the licensed parameters. Exhibit 21.2 illustrates the side mounted antenna configuration on the support structure. Exhibit 21.3 demonstrates that the proposed STA facility has a coverage contour which is completely subsumed by the licensed coverage contour and will continue to cover the community of license. Since the proposed STA is simply a height reduction relative to the licensed facility no new interference is predicted to be caused to the market; hence, allocation studies have not been prepared. WVEBA also understands that the service area based on the WPBY-TV license will continue to be protected during the period of the STA.

The applicant accepts full responsibility for the elimination of any objectionable interference including that caused by intermodulation to facilities in existence or authorized prior to the grant of this application.

It is herein proposed to use the alternate antenna to best replicate the licensed facility until the licensed antenna is fully assessed for repair or replacement. Upon completion, WPBY-TV will resume operation using the parameters specified in FCC license number BLEDT-20040211AAL.

### **ENVIRONMENTAL IMPACT/RFR HAZARD ANALYSIS**

An analysis has been made of the human exposure to RFR using the calculation methodology described in OET Bulletin 65, Edition, 97-01. Exhibit 21.4 is a RFR study demonstrating compliance within 5% of the most restrictive permissible exposure at any location 2 meters above the ground assuming flat terrain. Exhibit 21.4 calculations were

made using a frequency of 590 MHz, which is the lower edge of the proposed channel. To account for ground reflections, a coefficient of 1.6 was included in the calculations.

Pursuant to OET Bulletin 65 concerning multiple-user transmitter sites only those licensees whose transmitters produce power density levels greater than 5.0% of the exposure limit are considered significant contributors to RFR. Since the proposed operation is well within 5% of the most permissible exposure at any location 2 meters above the ground, it is not considered a significant contributor to RFR exposure. Thus, contributions to exposure from other RF sources in the vicinity of WPBY-TV were not taken into account. The instant proposal complies with the FCC limits for human exposure to RF radiation and thus is excluded from further environmental processing.

A chain link fence shall encompass the WPBY-TV support structure if it is not already. The applicant will cooperate with any other users of the tower by reducing the power to the antenna or if necessary completely cutting it off in order to protect maintenance workers on the tower.

**CERTIFICATION**

The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge. Executed on May 16, 2011.

The logo for Kessler and Gehman Associates, Inc. (KGA) features the letters 'KGA' in a stylized, serif font. The letters are white with a black outline and are centered over a thick, horizontal grey bar.

Ryan Wilhour

A handwritten signature in blue ink that reads 'Ryan Wilhour'. The signature is written in a cursive, flowing style.

Consulting Engineer

## ENGINEERING SPECIFICATIONS

	Licensed Parameters		STA Parameters	
<b>Transmitter Site</b>				
N. Latitude (NAD 27)	38° 29' 41.0"		38° 29' 41.0"	
W. Longitude (NAD 27)	82° 12' 03.0"		82° 12' 03.0"	
FAA Study Number:	2001-AEA-4381-OE		2001-AEA-4381-OE	
ASR Study Number:	1045615		1045615	
<b>Emission Characteristics</b>				
Channel:	34		34	
Frequency:	590 - 596 MHz		590 - 596 MHz	
<b>Antenna and Other Elevations</b>				
Height of Site Above Mean Sea Level (AMSL)	286.6 m		286.6 m	
Overall Height of Structure Above Ground (AGL)	311.0 m		311.0 m	
(including all appurtenances)	323.0 m		323.0 m	
Overall Height of Structure Above Mean Sea Level	597.6 m		597.6 m	
(including all appurtenances)	609.6 m		609.6 m	
Average Terrain	224.8 m		224.8 m	
Effective Height of Antenna Above Ground	316.6 m		<b>298.7 m</b>	
Effective Height of Antenna Above Average Terrain	378.3 m		<b>360.5 m</b>	
Effective Height of Antenna Above Mean Sea Level	603.2 m		<b>585.3 m</b>	
<b>Antenna Parameters</b>				
	H Polarization	V Polarization	H Polarization	V Polarization
Maximum Antenna Gain in Beam Maximum	17.70 dB		<b>16.21 dB</b>	
Maximum Effective Radiated Power	17.8 dBkW	-----	17.8 dBkW	-----
In Beam Maximum	60.1 kW	-----	60.1 kW	-----
Antenna Make / Model	Dielectric / 881-24		<b>PSI / PSILPD18D88C-34</b>	

**KESSLER & GEHMAN**

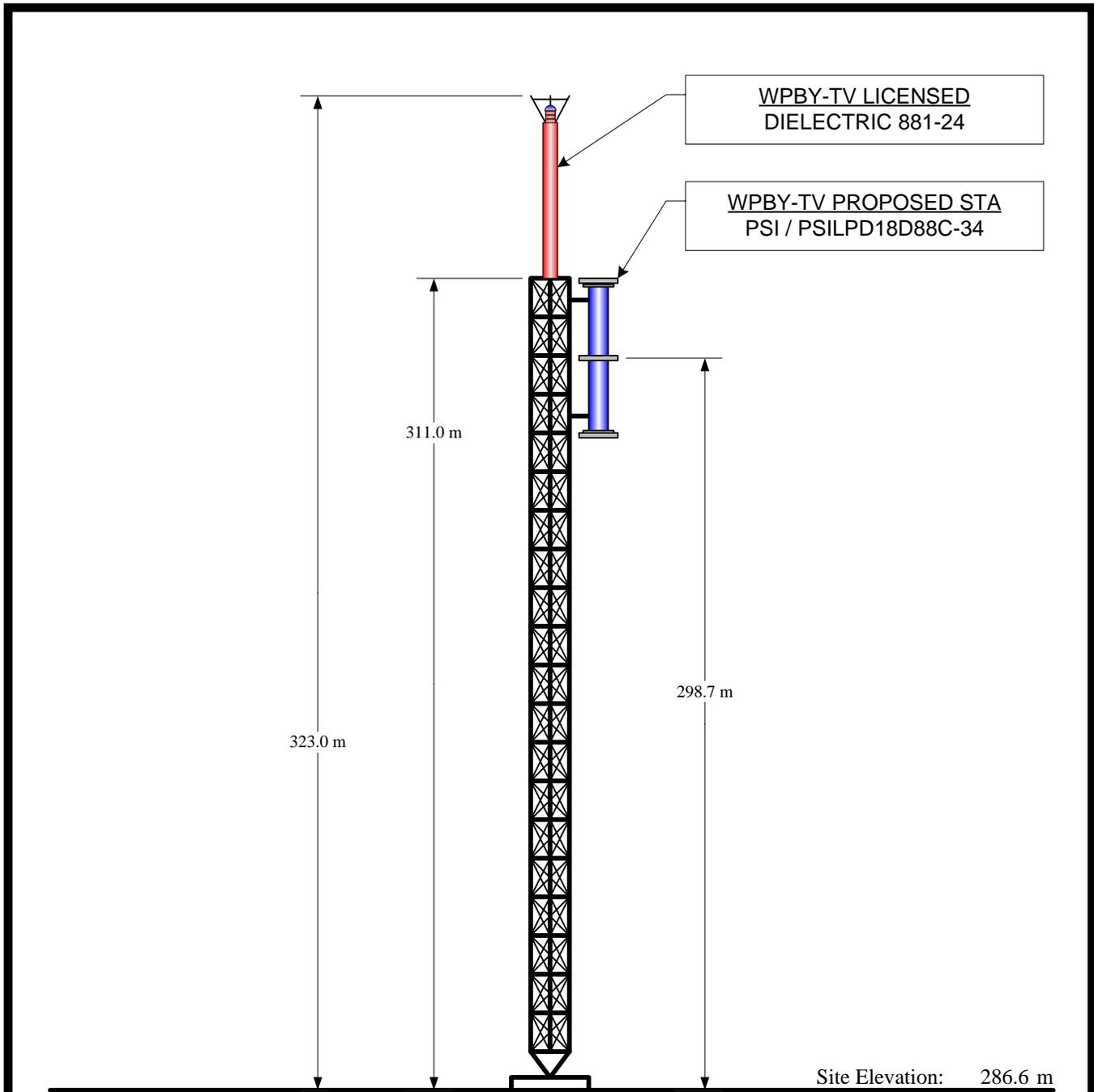
TELECOMMUNICATIONS CONSULTING ENGINEERS  
507 N.W. 60th Street, Suite C  
Gainesville, Florida 32607

**WPBY-TV**

HUNTINGTON, WV

20110516

EXHIBIT 21.1

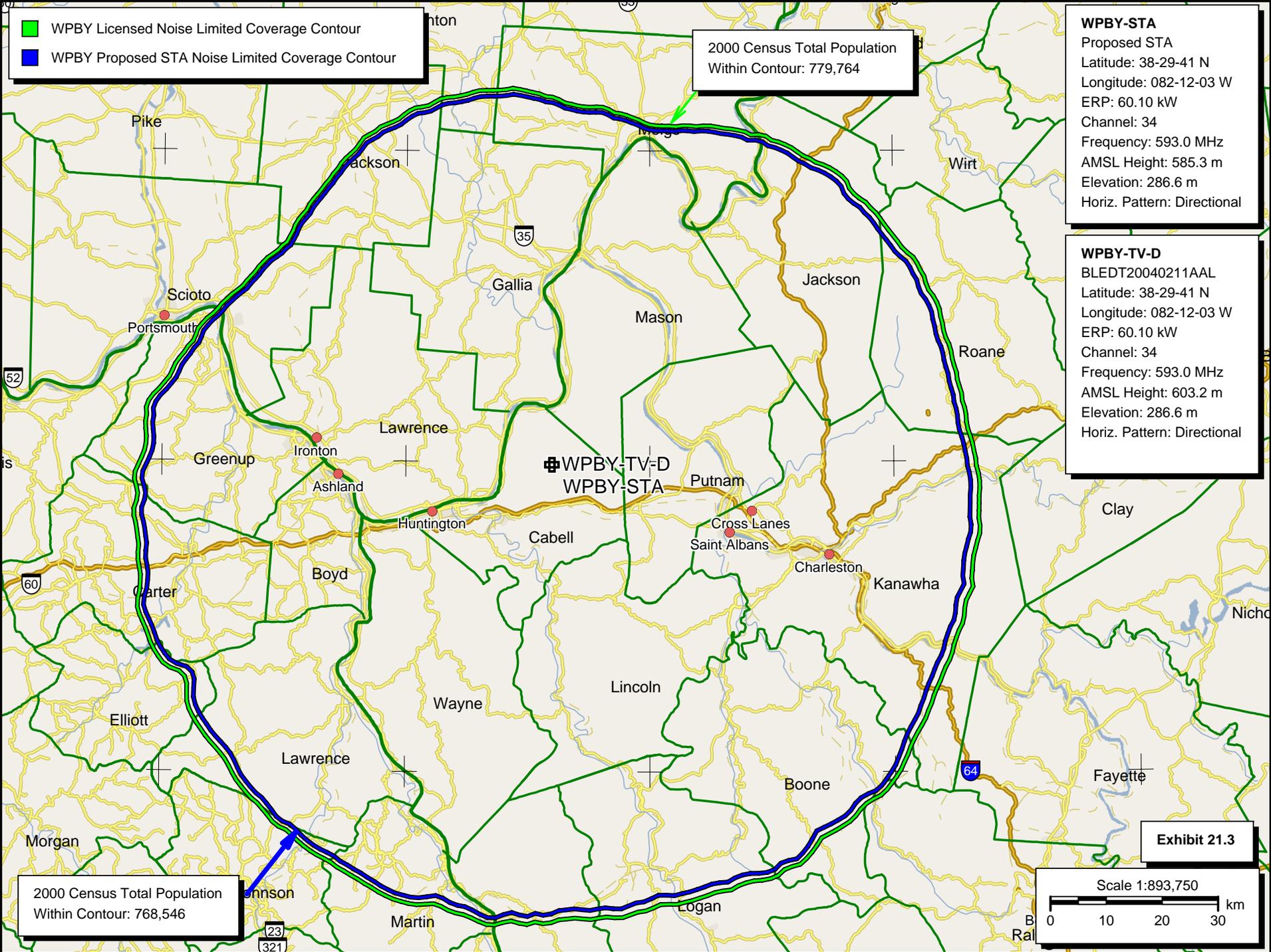


Overall Height AGL:	323.0 m	NAD 27 Coordinates:	
Overall Height AMSL:	609.6 m	N. Latitude:	38° 29' 41"
Radiation Center AGL:	298.7 m	W. Longitude:	82° 12' 03"
Radiation Center AMSL:	585.3 m	FCC Tower Registration Number:	1045615
Radiation Center HAAT:	360.5 m	FAA Aeronautical Study Number:	01-AEA-4391-OE
Average Terrain:	224.8 m		

NOTE: NOT TO SCALE

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 20110516 EXHIBIT 21.2



■ WPBY Licensed Noise Limited Coverage Contour  
■ WPBY Proposed STA Noise Limited Coverage Contour

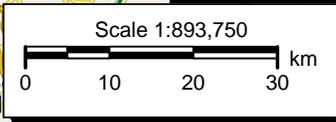
2000 Census Total Population  
 Within Contour: 779,764

**WPBY-STA**  
 Proposed STA  
 Latitude: 38-29-41 N  
 Longitude: 082-12-03 W  
 ERP: 60.10 kW  
 Channel: 34  
 Frequency: 593.0 MHz  
 AMSL Height: 585.3 m  
 Elevation: 286.6 m  
 Horiz. Pattern: Directional

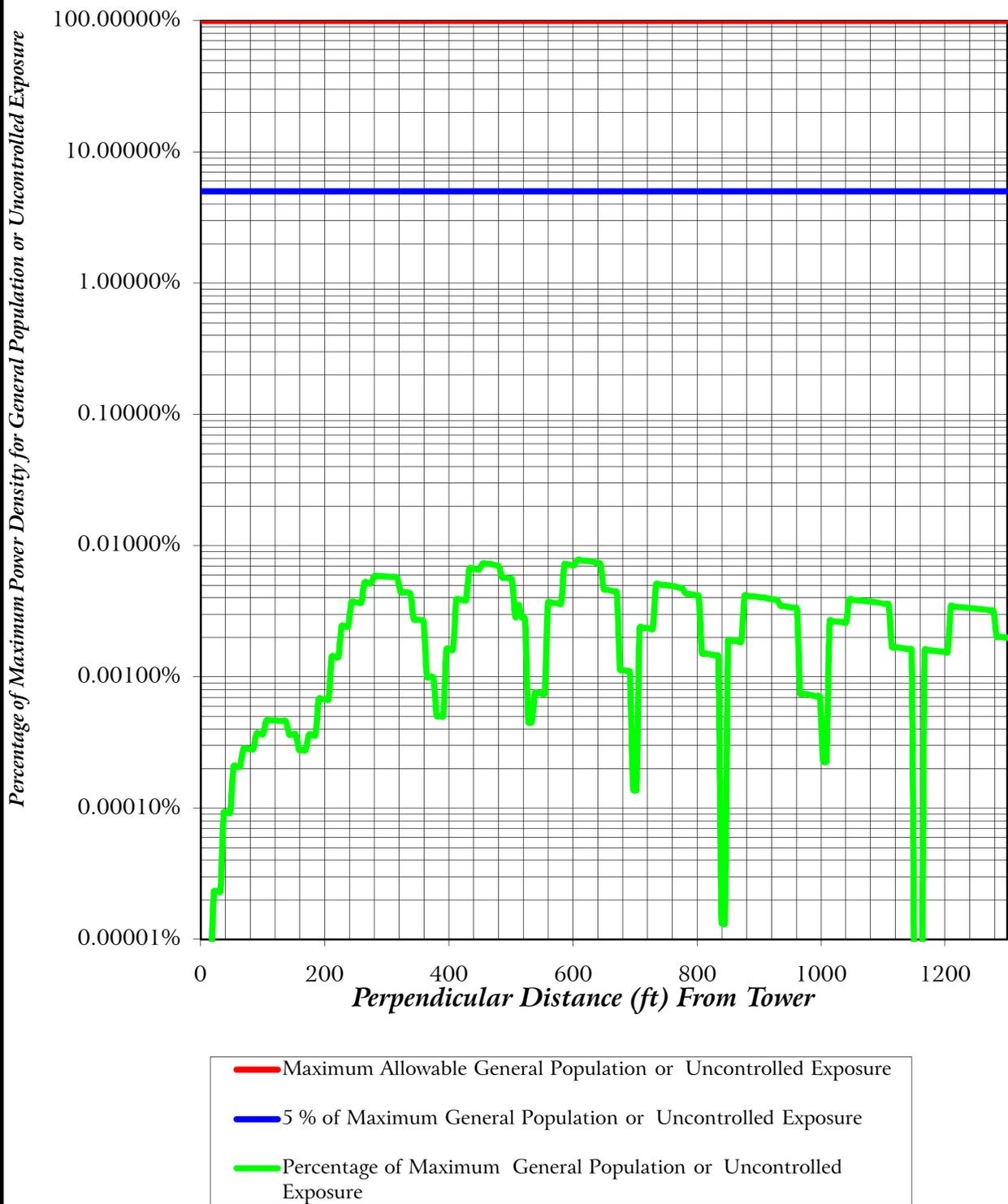
**WPBY-TV-D**  
 BLEDT20040211AAL  
 Latitude: 38-29-41 N  
 Longitude: 082-12-03 W  
 ERP: 60.10 kW  
 Channel: 34  
 Frequency: 593.0 MHz  
 AMSL Height: 603.2 m  
 Elevation: 286.6 m  
 Horiz. Pattern: Directional

2000 Census Total Population  
 Within Contour: 768,546

**Exhibit 21.3**



# FAR FIELD EXPOSURE TO RF EMISSIONS



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**WPBY-TV**

HUNTINGTON, WV

20110516

EXHIBIT 21.4

METHODOLOGY AND EXPLANATION OF  
ENVIRONMENTAL IMPACT / RADIO FREQUENCY RADIATION  
HAZARD ANALYSIS

A theoretical analysis has been conducted of the human exposure to radio frequency radiation (“RFR”) using the calculation methodology described in *OET Bulletin 65, Edition 97-01*. The RFR analysis is conducted pursuant to the following methodology:

Terrain<sup>1</sup> extraction is compiled from the proposed tower site to radial lengths of 0.25 miles in 0.001 mile increments for 360 radials. The power density is calculated for each terrain point at 6 feet above ground level using the elevation and azimuth pattern of the proposed broadcast antenna. The power density calculations are conducted using the lower edge of the proposed channel frequency. To account for ground reflections, a coefficient of 1.6 was included in the calculation.

The resulting cylindrical polar analysis is then summarized into a coordinate plane graph using the following methodology:

Starting from the origin the maximum calculated RFR value is determined among the 360 degree radials for each 0.001 mile increment, the value is then converted into a percentage of the maximum allowable general population or uncontrolled exposure and plotted as a function of perpendicular distance from the tower.

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<sup>1</sup> Terrain extraction is based upon a 3 arc second point spacing terrain database.