APPLICATION FOR MINOR MODIFICATION OF FCC FILE NUMBER BPFT-20051130AZE FOR A FM TRANSLATOR BROADCAST STATION W297AA CHANNEL 297D WEST VIRGINIA EDUCATIONAL BROADCASTING AUTHORITY CLARKSBURG, WEST VIRGINIA

KESSLER & GEHMAN ASSOCIATES, INC.
TELECOMMUNICATIONS CONSULTING ENGINEERS

KGA

20060119

Prepared by Ryan Wilhour

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TECHNICAL STATEMENT OF RYAN WILHOUR OF THE FIRM OF
KESSLER AND GEHMAN ASSOCIATES, INC., CONSULTING ENGINEERS
IN CONNECTION WITH AN APPLICATION FOR MINOR MODIFICATION TO
W297AA FCC FILE NUMBER BPFT-20051130AZE FOR A FM TRANSLATOR
BROADCAST STATION
CHANNEL 297D, ERP 8 WATTS H POLARIZED AT 147.4 M AAT
WEST VIRGINIA EDUCATIONAL BROADCASTING AUTHORITY
CLARKSBURG, WV

APPLICATION SUMMARY

West Virginia Educational Broadcasting Authority ("WVEBA") is the applicant of construction permit number BPFT-20051130AZE. Upon approval, the instant application will decrease the effective antenna height by 24 m, no other changes are proposed.

ATTACHED FIGURES

In carrying out the engineering studies, the following attached figures were prepared:

1) Proposed engineering specifications Exhibit E1.
2) Elevation drawing of the antenna system Exhibit E2.
3) Map showing the proposed 1-mV/m contour Exhibit E3.
4) Environmental impact / RFR hazard analysis and methodology Exhibit E4

AREA AND POPULATION ANALYSIS

The area within the proposed 1 mV/m contour demonstrated in Exhibit E3 was generated by a computer which calculates and plots the distances to the contour. The population

served by the proposed 1 mV/m contour was determined by using 2000 census data and a computer program which added the population of all census blocks whose centroids fall within the contour. The area and population which would be served by the proposed 1 mV/m contour are 139.1 km^2 and 34,362 persons respectively.

ALLOCATION STUDIES

Allocation studies were not conducted for the instant application since the only modification being made relative to the construction permitted facility is a decrease in effective antenna height. Based upon a standard protected and interfering contour overlap analysis, a reduction in antenna height will not increase potential interference to neighboring facilities. Thus, exhibits have not been provided.

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 E4 is a RFR study demonstrating compliance within 5% of the most restrictive permissible exposure at any location 2 meters above the ground assuming worse case terrain (See Methodology). Exhibit E4 calculations were made using a frequency of 107.2 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 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 the proposed facility were not taken into account. This minor modification 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 proposed 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.

DECLARATION OF ENGINEER

I, Ryan Wilhour, declare and state that I am a graduate electrical engineer with a Bachelor of Science in Electrical Engineering and my qualifications are a matter of record with the Federal Communication Commission, and that I am an engineer in the firm of Kessler and Gehman Associates, Inc., and that firm has been retained by West Virginia Educational Broadcasting Authority to prepare the herein application.

The foregoing statement and the report regarding the aforementioned engineering work are true and correct to the best of my knowledge. Executed on January 19, 2006

KESSLER AND GEHMAN ASSOCIATES, INC.

Ryan Wilhour
Consulting Engineer

ENGINEERING SPECIFICATIONS

A. Transmitter Site (NAD 27)

FCC Tower Reg. Number	1033593
North Latitude	39 ° 17 ' 06 "
West Longitude	80 ° 19 ' 46 "

Street Address or Location

Pinnickinnick Mountain
Clarksburg, WV

B. Proposed Facility
Channel

Number	297D

C. Antenna Height

Height of Site Above Mean Sea Level (AMSL)	442.6 m
Overall Height of Structure Above Ground (including all appurtenances)	180.7 m
Overall Height of Structure Above Mean Sea Level (including all appurtenances)	623.3 m
Average Terrain	356.3 m
Height of Site Above Average Terrain	86.3 m
Effective Height of Antenna Above Ground	61.0 m
Effective Height of Antenna Above Average Terrain	147.4 m
Effective Height of Antenna Above Mean Sea Level	503.6 m

D. Proposed ERP

Polarization	Horizontal	Vertical
Effective Radiated Power	8 W	0 W

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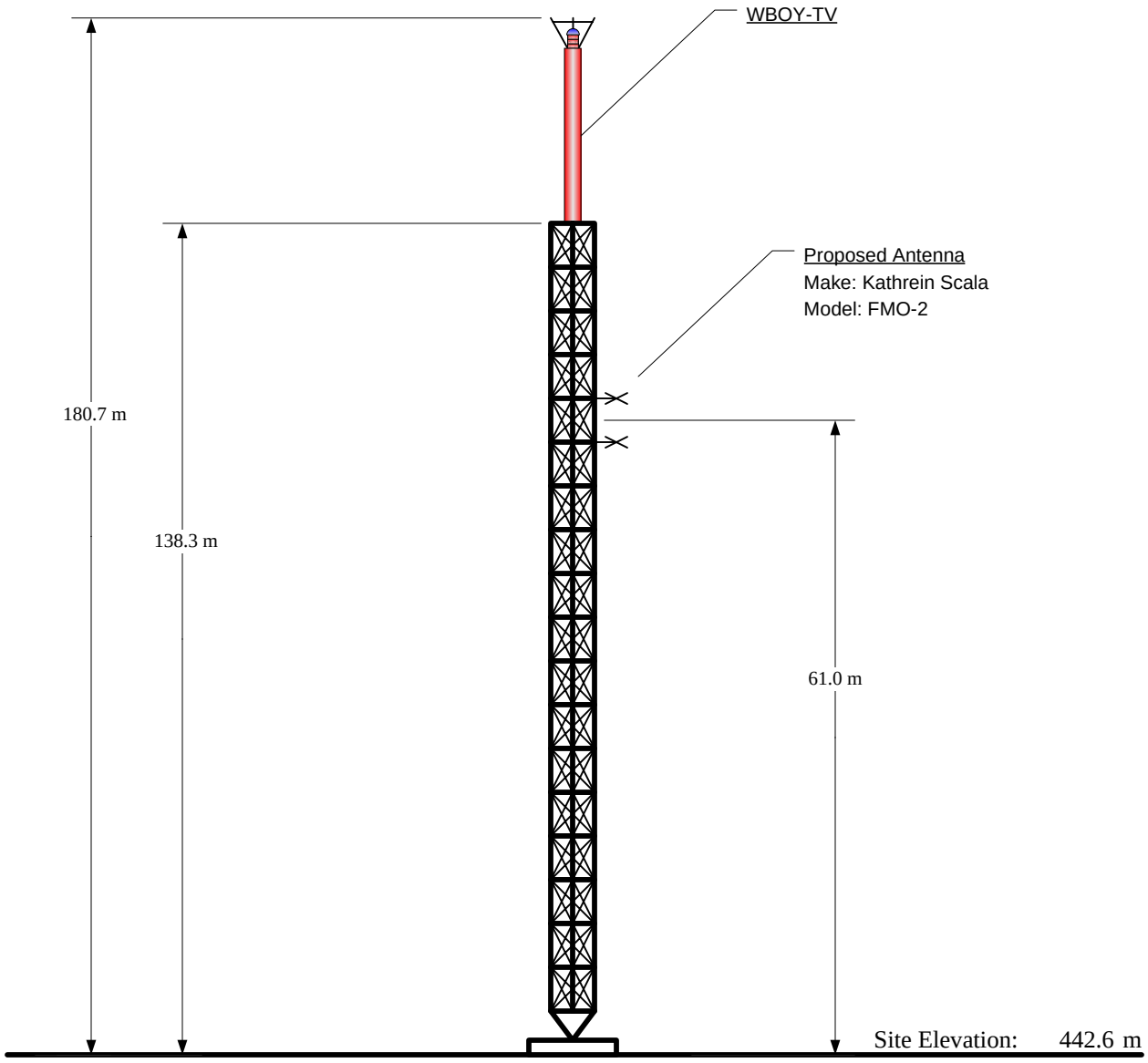
EXHIBIT E1



Overall Height AGL:	180.7 m
Overall Height AMSL:	623.3 m
Radiation Center AGL:	61.0 m
Radiation Center AMSL:	503.6 m
Radiation Center HAAT:	147.4 m
Average Terrain (12 radial):	356.3 m

NOTE: NOT TO SCALE

NAD 27 Coordinates:

N. Latitude:	39º	17'	6"
N. Longitude:	80º	19'	46"

FAA Study Number: 1997-AEA-2619-OE

FCC Tower Registration Number: 1033593

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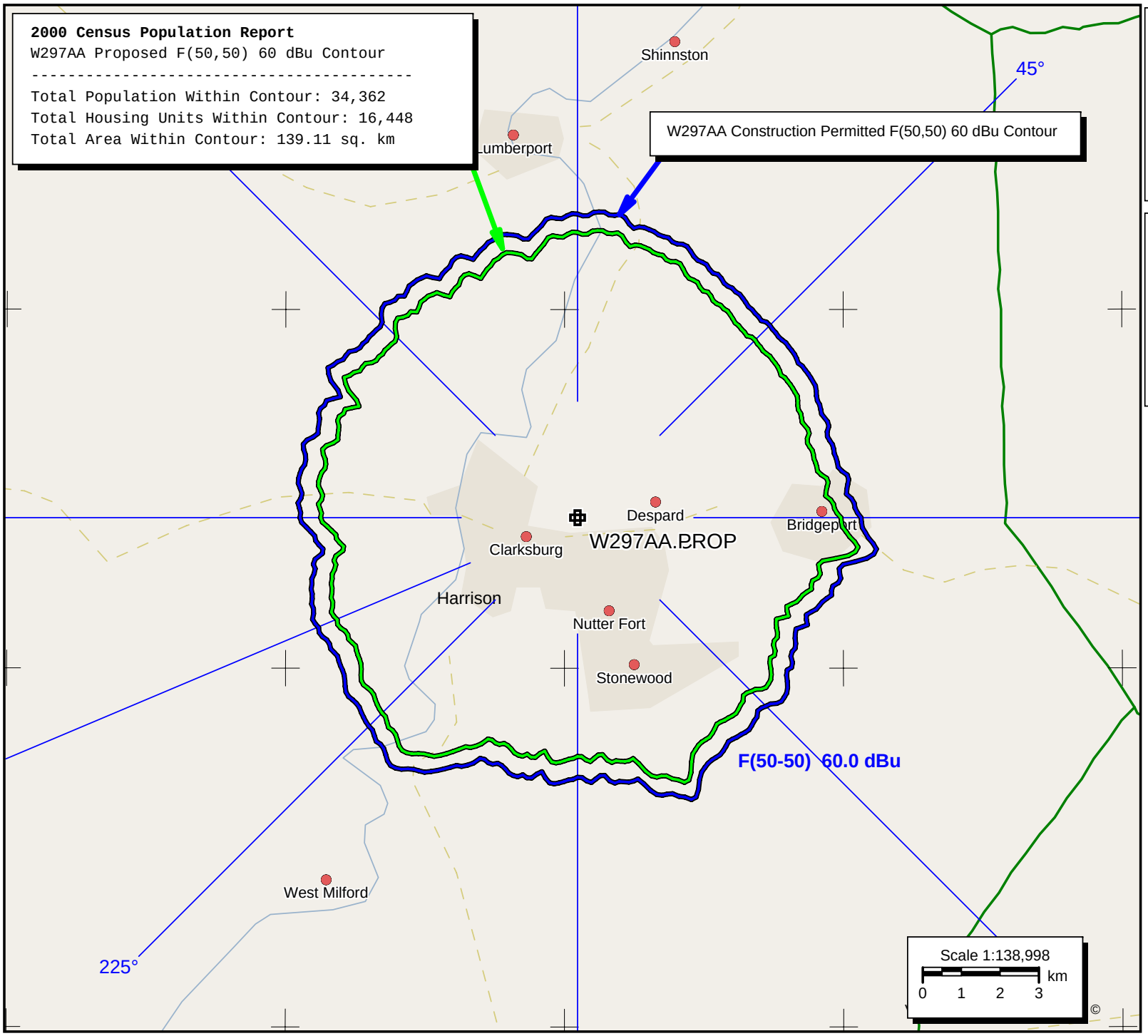
20060120 EXHIBIT E2


2000 Census Population Report
W297AA Proposed F(50,50) 60 dBu Contour
Total Population Within Contour: 34,362
Total Housing Units Within Contour: 16,448
Total Area Within Contour: 139.11 sq. km
W297AA Construction Permitted F(50,50) 60 dBu Contour
W297AA.CP
BPFT20051130AZE
Latitude: 39-17-06 N
Longitude: 080-19-46 W
ERP: 0.008 kW
Channel: 297
AMSL Height: 528.0 m
Horiz. Pattern: Omni
W297AA.PROP
Proposed
Latitude: 39-17-06 N
Longitude: 080-19-46 W
ERP: 0.008 kW
Channel: 297
AMSL Height: 503.6 m
Horiz. Pattern: Omni
Shinnston
Lumberport
45°
Despard
Bridgeport
Clarksburg
W297AA.PROP
Harrison
Nutter Fort
Stonewood
F(50-50) 60.0 dBu
West Milford
225°
Scale 1:138,998
km
0 1 2 3
EXHIBIT E3

FAR FIELD EXPOSURE TO RF EMISSIONS

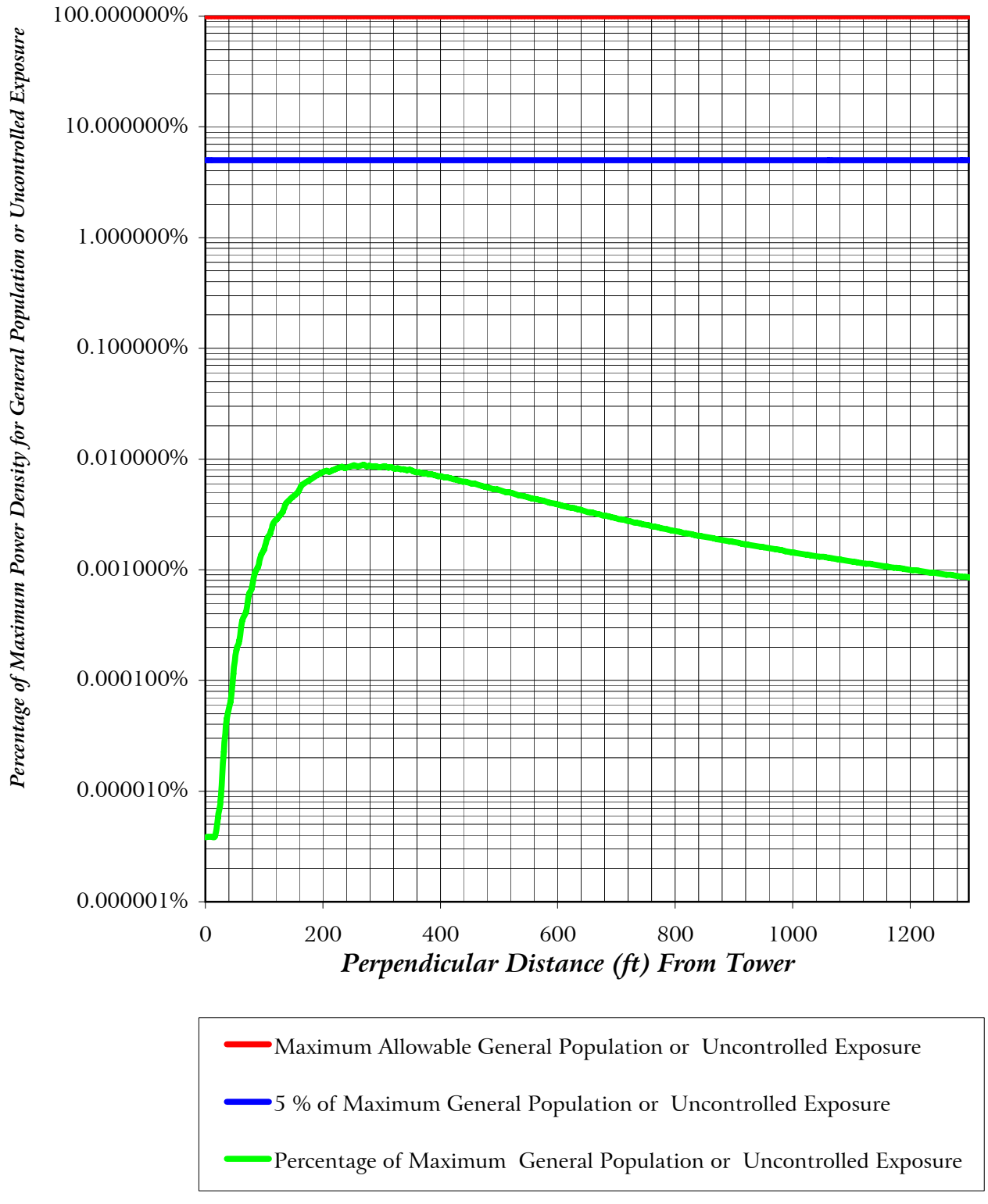


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EXHIBIT E4

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[1] 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.

[1] Terrain extraction is based upon a 3 arc second point spacing terrain database.