

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

Section 73.37

Groundwave

The proposed daytime operation of WPEN does not involve new or increase in existing prohibited contour overlap with any other existing or proposed AM stations on co-channel (950 kHz) as well as \pm three channels of 950 kHz (see attached maps, Figures 5 thru 14). This determination has been made based on the FCC M-3 estimated and measured ground conductivities.

WPEN presently has prohibitive contour overlap with co-channel station WCTN, Potomac-Cabin John, Maryland (licensed operation) and its recently authorized operation, BP-20050323AAW. As indicated in Figures 7 and 8 the prohibitive contour overlap with this co-channel station from the WPEN proposed operation would be slightly reduced.

In addition to the co-channel overlap, the present WPEN operation also has prohibitive contour overlap with first-adjacent channel stations WHYL (960 KHz), Carlisle, Pennsylvania and WADV (940 KHz), Lebanon, Pennsylvania. Since the WPEN 43 kW proposal reduces the effective radiation below the present licensed 25 kW operation through the entire service areas of these stations the area of prohibitive contour overlap (received and given) from the proposed operation of WPEN is reduced (see Figures 9 through 12). Therefore, no increase in area of present prohibitive contour overlap to these stations will occur as a result of this proposal.

Three radials for additional measurements were selected to augment the existing measurement data contained in WPEN's antenna proof-of-performance, Appendix A of the 25 kW application and the antenna proofs of other AM stations. Measured radials were selected to adhere to the Commission's policy of limiting the measured data to plus or minus ten degrees of an azimuth.

The inverse field utilized for analyzing the new WPEN and WTGM measured radials was taken from the station's directional standard pattern, particularly in the case where the radial was a stub radial which did not include any close-in measurements. Similarly, the measured data of other stations was analyzed using the inverse field from the measured non-directional or directional licensed pattern of the particular station.

Additionally, extensive field strength measurement data, presently on file at the Commission, was also utilized for the daytime allocation showings of the presently licensed and the proposed WPEN operations. This measured data is not being resubmitted but is referred to in Exhibits 14 and 15 of the 25 kW CP application and Appendix A. Included in Appendix A attached are two previous measured radials for WPEN (N 230° E and N 250°E) requested by the engineering staff.

The values of conductivity, azimuths, and inverse distance field strengths used as a basis for coverage contours and for the prohibitive contour overlap studies with other AM stations are included on the tables attached hereto as Exhibits E-14 and 15. This detailed information in the form of computer generated tabulations also shows the basis of the ground conductivities and distance to contours shown on the FCC Figure M-3 maps. The pertinent contours of other AM stations depicted on the M-3 maps have been obtained from their respective license or pending application files where indicated or

were computed based on their standard radiation pattern and the Commission's estimated (Figure M-3) and/or measured conductivities.

Section 73.182

Skywave

Not applicable

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

Station WPEN (Licensed and Proposed)

Latitude: 39-58-28 N

Longitude: 075-16-19 W

Conductivity Database Used: US M3

Ground Conductivity Data: Region conductivity in mS/m followed by distance in km Azimuth to the end of region. E - map data; M - measurement data.										
Azimuth										
0.0	2.0M	64.8	1.0M	104.6	0.1M	118.7	2.0E	135.9	4.0E	542.7
15.0	10.0E	621.6	4.0E	649.4	2.0E	836.1	2.0E	1609.2	2.0E	1609.3
	2.0M	64.8	1.0M	104.6	0.1M	118.7	2.0E	142.4	4.0E	560.9
10.0	10.0E	628.8	4.0E	646.7	2.0E	830.1	2.0E	1609.2	2.0E	1609.3
	2.0M	64.8	1.0M	104.6	0.1M	118.7	2.0E	151.2	4.0E	568.0
14.9	10.0E	624.7	4.0E	672.3	2.0E	853.4	2.0E	1609.2	2.0E	1609.3
	2.0M	64.8	1.0M	104.6	0.1M	118.7	2.0E	162.2	4.0E	343.2
15.0	2.0E	443.2	4.0E	580.2	10.0E	714.7	4.0E	773.3	2.0E	920.1
	2.0M	60.0	1.5M	115.2	0.1M	155.3	2.0E	162.4	4.0E	343.5
15.1	2.0E	447.0	4.0E	584.6	10.0E	715.8	4.0E	775.3	2.0E	922.2
	2.0M	60.0	1.5M	115.2	0.1M	155.3	2.0E	162.7	4.0E	343.7
20.0	2.0E	456.4	4.0E	589.1	10.0E	717.0	4.0E	777.3	2.0E	924.2
	2.0M	60.0	1.5M	115.2	0.1M	155.3	2.0E	174.2	4.0E	360.3
25.0	2.0E	598.2	4.0E	683.8	6.0E	797.7	4.0E	890.9	2.0E	1057.1
	2.0M	60.0	1.5M	115.2	0.1M	155.3	2.0E	174.2	4.0E	374.9
30.0	2.0E	506.2	0.5E	623.6	4.0E	903.7	5000.0E	1100.1	2.0E	1216.1
	2.0M	60.0	1.5M	115.2	0.1M	155.3	2.0E	168.4	4.0E	379.6
34.9	1.0E	534.9	0.5E	687.8	4.0E	694.8	1.0E	707.5	4.0E	714.6
	1.0E	749.9	4.0E	753.2	1.0E	950.0	2.0E	1191.3	5000.0E	1363.7
35.0	2.0M	60.0	1.5M	115.2	0.1M	155.3	2.0E	145.9	4.0E	297.4
	1.0E	991.9	2.0E	1135.5	5000.0E	1144.6	2.0E	1309.0	5000.0E	1387.8
35.1	2.0M	70.0	3.0M	90.5	2.0M	105.0	1.0M	144.5	0.5M	180.2
	4.0E	295.1	1.0E	990.0	2.0E	1139.2	5000.0E	1146.6	2.0E	1310.4
40.0	2.0M	70.0	3.0M	90.5	2.0M	105.0	1.0M	144.5	0.5M	180.2
	4.0E	292.8	1.0E	987.9	2.0E	1142.8	5000.0E	1148.6	2.0E	1311.8
45.0	2.0M	70.0	3.0M	90.5	2.0M	105.0	1.0M	144.5	0.5M	180.2
	4.0E	193.7	1.0E	515.3	2.0E	796.7	1.0E	900.1	2.0E	1201.3
50.0	2.0M	70.0	3.0M	90.5	2.0M	105.0	1.0M	144.5	0.5M	180.2
	4.0E	181.1	1.0E	263.8	2.0E	384.6	1.0E	487.5	2.0E	499.9
54.9	5000.0E	511.1	2.0E	537.4	5000.0E	548.3	2.0E	553.2	5000.0E	614.4
	2.0E	619.3	5000.0E	634.6	2.0E	641.5	5000.0E	645.6	2.0E	663.7
55.0	2.0M	70.0	3.0M	90.5	2.0M	105.0	1.0M	144.5	0.5M	180.2
	1.0E	246.6	2.0E	479.6	5000.0E	980.7	2.0E	1012.8	5000.0E	1027.6
55.0	4.0E	1076.0	5000.0E	1086.8	4.0E	1130.7	5000.0E	1148.4	4.0E	1151.5
	5000.0E	1175.8	4.0E	1212.0	5000.0E	1541.0	1.0E	1609.2	5000.0E	1609.3
55.0	2.0M	70.0	3.0M	90.5	2.0M	105.0	1.0M	144.5	0.5M	180.2
	4.0E	185.9	5000.0E	191.0	4.0E	191.2	5000.0E	252.1	2.0E	453.1
55.0	5000.0E	883.2	2.0E	1134.5	4.0E	1259.7	5000.0E	1295.6	1.0E	1366.0
	2.0M	9.2	3.0M	25.0	2.0M	62.0	1.5M	100.5	1.0M	111.9
55.0	0.5M	115.6	4.0E	125.2	5000.0E	129.1	0.5E	148.0	4.0E	165.2
	5000.0E	166.8	4.0E	186.0	5000.0E	190.8	4.0E	191.5	5000.0E	253.2
55.0	2.0E	453.0	5000.0E	882.1	2.0E	1138.1	4.0E	1259.4	5000.0E	1294.8
	1.0E	1363.6	4.0E	1402.4	5000.0E	1609.2	1.0E	1609.3	5000.0E	1609.3

¹ WPEN Minor change application dated November 2005 – Appendix A.

² WPEN Minor change application dated November 2005 – Appendix A (Extended see Appendix A attached).

³ WPEN Minor change application dated November 2005 – Appendix A.

KHANNA & GULL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth	to the end of region. E - map data; M - measurement data.									
55.1	2.0M	9.2	3.0M	25.0	2.0M	62.0	1.5M	100.5	1.0M	111.9
	0.5M	115.6	4.0E	125.2	5000.0E	129.0	0.5E	148.9	4.0E	165.1
	5000.0E	166.6	4.0E	186.2	5000.0E	190.5	4.0E	191.8	5000.0E	254.2
	2.0E	453.0	5000.0E	880.9	2.0E	1141.6	4.0E	1259.6	5000.0E	1293.9
60.0	2.0M	9.2	3.0M	25.0	2.0M	62.0	1.5M	100.5	1.0M	111.9
	0.5M	115.6	5000.0E	145.7	0.5E	224.2	5000.0E	310.4	2.0E	368.0
	5000.0E	389.3	2.0E	451.6	5000.0E	486.9	2.0E	489.8	5000.0E	887.3
	2.0E	920.2	5000.0E	937.5	2.0E	957.5	5000.0E	1609.2	1.0E	1609.3
⁴ 65.0	2.0M	9.2	3.0M	25.0	2.0M	62.0	1.5M	100.5	1.0M	111.9
	0.5M	115.6	4.0E	119.8	5000.0E	200.7	0.5E	251.9	5000.0E	264.2
	0.5E	290.1	5000.0E	467.0	2.0E	484.7	5000.0E	2500.0		
68.9	2.0M	9.2	3.0M	25.0	2.0M	62.0	1.5M	100.5	1.0M	111.9
	0.5M	115.6	4.0E	117.1	5000.0E	2500.0				
69.0	2.0M	7.0	3.0M	32.0	2.0M	110.0	4.0E	117.0	5000.0E	2500.0
69.1	2.0M	7.0	3.0M	32.0	2.0M	110.0	4.0E	116.9	5000.0E	2500.0
⁵ 70.0	2.0M	7.0	3.0M	32.0	2.0M	110.0	4.0E	116.4	5000.0E	2500.0
75.0	2.0M	7.0	3.0M	32.0	2.0M	110.0	4.0E	111.5	5000.0E	2500.0
80.0	2.0M	7.0	3.0M	32.0	2.0M	110.0	5000.0E	2500.0		
80.1	4.0E	107.6	5000.0E	2500.0						
85.0	4.0E	100.8	5000.0E	2500.0						
90.0	4.0E	100.6	5000.0E	2500.0						
95.0	4.0E	99.8	5000.0E	2500.0						
100.0	4.0E	98.4	5000.0E	2500.0						
104.9	4.0E	100.0	5000.0E	2500.0						
105.0	5.0M	14.4	3.0M	31.4	4.0E	100.0	5000.0E	2500.0		
110.0	5.0M	14.4	3.0M	31.4	4.0E	98.5	5000.0E	2500.0		
⁶ 115.0	5.0M	14.4	3.0M	31.4	4.0E	94.8	5000.0E	2500.0		
120.0	5.0M	14.4	3.0M	31.4	4.0E	97.2	5000.0E	2500.0		
125.0	5.0M	14.4	3.0M	31.4	4.0E	92.9	5000.0E	2500.0		
125.1	4.0E	93.0	5000.0E	2500.0						
130.0	4.0E	14.8	5000.0E	15.0	4.0E	91.9	5000.0E	2500.0		
135.0	4.0E	13.9	5000.0E	14.4	4.0E	96.2	5000.0E	2500.0		
140.0	4.0E	13.2	5000.0E	13.9	4.0E	95.5	5000.0E	2500.0		
145.0	4.0E	12.6	5000.0E	13.6	4.0E	100.4	5000.0E	2500.0		
149.9	4.0E	12.2	5000.0E	13.4	4.0E	103.9	5000.0E	2500.0		
150.0	3.0M	4.8	5.0M	15.8	3.0M	32.0	2.0M	84.7	3.0M	116.0
	5000.0E	2500.0								
155.0	3.0M	4.8	5.0M	15.8	3.0M	32.0	2.0M	84.7	3.0M	116.0
	5000.0E	2500.0								
⁷ 160.0	3.0M	4.8	5.0M	15.8	3.0M	32.0	2.0M	84.7	3.0M	116.0
	4.0E	118.4	5000.0E	2500.0						
165.0	3.0M	4.8	5.0M	15.8	3.0M	32.0	2.0M	84.7	3.0M	116.0
	4.0E	119.6	5000.0E	2500.0						
169.9	3.0M	4.8	5.0M	15.8	3.0M	32.0	2.0M	84.7	3.0M	116.0
	5000.0E	2500.0								
170.0	3.0M	4.8	5.0M	15.8	3.0M	32.0	2.0M	84.7	3.0M	116.0
	5000.0E	2500.0								
170.0	3.0M	4.8	5.0M	15.8	3.0M	32.0	2.0M	84.7	3.0M	116.0
	5000.0E	2500.0								
170.1	3.0M	4.6	5.0M	12.9	3.0M	45.1	2.0M	53.8	1.0M	67.3
	2.5M	159.9	5000.0E	2500.0						
175.0	3.0M	4.6	5.0M	12.9	3.0M	45.1	2.0M	53.8	1.0M	67.3
	2.5M	159.9	2.0E	170.5	5000.0E	174.2	2.0E	175.4	5000.0E	2500.0
⁸ 180.0	3.0M	4.6	5.0M	12.9	3.0M	45.1	2.0M	53.8	1.0M	67.3
	2.5M	159.9	2.0E	202.6	5000.0E	2500.0				
184.9	3.0M	4.6	5.0M	12.9	3.0M	45.1	2.0M	53.8	1.0M	67.3
	2.5M	159.9	2.0E	245.5	5000.0E	462.6	4.0E	468.6	5000.0E	470.6

⁴ WPEN Minor change application dated November 2005 – Appendix A.

⁵ WPEN Minor change application dated November 2005.

⁶ WPEN Antenna proof-of-performance dated February 1978.

⁷ WPEN Minor change application dated November 2005.

⁸ WPEN Minor change application dated November 2005 combined with measurements dated August 2007 – See Appendix A for re-plot of 2005 measurements adjusted to 25 kW and new 25 kW measurements.

KHANNA & GULL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
to the end of region. E - map data; M - measurement data.										
Azimuth										
185.0	4.0E	477.7	5000.0E	483.7	4.0E	486.3	5000.0E	2500.0		
	3.0M	4.6	5.0M	12.9	3.0M	45.1	2.0M	53.8	1.0M	67.3
	2.5M	159.9	2.0E	246.7	5000.0E	461.4	4.0E	477.7	5000.0E	482.2
185.1	4.0E	487.1	5000.0E	2500.0						
	3.0M	33.0	4.0M	57.0	6.0M	94.7	3.0M	124.4	2.0M	173.6
	2.0E	248.0	5000.0E	460.2	4.0E	477.8	5000.0E	480.8	4.0E	488.0
190.0	5000.0E	2500.0								
	3.0M	33.0	4.0M	57.0	6.0M	94.7	3.0M	124.4	2.0M	173.6
	2.0E	226.4	5000.0E	246.0	2.0E	249.4	5000.0E	251.0	2.0E	254.0
190.1	5000.0E	255.3	2.0E	292.4	5000.0E	355.5	4.0E	385.3	5000.0E	387.6
	4.0E	389.4	5000.0E	394.6	4.0E	420.1	5000.0E	426.2	4.0E	433.3
	5000.0E	449.2	4.0E	520.6	5000.0E	557.9	4.0E	560.5	5000.0E	564.3
195.0	4.0E	568.4	5000.0E	568.9	4.0E	574.8	5000.0E	2500.0		
	3.0M	33.0	4.0M	57.0	6.0M	94.7	3.0M	124.4	2.0M	173.6
	2.0E	226.4	5000.0E	245.9	2.0E	248.6	5000.0E	251.2	2.0E	253.8
200.0	5000.0E	255.4	2.0E	260.6	5000.0E	261.0	2.0E	292.5	5000.0E	354.2
	4.0E	384.6	5000.0E	386.1	4.0E	389.6	5000.0E	393.8	4.0E	419.5
	5000.0E	425.4	4.0E	433.6	5000.0E	449.4	4.0E	522.4	5000.0E	565.0
204.9	4.0E	575.8	5000.0E	2500.0						
	3.0M	33.0	4.0M	57.0	6.0M	94.7	3.0M	124.4	2.0M	173.6
	2.0E	199.4	5000.0E	203.0	2.0E	210.4	5000.0E	347.8	4.0E	352.1
205.0	5000.0E	357.4	4.0E	454.1	5000.0E	464.3	4.0E	521.1	5000.0E	526.8
	4.0E	568.8	5000.0E	574.7	4.0E	604.9	5000.0E	2500.0		
	3.0M	33.0	4.0M	57.0	6.0M	94.7	3.0M	124.4	2.0M	173.6
205.1	2.0E	203.6	5000.0E	252.9	4.0E	253.7	5000.0E	264.2	4.0E	269.0
	5000.0E	282.7	2.0E	299.6	5000.0E	300.0	2.0E	305.8	5000.0E	307.2
	2.0E	319.8	5000.0E	323.1	2.0E	338.3	4.0E	340.3	5000.0E	348.2
210.0	2.0E	358.4	4.0E	383.2	2.0E	520.4	4.0E	674.4	5000.0E	1464.6
	3.0M	33.0	4.0M	57.0	6.0M	94.7	3.0M	124.4	2.0M	173.6
	2.0E	195.3	5000.0E	221.5	4.0E	230.5	5000.0E	243.5	4.0E	271.6
215.0	5000.0E	277.7	2.0E	305.8	5000.0E	308.9	2.0E	334.2	5000.0E	338.5
	4.0E	557.7	4.0E	749.3	5000.0E	1312.1	2.0E	1523.0	8.0E	1609.2
	3.0M	96.2	2.0M	109.3	1.0M	133.2	4.0E	166.4	40.0E	168.3
219.9	4.0E	169.9	2.0E	195.1	5000.0E	220.8	4.0E	230.3	5000.0E	243.5
	4.0E	271.2	5000.0E	277.2	2.0E	305.5	5000.0E	308.6	2.0E	334.2
	5000.0E	338.7	2.0E	557.6	4.0E	750.4	5000.0E	1310.0	2.0E	1523.6
220.0	2.0M	109.3	1.0M	133.2	4.0E	166.3	40.0E	168.4	4.0E	170.0
	2.0E	195.3	5000.0E	220.4	4.0E	230.2	5000.0E	243.5	4.0E	270.8
	5000.0E	276.6	2.0E	305.2	5000.0E	308.3	2.0E	334.3	5000.0E	339.0
225.0	2.0E	557.5	4.0E	751.6	5000.0E	1307.8	2.0E	1524.2	8.0E	1607.1
	5000.0E	2500.0								
	2.0M	109.3	1.0M	133.2	4.0E	140.0	40.0E	140.3	4.0E	149.4
225.0	40.0E	155.0	4.0E	158.0	40.0E	171.5	4.0E	175.5	40.0E	180.8
	5000.0E	199.5	4.0E	207.4	5000.0E	211.8	4.0E	228.6	5000.0E	235.5
	4.0E	265.4	5000.0E	268.2	2.0E	555.3	4.0E	599.8	2.0E	694.1
225.0	4.0E	946.2	5000.0E	1186.2	8.0E	1187.9	5000.0E	1194.5	8.0E	1210.8
	4.0E	1277.0	2.0E	1321.6	4.0E	1470.6	5000.0E	1477.9	4.0E	1481.7
	5000.0E	2500.0								
225.0	2.0M	109.3	1.0M	133.2	4.0E	141.5	40.0E	187.7	4.0E	204.8
	5000.0E	208.5	4.0E	232.9	5000.0E	242.4	4.0E	262.3	2.0E	554.0
	4.0E	595.6	2.0E	780.7	4.0E	1216.3	2.0E	1320.7	4.0E	1370.9
225.0	5000.0E	1609.2	6.0E	2500.0						
	2.0M	109.3	1.0M	133.2	40.0E	167.9	4.0E	233.7	5000.0E	237.1
	4.0E	258.3	2.0E	487.4	4.0E	723.8	2.0E	1011.2	4.0E	1191.2
225.0	2.0E	1361.2	1.0E	1407.8	5000.0E	2500.0				
	2.0M	109.3	1.0M	133.2	40.0E	167.0	4.0E	233.4	5000.0E	236.8
	4.0E	258.3	2.0E	486.6	4.0E	731.3	2.0E	1012.0	4.0E	1192.4
225.0	2.0E	1358.3	1.0E	1412.4	5000.0E	2500.0				
	3.0M	154.1	2.0M	172.5	4.0E	243.8	5000.0E	250.9	4.0E	251.2
	2.0E	474.3	4.0E	582.6	2.0E	603.2	4.0E	689.4	2.0E	748.2
225.0	4.0E	1382.9	1.0E	1451.2	5000.0E	2500.0				

⁹ WPEN Minor change application dated November 2005 – Appendix A.

¹⁰ WPEN Minor change application dated November 2005 – Appendix A and Appendix A attached (points 53-98 kilometers remeasured).

KHANNA & GUILL, Inc. – Consulting Engineers

Ground Conductivity Data: Region conductivity in mS/m followed by distance in km to the end of region. E - map data; M - measurement data.									
Azimuth									
225.1	3.0M	154.1	2.0M	172.5	4.0E	243.4	5000.0E	250.2	4.0E 250.8
	2.0E	474.3	4.0E	580.7	2.0E	606.9	4.0E	683.0	2.0E 759.3
¹¹ 230.0	3.0M	154.1	2.0M	172.5	4.0E	196.4	5000.0E	199.4	4.0E 224.3
	2.0E	897.4	4.0E	1036.3	1.0E	1101.6	4.0E	1135.1	2.0E 1159.0
	4.0E	1320.3	8.0E	1418.6	1.0E	1556.1	2.0E	1561.5	5000.0E 2500.0
235.0	3.0M	154.1	2.0M	172.5	2.0E	1231.0	4.0E	1363.3	8.0E 1384.2
	2.0E	1609.2	4.0E	1609.3	15.0E	1609.3	5000.0E	1609.3	15.0E 1609.3
	5000.0E	2500.0							
239.9	3.0M	154.1	2.0M	172.5	2.0E	628.9	4.0E	801.2	2.0E 977.2
	4.0E	1085.0	2.0E	1242.3	4.0E	1295.2	2.0E	1487.0	4.0E 1609.2
	8.0E	1609.3	15.0E	1609.3	30.0E	1609.3	5000.0E	2500.0	
240.0	2.0M	2.6	3.0M	7.3	1.5M	31.7	2.0M	127.1	4.0E 134.8
	2.0E	628.8	4.0E	800.9	2.0E	977.9	4.0E	1080.4	2.0E 1242.6
	4.0E	1294.4	2.0E	1488.0	4.0E	1609.2	8.0E	1609.3	15.0E 1609.3
	30.0E	1609.3	5000.0E	2500.0					
240.0	2.0M	2.6	3.0M	7.3	1.5M	31.7	2.0M	127.1	4.0E 134.8
	2.0E	628.8	4.0E	800.9	2.0E	977.9	4.0E	1080.4	2.0E 1242.6
	4.0E	1294.4	2.0E	1488.0	4.0E	1609.2	8.0E	1609.3	15.0E 1609.3
	30.0E	1609.3	5000.0E	2500.0					
240.1	2.0M	2.6	3.0M	7.3	1.5M	31.7	2.0M	127.1	4.0E 134.5
	2.0E	628.8	4.0E	800.6	2.0E	978.5	4.0E	1076.0	2.0E 1243.0
	4.0E	1294.0	2.0E	1489.4	4.0E	1609.2	8.0E	1609.3	15.0E 1609.3
	30.0E	1609.3	5000.0E	2500.0					
245.0	2.0M	2.6	3.0M	7.3	1.5M	31.7	2.0M	127.1	2.0E 763.6
	4.0E	787.6	2.0E	1037.7	4.0E	1315.9	2.0E	1434.7	8.0E 1609.2
	4.0E	1609.3	15.0E	1609.3	8.0E	1609.3	4.0E	1609.3	15.0E 1609.3
	30.0E	1609.3	15.0E	2500.0					
¹² 250.0	2.0M	2.6	3.0M	7.3	1.5M	31.7	2.0M	127.1	2.0E 912.7
	4.0E	1337.1	8.0E	1584.3	4.0E	1609.2	15.0E	1609.3	8.0E 1609.3
	4.0E	1609.3	15.0E	1609.3	30.0E	1609.3	8.0E	2500.0	
255.0	2.0M	2.6	3.0M	7.3	1.5M	31.7	2.0M	127.1	4.0E 143.7
	2.0E	314.4	4.0E	374.2	2.0E	765.5	8.0E	840.1	4.0E 1302.3
	8.0E	1582.8	4.0E	1609.2	15.0E	1609.3	4.0E	1609.3	30.0E 1609.3
	15.0E	1609.3	8.0E	2500.0					
260.0	2.0M	2.6	3.0M	7.3	1.5M	31.7	2.0M	127.1	4.0E 170.1
	2.0E	264.3	4.0E	457.2	2.0E	737.9	8.0E	891.0	4.0E 1011.6
	8.0E	1609.2	15.0E	1609.3	30.0E	1609.3	15.0E	1609.3	30.0E 1609.3
	15.0E	2500.0							
260.1	4.0E	170.2	2.0E	263.7	4.0E	457.0	2.0E	737.4	8.0E 892.9
	4.0E	1010.3	8.0E	1609.2	15.0E	1609.3	30.0E	1609.3	15.0E 1609.3
	30.0E	1609.3	15.0E	2500.0					
265.0	4.0E	165.4	2.0E	240.6	4.0E	416.1	2.0E	706.8	8.0E 1609.2
	15.0E	1609.3	30.0E	1609.3	8.0E	1609.3	30.0E	1609.3	15.0E 1609.3
	30.0E	1609.3	15.0E	2500.0					
270.0	4.0E	154.1	2.0E	227.2	4.0E	573.1	8.0E	1165.6	15.0E 1330.4
	8.0E	1501.4	15.0E	1609.2	30.0E	1609.3	15.0E	2500.0	
275.0	4.0E	145.5	2.0E	218.4	4.0E	513.4	8.0E	680.7	15.0E 947.9
	8.0E	1117.4	15.0E	1257.5	8.0E	1347.6	15.0E	1609.2	30.0E 1609.3
	15.0E	1609.3	30.0E	1609.3	15.0E	2500.0			
280.0	4.0E	139.7	2.0E	212.9	4.0E	276.4	2.0E	326.5	4.0E 470.5
	8.0E	650.6	15.0E	723.2	8.0E	811.1	15.0E	865.2	8.0E 1080.4
	15.0E	1153.2	8.0E	1385.5	15.0E	1609.2	30.0E	1609.3	15.0E 1609.3
	30.0E	1609.3	15.0E	1609.3	30.0E	1609.3	15.0E	1609.3	8.0E 2500.0
283.9	4.0E	136.2	2.0E	212.2	4.0E	269.5	2.0E	354.4	4.0E 443.2
	8.0E	651.7	15.0E	720.2	8.0E	1053.0	15.0E	1093.9	8.0E 1415.5
	15.0E	1609.2	4.0E	1609.3	8.0E	2500.0			
284.0	3.0M	12.5	2.0M	32.3	4.0E	136.1	2.0E	212.2	4.0E 269.3
	2.0E	355.2	4.0E	442.6	8.0E	651.6	15.0E	720.4	8.0E 1051.9
	15.0E	1092.2	8.0E	1415.2	15.0E	1609.2	4.0E	1609.3	8.0E 2500.0

¹¹ WPEN Minor change application dated November 2005 (Included in Appendix A).

¹² WPEN Minor change application dated November 2005 (Included in Appendix A).

KHANNA & GUILL, Inc. – Consulting Engineers

	Ground Conductivity Data: Region conductivity in mS/m followed by distance in km to the end of region. E - map data; M - measurement data.									
Azimuth										
285.0	3.0M	12.5	2.0M	32.3	4.0E	135.4	2.0E	212.4	4.0E	267.8
	2.0E	363.5	4.0E	436.4	8.0E	650.8	15.0E	720.8	8.0E	886.1
	2.0E	966.5	8.0E	1413.9	15.0E	1609.2	8.0E	1609.3	4.0E	1609.3
	8.0E	2500.0								
290.0	3.0M	12.5	2.0M	32.3	4.0E	129.3	2.0E	217.0	4.0E	260.9
	2.0E	420.0	8.0E	626.0	10.0E	672.1	8.0E	787.7	4.0E	853.7
	2.0E	958.7	8.0E	1085.6	15.0E	1113.1	8.0E	1275.5	4.0E	1403.7
	8.0E	1482.8	15.0E	1593.5	30.0E	1609.2	15.0E	1609.3	30.0E	1609.3
¹³ 295.0	15.0E	1609.3	8.0E	1609.3	15.0E	1609.3	8.0E	1609.3	15.0E	2500.0
	3.0M	12.5	2.0M	32.3	4.0E	123.5	2.0E	420.0	8.0E	579.9
	10.0E	633.5	20.0E	694.0	8.0E	938.3	2.0E	984.9	8.0E	1108.9
	15.0E	1152.3	8.0E	1239.7	4.0E	1432.7	8.0E	1516.7	4.0E	1541.0
300.0	15.0E	1584.7	4.0E	1609.2	8.0E	1609.3	15.0E	1609.3	30.0E	1609.3
	3.0M	12.5	2.0M	32.3	4.0E	116.3	2.0E	420.1	4.0E	482.8
	8.0E	531.9	10.0E	599.9	20.0E	677.9	15.0E	745.6	8.0E	956.0
	2.0E	1028.8	8.0E	1225.8	4.0E	1609.2	30.0E	1609.3	8.0E	2500.0
304.0	3.0M	12.5	2.0M	32.3	4.0E	106.7	2.0E	328.4	4.0E	462.9
	8.0E	492.1	10.0E	560.6	20.0E	665.5	10.0E	686.4	8.0E	707.3
	15.0E	789.9	8.0E	952.0	2.0E	1038.8	8.0E	1203.3	4.0E	1489.9
	8.0E	1609.2	4.0E	1609.3	8.0E	1609.3	15.0E	1609.3	30.0E	1609.3
304.1	15.0E	1609.3	30.0E	1609.3	40.0E	2500.0				
	4.0E	106.5	2.0E	326.5	4.0E	462.6	8.0E	491.3	10.0E	558.9
	4.0E	559.2	20.0E	665.4	10.0E	686.6	8.0E	708.0	15.0E	791.0
	8.0E	952.9	2.0E	1037.4	8.0E	1202.8	4.0E	1488.2	8.0E	1609.2
305.0	4.0E	1609.3	8.0E	1609.3	15.0E	1609.3	30.0E	1609.3	15.0E	1609.3
	4.0E	104.7	2.0E	310.7	4.0E	458.7	8.0E	485.2	10.0E	526.4
	4.0E	564.3	20.0E	663.9	10.0E	688.1	8.0E	716.3	15.0E	795.3
	8.0E	967.3	2.0E	1012.1	8.0E	1198.7	4.0E	1471.7	8.0E	1609.2
310.0	4.0E	1609.3	8.0E	1609.3	30.0E	1609.3	15.0E	1609.3	30.0E	1609.3
	4.0E	97.3	2.0E	246.5	4.0E	421.5	8.0E	460.8	10.0E	506.0
	20.0E	528.2	4.0E	590.9	6.0E	675.8	10.0E	722.3	8.0E	1192.1
	4.0E	1302.2	8.0E	1307.4	4.0E	1349.5	8.0E	1609.2	2.0E	1609.3
315.0	8.0E	1609.3	20.0E	1609.3	8.0E	1609.3	20.0E	1609.3	40.0E	1609.3
	4.0E	93.0	2.0E	212.8	4.0E	417.1	8.0E	448.2	10.0E	467.3
	20.0E	546.4	4.0E	597.5	6.0E	710.8	10.0E	785.8	8.0E	1447.6
	2.0E	1609.2	10.0E	1609.3	20.0E	1609.3	10.0E	1609.3	20.0E	2500.0
320.0	4.0E	90.3	2.0E	194.6	4.0E	416.9	8.0E	476.1	20.0E	485.4
	15.0E	534.3	6.0E	560.1	10.0E	571.2	4.0E	692.3	10.0E	695.7
	4.0E	714.9	10.0E	717.2	4.0E	744.4	10.0E	748.7	4.0E	756.3
	10.0E	859.6	4.0E	875.2	10.0E	876.9	4.0E	879.3	10.0E	881.0
325.0	4.0E	882.9	10.0E	905.0	4.0E	906.0	10.0E	937.3	2.0E	1103.8
	8.0E	1216.0	2.0E	1219.2	8.0E	1358.3	2.0E	1599.5	2.0E	1609.2
	4.0E	88.4	2.0E	167.0	4.0E	370.7	8.0E	491.6	15.0E	528.3
	6.0E	589.2	4.0E	648.3	10.0E	655.2	4.0E	666.9	10.0E	834.8
328.9	2.0E	839.3	10.0E	839.6	2.0E	852.5	10.0E	854.5	2.0E	1414.1
	4.0E	87.5	2.0E	140.6	4.0E	371.5	8.0E	474.8	15.0E	515.3
	6.0E	626.8	4.0E	627.4	1.0E	726.0	2.0E	1309.0	6.0E	1344.9
	2.0E	1609.2	2.0E	2500.0						
329.0	2.0M	32.0	4.0E	87.4	2.0E	140.3	4.0E	372.0	8.0E	474.4
	15.0E	514.7	6.0E	626.6	1.0E	725.8	2.0E	1306.3	6.0E	1344.6
	2.0E	1548.2	2.0E	1552.6	2.0E	1609.2	2.0E	2500.0		
330.0	2.0M	32.0	4.0E	87.4	2.0E	137.5	4.0E	378.3	8.0E	469.6
	15.0E	509.8	6.0E	618.5	1.0E	724.6	2.0E	1280.8	6.0E	1336.0
335.0	2.0M	32.0	4.0E	87.9	2.0E	128.4	4.0E	408.3	8.0E	446.1
	15.0E	494.3	6.0E	582.3	1.0E	725.0	2.0E	1088.8	6.0E	1260.0
	2.0E	1609.2	5000.0E	2500.0						
¹⁴ 340.0	2.0M	32.0	4.0E	89.0	2.0E	127.1	4.0E	393.3	8.0E	430.0
	15.0E	467.3	4.0E	468.5	15.0E	473.1	4.0E	565.5	1.0E	736.8
	2.0E	1017.5	6.0E	1178.6	2.0E	1609.2	5000.0E	2500.0		

¹³ WPEN N 294° E Radial - Antenna proof-of-performance dated February 1978.

¹⁴ WPEN N 339° E Radial - Antenna proof-of-performance dated February 1978.

KHANNA & GUILL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth	to the end of region. E - map data; M - measurement data.									
345.0	2.0M	32.0	4.0E	90.9	2.0E	127.8	4.0E	401.2	8.0E	436.9
	15.0E	481.5	10.0E	496.6	4.0E	561.8	1.0E	718.6	2.0E	988.9
	6.0E	1090.1	2.0E	1312.2	5000.0E	1609.2	2.0E	1609.3	5000.0E	2500.0
349.0	2.0M	32.0	4.0E	93.7	2.0E	129.0	4.0E	407.1	8.0E	468.1
	15.0E	483.2	10.0E	511.0	4.0E	686.4	2.0E	969.9	6.0E	1040.1
	2.0E	1112.2	2.0E	1307.2	5000.0E	1341.4	2.0E	1347.4	5000.0E	2500.0
349.1	4.0E	93.8	2.0E	129.0	4.0E	408.3	8.0E	462.8	4.0E	463.5
	8.0E	468.4	15.0E	483.3	10.0E	511.3	4.0E	686.2	2.0E	969.3
	6.0E	1038.6	2.0E	1120.0	2.0E	1311.8	5000.0E	1335.3	2.0E	1349.3
350.0	5000.0E	2500.0								
	4.0E	94.6	2.0E	129.4	4.0E	438.2	8.0E	453.4	4.0E	455.8
	8.0E	459.4	4.0E	475.5	15.0E	486.5	10.0E	514.3	4.0E	683.6
354.9	2.0E	964.4	6.0E	1024.3	2.0E	1213.5	2.0E	1367.0	5000.0E	1609.2
	2.0E	1609.3	5000.0E	2500.0						
	4.0E	99.3	2.0E	132.0	4.0E	497.7	10.0E	550.7	4.0E	647.8
355.0	2.0E	879.7	2.0E	1609.2	2.0E	1609.3	5000.0E	1609.3	2.0E	1609.3
	5000.0E	2500.0								
	2.0M	64.8	1.0M	104.6	0.1M	118.7	2.0E	132.1	4.0E	499.0
355.0	10.0E	552.6	4.0E	647.3	2.0E	878.0	2.0E	1609.2	2.0E	1609.3
	5000.0E	1609.3	2.0E	1609.3	5000.0E	2500.0				

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

PHILADELPHIA, PA

Call: WPEN LICENSED

Coordinates: N 39 58 28 W 75 16 19

Frequency: 950 kHz Number of contours: 5

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :				
		Contour levels in mV/m.				
		.025	.500	.250	5.000	25.000
0.0	654.71	130.26	54.18	64.80	19.14	8.46
5.0	690.36	133.89	55.48	64.80	19.62	8.72
10.0	747.83	139.32	57.51	64.80	20.36	9.11
14.9	829.16	146.54	60.23	64.80	21.35	9.64
15.0	831.08	146.71	60.29	64.80	21.38	9.65
15.1	833.02	140.65	60.00	73.10	21.40	9.67
25.0	1073.50	155.35	60.00	81.83	24.03	11.06
30.0	1224.56	165.12	63.65	86.71	25.51	11.85
34.9	1384.18	176.54	67.27	91.47	26.96	12.61
35.0	1387.51	176.74	67.34	91.57	26.99	12.63
35.1	1390.85	181.60	90.50	102.39	27.02	12.64
45.0	1723.44	196.77	90.50	105.00	29.76	14.07
50.0	1884.94	203.19	90.50	105.00	30.98	14.71
54.9	2033.10	252.89	90.50	105.00	32.05	15.26
55.0	2035.99	253.26	90.50	105.00	32.07	15.27
55.1	2038.88	271.81	79.98	100.50	32.09	19.04
60.0	2173.35	254.61	82.27	100.50	33.02	19.65
65.0	2294.96	285.59	84.26	100.50	33.84	20.17
68.9	2378.20	460.33	85.60	101.54	34.39	20.53
69.0	2380.20	637.86	95.81	166.25	34.40	20.53
69.1	2382.19	638.18	95.84	166.56	34.41	20.54
70.0	2399.82	641.00	96.15	169.28	34.53	20.62
75.0	2487.92	660.32	97.64	188.14	35.09	20.98
80.0	2560.02	669.99	98.84	197.47	35.54	21.26
80.1	2561.31	820.69	211.10	348.16	51.24	24.95
85.0	2617.43	849.07	239.04	376.29	51.72	25.21
90.0	2661.80	853.22	242.85	380.24	52.09	25.42
95.0	2694.89	858.84	248.22	385.72	52.36	25.57
100.0	2718.38	865.53	254.82	392.40	52.56	25.68
104.9	2733.49	860.99	250.26	387.88	52.68	25.75
105.0	2733.72	836.17	225.43	363.05	47.15	21.94
110.0	2742.01	841.77	231.01	368.66	47.22	21.97
115.0	2743.88	855.09	244.33	381.99	47.24	21.98
120.0	2739.49	846.28	235.53	373.17	47.20	21.96
125.0	2728.48	860.46	249.73	387.34	47.11	21.92
125.1	2728.19	886.23	275.50	413.11	52.64	25.73
130.0	2710.03	890.10	279.41	416.96	52.62	25.78
135.0	2682.89	872.38	261.85	399.31	52.64	25.90
140.0	2645.50	873.16	262.91	400.25	52.53	25.92
145.0	2596.13	851.86	242.00	379.17	52.29	25.86
149.9	2534.43	835.19	225.83	362.79	51.91	25.71
150.0	2533.03	728.99	119.64	256.59	35.37	21.16
155.0	2454.66	722.30	115.40	250.30	34.88	20.84
160.0	2359.90	707.60	113.54	236.10	34.27	20.45
165.0	2248.29	694.32	111.29	223.47	33.53	19.97
169.9	2122.93	691.87	108.68	221.83	32.68	19.43
170.0	2120.21	691.60	108.62	221.58	32.66	19.41
170.1	2117.49	574.76	99.83	132.89	40.31	19.40
175.0	1977.06	530.10	96.96	129.26	39.12	18.76

KHANNA & GUILL, Inc. – Consulting Engineers

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :				
		Contour levels in mV/m.				
		.025	.500	.250	5.000	25.000
¹⁵ 180.0	1821.38	442.56	66.36	125.05	37.75	18.01
184.9	1660.20	339.57	63.58	120.42	36.25	17.19
185.0	1656.85	336.80	63.52	120.32	36.22	17.17
185.1	1653.51	269.96	97.86	124.40	42.50	17.15
190.0	1488.27	262.46	94.70	124.40	40.60	16.26
190.1	1484.90	263.24	94.70	124.40	40.56	16.24
195.0	1321.33	297.04	94.70	118.95	32.79	15.29
200.0	1162.35	268.37	94.70	112.84	30.98	14.29
204.9	1020.54	246.90	94.70	106.91	29.23	13.32
205.0	1017.83	246.46	94.70	106.79	29.20	13.30
205.1	1015.13	192.85	65.92	89.46	23.43	10.74
210.0	893.76	205.87	62.28	84.63	22.10	10.04
215.0	794.58	193.54	59.09	80.39	20.94	9.42
219.9	723.10	181.71	56.65	77.12	20.04	8.94
220.0	721.90	181.23	56.61	77.07	20.03	8.94
225.0	673.80	193.02	66.58	89.73	24.19	10.54
225.1	673.06	192.94	66.54	89.69	24.18	10.53
230.0	645.21	189.72	65.34	88.08	23.72	10.27
235.0	629.82	185.83	64.66	87.18	23.45	10.13
239.9	622.14	185.02	64.31	86.72	23.31	10.06
240.0	622.04	185.01	64.31	86.72	23.31	10.05
240.1	621.93	186.26	52.94	72.16	16.16	7.30
245.0	618.13	184.59	52.80	71.96	16.11	7.30
250.0	616.26	184.39	52.73	71.86	16.09	7.30
255.0	615.94	187.16	52.72	71.85	16.09	7.30
260.0	617.32	191.40	52.77	71.92	16.10	7.30
260.1	617.36	226.10	74.28	99.26	27.29	11.46
265.0	620.55	225.58	74.44	99.48	27.35	11.50
270.0	625.44	224.06	74.69	99.80	27.46	11.55
275.0	631.38	223.79	74.98	100.19	27.58	11.62
280.0	637.42	224.09	75.28	100.59	27.71	11.69
283.9	641.52	223.87	75.49	100.85	27.79	11.73
284.0	641.61	210.61	61.00	86.37	18.96	10.24
285.0	642.50	210.56	61.05	86.43	18.97	10.25
290.0	645.72	209.75	61.21	86.64	19.02	10.28
295.0	646.50	208.66	61.24	86.69	19.03	10.28
300.0	644.70	207.03	61.16	86.57	19.00	10.27
304.0	641.61	204.72	61.00	86.37	18.96	10.24
304.1	641.52	216.03	75.49	100.85	27.79	11.73
305.0	640.65	215.53	75.44	100.80	27.77	11.72
310.0	635.06	213.28	75.17	99.72	27.66	11.66
315.0	628.94	211.67	74.86	98.44	27.53	11.59
320.0	623.32	213.00	74.58	97.53	27.41	11.53
325.0	619.04	216.89	74.36	96.87	27.32	11.48
328.9	616.94	221.93	74.26	96.54	27.28	11.45
329.0	616.90	208.42	59.88	84.86	18.61	8.18
330.0	616.55	208.98	59.86	84.83	18.61	8.18
335.0	615.88	211.05	59.83	84.79	18.60	8.18
340.0	616.81	211.79	59.88	84.85	18.61	8.18
345.0	619.38	212.49	60.01	85.02	18.65	8.20
349.0	623.19	213.45	60.20	85.28	18.70	8.23
349.1	623.32	227.30	74.58	98.34	27.41	11.53
350.0	624.52	227.57	74.64	98.57	27.44	11.54
354.9	634.50	229.46	75.14	100.16	27.65	11.66
355.0	634.79	128.18	53.43	64.80	18.87	8.32

¹⁵ Distances to the 0.5 mV/m and 0.25 mV/m contours from N 170.1° E through N 185° E are referenced to conductivity of 2.5 mS/m (see Appendix A).

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

PHILADELPHIA, PA

Call: WPEN PROPOSED 43 kW

Coordinates: N 39 58 28 W 75 16 19

Frequency: 950 kHz Number of contours: 5

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :				
		Contour levels in mV/m.				
		.025	.500	.250	5.000	25.000
0.0	621.70	126.79	52.94	64.80	18.68	8.22
5.0	651.23	129.90	54.05	64.80	19.09	8.44
10.0	722.20	136.94	56.62	64.80	20.03	8.94
14.9	840.08	147.48	60.58	64.80	21.48	9.71
15.0	842.98	147.72	60.68	64.80	21.52	9.73
15.1	845.91	141.51	60.00	73.61	21.55	9.75
20.0	1011.47	151.78	60.00	79.70	23.39	10.72
25.0	1218.83	164.76	63.52	86.53	25.45	11.82
30.0	1453.97	179.19	68.77	93.46	27.56	12.93
34.9	1700.69	194.12	73.78	99.98	29.58	13.98
35.0	1705.82	194.38	73.88	100.11	29.62	14.00
35.1	1710.96	199.30	90.50	105.00	29.66	14.02
40.0	1964.14	208.51	90.50	105.00	31.56	15.01
45.0	2219.80	215.51	92.98	105.00	33.34	15.92
50.0	2465.03	223.23	97.26	105.00	34.94	16.74
54.9	2689.22	275.79	100.94	107.01	36.34	17.45
55.0	2693.59	276.19	101.01	107.09	36.36	17.46
55.1	2697.96	294.76	90.45	107.16	36.39	21.80
60.0	2900.94	312.29	93.36	110.50	37.59	22.56
65.0	3084.19	338.76	95.86	111.90	38.64	23.22
68.9	3209.50	522.67	97.51	111.90	39.34	23.66
69.0	3212.51	700.22	108.83	226.46	39.35	23.67
69.1	3215.51	700.56	108.87	226.79	39.37	23.68
70.0	3242.03	703.52	109.24	229.69	39.52	23.77
75.0	3374.57	723.52	111.34	249.40	40.23	24.21
80.0	3483.01	733.71	120.75	259.38	40.81	24.57
80.1	3484.95	884.42	271.44	410.08	58.38	28.89
85.0	3569.37	913.19	299.90	438.70	58.97	29.21
90.0	3636.14	917.63	304.11	443.03	59.43	29.47
95.0	3685.97	923.46	309.78	448.79	59.77	29.65
100.0	3721.36	930.39	316.59	455.66	60.02	29.78
104.9	3744.15	926.03	312.15	451.27	60.17	29.87
105.0	3744.50	901.20	287.33	426.44	54.65	25.41
110.0	3757.00	906.90	292.98	432.12	54.73	25.44
115.0	3759.83	920.24	306.32	445.46	54.75	25.45
120.0	3753.20	911.39	297.48	436.61	54.71	25.43
125.0	3736.60	925.43	311.58	450.68	54.59	25.38
125.1	3736.16	951.20	337.35	476.45	60.12	29.84
130.0	3708.79	954.86	341.10	480.15	60.06	29.87
135.0	3667.90	936.93	323.30	462.28	60.03	29.96
140.0	3611.62	937.46	324.02	462.90	59.84	29.95
145.0	3537.33	915.83	302.66	441.40	59.49	29.84
149.9	3444.53	898.73	285.91	424.47	58.98	29.62
150.0	3442.41	792.52	179.71	318.26	40.59	24.44
155.0	3324.53	785.25	172.92	311.24	39.96	24.05
160.0	3181.96	769.79	158.09	296.10	39.19	23.56
165.0	3013.90	755.52	144.33	282.26	38.24	22.97
169.9	2824.87	751.81	140.89	278.79	37.15	22.28
170.0	2820.77	751.51	140.61	278.50	37.12	22.27
170.1	2816.66	634.64	112.52	149.29	45.10	22.25

KHANNA & GULL, Inc. – Consulting Engineers

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :				
		Contour levels in mV/m.				
		.025	.500	.250	5.000	25.000
175.0	2604.50	587.82	108.91	144.24	44.10	21.44
¹⁶ 180.0	2368.62	496.80	104.66	138.93	42.32	20.49
184.9	2123.49	390.65	99.95	133.04	40.36	19.43
185.0	2118.39	387.81	99.85	132.91	40.31	19.41
185.1	2113.28	320.90	108.47	124.40	47.22	19.38
190.0	1860.65	280.00	102.84	124.40	44.71	18.20
195.0	1603.75	337.10	96.61	124.40	41.94	16.89
200.0	1357.30	288.82	94.70	120.26	39.00	15.50
204.9	1136.15	255.64	94.70	111.78	30.67	14.11
205.0	1131.92	255.12	94.70	111.60	30.61	14.08
205.1	1127.70	210.34	69.08	93.62	24.57	11.35
210.0	938.83	212.52	63.67	86.47	22.60	10.31
215.0	788.62	192.93	58.89	80.12	20.87	9.38
219.9	689.58	178.02	55.46	75.53	19.61	8.71
220.0	688.06	177.50	55.40	75.45	19.59	8.70
225.0	635.24	188.55	64.90	87.50	23.54	10.18
225.1	634.60	188.47	64.87	87.46	23.53	10.17
230.0	618.01	186.45	64.13	86.48	23.24	10.02
235.0	619.77	184.76	64.21	86.58	23.27	10.03
239.9	626.89	185.52	64.53	87.01	23.40	10.10
240.0	627.03	185.54	64.53	87.02	23.40	10.10
240.1	627.17	186.82	53.14	72.42	16.22	7.30
245.0	632.28	186.09	53.34	72.68	16.29	7.30
250.0	633.11	186.18	53.37	72.73	16.30	7.30
255.0	630.27	188.69	53.26	72.58	16.26	7.30
260.0	625.91	192.32	53.10	72.36	16.21	7.30
260.1	625.82	227.00	74.70	99.83	27.46	11.56
265.0	622.28	225.77	74.53	99.59	27.39	11.52
270.0	620.85	223.57	74.45	99.50	27.36	11.50
275.0	621.92	222.64	74.51	99.57	27.38	11.51
280.0	624.77	222.59	74.65	99.76	27.44	11.54
283.9	627.38	222.20	74.78	99.93	27.50	11.57
284.0	627.45	209.11	60.30	85.45	18.76	10.11
285.0	628.08	209.04	60.33	85.49	18.77	10.11
290.0	630.51	208.14	60.45	85.65	18.81	10.13
295.0	631.13	207.05	60.48	85.69	18.81	10.14
300.0	629.71	205.45	60.41	85.59	18.79	10.13
304.0	627.45	203.22	60.30	85.45	18.76	10.11
304.1	627.38	214.54	74.78	99.93	27.50	11.57
305.0	626.79	214.07	74.75	99.89	27.48	11.57
310.0	623.49	212.05	74.59	99.13	27.42	11.53
315.0	621.22	210.84	74.47	98.04	27.37	11.50
320.0	621.12	212.73	74.47	97.42	27.37	11.50
325.0	623.53	217.45	74.59	97.10	27.42	11.53
328.9	626.70	223.14	74.75	97.04	27.48	11.57
329.0	626.79	209.65	60.38	85.52	18.75	8.26
330.0	627.68	210.36	60.42	85.57	18.77	8.26
335.0	631.72	213.00	60.63	85.84	18.82	8.29
340.0	633.31	213.80	60.71	85.94	18.84	8.30
345.0	630.67	213.87	60.57	85.77	18.81	8.29
349.0	625.58	213.74	60.32	85.44	18.74	8.25
349.1	625.43	227.56	74.69	98.44	27.46	11.55
350.0	624.08	227.51	74.62	98.54	27.43	11.54
354.9	617.85	227.43	74.30	99.30	27.30	11.46
355.0	617.78	126.37	52.79	64.80	18.63	8.19

¹⁶ Distances to the 0.5 mV/m and 0.25 mV/m contours from N 170.1° E through N 185° E are referenced to conductivity of 2.5 mS/m (see Appendix A).

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

PHILADELPHIA , PA

Call: WPEN_P

Coordinates: N 39 58 28 W 75 16 19

Frequency: 950 kHz Number of contours: 1

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers : Contour levels in mV/m. .250
170.0	2820.77	278.50
171.0	2779.28	147.92
172.0	2736.88	147.04
173.0	2693.59	146.14
174.0	2649.46	145.21
175.0	2604.50	144.24
176.0	2558.75	143.24
177.0	2512.24	142.20
178.0	2465.03	141.14
179.0	2417.14	140.05
180.0	2368.62	138.93
181.0	2319.53	137.79
182.0	2269.90	136.62
183.0	2219.80	135.41
184.0	2169.28	134.18
185.0	2118.39	132.91
186.0	2067.19	124.40
187.0	2015.76	124.40
188.0	1964.14	124.40
189.0	1912.42	124.40
190.0	1860.65	124.40

Distances to the WPEN Proposed 0.25 mV/m Contour shown every one degree of azimuth for an effective conductivity of 2.5 mS/m used in Figure 14.

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

Station WCTN (licensed and CP)

Latitude: 39-02-12 N
 Longitude: 077-12-09 W

Conductivity Database Used: US M3

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth	to the end of region. E - map data; M - measurement data.									

¹⁷ 0.0	1.7M	33.8	2.0E	71.2	4.0E	88.0	2.0E	254.6	4.0E	473.1
5.0	8.0E	506.6	15.0E	536.5	4.0E	643.3	1.0E	719.2	4.0E	774.1
	1.7M	33.8	2.0E	68.0	4.0E	100.9	2.0E	253.6	4.0E	483.8
	8.0E	535.8	15.0E	577.4	10.0E	605.8	4.0E	764.9	2.0E	969.8
10.0	1.7M	33.8	2.0E	67.8	4.0E	120.2	2.0E	254.8	4.0E	602.4
10.1	10.0E	727.3	4.0E	762.0	2.0E	952.8	2.0E	1609.2	2.0E	1609.3
	2.0E	67.8	4.0E	120.7	2.0E	254.8	4.0E	604.1	10.0E	728.0
	4.0E	762.4	2.0E	952.9	2.0E	1609.2	2.0E	1609.3	5000.0E	1609.3
15.0	2.0E	68.7	4.0E	150.0	2.0E	249.9	4.0E	688.3	10.0E	761.4
19.9	4.0E	778.5	2.0E	972.1	2.0E	1609.2	2.0E	1609.3	5000.0E	2500.0
	2.0E	70.1	4.0E	169.9	2.0E	243.0	4.0E	709.5	10.0E	770.3
	4.0E	850.1	2.0E	1043.2	2.0E	1609.2	2.0E	1609.3	5000.0E	2500.0
20.0	2.0M	79.3	1.5M	110.0	4.0E	170.3	2.0E	242.9	4.0E	710.0
25.0	10.0E	771.2	4.0E	854.5	2.0E	1045.9	2.0E	1609.2	2.0E	1609.3
	2.0M	79.3	1.5M	110.0	4.0E	180.9	2.0E	244.4	4.0E	803.1
	6.0E	942.5	4.0E	1029.0	2.0E	1242.9	2.0E	1609.2	2.0E	1609.3
¹⁸ 30.0	2.0M	79.3	1.5M	110.0	4.0E	197.5	2.0E	266.1	4.0E	509.1
35.0	2.0E	770.3	0.5E	779.2	4.0E	1169.3	2.0E	1218.1	5000.0E	1355.8
	2.0E	1428.2	2.0E	1609.2	2.0E	1609.3	5000.0E	2500.0		
	2.0M	79.3	1.5M	110.0	4.0E	230.9	2.0E	302.8	4.0E	548.4
39.9	2.0E	647.4	1.0E	675.5	0.5E	864.4	1.0E	886.0	4.0E	889.3
	1.0E	1173.1	2.0E	1454.6	5000.0E	1609.2	2.0E	1609.3	5000.0E	2500.0
	2.0M	79.3	1.5M	110.0	4.0E	282.0	2.0E	352.9	4.0E	530.9
40.0	1.0E	762.1	2.0E	818.8	1.0E	1124.7	2.0E	1339.0	5000.0E	1388.4
	2.0E	1404.7	5000.0E	1411.2	2.0E	1491.8	5000.0E	1589.3	2.0E	1609.2
	2.0M	79.3	1.5M	110.0	4.0E	282.2	2.0E	353.0	4.0E	529.2
40.1	1.0E	757.3	2.0E	825.9	1.0E	1122.8	2.0E	1337.7	5000.0E	1416.1
	2.0E	1443.2	5000.0E	1445.3	2.0E	1480.5	5000.0E	1591.0	2.0E	1609.2
	4.0M	1.5	1.5M	7.1	2.0M	13.9	1.0M	67.8	0.5M	75.6
45.0	2.0E	78.4	4.0E	282.4	2.0E	353.1	4.0E	527.5	1.0E	752.5
	2.0E	833.2	1.0E	1120.9	2.0E	1336.3	5000.0E	1420.9	2.0E	1432.7
	4.0M	1.5	1.5M	7.1	2.0M	13.9	1.0M	67.8	0.5M	75.6
¹⁹ 50.0	2.0E	77.8	4.0E	285.6	2.0E	350.1	4.0E	444.2	1.0E	697.9
	4.0M	1.5	1.5M	7.1	2.0M	13.9	1.0M	67.8	0.5M	75.6
	4.0E	301.6	2.0E	314.2	4.0E	376.4	1.0E	453.3	2.0E	677.4
55.0	4.0M	1.5	1.5M	7.1	2.0M	13.9	1.0M	67.8	0.5M	75.6
59.9	4.0E	322.1	5000.0E	331.4	4.0E	349.0	5000.0E	354.1	4.0E	361.4
	5000.0E	365.1	4.0E	373.5	5000.0E	379.1	4.0E	379.6	5000.0E	443.4
	4.0M	1.5	1.5M	7.1	2.0M	13.9	1.0M	67.8	0.5M	75.6
	4.0E	91.5	40.0E	94.4	4.0E	108.2	40.0E	119.3	4.0E	173.6
	5000.0E	186.4	4.0E	314.4	5000.0E	382.8	0.5E	459.4	5000.0E	550.2
	2.0E	550.5	5000.0E	577.1	2.0E	588.2	5000.0E	591.1	2.0E	601.9
	5000.0E	610.5	2.0E	616.7	5000.0E	629.3	2.0E	645.5	5000.0E	685.3

¹⁷ WCTN - Antenna proof-of-performance dated June 1985.

¹⁸ WCTN Application BP-20050323AAW dated October 2005.

¹⁹ WCTN Application BP-20050323AAW dated October 2005 and application dated December 1976.

KHANNA & GUILL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										
Azimuth										
60.0	3.0M	27.3	2.0M	54.7	1.5M	72.1	4.0E	91.4	40.0E	94.3
	4.0E	107.8	40.0E	120.3	4.0E	173.1	5000.0E	187.4	4.0E	314.1
	5000.0E	386.7	0.5E	457.0	5000.0E	576.7	2.0E	587.3	5000.0E	590.9
60.1	3.0M	27.3	2.0M	54.7	1.5M	72.1	4.0E	91.3	40.0E	94.3
	4.0E	107.4	40.0E	121.2	4.0E	172.5	5000.0E	188.4	4.0E	313.9
	5000.0E	388.4	0.5E	451.6	5000.0E	585.5	2.0E	586.4	5000.0E	590.6
64.9	3.0M	27.3	2.0M	54.7	1.5M	72.1	4.0E	74.4	40.0E	75.6
	4.0E	79.3	40.0E	83.2	4.0E	87.5	40.0E	90.3	4.0E	96.3
	40.0E	123.8	4.0E	149.8	5000.0E	156.3	4.0E	298.0	5000.0E	2500.0
²⁰ 65.0	3.0M	27.3	2.0M	54.7	1.5M	72.1	4.0E	74.4	40.0E	75.7
	4.0E	79.2	40.0E	83.2	4.0E	87.4	40.0E	90.3	4.0E	95.9
	40.0E	123.1	4.0E	149.9	5000.0E	156.1	4.0E	297.7	5000.0E	2500.0
²¹ 70.0	2.0M	2.4	1.5M	8.7	1.0M	24.2	0.5M	32.9	1.0M	39.2
	2.0M	54.7	1.5M	72.4	4.0E	72.5	40.0E	94.8	4.0E	110.3
	40.0E	115.4	4.0E	146.7	5000.0E	154.0	4.0E	280.6	5000.0E	2500.0
70.1	2.0M	2.4	1.5M	8.7	1.0M	24.2	0.5M	32.9	1.0M	39.2
	2.0M	54.7	1.5M	72.4	4.0E	72.4	40.0E	94.5	4.0E	110.9
	40.0E	115.3	4.0E	146.5	5000.0E	154.0	4.0E	280.2	5000.0E	2500.0
70.9	2.0M	2.4	1.5M	8.7	1.0M	24.2	0.5M	32.9	1.0M	39.2
	2.0M	54.7	1.5M	72.4	4.0E	92.5	4.0E	144.7	5000.0E	154.1
	4.0E	276.6	5000.0E	2500.0						
71.0	2.0M	2.4	1.5M	8.7	1.0M	24.2	0.5M	32.9	1.0M	39.2
	2.0M	54.7	1.5M	72.4	4.0E	92.3	4.0E	144.6	5000.0E	154.1
	4.0E	276.2	5000.0E	2500.0						
71.1	1.5M	17.6	2.0M	40.2	0.5M	69.2	4.0E	70.4	40.0E	92.1
	4.0E	144.7	5000.0E	154.2	4.0E	275.8	5000.0E	2500.0		
²² 74.9	1.5M	17.6	2.0M	40.2	0.5M	69.2	4.0E	85.3	4.0E	150.2
	5000.0E	158.5	4.0E	260.1	5000.0E	2500.0				
75.0	1.5M	17.6	2.0M	40.2	0.5M	69.2	4.0E	85.3	4.0E	150.4
	5000.0E	158.7	4.0E	259.3	5000.0E	2500.0				
75.1	2.0M	102.1	3.0M	124.8	2.0M	142.8	4.0E	150.5	5000.0E	158.8
	4.0E	258.5	5000.0E	2500.0						
80.0	2.0M	102.1	3.0M	124.8	2.0M	142.8	4.0E	155.9	5000.0E	168.8
	4.0E	239.5	5000.0E	2500.0						
²³ 85.0	2.0M	102.1	3.0M	124.8	2.0M	142.8	4.0E	155.0	5000.0E	197.8
	4.0E	219.9	5000.0E	2500.0						
89.9	2.0M	102.1	3.0M	124.8	2.0M	142.8	4.0E	161.6	5000.0E	196.4
	4.0E	209.1	5000.0E	2500.0						
90.0	2.0M	102.1	3.0M	124.8	2.0M	142.8	4.0E	161.9	5000.0E	196.3
	4.0E	209.2	5000.0E	2500.0						
95.0	1.8M	39.2	4.0E	59.1	40.0E	61.9	4.0E	63.8	40.0E	66.9
	4.0E	67.2	40.0E	85.4	4.0E	170.1	5000.0E	2500.0		
95.0	1.8M	39.2	4.0E	59.1	40.0E	61.9	4.0E	63.8	40.0E	66.9
	4.0E	67.2	40.0E	85.4	4.0E	170.1	5000.0E	2500.0		
95.1	1.8M	39.2	4.0E	59.2	40.0E	62.0	4.0E	63.7	40.0E	66.9
	4.0E	67.2	40.0E	85.4	4.0E	90.4	40.0E	90.6	4.0E	170.4
	5000.0E	2500.0								
²⁴ 100.0	1.8M	39.2	4.0E	54.0	40.0E	55.6	4.0E	63.7	40.0E	87.5
	4.0E	89.2	40.0E	98.0	4.0E	187.8	5000.0E	2500.0		
105.0	1.8M	39.2	4.0E	62.4	40.0E	83.0	4.0E	85.1	40.0E	91.3
	4.0E	96.3	40.0E	97.4	4.0E	167.8	2.0E	193.5	5000.0E	2500.0
110.0	1.8M	39.2	4.0E	64.5	40.0E	81.9	4.0E	83.9	40.0E	84.4
	4.0E	87.6	40.0E	91.4	4.0E	138.0	2.0E	194.7	5000.0E	2500.0
110.1	2.0E	20.9	4.0E	64.5	40.0E	81.9	4.0E	83.9	40.0E	84.6
	4.0E	87.6	40.0E	92.3	4.0E	137.5	2.0E	195.0	5000.0E	2500.0
115.0	2.0E	20.5	4.0E	64.7	40.0E	82.5	4.0E	84.1	40.0E	105.0
	4.0E	115.3	2.0E	198.5	5000.0E	2500.0				
119.9	2.0E	20.3	4.0E	65.3	40.0E	91.7	4.0E	100.2	40.0E	103.0
	2.0E	194.4	5000.0E	2500.0						

²⁰ WCTN application dated December 1976.

²¹ WCTN Application BP-20050323AAW dated October 2005.

²² WCTN – N 73° E Radial, application dated December 1976.

²³ WCTN Application BP-20050323AAW dated October 2005.

²⁴ WCTN - Antenna proof-of-performance dated June 1985.

KHANNA & GULL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										

120.0	1.5M	7.2	2.0M	33.0	4.0E	65.3	40.0E	91.9	4.0E	99.8
	40.0E	103.0	2.0E	194.3	5000.0E	2500.0				
125.0	1.5M	7.2	2.0M	33.0	4.0E	72.6	40.0E	91.7	5000.0E	100.0
	2.0E	127.4	5000.0E	128.6	2.0E	137.0	5000.0E	140.3	2.0E	195.5
	5000.0E	2500.0								
²⁵ 130.0	1.5M	7.2	2.0M	33.0	4.0E	78.4	40.0E	82.0	5000.0E	100.2
	2.0E	132.4	5000.0E	145.4	2.0E	152.8	5000.0E	156.8	2.0E	162.9
	5000.0E	163.8	2.0E	199.1	5000.0E	2500.0				
135.0	1.5M	7.2	2.0M	33.0	4.0E	91.3	5000.0E	166.3	2.0E	171.7
	5000.0E	188.5	2.0E	203.1	5000.0E	2500.0				
140.0	1.5M	7.2	2.0M	33.0	4.0E	87.6	5000.0E	105.9	4.0E	109.7
	5000.0E	191.2	2.0E	211.3	5000.0E	2500.0				
140.1	2.0E	21.0	4.0E	87.6	5000.0E	105.7	4.0E	109.8	5000.0E	190.9
	2.0E	211.8	5000.0E	2500.0						
145.0	2.0E	21.6	4.0E	24.7	5000.0E	29.1	4.0E	72.7	5000.0E	75.7
	4.0E	132.9	5000.0E	198.8	2.0E	214.7	5000.0E	2500.0		
149.9	2.0E	22.4	4.0E	28.7	5000.0E	33.2	4.0E	96.5	5000.0E	97.0
	4.0E	109.6	5000.0E	136.1	4.0E	151.3	5000.0E	156.2	4.0E	158.0
	5000.0E	216.2	2.0E	227.8	5000.0E	2500.0				
150.0	2.0M	3.2	1.3M	33.0	5000.0E	33.3	4.0E	96.5	5000.0E	97.1
	4.0E	109.2	5000.0E	135.8	4.0E	150.9	5000.0E	155.4	4.0E	158.5
	5000.0E	216.7	2.0E	228.4	5000.0E	2500.0				
155.0	2.0M	3.2	1.3M	33.0	4.0E	34.9	5000.0E	39.5	4.0E	94.5
	5000.0E	109.1	4.0E	171.6	5000.0E	179.6	2.0E	183.4	5000.0E	191.6
	2.0E	198.9	5000.0E	2500.0						
²⁶ 160.0	2.0M	3.2	1.3M	33.0	4.0E	38.5	5000.0E	40.6	4.0E	83.4
	5000.0E	103.7	4.0E	148.3	5000.0E	164.6	2.0E	195.8	5000.0E	202.2
	2.0E	208.1	5000.0E	223.1	4.0E	237.2	5000.0E	246.9	4.0E	296.9
	5000.0E	300.1	4.0E	322.8	5000.0E	362.6	4.0E	394.5	5000.0E	2500.0
165.0	2.0M	3.2	1.3M	33.0	4.0E	39.1	5000.0E	40.5	4.0E	81.7
	5000.0E	97.5	4.0E	126.1	5000.0E	132.7	2.0E	191.7	5000.0E	201.2
	2.0E	221.5	4.0E	225.8	5000.0E	240.2	4.0E	243.9	5000.0E	248.9
	4.0E	329.5	5000.0E	331.7	4.0E	337.2	5000.0E	350.8	4.0E	383.2
	5000.0E	385.4	4.0E	414.8	5000.0E	2500.0				
166.9	2.0M	3.2	1.3M	33.0	4.0E	39.4	5000.0E	40.6	4.0E	65.8
	5000.0E	89.1	4.0E	93.4	5000.0E	95.6	4.0E	115.1	5000.0E	125.2
	2.0E	176.8	5000.0E	183.8	2.0E	209.4	5000.0E	229.5	2.0E	233.3
	4.0E	252.5	5000.0E	252.8	4.0E	328.5	5000.0E	332.8	4.0E	336.9
	5000.0E	354.0	4.0E	420.3	5000.0E	2500.0				
167.0	2.0M	3.2	1.3M	33.0	4.0E	39.4	5000.0E	40.6	4.0E	65.9
	5000.0E	88.9	4.0E	94.1	5000.0E	95.5	4.0E	114.5	5000.0E	124.6
	4.0E	124.8	2.0E	176.1	5000.0E	183.0	2.0E	209.3	5000.0E	229.1
	2.0E	233.7	4.0E	328.0	5000.0E	332.0	4.0E	336.8	5000.0E	353.9
	4.0E	420.3	5000.0E	2500.0						
167.9	2.0M	3.2	1.3M	33.0	4.0E	39.6	5000.0E	44.5	4.0E	66.5
	5000.0E	87.5	4.0E	109.9	5000.0E	119.1	4.0E	121.8	2.0E	172.4
	5000.0E	175.9	2.0E	208.6	5000.0E	211.7	2.0E	224.9	5000.0E	225.7
	2.0E	237.4	4.0E	324.2	5000.0E	325.3	4.0E	337.2	5000.0E	347.1
	4.0E	415.7	5000.0E	2500.0						
168.0	1.5M	13.7	1.0M	27.6	1.5M	54.7	0.5M	83.7	5000.0E	87.4
	4.0E	110.1	5000.0E	118.5	4.0E	121.5	2.0E	172.1	5000.0E	175.1
	2.0E	208.5	5000.0E	211.9	2.0E	237.8	4.0E	323.8	5000.0E	324.6
	4.0E	337.7	5000.0E	347.2	4.0E	415.0	5000.0E	2500.0		
²⁷ 170.0	1.5M	13.7	1.0M	27.6	1.5M	54.7	0.5M	83.7	4.0E	115.3
	2.0E	205.0	5000.0E	210.5	2.0E	250.4	4.0E	341.3	5000.0E	349.3
	4.0E	407.2	5000.0E	452.3	4.0E	462.0	5000.0E	2500.0		
170.1	1.5M	13.7	1.0M	27.6	1.5M	54.7	0.5M	83.7	4.0E	115.1
	2.0E	204.8	5000.0E	210.1	2.0E	251.3	4.0E	341.2	5000.0E	349.2
	4.0E	407.3	5000.0E	457.1	4.0E	462.1	5000.0E	465.8	4.0E	466.4
175.0	1.5M	54.7	0.5M	83.7	4.0E	102.7	2.0E	349.9	4.0E	399.3
	5000.0E	405.6	4.0E	453.3	5000.0E	461.1	4.0E	475.5	5000.0E	477.6
	4.0E	481.3	5000.0E	2500.0						

²⁵ WCTN - Antenna proof-of-performance dated June 1985.

²⁶ WCTN - Antenna proof-of-performance dated June 1985.

²⁷ WPEN application dated May 1999.

KHANNA & GULL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										

176.0	1.5M	54.7	0.5M	83.7	4.0E	100.4	2.0E	358.8	4.0E	398.3
	5000.0E	402.6	4.0E	449.5	5000.0E	456.0	4.0E	480.7	5000.0E	2500.0
²⁸ 176.1	1.5M	54.7	0.5M	83.7	4.0E	100.2	2.0E	359.4	4.0E	398.3
	5000.0E	402.4	4.0E	448.9	5000.0E	455.5	4.0E	480.7	5000.0E	2500.0
180.0	1.5M	54.7	0.5M	83.7	4.0E	92.6	2.0E	383.7	4.0E	489.8
185.0	1.5M	54.7	0.5M	83.7	2.0E	413.5	4.0E	526.0	5000.0E	2500.0
187.0	1.5M	54.7	0.5M	83.7	2.0E	412.9	4.0E	556.6	5000.0E	2500.0
187.1	2.0E	43.8	4.0E	76.2	2.0E	412.7	4.0E	557.5	5000.0E	2500.0
190.0	2.0E	52.5	4.0E	61.6	2.0E	405.1	4.0E	579.3	5000.0E	2500.0
195.0	2.0E	394.7	4.0E	445.6	2.0E	499.3	4.0E	621.8	5000.0E	1267.4
	8.0E	1324.9	2.0E	1350.0	8.0E	1538.6	5000.0E	1541.8	8.0E	1551.3
200.0	2.0E	387.6	4.0E	427.1	2.0E	541.6	4.0E	735.4	5000.0E	740.3
	4.0E	744.8	5000.0E	745.6	4.0E	752.2	5000.0E	1117.2	2.0E	1351.3
205.0	2.0E	324.6	4.0E	426.8	2.0E	590.9	4.0E	794.8	8.0E	798.2
	5000.0E	804.4	8.0E	850.3	5000.0E	887.5	8.0E	889.0	5000.0E	897.3
	8.0E	908.4	5000.0E	933.4	8.0E	935.4	5000.0E	959.2	8.0E	961.4
210.0	2.0E	296.9	4.0E	488.7	2.0E	649.8	4.0E	1036.0	2.0E	1145.3
215.0	2.0E	287.3	4.0E	642.5	2.0E	830.9	4.0E	1006.2	2.0E	1184.6
220.0	2.0E	284.0	4.0E	371.4	2.0E	602.5	4.0E	1187.6	1.0E	1248.6
225.0	2.0E	674.8	4.0E	1207.1	1.0E	1292.4	5000.0E	2500.0		
230.0	2.0E	810.2	1.0E	856.1	2.0E	1022.3	4.0E	1084.8	8.0E	1264.5
	1.0E	1338.1	2.0E	1347.6	5000.0E	1350.6	2.0E	1397.7	5000.0E	1403.2
235.0	2.0E	991.2	4.0E	1142.4	2.0E	1414.8	4.0E	1523.4	15.0E	1609.2
240.0	2.0E	433.3	4.0E	604.0	2.0E	787.0	4.0E	854.5	2.0E	1048.3
	4.0E	1096.3	2.0E	1311.7	4.0E	1425.7	8.0E	1609.2	15.0E	1609.3
245.0	2.0E	515.2	4.0E	595.1	2.0E	862.7	4.0E	1123.4	2.0E	1234.2
250.0	2.0E	738.8	4.0E	1148.4	8.0E	1402.9	4.0E	1574.6	15.0E	1609.2
	8.0E	1609.3	4.0E	1609.3	15.0E	1609.3	30.0E	1609.3	8.0E	1609.3
255.0	2.0E	616.8	8.0E	663.8	2.0E	689.7	4.0E	1129.2	8.0E	1377.5
260.0	2.0E	578.1	8.0E	646.4	4.0E	881.3	8.0E	1019.0	4.0E	1081.6
	8.0E	1516.4	15.0E	1609.2	30.0E	1609.3	15.0E	1609.3	8.0E	2500.0
265.0	2.0E	563.3	8.0E	721.7	4.0E	821.0	8.0E	1604.5	15.0E	1609.2
	8.0E	1609.3	30.0E	1609.3	15.0E	1609.3	30.0E	1609.3	15.0E	1609.3
270.0	2.0E	224.6	4.0E	240.0	2.0E	550.3	8.0E	1075.4	15.0E	1167.4
	8.0E	1443.8	15.0E	1601.6	30.0E	1609.2	15.0E	1609.3	2.0E	2500.0
275.0	2.0E	147.5	4.0E	283.2	2.0E	524.0	8.0E	999.5	15.0E	1155.0
	8.0E	1286.9	15.0E	1583.8	30.0E	1609.2	15.0E	1609.3	2.0E	1609.3
280.0	2.0E	131.0	4.0E	267.7	2.0E	389.7	4.0E	433.4	2.0E	440.4
	8.0E	969.3	15.0E	1104.1	8.0E	1177.7	15.0E	1539.0	30.0E	1599.6
	15.0E	1609.2	30.0E	1609.3	15.0E	1609.3	8.0E	1609.3	2.0E	2500.0
284.9	2.0E	119.5	4.0E	253.3	2.0E	316.1	4.0E	406.8	8.0E	562.9
	15.0E	770.6	8.0E	949.9	15.0E	1031.8	8.0E	1256.1	15.0E	1609.2
285.0	1.0M	2.6	2.0M	8.2	1.5M	20.7	2.0E	119.3	4.0E	253.0
	2.0E	315.2	4.0E	406.2	8.0E	560.3	15.0E	769.6	8.0E	949.5
	15.0E	1030.3	8.0E	1260.4	15.0E	1609.2	30.0E	1609.3	15.0E	1609.3
290.0	1.0M	2.6	2.0M	8.2	1.5M	20.7	2.0E	114.0	4.0E	381.8
	8.0E	512.8	15.0E	600.1	8.0E	690.2	15.0E	716.8	8.0E	933.3
	15.0E	976.5	8.0E	1287.2	15.0E	1609.2	8.0E	1609.3	4.0E	1609.3
²⁹ 295.0	1.0M	2.6	2.0M	8.2	1.5M	20.7	2.0E	111.2	4.0E	364.5
	8.0E	525.8	15.0E	595.4	8.0E	764.0	2.0E	855.7	8.0E	964.9
	15.0E	986.6	8.0E	1171.7	4.0E	1286.0	8.0E	1369.1	15.0E	1479.5
300.0	1.0M	2.6	2.0M	8.2	1.5M	20.7	2.0E	109.3	4.0E	350.5
	8.0E	537.3	15.0E	604.6	8.0E	687.2	4.0E	750.3	2.0E	853.8
	8.0E	997.6	15.0E	1018.1	8.0E	1151.1	4.0E	1328.4	8.0E	1422.5
305.0	1.0M	2.6	2.0M	8.2	1.5M	20.7	2.0E	108.4	4.0E	339.9
	8.0E	533.0	10.0E	596.5	8.0E	847.8	2.0E	907.1	8.0E	1026.8
305.1	2.0E	108.4	4.0E	339.7	8.0E	531.3	10.0E	597.0	8.0E	848.7
	2.0E	909.1	8.0E	1027.5	15.0E	1093.0	8.0E	1147.1	4.0E	1609.2
310.0	2.0E	108.2	4.0E	332.5	8.0E	508.7	10.0E	555.0	20.0E	608.4
	15.0E	614.7	8.0E	879.7	2.0E	952.6	8.0E	1139.4	4.0E	1418.2
314.9	2.0E	108.9	4.0E	181.6	2.0E	237.9	4.0E	333.7	8.0E	492.0
	10.0E	535.5	20.0E	607.6	15.0E	698.4	8.0E	900.9	2.0E	940.7

²⁸ WPEN application dated May 1999.

²⁹ WPEN application dated May 1999.

KHANNA & GUILL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										

315.0	1.5M	1.6	1.0M	3.1	1.5M	9.9	1.0M	25.9	0.5M	38.6
	1.5M	58.6	0.5M	66.8	2.0E	108.9	4.0E	181.4	2.0E	242.3
	4.0E	333.9	8.0E	491.7	10.0E	536.0	20.0E	608.6	15.0E	700.0
	8.0E	903.8	2.0E	936.8	8.0E	1136.5	4.0E	1319.5	8.0E	1609.2
320.0	1.5M	1.6	1.0M	3.1	1.5M	9.9	1.0M	25.9	0.5M	38.6
	1.5M	58.6	0.5M	66.8	2.0E	111.1	4.0E	180.5	2.0E	347.2
	8.0E	411.0	4.0E	430.9	8.0E	471.9	10.0E	530.9	20.0E	611.8
	10.0E	635.6	8.0E	672.8	15.0E	740.3	8.0E	1267.5	4.0E	1289.4
³⁰ 325.0	1.5M	1.6	1.0M	3.1	1.5M	9.9	1.0M	25.9	0.5M	38.6
	1.5M	58.6	0.5M	66.8	2.0E	115.5	4.0E	185.6	2.0E	367.7
	8.0E	371.3	4.0E	421.9	8.0E	422.1	4.0E	424.1	8.0E	451.4
	10.0E	487.1	4.0E	537.2	20.0E	567.1	6.0E	632.3	10.0E	697.4
330.0	1.5M	1.6	1.0M	3.1	1.5M	9.9	1.0M	25.9	0.5M	38.6
	1.5M	58.6	0.5M	66.8	2.0E	121.3	4.0E	193.8	2.0E	358.3
	4.0E	419.6	8.0E	441.7	10.0E	485.1	20.0E	494.8	4.0E	567.2
	6.0E	692.3	10.0E	884.0	4.0E	905.3	10.0E	940.6	2.0E	1154.9
335.0	1.5M	1.6	1.0M	3.1	1.5M	9.9	1.0M	25.9	0.5M	38.6
	1.5M	58.6	0.5M	66.8	2.0E	129.6	4.0E	204.4	2.0E	322.8
	4.0E	402.2	8.0E	439.9	10.0E	469.4	20.0E	535.2	4.0E	691.2
	10.0E	695.8	4.0E	713.6	10.0E	716.8	4.0E	728.2	10.0E	730.3
335.1	4.0E	733.9	10.0E	762.5	4.0E	769.3	10.0E	822.0	4.0E	839.1
	2.0E	129.8	4.0E	204.7	2.0E	322.2	4.0E	402.5	8.0E	439.9
	10.0E	469.4	20.0E	534.9	4.0E	691.3	10.0E	697.0	4.0E	713.6
	10.0E	717.1	4.0E	724.4	10.0E	726.9	4.0E	728.1	10.0E	731.3
340.0	4.0E	733.2	10.0E	763.2	4.0E	768.9	10.0E	822.4	4.0E	840.2
	2.0E	141.4	4.0E	209.7	2.0E	298.9	4.0E	415.4	8.0E	446.1
	10.0E	452.1	20.0E	494.5	15.0E	541.7	6.0E	580.4	4.0E	652.6
	10.0E	821.3	2.0E	1255.2	6.0E	1316.8	2.0E	1609.2	5000.0E	2500.0
345.0	2.0E	162.0	4.0E	200.0	2.0E	282.6	4.0E	433.2	8.0E	518.3
	15.0E	552.4	6.0E	658.1	1.0E	759.1	2.0E	1107.6	6.0E	1282.3
349.9	2.0E	269.8	4.0E	419.4	8.0E	515.0	15.0E	551.5	6.0E	641.1
	1.0E	780.6	2.0E	1070.5	6.0E	1188.6	2.0E	1379.6	5000.0E	1385.0
350.0	1.7M	33.8	2.0E	269.5	4.0E	418.9	8.0E	514.9	15.0E	551.7
	6.0E	640.7	1.0E	781.1	2.0E	1070.2	6.0E	1187.2	2.0E	1380.4
355.0	1.7M	33.8	2.0E	260.2	4.0E	416.3	8.0E	508.2	15.0E	553.7
	6.0E	557.9	4.0E	632.2	1.0E	806.7	2.0E	1059.3	6.0E	1144.5

³⁰ WCTN Application BP-20050323AAW dated October 2005.

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

POTOMAC-CABIN JOHN ,MD

Call: WCTN LICENSED

Coordinates: N 39 2 12 W 77 12 9

Frequency: 950 kHz Number of contours: 2

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.025
0.0	670.93	54.78	193.82
5.0	639.79	53.62	194.05
10.0	604.96	52.29	194.23
10.1	604.23	52.26	194.25
15.0	566.61	50.78	195.17
19.9	525.93	49.11	193.23
20.0	525.07	49.07	171.23
25.0	480.80	47.17	164.84
30.0	434.49	45.07	157.51
35.0	387.06	42.79	149.29
39.9	340.70	40.41	140.49
40.0	339.77	40.36	140.31
40.1	338.84	30.32	119.60
45.0	294.31	28.38	110.19
50.0	253.03	26.43	100.90
55.0	219.17	24.70	91.89
59.9	197.03	23.49	85.42
60.0	196.71	31.58	126.94
60.1	196.41	31.56	127.55
64.9	188.99	31.02	135.81
65.0	188.99	31.02	135.90
65.0	188.99	31.02	135.90
70.0	196.26	23.44	134.37
70.1	196.54	23.46	133.99
70.9	198.94	23.59	131.25
71.0	199.26	23.61	131.21
71.1	199.59	31.79	101.83
74.9	214.70	32.84	103.51
75.0	215.16	32.88	103.60
75.0	215.16	32.88	103.60
75.1	215.63	32.91	124.80
80.0	240.96	34.59	128.65
85.0	269.72	36.38	134.63
89.9	298.17	38.06	140.10
90.0	298.74	38.09	140.20
95.0	326.31	39.78	228.13
95.1	326.84	39.82	228.47
100.0	351.37	41.58	224.85
105.0	373.24	43.09	199.15
110.0	391.50	44.32	189.09
110.1	391.82	51.60	197.38
115.0	405.88	52.69	208.13
119.9	416.07	53.44	197.54
120.0	416.24	48.17	191.22
125.0	422.49	48.56	194.50
130.0	424.57	48.69	214.13
135.0	422.49	48.56	370.30
140.0	416.24	48.17	369.11
140.1	416.07	53.12	383.96
145.0	405.88	56.02	305.21

KHANNA & GULL, Inc. – Consulting Engineers

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.025
149.9	391.82	54.88	321.28
150.0	391.50	40.52	270.46
155.0	373.24	42.90	208.29
160.0	351.37	37.48	198.36
165.0	326.31	35.68	177.52
166.9	316.08	34.92	187.73
167.0	315.54	34.88	186.81
167.9	310.57	34.51	182.74
168.0	310.01	33.97	114.12
170.0	298.74	33.40	106.43
170.1	298.17	33.37	106.30
175.0	269.72	31.87	99.76
176.0	263.88	31.55	98.33
176.1	263.29	31.52	98.19
180.0	240.96	30.26	92.52
185.0	215.16	28.73	85.15
187.0	206.51	28.19	83.25
187.1	206.11	32.25	128.48
190.0	196.26	31.55	120.49
195.0	188.99	31.02	116.47
200.0	196.71	31.58	118.41
205.0	219.17	33.15	123.79
210.0	253.03	35.36	131.22
215.0	294.31	37.84	139.38
220.0	339.77	40.36	147.48
225.0	387.06	42.79	155.13
230.0	434.49	45.07	162.09
235.0	480.80	47.17	168.39
240.0	525.07	49.07	173.96
245.0	566.61	50.78	178.90
250.0	604.96	52.29	183.16
255.0	639.79	53.62	186.89
260.0	670.93	54.78	190.11
265.0	698.35	55.77	192.86
270.0	722.09	56.61	195.11
275.0	742.30	57.32	204.92
280.0	759.17	57.90	210.02
284.9	772.67	58.36	213.92
285.0	772.91	55.22	210.13
285.0	772.91	55.22	210.13
290.0	783.76	55.58	212.44
295.0	791.94	55.86	213.92
300.0	797.63	56.04	214.93
305.0	800.99	56.16	215.49
305.0	800.99	56.16	215.49
305.1	801.03	59.30	219.40
310.0	802.10	59.34	219.53
314.9	801.03	59.30	214.36
315.0	800.99	52.48	180.61
315.0	800.99	52.48	180.61
320.0	797.63	52.38	179.86
325.0	791.94	38.62	178.37
330.0	783.76	38.43	176.53
335.0	772.91	38.18	173.90
335.1	772.67	58.36	210.74
340.0	759.17	57.90	207.93
345.0	742.30	57.32	202.02
349.9	722.53	56.63	195.15
350.0	722.09	56.61	195.11
355.0	698.35	55.77	192.86

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

POTOMAC-CABIN JOHN , MD

Call: WCTN_CP AUTHORIZATION

Coordinates: N 39 2 12 W 77 12 9

Frequency: 950 kHz Number of contours: 2

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.025
0.0	572.02	50.99	183.23
5.0	531.56	49.34	181.92
10.0	488.46	47.50	180.44
10.1	487.57	47.46	180.43
15.0	443.24	45.47	179.58
19.9	397.55	43.31	175.88
20.0	396.61	43.26	151.01
25.0	349.41	40.87	142.20
30.0	302.78	38.32	132.48
35.0	258.18	35.68	122.08
39.9	218.38	33.10	111.55
40.0	217.63	33.04	111.33
40.1	216.88	24.58	90.59
45.0	183.98	22.74	80.82
50.0	160.92	21.35	74.41
55.0	151.81	20.77	72.46
59.9	156.76	21.08	73.53
60.0	156.99	28.53	107.48
60.1	157.22	28.55	107.76
64.9	172.50	29.77	130.43
65.0	172.89	29.80	130.66
70.0	194.65	23.35	133.88
70.0	194.65	23.35	133.88
70.1	195.12	23.38	133.56
70.9	198.88	23.59	131.23
71.0	199.35	23.62	131.23
71.1	199.82	31.80	101.91
74.9	217.98	33.07	104.45
75.0	218.46	33.10	104.54
75.1	218.94	33.13	124.80
80.0	241.85	34.65	128.84
85.0	263.32	35.99	133.36
89.9	281.65	37.10	136.96
90.0	281.99	37.12	137.03
95.0	297.30	38.01	209.70
95.1	297.57	38.02	209.89
100.0	308.90	38.67	199.03
105.0	316.59	39.10	185.61
110.0	320.26	39.33	177.41
110.1	320.29	46.60	183.97
115.0	319.85	46.74	187.45
119.9	315.50	46.51	179.17
120.0	315.38	41.21	175.00
125.0	306.89	40.57	175.84
130.0	294.52	39.62	182.38
135.0	278.51	38.35	286.32
140.0	259.23	36.75	273.48
140.1	258.81	41.68	288.08
145.0	237.28	43.37	209.98

KHANNA & GUILL, Inc. – Consulting Engineers

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.025
149.9	214.15	41.03	220.54
150.0	213.67	28.64	180.10
155.0	190.04	27.14	149.65
160.0	169.09	25.72	145.39
165.0	154.94	24.71	139.52
166.9	152.38	24.52	145.67
167.0	152.30	24.51	144.91
167.9	151.80	24.48	144.02
168.0	151.77	20.76	72.45
170.0	152.44	20.81	72.60
170.1	152.53	20.81	72.62
175.0	164.49	25.40	75.15
176.0	168.62	25.69	76.00
176.1	169.06	25.72	76.09
180.0	189.99	27.14	80.20
185.0	225.29	29.34	87.49
187.0	241.34	30.28	91.03
187.1	242.16	34.67	136.68
190.0	266.85	36.21	136.25
195.0	312.00	38.84	142.64
200.0	358.85	41.36	150.64
205.0	406.01	43.72	157.98
210.0	452.43	45.89	164.59
215.0	497.27	47.88	170.50
220.0	539.88	49.69	175.76
225.0	579.75	51.30	180.38
230.0	616.53	52.74	184.41
235.0	649.96	54.00	187.95
240.0	679.92	55.11	191.02
245.0	706.38	56.06	193.63
250.0	729.40	56.87	195.80
255.0	749.09	57.55	197.62
260.0	765.65	58.12	199.13
265.0	779.27	58.58	200.35
270.0	790.17	58.94	201.32
275.0	798.56	59.22	210.76
280.0	804.63	59.42	214.69
284.9	808.46	59.55	217.56
285.0	808.52	56.41	213.75
290.0	810.34	56.46	215.12
295.0	810.13	56.46	215.74
300.0	807.91	56.38	215.96
305.0	803.59	56.24	215.76
305.1	803.48	59.39	219.64
310.0	797.08	59.17	219.02
314.9	788.40	58.88	213.25
315.0	788.20	38.54	179.32
320.0	776.77	38.27	177.72
325.0	762.58	37.93	175.34
330.0	745.41	37.52	172.53
335.0	725.06	37.03	168.83
335.1	724.62	56.70	206.33
340.0	701.37	55.88	201.71
345.0	674.21	54.90	194.84
349.9	644.20	53.79	187.35
350.0	643.55	53.76	187.28
355.0	609.44	52.46	183.65

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

Station WHVW (licensed)

Latitude: 41-44-46 N

Longitude: 073-54-46 W

Conductivity Database Used: US M3

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										
Azimuth										
0.0	4.0E	138.0	2.0E	221.2	4.0E	361.8	10.0E	416.9	4.0E	451.9
	2.0E	632.6	2.0E	1473.6	2.0E	1609.2	5000.0E	2500.0		
5.0	4.0E	141.1	2.0E	281.7	4.0E	363.1	10.0E	453.3	4.0E	503.6
	2.0E	648.2	2.0E	1481.9	2.0E	1609.2	5000.0E	2500.0		
10.0	4.0E	143.8	2.0E	367.5	4.0E	420.0	6.0E	434.1	10.0E	503.6
	4.0E	558.3	2.0E	688.9	2.0E	1503.6	2.0E	1609.2	5000.0E	2500.0
15.0	4.0E	146.6	2.0E	375.7	4.0E	452.4	6.0E	561.2	4.0E	620.2
	2.0E	763.3	2.0E	1542.7	2.0E	1609.2	5000.0E	2500.0		
20.0	4.0E	149.7	2.0E	345.7	0.5E	387.4	4.0E	519.4	6.0E	540.1
	4.0E	602.1	5000.0E	607.5	4.0E	724.6	2.0E	873.4	2.0E	1600.1
25.0	4.0E	152.6	2.0E	266.8	1.0E	268.7	0.5E	403.5	4.0E	740.9
	5000.0E	881.3	2.0E	993.0	2.0E	1609.2	2.0E	1609.3	5000.0E	2500.0
30.0	4.0E	154.9	2.0E	166.2	1.0E	293.3	0.5E	463.7	4.0E	557.5
	1.0E	731.3	2.0E	935.7	5000.0E	1109.3	2.0E	1609.2	2.0E	1609.3
35.0	4.0E	127.0	1.0E	767.5	2.0E	1058.0	5000.0E	1208.1	2.0E	1609.2
40.0	4.0E	104.3	1.0E	351.1	2.0E	396.1	1.0E	727.9	2.0E	935.3
	5000.0E	960.6	2.0E	1081.3	5000.0E	1084.4	2.0E	1092.4	5000.0E	1166.6
45.0	4.0E	89.1	1.0E	301.8	2.0E	576.3	1.0E	669.7	2.0E	960.2
50.0	4.0E	78.3	1.0E	292.3	2.0E	574.9	1.0E	659.0	2.0E	908.4
	5000.0E	956.5	4.0E	981.3	5000.0E	1478.3	1.0E	1585.4	5000.0E	1609.2
55.0	4.0E	67.6	1.0E	284.1	2.0E	347.2	5000.0E	397.9	2.0E	401.8
	5000.0E	428.1	2.0E	433.0	5000.0E	457.6	2.0E	463.8	5000.0E	465.0
	2.0E	472.0	5000.0E	512.3	2.0E	518.1	5000.0E	557.6	2.0E	598.0
60.0	4.0E	59.5	1.0E	269.0	2.0E	299.6	5000.0E	783.3	2.0E	865.4
	5000.0E	900.1	4.0E	1003.1	5000.0E	1099.8	1.0E	1173.8	5000.0E	1181.1
	4.0E	1190.9	5000.0E	1571.2	1.0E	1584.6	5000.0E	1609.2	1.0E	1609.3
65.0	4.0E	53.5	1.0E	243.3	2.0E	277.9	5000.0E	678.5	2.0E	838.6
	5000.0E	851.3	2.0E	859.8	5000.0E	870.9	2.0E	892.6	5000.0E	892.9
70.0	4.0E	48.9	1.0E	123.4	2.0E	263.8	5000.0E	699.5	2.0E	731.9
75.0	4.0E	45.4	1.0E	91.7	2.0E	246.6	5000.0E	2500.0		
80.0	4.0E	42.6	1.0E	80.3	2.0E	270.0	5000.0E	2500.0		
85.0	4.0E	40.5	1.0E	75.9	2.0E	279.8	5000.0E	317.6	2.0E	325.3
	5000.0E	2500.0								
90.0	4.0E	38.0	1.0E	73.9	2.0E	210.6	5000.0E	216.6	2.0E	222.3
	5000.0E	227.0	2.0E	264.9	5000.0E	271.8	2.0E	328.2	5000.0E	2500.0
95.0	4.0E	35.8	1.0E	73.7	2.0E	207.0	5000.0E	226.2	2.0E	236.2
	5000.0E	239.6	2.0E	243.3	5000.0E	2500.0				
100.0	4.0E	34.1	1.0E	74.8	2.0E	202.1	5000.0E	205.0	2.0E	206.2
	5000.0E	2500.0								
105.0	4.0E	32.8	1.0E	76.6	2.0E	156.5	5000.0E	157.6	2.0E	166.5
	5000.0E	2500.0								
110.0	4.0E	31.8	1.0E	79.2	2.0E	136.8	5000.0E	140.8	2.0E	145.0
	5000.0E	2500.0								
115.0	4.0E	31.1	1.0E	82.9	2.0E	125.1	5000.0E	150.6	0.5E	153.1
	5000.0E	177.8	0.5E	181.9	5000.0E	2500.0				
120.0	4.0E	30.7	1.0E	87.7	2.0E	108.0	5000.0E	143.0	0.5E	147.4
	5000.0E	160.9	0.5E	172.3	5000.0E	2500.0				
125.0	4.0E	30.5	1.0E	93.8	2.0E	96.2	5000.0E	139.0	0.5E	144.8
	5000.0E	153.2	0.5E	162.5	5000.0E	2500.0				
130.0	4.0E	30.6	1.0E	93.1	5000.0E	132.2	0.5E	141.1	5000.0E	142.1
	0.5E	154.4	5000.0E	2500.0						

KHANNA & GULL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth	to the end of region. E - map data; M - measurement data.									
135.0	4.0E	31.0	1.0E	91.2	5000.0E	122.0	0.5E	147.6	5000.0E	2500.0
136.9	4.0E	31.3	1.0E	87.8	5000.0E	118.8	0.5E	144.9	5000.0E	2500.0
137.0	1.5M	2.6	2.0M	8.7	1.5M	30.7	1.0M	53.5	0.5M	82.8
	1.0E	87.7	5000.0E	118.6	0.5E	144.8	5000.0E	2500.0		
140.0	1.5M	2.6	2.0M	8.7	1.5M	30.7	1.0M	53.5	0.5M	82.8
	1.0E	87.1	5000.0E	112.9	0.5E	141.0	5000.0E	2500.0		
³¹ 145.0	1.5M	2.6	2.0M	8.7	1.5M	30.7	1.0M	53.5	0.5M	82.8
	1.0E	85.0	5000.0E	112.0	0.5E	136.1	5000.0E	2500.0		
150.0	1.5M	2.6	2.0M	8.7	1.5M	30.7	1.0M	53.5	0.5M	82.8
	1.0E	84.1	5000.0E	106.5	0.5E	131.7	5000.0E	2500.0		
155.0	1.5M	2.6	2.0M	8.7	1.5M	30.7	1.0M	53.5	0.5M	82.8
	1.0E	84.5	5000.0E	99.9	4.0E	103.2	0.5E	128.1	5000.0E	2500.0
156.9	1.5M	2.6	2.0M	8.7	1.5M	30.7	1.0M	53.5	0.5M	82.8
	1.0E	84.7	5000.0E	100.2	4.0E	102.5	0.5E	127.8	5000.0E	2500.0
157.0	1.5M	2.6	2.0M	8.7	1.5M	30.7	1.0M	53.5	0.5M	82.8
	1.0E	84.7	5000.0E	100.0	4.0E	102.5	0.5E	127.8	5000.0E	2500.0
157.1	1.5M	3.0	2.0M	21.5	1.5M	57.4	1.0M	84.8	5000.0E	99.8
	4.0E	102.4	0.5E	127.8	5000.0E	2500.0				
160.0	1.5M	3.0	2.0M	21.5	1.5M	57.4	1.0M	84.8	1.0E	85.1
	5000.0E	97.7	4.0E	102.3	0.5E	127.4	5000.0E	2500.0		
³² 165.0	1.5M	3.0	2.0M	21.5	1.5M	57.4	1.0M	84.8	1.0E	88.1
	5000.0E	97.7	4.0E	105.7	0.5E	126.3	5000.0E	2500.0		
170.0	1.5M	3.0	2.0M	21.5	1.5M	57.4	1.0M	84.8	4.0E	92.4
	5000.0E	99.9	4.0E	109.5	0.5E	130.2	5000.0E	2500.0		
175.0	1.5M	3.0	2.0M	21.5	1.5M	57.4	1.0M	84.8	4.0E	99.1
	5000.0E	106.7	4.0E	112.4	0.5E	123.7	5000.0E	126.0	0.5E	128.0
	5000.0E	2500.0								
176.9	1.5M	3.0	2.0M	21.5	1.5M	57.4	1.0M	84.8	4.0E	103.0
	5000.0E	105.4	4.0E	113.3	0.5E	121.9	5000.0E	2500.0		
177.0	1.5M	3.0	2.0M	21.5	1.5M	57.4	1.0M	84.8	4.0E	103.0
	5000.0E	105.3	4.0E	113.4	0.5E	121.8	5000.0E	2500.0		
177.1	4.0M	19.0	0.5M	55.9	1.0M	79.1	4.0E	103.0	5000.0E	105.3
	4.0E	113.4	0.5E	121.7	5000.0E	2500.0				
180.0	4.0M	19.0	0.5M	55.9	1.0M	79.1	4.0E	103.2	5000.0E	106.6
	4.0E	115.2	0.5E	128.7	5000.0E	2500.0				
³³ 185.0	4.0M	19.0	0.5M	55.9	1.0M	79.1	4.0E	114.1	5000.0E	146.3
	4.0E	186.9	5000.0E	188.2	4.0E	214.4	5000.0E	223.7	4.0E	224.0
	5000.0E	2500.0								
190.0	4.0M	19.0	0.5M	55.9	1.0M	79.1	4.0E	137.6	5000.0E	146.2
	4.0E	258.0	5000.0E	264.1	4.0E	266.5	5000.0E	2500.0		
195.0	4.0M	19.0	0.5M	55.9	1.0M	79.1	4.0E	323.4	5000.0E	379.5
	2.0E	380.7	5000.0E	663.0	4.0E	712.7	5000.0E	2500.0		
196.9	4.0M	19.0	0.5M	55.9	1.0M	79.1	4.0E	298.5	5000.0E	346.1
	4.0E	357.3	2.0E	422.2	5000.0E	621.4	4.0E	631.8	5000.0E	633.1
	4.0E	645.1	5000.0E	668.1	4.0E	740.6	5000.0E	786.8	4.0E	800.6
197.0	4.0M	19.0	0.5M	55.9	1.0M	79.1	4.0E	298.5	5000.0E	344.7
	4.0E	357.6	2.0E	426.0	5000.0E	609.1	4.0E	610.7	5000.0E	619.9
197.1	1.5M	19.8	1.0M	75.3	4.0E	298.4	5000.0E	343.3	4.0E	357.9
	2.0E	429.8	5000.0E	606.9	4.0E	610.8	5000.0E	621.6	4.0E	643.7
	5000.0E	668.0	4.0E	739.1	5000.0E	786.7	4.0E	812.9	5000.0E	2500.0
200.0	1.5M	19.8	1.0M	75.3	4.0E	95.7	2.0E	113.9	4.0E	301.3
	5000.0E	336.9	4.0E	367.7	2.0E	445.9	5000.0E	450.0	2.0E	454.1
	5000.0E	466.8	2.0E	474.9	5000.0E	475.4	2.0E	536.9	5000.0E	570.0
³⁴ 205.0	1.5M	19.8	1.0M	75.3	2.0E	121.9	4.0E	293.4	5000.0E	305.0
	4.0E	383.8	2.0E	425.6	5000.0E	508.5	2.0E	525.5	5000.0E	526.2
	2.0E	531.5	5000.0E	533.0	2.0E	545.5	5000.0E	548.6	2.0E	565.5
	4.0E	565.7	5000.0E	573.3	2.0E	777.3	4.0E	951.8	5000.0E	1598.1
210.0	1.5M	19.8	1.0M	75.3	2.0E	124.6	4.0E	240.7	5000.0E	246.2
	4.0E	275.7	5000.0E	285.3	4.0E	385.4	40.0E	389.8	4.0E	390.9
	40.0E	397.8	4.0E	402.4	40.0E	405.6	5000.0E	414.3	2.0E	419.1

³¹ WPEN application dated May 1999 – Appendix A (N 147° E Radial).

³² WPEN application dated May 1999 – Appendix A (N 167° E Radial).

³³ WPEN application dated May 1999 – Appendix A (N 187° E Radial).

³⁴ WPEN application dated May 1999 – Appendix A (N 207° E Radial).

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Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										
Azimuth										
215.0	1.5M	19.8	1.0M	75.3	2.0E	125.8	4.0E	298.6	40.0E	311.5
	4.0E	316.9	40.0E	319.6	4.0E	352.4	40.0E	391.0	4.0E	451.6
	5000.0E	452.0	4.0E	459.8	5000.0E	467.0	4.0E	486.1	2.0E	754.7
216.9	1.5M	19.8	1.0M	75.3	2.0E	125.9	4.0E	300.4	40.0E	314.3
	4.0E	316.5	40.0E	363.8	4.0E	366.9	40.0E	370.0	4.0E	375.2
	40.0E	377.1	4.0E	383.8	40.0E	384.4	4.0E	451.5	5000.0E	461.1
	4.0E	481.6	2.0E	720.2	4.0E	870.1	2.0E	1062.0	4.0E	1425.9
217.0	1.5M	19.8	1.0M	75.3	2.0E	125.9	4.0E	301.1	40.0E	314.1
	4.0E	320.0	40.0E	363.6	4.0E	367.2	40.0E	370.0	4.0E	375.1
	40.0E	376.9	4.0E	383.9	40.0E	384.3	4.0E	451.8	5000.0E	462.4
	4.0E	481.2	2.0E	719.0	4.0E	874.3	2.0E	1065.0	4.0E	1424.8
217.1	4.0M	19.0	1.0M	81.7	2.0E	126.0	4.0E	301.8	40.0E	314.0
	4.0E	323.5	40.0E	363.3	4.0E	367.5	40.0E	370.1	4.0E	374.9
	40.0E	376.8	4.0E	384.0	40.0E	384.2	4.0E	455.3	5000.0E	463.8
	4.0E	480.8	2.0E	717.8	4.0E	878.6	2.0E	1067.9	4.0E	1423.8
220.0	4.0M	19.0	1.0M	81.7	2.0E	126.5	4.0E	356.1	40.0E	361.2
	4.0E	417.2	5000.0E	420.7	4.0E	443.8	5000.0E	444.9	4.0E	462.0
	2.0E	698.7	4.0E	1071.7	2.0E	1236.2	4.0E	1454.5	2.0E	1574.3
³⁵ 225.0	4.0M	19.0	1.0M	81.7	2.0E	127.2	4.0E	333.1	2.0E	1065.4
	4.0E	1609.2	1.0E	1609.3	5000.0E	1609.3	1.0E	1609.3	5000.0E	2500.0
230.0	4.0M	19.0	1.0M	81.7	2.0E	131.0	4.0E	356.4	2.0E	1214.5
	1.0E	1235.2	2.0E	1432.4	4.0E	1495.4	8.0E	1609.2	1.0E	1609.3
235.0	4.0M	19.0	1.0M	81.7	2.0E	230.3	4.0E	320.4	2.0E	834.5
	4.0E	1000.3	2.0E	1179.3	4.0E	1514.2	2.0E	1609.2	4.0E	1609.3
236.9	4.0M	19.0	1.0M	81.7	2.0E	247.8	4.0E	295.6	2.0E	467.9
	4.0E	487.5	2.0E	908.1	4.0E	989.5	2.0E	1443.8	4.0E	1493.0
237.0	4.0M	19.0	1.0M	81.7	2.0E	248.7	4.0E	294.4	2.0E	465.1
	4.0E	495.2	2.0E	912.4	4.0E	989.0	2.0E	1443.4	4.0E	1492.4
	2.0E	1609.2	4.0E	1609.3	8.0E	1609.3	15.0E	1609.3	30.0E	1609.3
237.1	0.5M	20.4	1.0M	33.3	0.1M	82.8	2.0E	249.5	4.0E	293.3
	2.0E	462.4	4.0E	503.2	2.0E	916.7	4.0E	988.4	2.0E	1443.1
240.0	0.5M	20.4	1.0M	33.3	0.1M	82.8	2.0E	401.9	4.0E	574.1
	2.0E	1141.5	4.0E	1494.8	2.0E	1609.2	8.0E	1609.3	15.0E	1609.3
³⁶ 245.0	0.5M	20.4	1.0M	33.3	0.1M	82.8	4.0E	186.1	2.0E	356.3
	4.0E	625.7	2.0E	952.4	8.0E	1043.8	2.0E	1053.4	4.0E	1520.9
250.0	0.5M	20.4	1.0M	33.3	0.1M	82.8	4.0E	205.4	2.0E	339.3
	4.0E	409.6	2.0E	446.3	4.0E	577.1	2.0E	897.7	8.0E	1012.0
255.0	0.5M	20.4	1.0M	33.3	0.1M	82.8	4.0E	218.2	2.0E	463.0
	4.0E	707.9	8.0E	1609.2	15.0E	1609.3	30.0E	1609.3	8.0E	2500.0
256.9	1.0M	23.5	0.1M	80.0	4.0E	225.5	2.0E	469.7	4.0E	649.1
	8.0E	1609.2	15.0E	1609.3	30.0E	1609.3	15.0E	1609.3	30.0E	2500.0
257.0	1.0M	23.5	0.1M	80.0	4.0E	226.0	2.0E	470.1	4.0E	646.5
	8.0E	1609.2	15.0E	1609.3	30.0E	1609.3	15.0E	1609.3	30.0E	2500.0
257.1	1.0M	23.5	0.1M	80.0	4.0E	226.5	2.0E	470.5	4.0E	644.1
	8.0E	1609.2	15.0E	1609.3	30.0E	1609.3	15.0E	1609.3	30.0E	2500.0
260.0	1.0M	23.5	0.1M	80.0	4.0E	254.0	2.0E	483.4	4.0E	577.9
	8.0E	1359.8	15.0E	1468.4	8.0E	1609.2	15.0E	1609.3	30.0E	1609.3
³⁷ 265.0	1.0M	23.5	0.1M	80.0	4.0E	323.2	2.0E	509.2	8.0E	756.6
	15.0E	1058.3	8.0E	1245.7	15.0E	1418.3	8.0E	1574.1	15.0E	1609.2
270.0	1.0M	23.5	0.1M	80.0	4.0E	404.6	2.0E	489.7	8.0E	732.7
	15.0E	809.5	8.0E	1182.8	15.0E	1285.4	8.0E	1423.5	15.0E	1609.2
274.9	1.0M	23.5	0.1M	80.0	4.0E	545.5	8.0E	645.4	10.0E	710.7
	20.0E	713.5	10.0E	761.9	8.0E	866.0	4.0E	946.0	2.0E	1055.5
275.0	1.0M	23.5	0.1M	80.0	4.0E	543.7	8.0E	643.5	10.0E	710.7
	20.0E	714.6	10.0E	761.8	8.0E	864.7	4.0E	944.8	2.0E	1054.0
275.0	1.0M	23.5	0.1M	80.0	4.0E	543.7	8.0E	643.5	10.0E	710.7
	20.0E	714.6	10.0E	761.8	8.0E	864.7	4.0E	944.8	2.0E	1054.0
275.1	1.0M	4.9	0.5M	6.7	0.1M	70.2	4.0E	542.0	8.0E	641.6
	10.0E	710.7	20.0E	715.6	10.0E	737.3	20.0E	747.1	10.0E	761.6
	8.0E	863.4	4.0E	943.7	2.0E	1052.4	8.0E	1501.9	15.0E	1609.2
280.0	1.0M	4.9	0.5M	6.7	0.1M	70.2	4.0E	444.5	8.0E	514.9
	10.0E	641.7	20.0E	738.7	15.0E	754.0	8.0E	969.8	2.0E	1016.9

³⁵ WPEN application dated May 1999 – Appendix A (N 227° E Radial).

³⁶ WPEN application dated May 1999 – Appendix A (N 247° E Radial).

³⁷ WPEN application dated May 1999 – Appendix A.

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Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										

³⁸ 285.0	1.0M	4.9	0.5M	6.7	0.1M	70.2	4.0E	415.3	8.0E	456.7
	10.0E	518.8	20.0E	533.0	4.0E	594.4	20.0E	691.9	10.0E	709.7
	8.0E	717.7	15.0E	784.0	8.0E	987.4	2.0E	1044.2	8.0E	1148.2
	15.0E	1191.9	8.0E	1288.3	4.0E	1463.1	8.0E	1541.9	15.0E	1609.2
290.0	1.0M	4.9	0.5M	6.7	0.1M	70.2	4.0E	329.7	8.0E	441.5
	20.0E	543.0	4.0E	588.4	6.0E	666.8	10.0E	703.4	8.0E	741.6
	15.0E	804.9	8.0E	962.8	2.0E	1044.4	8.0E	1250.0	4.0E	1609.2
295.0	1.0M	4.9	0.5M	6.7	0.1M	70.2	4.0E	329.9	8.0E	468.3
	15.0E	504.4	6.0E	506.5	10.0E	535.9	4.0E	582.6	6.0E	687.0
	10.0E	729.9	8.0E	1199.9	4.0E	1522.1	8.0E	1609.2	4.0E	1609.3
295.0	1.0M	4.9	0.5M	6.7	0.1M	70.2	4.0E	329.9	8.0E	468.3
	15.0E	504.4	6.0E	506.5	10.0E	535.9	4.0E	582.6	6.0E	687.0
295.1	4.0E	330.0	8.0E	469.3	15.0E	504.3	6.0E	507.5	10.0E	536.1
	4.0E	583.0	6.0E	686.5	10.0E	730.5	8.0E	1199.1	4.0E	1519.1
300.0	4.0E	339.0	8.0E	428.5	15.0E	480.9	6.0E	525.2	4.0E	675.4
	10.0E	764.5	8.0E	1172.7	4.0E	1352.4	8.0E	1609.2	30.0E	1609.3
305.0	4.0E	300.4	8.0E	368.8	15.0E	437.8	6.0E	542.7	4.0E	587.2
	10.0E	708.4	4.0E	723.8	10.0E	850.6	4.0E	850.8	10.0E	856.2
310.0	4.0E	289.6	8.0E	327.3	15.0E	401.4	4.0E	406.0	6.0E	535.3
	1.0E	634.8	10.0E	635.4	1.0E	642.0	10.0E	779.5	2.0E	782.9
315.0	4.0E	282.4	8.0E	317.2	15.0E	346.4	4.0E	350.7	15.0E	353.3
	4.0E	472.9	1.0E	632.4	2.0E	1425.2	2.0E	1609.2	10.0E	1609.3
320.0	4.0E	289.0	8.0E	325.1	15.0E	357.1	10.0E	371.1	4.0E	445.5
	1.0E	618.7	2.0E	1231.7	6.0E	1244.0	2.0E	2500.0		
325.0	4.0E	303.7	8.0E	306.7	4.0E	310.9	8.0E	318.0	4.0E	333.8
	15.0E	343.8	10.0E	370.1	4.0E	428.3	1.0E	614.3	2.0E	975.3
330.0	4.0E	335.3	15.0E	336.0	10.0E	368.9	4.0E	447.2	1.0E	468.9
	4.0E	537.2	1.0E	578.4	2.0E	884.3	6.0E	1099.8	2.0E	1609.2
335.0	4.0E	343.0	10.0E	379.7	4.0E	528.6	2.0E	842.5	6.0E	958.6
	2.0E	1609.2	5000.0E	2500.0						
340.0	4.0E	354.6	10.0E	417.7	4.0E	479.5	2.0E	806.4	6.0E	884.6
	2.0E	913.9	2.0E	1158.0	5000.0E	1571.1	2.0E	1609.2	5000.0E	2500.0
345.0	4.0E	140.3	2.0E	164.4	4.0E	366.1	10.0E	436.1	4.0E	465.5
	2.0E	709.4	2.0E	1213.4	2.0E	1219.3	5000.0E	1257.2	2.0E	1267.9
350.0	4.0E	136.3	2.0E	174.5	4.0E	367.6	10.0E	438.6	4.0E	459.4
	2.0E	652.9	2.0E	1503.3	2.0E	1519.8	5000.0E	2500.0		
355.0	4.0E	136.1	2.0E	191.2	4.0E	363.3	10.0E	426.2	4.0E	446.6
	2.0E	633.8	2.0E	1482.8	2.0E	1609.2	5000.0E	2500.0		

³⁸ WPEN application dated May 1999 – Appendix A.

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

HYDE PARK , NY

Call: WHVW (Licensed)

Coordinates: N 41 44 46 W 73 54 46

Frequency: 950 kHz Number of contours: 2

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m. .500	.025
0.0	212.80	47.36	157.87
5.0	212.80	47.36	158.48
10.0	212.80	47.36	159.02
15.0	212.80	47.36	159.56
20.0	212.80	47.36	160.15
25.0	212.80	47.36	160.70
30.0	212.80	47.36	161.13
35.0	212.80	47.36	150.68
40.0	212.80	47.36	142.46
45.0	212.80	47.36	136.68
50.0	212.80	47.36	132.46
55.0	212.80	47.36	128.21
60.0	212.80	47.36	124.90
65.0	212.80	47.36	122.40
70.0	212.80	47.36	120.46
75.0	212.80	46.50	124.69
80.0	212.80	45.29	125.86
85.0	212.80	44.33	125.75
90.0	212.80	43.19	124.82
95.0	212.80	42.20	123.63
100.0	212.80	41.41	122.37
105.0	212.80	40.80	121.19
110.0	212.80	40.34	120.00
115.0	212.80	40.01	118.73
120.0	212.80	39.80	143.69
125.0	212.80	39.71	153.28
130.0	212.80	39.73	143.67
135.0	212.80	39.95	135.97
136.9	212.80	40.09	136.14
137.0	212.80	28.59	84.55
140.0	212.80	28.59	84.55
145.0	212.80	28.59	84.55
150.0	212.80	28.59	86.34
155.0	212.80	28.59	84.69
156.9	212.80	28.59	84.55
157.0	212.80	28.59	84.55
157.1	212.80	28.59	108.92
160.0	212.80	28.59	107.76
165.0	212.80	28.59	106.87
170.0	212.80	28.59	107.78
175.0	212.80	28.59	107.88
176.9	212.80	28.59	102.53
177.0	212.80	28.59	102.53
177.1	212.80	20.48	107.03
180.0	212.80	20.48	107.83
185.0	212.80	20.48	105.45
190.0	212.80	20.48	105.45
195.0	212.80	20.48	105.45
196.9	212.80	20.48	105.45
197.0	212.80	20.48	105.45

KHANNA & GUILL, Inc. – Consulting Engineers

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.025
197.1	212.80	24.36	107.46
200.0	212.80	24.36	105.29
205.0	212.80	24.36	101.27
210.0	212.80	24.36	101.27
215.0	212.80	24.36	101.27
216.9	212.80	24.36	101.27
217.0	212.80	24.36	101.27
217.1	212.80	24.36	99.89
220.0	212.80	24.36	99.89
225.0	212.80	24.36	99.89
230.0	212.80	24.36	99.89
235.0	212.80	24.36	99.89
236.9	212.80	24.36	99.89
237.0	212.80	24.36	99.89
237.1	212.80	24.36	78.50
240.0	212.80	24.36	78.50
245.0	212.80	24.36	78.50
250.0	212.80	24.36	78.50
255.0	212.80	24.36	78.50
256.9	212.80	23.50	78.50
257.0	212.80	23.50	78.50
257.1	212.80	23.50	78.50
260.0	212.80	23.50	78.50
265.0	212.80	23.50	78.50
270.0	212.80	23.50	78.50
274.9	212.80	23.50	78.50
275.0	212.80	23.50	78.50
275.0	212.80	23.50	78.50
275.1	212.80	18.54	84.70
280.0	212.80	18.54	84.70
285.0	212.80	18.54	84.70
290.0	212.80	18.54	84.70
295.0	212.80	18.54	84.70
295.0	212.80	18.54	84.70
295.1	212.80	47.36	162.52
300.0	212.80	47.36	162.52
305.0	212.80	47.36	162.52
310.0	212.80	47.36	162.52
315.0	212.80	47.36	162.52
320.0	212.80	47.36	162.52
325.0	212.80	47.36	162.52
330.0	212.80	47.36	162.52
335.0	212.80	47.36	162.52
340.0	212.80	47.36	162.52
345.0	212.80	47.36	158.33
350.0	212.80	47.36	157.53
355.0	212.80	47.36	157.49

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

Station WXGI (licensed)

Latitude: 37-30-52 N

Longitude: 077-30-28 W

Conductivity Database Used: US M3

Ground Conductivity Data:									
Region conductivity in mS/m followed by distance in km									
Azimuth	to the end of region. E - map data; M - measurement data.								
0.0	2.0E	428.9	4.0E	638.0	8.0E	675.3	15.0E	714.3	4.0E 805.9
	1.0E	957.1	2.0E	1220.6	6.0E	1270.5	2.0E	1609.2	2.0E 1609.3
5.0	2.0E	246.6	4.0E	248.4	2.0E	423.8	4.0E	646.6	8.0E 685.1
	15.0E	747.2	10.0E	769.1	4.0E	940.2	2.0E	1145.1	2.0E 1609.2
10.0	2.0E	97.6	4.0E	129.8	2.0E	239.3	4.0E	301.3	2.0E 425.7
	4.0E	788.5	10.0E	903.0	4.0E	935.8	2.0E	1124.2	2.0E 1609.2
15.0	2.0E	86.6	4.0E	94.3	5000.0E	99.5	4.0E	125.0	5000.0E 135.2
	4.0E	161.3	2.0E	242.7	4.0E	343.1	2.0E	413.0	4.0E 864.9
19.9	2.0E	80.6	4.0E	101.8	5000.0E	106.7	4.0E	208.8	2.0E 238.6
	4.0E	361.3	2.0E	418.4	4.0E	891.7	10.0E	1028.6	4.0E 1095.6
20.0	1.0M	46.6	0.5M	85.8	1.5M	123.0	1.0M	136.3	4.0E 208.9
	40.0E	209.2	4.0E	211.5	2.0E	238.4	4.0E	362.0	2.0E 419.0
	4.0E	892.3	10.0E	1030.6	4.0E	1099.2	2.0E	1271.3	2.0E 1609.2
20.0	1.0M	46.6	0.5M	85.8	1.5M	123.0	1.0M	136.3	4.0E 208.9
	40.0E	209.2	4.0E	211.5	2.0E	238.4	4.0E	362.0	2.0E 419.0
25.0	1.0M	46.6	0.5M	85.8	1.5M	123.0	1.0M	136.3	4.0E 188.5
	40.0E	189.8	4.0E	193.6	40.0E	193.8	4.0E	200.4	40.0E 210.5
	4.0E	215.2	40.0E	216.6	4.0E	221.6	40.0E	222.7	4.0E 406.5
	2.0E	457.3	4.0E	675.6	2.0E	930.8	4.0E	1059.8	6.0E 1093.1
³⁹ 30.0	1.0M	46.6	0.5M	85.8	1.5M	123.0	1.0M	136.3	4.0E 171.9
	40.0E	214.9	4.0E	239.1	40.0E	266.2	4.0E	436.3	2.0E 507.5
	4.0E	712.4	2.0E	774.6	1.0E	837.8	0.5E	1024.3	4.0E 1114.9
35.0	1.0M	46.6	0.5M	85.8	1.5M	123.0	1.0M	136.3	4.0E 150.4
	40.0E	194.9	4.0E	201.8	40.0E	203.6	4.0E	283.5	5000.0E 311.3
	4.0E	312.6	5000.0E	318.4	4.0E	444.0	2.0E	469.1	4.0E 593.1
39.9	1.0M	46.6	0.5M	85.8	1.5M	123.0	1.0M	136.3	4.0E 139.3
	5000.0E	152.2	40.0E	178.6	4.0E	269.8	5000.0E	277.0	4.0E 432.4
	5000.0E	452.2	4.0E	454.6	5000.0E	458.9	0.5E	469.7	4.0E 479.6
	5000.0E	479.9	4.0E	483.1	5000.0E	520.0	1.0E	583.5	2.0E 724.8
40.0	1.0M	46.6	0.5M	85.8	1.5M	123.0	1.0M	136.3	4.0E 139.2
	5000.0E	152.4	40.0E	178.7	4.0E	269.8	5000.0E	277.0	4.0E 432.4
	5000.0E	458.4	0.5E	471.1	4.0E	483.5	5000.0E	493.1	4.0E 494.9
	5000.0E	522.4	1.0E	582.5	2.0E	726.4	1.0E	819.5	2.0E 832.5
40.1	2.0M	15.7	1.5M	32.6	1.0M	73.4	1.5M	116.3	3.0M 178.0
	40.0E	178.8	4.0E	269.8	5000.0E	276.9	4.0E	432.9	5000.0E 457.8
	0.5E	472.6	4.0E	483.9	5000.0E	490.9	4.0E	495.1	5000.0E 524.9
	1.0E	581.6	2.0E	728.1	1.0E	817.8	2.0E	832.5	5000.0E 843.3
45.0	2.0M	15.7	1.5M	32.6	1.0M	73.4	1.5M	116.3	3.0M 178.0
	4.0E	255.7	5000.0E	278.0	4.0E	408.2	5000.0E	409.1	4.0E 418.3
	5000.0E	514.7	0.5E	557.1	5000.0E	607.5	2.0E	607.9	5000.0E 611.9
⁴⁰ 50.0	2.0M	15.7	1.5M	32.6	1.0M	73.4	1.5M	116.3	3.0M 178.0
	2.0E	189.3	4.0E	249.4	5000.0E	291.1	4.0E	319.2	5000.0E 320.4
	4.0E	349.5	5000.0E	355.9	4.0E	359.1	5000.0E	743.8	2.0E 768.2
55.0	2.0M	15.7	1.5M	32.6	1.0M	73.4	1.5M	116.3	3.0M 178.0
	2.0E	215.8	4.0E	254.3	5000.0E	1609.2	1.0E	1609.3	5000.0E 1609.3

³⁹ WPEN application dated May 1999 – Appendix A.

⁴⁰ WPEN application dated May 1999 – Appendix A.

KHANNA & GULL, Inc. – Consulting Engineers

Ground Conductivity Data: Region conductivity in mS/m followed by distance in km to the end of region. E - map data; M - measurement data.										
Azimuth										
59.9	2.0M	15.7	1.5M	32.6	1.0M	73.4	1.5M	116.3	3.0M	178.0
	2.0E	246.2	5000.0E	2500.0						
60.0	2.0M	15.7	1.5M	32.6	1.0M	73.4	1.5M	116.3	3.0M	178.0
	2.0E	246.0	5000.0E	2500.0						
60.1	1.0M	50.6	0.5M	73.8	1.0M	165.5	2.0M	204.0	2.0E	245.8
	5000.0E	2500.0								
65.0	1.0M	50.6	0.5M	73.8	1.0M	165.5	2.0M	204.0	2.0E	230.2
	5000.0E	2500.0								
⁴¹ 70.0	1.0M	50.6	0.5M	73.8	1.0M	165.5	2.0M	204.0	2.0E	205.9
	5000.0E	2500.0								
75.0	1.0M	50.6	0.5M	73.8	1.0M	165.5	2.0M	204.0	5000.0E	2500.0
80.0	1.0M	50.6	0.5M	73.8	1.0M	165.5	2.0M	204.0	5000.0E	2500.0
80.1	2.0E	84.5	5000.0E	89.5	4.0E	90.5	5000.0E	94.4	4.0E	103.5
	5000.0E	151.9	2.0E	178.0	5000.0E	2500.0				
85.0	2.0E	98.6	5000.0E	143.4	2.0E	165.4	5000.0E	166.6	2.0E	170.4
	5000.0E	2500.0								
90.0	2.0E	61.9	5000.0E	64.5	2.0E	102.0	5000.0E	138.6	2.0E	152.8
	5000.0E	160.6	2.0E	162.9	5000.0E	2500.0				
95.0	2.0E	66.1	5000.0E	69.6	2.0E	94.8	5000.0E	95.1	2.0E	111.4
	5000.0E	137.8	2.0E	149.6	5000.0E	2500.0				
100.0	2.0E	71.5	5000.0E	75.7	2.0E	94.4	5000.0E	107.5	2.0E	110.7
	5000.0E	136.5	2.0E	144.1	5000.0E	2500.0				
105.0	2.0E	78.5	5000.0E	83.7	2.0E	101.4	5000.0E	139.7	2.0E	145.2
	5000.0E	2500.0								
270.0	2.0E	582.5	8.0E	632.4	4.0E	851.9	8.0E	982.5	4.0E	1028.5
275.0	2.0E	547.6	8.0E	612.2	4.0E	805.9	8.0E	1453.4	15.0E	1582.9
280.0	2.0E	546.5	8.0E	741.5	4.0E	768.7	8.0E	1045.6	15.0E	1171.5
285.0	2.0E	549.5	8.0E	999.8	15.0E	1143.8	8.0E	1260.8	15.0E	1558.2
290.0	2.0E	549.3	8.0E	986.9	15.0E	1108.5	8.0E	1196.6	15.0E	1550.3
	30.0E	1589.9	15.0E	1609.2	30.0E	1609.3	15.0E	1609.3	30.0E	1609.3
295.0	2.0E	520.2	8.0E	755.6	15.0E	819.0	8.0E	981.6	15.0E	1050.7
300.0	2.0E	479.9	8.0E	620.3	15.0E	786.0	8.0E	979.6	15.0E	1016.6
305.0	2.0E	411.7	4.0E	461.1	8.0E	571.0	15.0E	652.3	8.0E	842.5
	2.0E	917.7	8.0E	1030.7	15.0E	1061.7	8.0E	1226.3	4.0E	1382.2
310.0	2.0E	261.8	4.0E	321.0	2.0E	381.8	4.0E	449.9	8.0E	590.8
	15.0E	670.0	8.0E	774.4	4.0E	827.6	2.0E	931.5	8.0E	1090.3
315.0	2.0E	240.0	4.0E	319.7	2.0E	362.2	4.0E	444.2	8.0E	620.3
	15.0E	634.6	8.0E	641.4	15.0E	667.4	8.0E	769.8	4.0E	804.6
	8.0E	946.6	2.0E	1022.7	8.0E	1236.2	4.0E	1516.1	8.0E	1609.2
320.0	2.0E	226.0	4.0E	441.9	8.0E	621.8	10.0E	670.2	20.0E	712.3
	8.0E	982.2	2.0E	1075.2	8.0E	1240.9	4.0E	1432.0	8.0E	1609.2
325.0	2.0E	218.9	4.0E	442.4	8.0E	612.6	10.0E	654.7	20.0E	712.2
	15.0E	823.9	8.0E	1266.1	4.0E	1270.4	8.0E	1386.1	4.0E	1407.5
330.0	2.0E	217.3	4.0E	447.5	8.0E	604.7	10.0E	657.0	20.0E	735.9
	10.0E	762.7	8.0E	825.1	15.0E	850.0	8.0E	1516.5	2.0E	1609.2
335.0	2.0E	217.8	4.0E	409.9	2.0E	472.7	8.0E	529.7	4.0E	557.8
	8.0E	589.3	10.0E	633.7	4.0E	670.3	20.0E	684.2	4.0E	690.7
	6.0E	799.8	10.0E	899.2	8.0E	969.0	10.0E	1039.9	4.0E	1046.2
340.0	2.0E	226.0	4.0E	320.7	2.0E	509.7	4.0E	562.9	8.0E	584.5
	10.0E	626.5	20.0E	653.7	4.0E	722.3	6.0E	803.9	4.0E	886.7
	10.0E	890.7	4.0E	921.6	10.0E	964.4	4.0E	1011.2	10.0E	1024.8
345.0	2.0E	239.9	4.0E	325.7	2.0E	483.4	4.0E	553.6	8.0E	592.2
	10.0E	616.3	20.0E	657.8	15.0E	681.5	10.0E	728.1	4.0E	803.4
	10.0E	960.1	2.0E	961.5	10.0E	964.2	2.0E	967.2	10.0E	971.6
350.0	2.0E	258.8	4.0E	357.3	2.0E	457.4	4.0E	581.1	8.0E	677.2
	15.0E	711.5	6.0E	816.3	1.0E	922.5	2.0E	1249.5	6.0E	1392.4
355.0	2.0E	295.1	4.0E	367.5	2.0E	441.2	4.0E	585.3	8.0E	678.9
	15.0E	717.3	6.0E	800.0	1.0E	962.1	2.0E	1229.2	6.0E	1324.8

⁴¹ WPEN application dated May 1999 – Appendix A.

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

RICHMOND , VA

Call: WXGI

Coordinates: N 37 30 52 W 77 30 28

Frequency: 950 kHz Number of contours: 2

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.025
0.0	731.28	56.93	195.97
5.0	731.28	56.93	195.97
10.0	731.28	56.93	202.14
15.0	731.28	56.93	219.04
19.9	731.28	56.93	221.17
20.0	731.28	43.50	167.66
25.0	731.28	43.50	167.66
30.0	731.28	43.50	167.66
35.0	731.28	43.50	178.81
39.9	731.28	43.50	186.48
40.0	731.28	43.50	186.59
40.1	731.28	43.50	228.32
45.0	731.28	43.50	228.00
50.0	731.28	43.50	226.02
55.0	731.28	43.50	221.91
59.9	731.28	43.50	221.16
60.0	731.28	43.50	221.16
60.1	731.28	43.50	160.20
65.0	731.28	43.50	160.20
70.0	731.28	43.50	160.20
75.0	731.28	43.50	160.20
80.0	731.28	43.50	160.20
80.1	731.28	56.93	394.74
85.0	731.28	56.93	372.04
90.0	731.28	56.93	396.66
95.0	731.28	56.93	383.29
100.0	731.28	56.93	443.73
105.0	731.28	56.93	440.98
270.0	731.28	56.93	195.97
275.0	731.28	56.93	195.97
280.0	731.28	56.93	195.97
285.0	731.28	56.93	195.97
290.0	731.28	56.93	195.97
295.0	731.28	56.93	195.97
300.0	731.28	56.93	195.97
305.0	731.28	56.93	195.97
310.0	731.28	56.93	195.97
315.0	731.28	56.93	195.97
320.0	731.28	56.93	195.97
325.0	731.28	56.93	195.97
330.0	731.28	56.93	195.97
335.0	731.28	56.93	195.97
340.0	731.28	56.93	195.97
345.0	731.28	56.93	195.97
350.0	731.28	56.93	195.97
355.0	731.28	56.93	195.97

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

Station WILT (licensed)

Latitude: 41-04-41 N

Longitude: 075-23-33 W

Conductivity Database Used: US M3

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth	to the end of region. E - map data; M - measurement data.									
0.0	2.0E	9.5	4.0E	410.7	10.0E	494.2	4.0E	524.3	2.0E	715.7
	2.0E	1549.6	2.0E	1609.2	5000.0E	2500.0				
5.0	2.0E	9.9	4.0E	437.6	10.0E	507.8	4.0E	526.6	2.0E	708.1
	2.0E	1554.8	2.0E	1609.2	5000.0E	1609.3	2.0E	1609.3	5000.0E	2500.0
10.0	2.0E	10.3	4.0E	443.2	10.0E	503.7	4.0E	524.6	2.0E	721.3
	2.0E	1580.5	2.0E	1609.2	5000.0E	1609.3	2.0E	1609.3	5000.0E	2500.0
15.0	2.0E	11.0	4.0E	452.5	10.0E	522.4	4.0E	592.7	2.0E	760.6
	2.0E	1609.2	2.0E	1609.3	5000.0E	1609.3	2.0E	1609.3	5000.0E	1609.3
20.0	2.0E	11.7	4.0E	227.8	2.0E	263.6	4.0E	472.6	10.0E	596.8
	6.0E	616.3	4.0E	689.3	2.0E	854.4	2.0E	1609.2	2.0E	1609.3
25.0	2.0E	12.7	4.0E	230.8	2.0E	484.9	4.0E	573.8	6.0E	698.1
	4.0E	831.4	2.0E	1012.0	2.0E	1609.2	2.0E	1609.3	5000.0E	1609.3
30.0	2.0E	14.1	4.0E	247.1	2.0E	475.5	0.5E	510.4	4.0E	897.8
35.0	2.0E	15.8	4.0E	265.4	2.0E	396.3	0.5E	578.8	4.0E	684.5
	1.0E	852.4	2.0E	1142.6	5000.0E	1306.2	2.0E	1609.2	5000.0E	1609.3
	2.0E	1609.3	5000.0E	1609.3	2.0E	1609.3	5000.0E	1609.3	2.0E	1609.3
40.0	2.0E	18.2	4.0E	281.1	2.0E	329.9	1.0E	471.5	0.5E	517.2
	1.0E	897.2	2.0E	1056.7	5000.0E	1085.4	2.0E	1231.2	5000.0E	1308.0
45.0	2.0E	22.4	4.0E	279.3	1.0E	480.1	2.0E	590.3	1.0E	828.2
	2.0E	1124.2	5000.0E	1364.6	2.0E	1395.1	5000.0E	2500.0		
49.9	2.0E	30.6	4.0E	247.0	1.0E	439.7	2.0E	721.2	1.0E	803.5
50.0	1.0M	1.1	0.5M	33.0	4.0E	246.5	1.0E	439.5	2.0E	720.8
55.0	1.0M	1.1	0.5M	33.0	2.0E	50.3	4.0E	222.1	1.0E	428.9
	2.0E	494.7	5000.0E	502.8	2.0E	510.1	5000.0E	542.3	2.0E	546.5
	5000.0E	564.3	2.0E	564.6	5000.0E	572.0	2.0E	578.6	5000.0E	602.5
	2.0E	616.0	5000.0E	655.9	2.0E	661.6	5000.0E	701.5	2.0E	742.9
⁴² 60.0	1.0M	1.1	0.5M	33.0	2.0E	82.8	4.0E	197.1	1.0E	405.5
	2.0E	431.6	5000.0E	850.9	2.0E	866.5	5000.0E	868.2	2.0E	879.0
65.0	1.0M	1.1	0.5M	33.0	2.0E	89.0	4.0E	176.0	1.0E	225.7
	2.0E	405.0	5000.0E	408.8	2.0E	424.2	5000.0E	819.8	2.0E	959.5
69.9	0.5M	46.7	2.0E	92.7	4.0E	153.9	1.0E	208.8	2.0E	404.8
	5000.0E	2500.0								
70.0	0.5M	46.7	2.0E	92.7	4.0E	153.6	1.0E	208.7	2.0E	405.0
	5000.0E	2500.0								
70.0	0.5M	46.7	2.0E	92.7	4.0E	153.6	1.0E	208.7	2.0E	405.0
	5000.0E	2500.0								
70.1	0.5M	46.7	2.0E	92.8	4.0E	153.3	1.0E	208.5	2.0E	405.1
75.0	0.5M	46.7	2.0E	96.2	4.0E	140.8	1.0E	204.2	2.0E	344.0
	5000.0E	344.3	2.0E	411.8	5000.0E	452.3	2.0E	455.7	5000.0E	2500.0
⁴³ 80.0	0.5M	46.7	2.0E	97.8	4.0E	136.7	1.0E	202.1	2.0E	335.5
	5000.0E	353.5	2.0E	364.9	5000.0E	366.0	2.0E	376.1	5000.0E	400.0
	2.0E	418.8	5000.0E	427.2	2.0E	446.5	5000.0E	456.0	2.0E	458.2
85.0	0.5M	46.7	2.0E	96.3	4.0E	137.2	1.0E	196.6	5000.0E	2500.0
88.9	0.5M	30.0	2.0E	94.6	4.0E	139.2	1.0E	166.0	5000.0E	246.4
	0.5E	252.5	5000.0E	288.6	0.5E	295.1	5000.0E	2500.0		
89.0	0.5M	30.0	2.0E	94.5	4.0E	139.3	1.0E	165.6	5000.0E	245.9
	0.5E	252.1	5000.0E	287.9	0.5E	294.3	5000.0E	2500.0		

⁴² WILT - Antenna proof-of-performance and license file.

⁴³ WILT - Antenna proof-of-performance and license file (N 79° E Radial).

KHANNA & GULL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										

89.1	0.5M	30.0	2.0E	94.5	4.0E	139.3	1.0E	165.1	5000.0E	245.4
	0.5E	251.7	5000.0E	287.2	0.5E	293.6	5000.0E	2500.0		
90.0	0.5M	30.0	2.0E	94.2	4.0E	140.1	1.0E	161.0	5000.0E	240.9
	0.5E	248.2	5000.0E	263.3	0.5E	273.4	5000.0E	281.3	0.5E	287.2
95.0	0.5M	30.0	2.0E	92.8	4.0E	144.1	5000.0E	159.3	4.0E	160.0
	5000.0E	167.0	4.0E	177.2	0.5E	177.3	5000.0E	187.3	0.5E	243.6
⁴⁴ 100.0	0.5M	30.0	2.0E	92.7	4.0E	135.0	5000.0E	140.9	4.0E	146.8
	5000.0E	149.1	4.0E	153.7	0.5E	203.9	5000.0E	2500.0		
105.0	0.5M	30.0	2.0E	93.4	4.0E	125.7	5000.0E	127.8	4.0E	139.9
	0.5E	171.1	5000.0E	2500.0						
108.0	0.5M	30.0	2.0E	92.8	4.0E	121.5	5000.0E	123.3	4.0E	123.7
	5000.0E	126.2	4.0E	130.1	0.5E	161.0	5000.0E	2500.0		
108.1	2.0E	92.8	4.0E	121.4	5000.0E	123.4	4.0E	123.7	5000.0E	126.1
	4.0E	129.8	0.5E	160.8	5000.0E	2500.0				
110.0	2.0E	92.3	4.0E	119.8	5000.0E	125.4	0.5E	136.3	5000.0E	145.0
	0.5E	153.3	5000.0E	2500.0						
115.0	2.0E	23.2	4.0E	37.2	2.0E	85.3	4.0E	124.5	5000.0E	2500.0
120.0	2.0E	22.0	4.0E	119.7	5000.0E	2500.0				
124.9	2.0E	21.1	4.0E	145.9	5000.0E	2500.0				
125.0	2.0E	21.1	4.0E	146.0	5000.0E	2500.0				
125.0	2.0E	21.1	4.0E	146.0	5000.0E	2500.0				
130.0	0.5M	30.9	4.0E	152.9	5000.0E	2500.0				
⁴⁵ 135.0	0.5M	30.9	4.0E	157.2	5000.0E	2500.0				
	0.5M	30.9	4.0E	170.4	5000.0E	2500.0				
140.0	0.5M	30.9	4.0E	170.7	5000.0E	2500.0				
140.0	0.5M	30.9	4.0E	170.7	5000.0E	2500.0				
140.1	0.5M	20.9	4.0E	171.0	5000.0E	2500.0				
⁴⁶ 145.0	0.5M	20.9	4.0E	184.5	5000.0E	2500.0				
	0.5M	20.9	4.0E	189.4	5000.0E	2500.0				
150.0	0.5M	20.9	4.0E	189.4	5000.0E	2500.0				
150.1	0.5M	28.9	4.0E	189.4	5000.0E	2500.0				
152.9	0.5M	28.9	4.0E	189.1	5000.0E	2500.0				
153.0	0.5M	28.9	4.0E	189.2	5000.0E	2500.0				
155.0	0.5M	28.9	4.0E	199.0	5000.0E	2500.0				
⁴⁷ 160.0	0.5M	28.9	4.0E	208.1	5000.0E	2500.0				
	0.5M	28.9	4.0E	228.8	5000.0E	2500.0				
168.0	1.0M	33.6	4.0E	239.8	5000.0E	2500.0				
168.1	1.0M	33.6	4.0E	240.0	5000.0E	2500.0				
168.4	1.0M	33.6	4.0E	217.2	5000.0E	218.5	4.0E	240.6	5000.0E	2500.0
168.5	1.0M	33.6	4.0E	217.0	5000.0E	219.3	4.0E	240.7	5000.0E	2500.0
170.0	1.0M	33.6	4.0E	213.7	5000.0E	231.9	4.0E	241.9	5000.0E	2500.0
⁴⁸ 175.0	1.0M	33.6	4.0E	134.6	5000.0E	136.9	4.0E	204.7	5000.0E	253.2
	4.0E	269.5	2.0E	293.7	5000.0E	297.8	2.0E	298.6	5000.0E	2500.0
180.0	1.0M	33.6	4.0E	138.5	5000.0E	141.4	4.0E	189.4	5000.0E	208.0
	4.0E	209.4	5000.0E	223.4	4.0E	272.8	2.0E	343.8	5000.0E	2500.0
185.0	1.0M	33.6	4.0E	155.9	5000.0E	170.8	4.0E	173.3	5000.0E	184.2
	4.0E	275.9	2.0E	346.8	5000.0E	366.4	2.0E	371.0	5000.0E	371.3
186.9	1.0M	33.6	4.0E	277.3	2.0E	316.6	5000.0E	318.1	2.0E	328.0
	5000.0E	332.2	2.0E	337.2	5000.0E	400.7	2.0E	403.3	5000.0E	411.9
187.0	1.0M	33.6	4.0E	277.3	2.0E	316.9	5000.0E	319.6	2.0E	328.1
	5000.0E	332.8	2.0E	337.5	5000.0E	413.8	2.0E	434.0	5000.0E	466.0
187.5	1.0M	32.4	4.0E	277.8	2.0E	302.6	5000.0E	303.7	2.0E	318.2
	5000.0E	321.5	2.0E	328.7	5000.0E	467.7	4.0E	536.5	5000.0E	537.0
187.6	1.0M	32.4	4.0E	277.8	2.0E	303.0	5000.0E	305.4	2.0E	318.4
	5000.0E	321.9	2.0E	328.8	5000.0E	468.0	4.0E	553.4	5000.0E	557.0
190.0	1.0M	32.4	4.0E	280.1	2.0E	304.4	5000.0E	448.7	4.0E	455.5
⁴⁹ 195.0	1.0M	32.4	4.0E	180.0	40.0E	186.0	4.0E	194.0	40.0E	196.3
	4.0E	219.4	40.0E	219.7	4.0E	248.3	40.0E	254.9	4.0E	261.6

⁴⁴ WILT - Antenna proof-of-performance and license file (N 98° E Radial).

⁴⁵ WILT - Antenna proof-of-performance and license file.

⁴⁶ WILT - Antenna proof-of-performance and license file.

⁴⁷ WILT - Antenna proof-of-performance and license file (N 158° E Radial).

⁴⁸ WILT - Antenna proof-of-performance and license file (N 177.5° E Radial).

⁴⁹ WILT - Antenna proof-of-performance and license file (N 197° E Radial).

KHANNA & GULL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										
200.0	1.0M	32.4	2.0E	36.4	4.0E	197.4	40.0E	285.2	4.0E	310.3
	5000.0E	314.3	4.0E	334.3	5000.0E	345.7	4.0E	369.5	5000.0E	373.1
205.0	1.0M	32.4	2.0E	41.0	4.0E	218.2	40.0E	219.1	4.0E	224.9
	40.0E	236.7	4.0E	245.4	40.0E	246.4	4.0E	331.1	5000.0E	335.4
207.0	1.0M	32.4	2.0E	43.3	4.0E	225.7	40.0E	230.9	4.0E	327.4
	5000.0E	337.0	4.0E	352.8	2.0E	657.0	4.0E	695.3	2.0E	831.7
207.1	2.0E	43.4	4.0E	225.8	40.0E	230.1	4.0E	326.2	5000.0E	337.7
	4.0E	352.4	2.0E	656.9	4.0E	695.2	2.0E	833.4	4.0E	1054.3
209.4	2.0E	46.5	4.0E	209.3	2.0E	235.0	4.0E	285.2	5000.0E	289.8
	4.0E	303.2	5000.0E	308.6	4.0E	311.5	5000.0E	315.1	4.0E	330.7
	5000.0E	337.8	4.0E	341.0	2.0E	608.6	4.0E	698.4	2.0E	872.1
209.5	1.0M	34.5	2.0E	46.6	4.0E	207.2	2.0E	237.6	4.0E	284.3
	5000.0E	289.0	4.0E	304.0	5000.0E	308.1	4.0E	312.1	5000.0E	315.6
	4.0E	329.8	5000.0E	336.1	4.0E	340.1	2.0E	606.9	4.0E	698.9
210.0	1.0M	34.5	2.0E	47.4	4.0E	198.8	2.0E	251.1	4.0E	283.2
	5000.0E	284.9	4.0E	313.0	5000.0E	327.7	4.0E	335.7	2.0E	598.5
215.0	1.0M	34.5	2.0E	56.5	4.0E	197.8	2.0E	562.7	4.0E	880.9
⁵⁰ 220.0	1.0M	34.5	2.0E	67.1	4.0E	208.2	2.0E	608.1	4.0E	636.0
225.0	1.0M	34.5	2.0E	82.0	4.0E	218.2	2.0E	1012.0	4.0E	1104.3
228.9	1.0M	34.5	2.0E	93.6	4.0E	198.3	2.0E	1298.1	4.0E	1379.4
229.0	1.0M	34.5	2.0E	93.9	4.0E	196.8	2.0E	1298.5	4.0E	1382.4
229.5	1.0M	34.5	2.0E	95.5	4.0E	189.4	2.0E	700.5	4.0E	709.3
229.6	1.0M	34.5	2.0E	95.8	4.0E	188.0	2.0E	698.3	4.0E	715.6
230.0	1.0M	34.5	2.0E	97.1	4.0E	182.6	2.0E	694.1	4.0E	740.0
⁵¹ 235.0	1.0M	34.5	2.0E	116.5	4.0E	130.3	2.0E	320.0	4.0E	350.4
	2.0E	749.0	4.0E	848.2	2.0E	1047.0	4.0E	1099.9	2.0E	1299.8
240.0	1.0M	34.5	2.0E	252.9	4.0E	441.1	2.0E	991.5	4.0E	1361.3
244.9	1.5M	2.0	1.0M	34.9	2.0E	224.9	4.0E	485.0	2.0E	810.7
245.0	1.5M	2.0	1.0M	34.9	2.0E	224.4	4.0E	485.3	2.0E	809.3
245.0	1.5M	2.0	1.0M	34.9	2.0E	224.4	4.0E	485.3	2.0E	809.3
245.1	1.5M	2.0	1.0M	34.9	2.0E	224.0	4.0E	485.2	2.0E	808.0
⁵² 250.0	1.5M	2.0	1.0M	34.9	2.0E	208.2	4.0E	418.9	2.0E	764.3
255.0	1.5M	2.0	1.0M	34.9	2.0E	200.7	4.0E	267.5	2.0E	309.0
260.0	1.5M	2.0	1.0M	34.9	2.0E	202.5	4.0E	245.3	2.0E	324.2
	4.0E	525.8	8.0E	1276.3	15.0E	1318.0	8.0E	1609.2	15.0E	1609.3
262.0	1.5M	2.0	1.0M	34.9	2.0E	43.8	4.0E	45.1	2.0E	208.8
	4.0E	236.7	2.0E	330.6	4.0E	493.9	8.0E	1205.7	15.0E	1343.4
262.1	2.0E	43.1	4.0E	45.4	2.0E	209.2	4.0E	236.2	2.0E	331.0
	4.0E	492.5	8.0E	1203.4	15.0E	1344.1	8.0E	1609.2	15.0E	1609.3
265.0	2.0E	32.5	4.0E	55.4	2.0E	341.6	4.0E	452.4	8.0E	654.3
270.0	2.0E	25.0	4.0E	66.7	2.0E	367.4	4.0E	400.2	8.0E	629.3
275.0	2.0E	20.4	4.0E	76.3	2.0E	380.2	8.0E	618.1	15.0E	689.6
280.0	2.0E	17.3	4.0E	88.8	2.0E	373.2	8.0E	570.0	10.0E	635.9
285.0	2.0E	15.2	4.0E	336.0	2.0E	353.9	4.0E	435.7	8.0E	509.3
	10.0E	575.9	20.0E	646.8	8.0E	853.3	2.0E	912.3	8.0E	1046.7
290.0	2.0E	13.6	4.0E	397.6	8.0E	436.6	10.0E	534.3	20.0E	614.8
	15.0E	673.0	8.0E	890.7	2.0E	947.1	8.0E	1049.2	15.0E	1106.1
295.0	2.0E	12.4	4.0E	346.9	8.0E	394.6	10.0E	445.2	4.0E	499.2
300.0	2.0E	11.5	4.0E	335.5	8.0E	370.7	10.0E	411.2	20.0E	456.2
	4.0E	512.2	6.0E	586.2	10.0E	626.7	8.0E	672.6	15.0E	707.8
305.0	2.0E	10.7	4.0E	326.5	8.0E	353.1	10.0E	358.3	20.0E	459.3
	4.0E	508.5	6.0E	617.2	10.0E	664.8	8.0E	1110.0	4.0E	1280.9
310.0	2.0E	10.2	4.0E	304.9	8.0E	388.0	20.0E	389.7	15.0E	439.5
	6.0E	447.3	10.0E	474.4	4.0E	617.8	10.0E	716.9	8.0E	1208.6
315.0	2.0E	9.7	4.0E	263.1	8.0E	393.9	15.0E	429.2	6.0E	471.6
	4.0E	562.2	10.0E	585.0	4.0E	590.6	10.0E	624.4	4.0E	629.1
320.0	2.0E	9.4	4.0E	277.4	8.0E	370.2	15.0E	411.8	6.0E	503.7
	4.0E	546.8	10.0E	549.5	4.0E	552.7	10.0E	555.2	4.0E	560.6
325.0	2.0E	9.2	4.0E	298.1	8.0E	344.7	15.0E	394.4	6.0E	502.4
330.0	2.0E	9.0	4.0E	286.4	8.0E	324.9	15.0E	378.6	4.0E	392.4
	6.0E	466.9	1.0E	610.8	2.0E	1112.1	6.0E	1182.1	2.0E	2500.0
335.0	2.0E	8.9	4.0E	274.7	8.0E	310.3	15.0E	343.4	4.0E	345.7

⁵⁰ WILT - Antenna proof-of-performance and license file (N 219.5° E Radial).

⁵¹ WILT - Antenna proof-of-performance and license file.

⁵² WILT - Antenna proof-of-performance and license file (N 252° E Radial).

KHANNA & GUILL, Inc. – Consulting Engineers

Ground Conductivity Data:
 Region conductivity in mS/m followed by distance in km
 Azimuth to the end of region. E - map data; M - measurement data.

340.0	2.0E	8.9	4.0E	280.5	8.0E	312.3	15.0E	351.7	4.0E	355.7
	15.0E	358.2	10.0E	370.3	15.0E	370.5	4.0E	442.4	1.0E	617.5
345.0	2.0E	8.9	4.0E	281.3	8.0E	337.6	15.0E	361.0	10.0E	384.8
350.0	2.0E	9.0	4.0E	325.4	8.0E	328.8	4.0E	358.4	15.0E	365.0
	10.0E	396.5	4.0E	555.1	2.0E	839.7	6.0E	889.9	2.0E	1208.9
355.0	2.0E	9.2	4.0E	377.6	10.0E	432.1	4.0E	523.7	2.0E	753.2

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

MOUNT POCONO, PA

Call: WILT

Coordinates: N 41 4 41 W 75 23 33

Frequency: 960 kHz Number of contours: 2

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m. .500	.250
0.0	493.09	63.60	86.43
5.0	560.78	67.17	91.22
10.0	615.87	69.78	94.74
15.0	655.77	71.44	97.02
20.0	678.99	72.15	98.08
25.0	685.27	71.91	97.94
30.0	675.48	70.76	96.64
35.0	651.49	68.70	94.22
40.0	615.86	65.73	90.69
45.0	571.61	61.50	85.73
49.9	522.96	55.42	78.80
50.0	521.93	31.63	53.73
55.0	469.92	30.06	45.77
60.0	418.42	28.43	42.55
65.0	369.86	26.78	39.30
69.9	327.00	25.23	35.24
70.0	326.19	25.20	35.20
70.1	325.38	25.17	35.16
75.0	288.87	23.76	33.21
80.0	258.85	22.53	31.50
85.0	236.58	21.56	30.16
88.9	224.62	21.03	29.42
89.0	224.37	21.01	29.40
89.1	224.13	21.00	29.39
90.0	222.08	20.91	29.26
95.0	214.93	20.58	28.80
100.0	214.34	20.55	28.76
105.0	219.14	20.77	29.07
108.0	223.99	21.00	29.38
108.1	224.17	33.49	45.71
110.0	227.82	33.73	46.04
115.0	238.62	38.47	51.04
120.0	249.53	40.44	57.67
124.9	258.32	41.61	59.10
125.0	258.46	41.63	59.12
130.0	263.38	22.72	32.56
135.0	262.43	22.68	32.45
139.9	254.45	22.34	31.56
140.0	254.21	22.33	31.53
140.1	253.97	23.75	41.12
145.0	237.89	22.35	39.26
150.0	213.41	20.51	36.28
150.1	212.84	20.48	28.66
152.9	195.73	19.66	27.53
153.0	195.08	19.63	27.48
155.0	181.52	18.95	26.54
160.0	143.83	16.91	23.71
165.0	102.65	14.33	20.13
168.0	77.47	15.08	20.97

KHANNA & GULL, Inc. – Consulting Engineers

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.250
168.1	76.64	15.00	20.86
168.4	74.14	14.76	20.54
168.5	73.31	14.68	20.43
170.0	60.93	13.43	18.71
175.0	22.78	8.22	11.65
180.0	18.53	7.38	10.52
185.0	43.94	11.45	16.01
186.9	51.90	12.42	17.34
187.0	52.29	12.47	17.40
187.5	54.16	12.68	17.69
187.6	54.52	12.72	17.75
190.0	62.10	13.55	18.88
195.0	70.78	14.44	20.09
200.0	69.93	14.35	19.98
205.0	60.55	13.39	18.66
207.0	54.78	12.75	17.79
207.1	54.47	17.56	24.19
209.4	46.62	16.30	22.53
209.5	46.26	11.74	16.41
210.0	44.40	11.51	16.09
215.0	24.21	8.48	12.00
220.0	11.20	5.62	8.15
225.0	29.05	9.31	13.12
228.9	46.26	11.74	16.41
229.0	46.69	11.79	16.49
229.5	48.82	12.05	16.84
229.6	49.24	12.10	16.91
230.0	50.93	12.31	17.18
235.0	70.14	14.37	20.00
240.0	85.02	15.76	21.91
244.9	94.55	16.58	23.04
245.0	94.69	16.60	23.05
245.0	94.69	16.60	23.05
245.1	94.83	16.61	23.07
250.0	98.71	16.93	23.51
255.0	97.06	16.79	23.32
260.0	89.98	16.20	22.50
262.0	85.75	15.83	22.00
262.1	85.51	21.66	29.65
265.0	78.01	20.76	28.45
270.0	61.90	18.64	25.92
275.0	42.70	15.63	22.23
280.0	22.27	11.28	15.95
285.0	11.45	7.84	11.44
290.0	27.85	12.65	19.85
295.0	46.75	18.36	27.55
300.0	61.94	22.32	32.46
305.0	70.92	24.50	35.14
310.0	71.52	24.91	35.58
315.0	61.82	23.21	33.35
320.0	40.51	18.31	27.05
325.0	11.71	7.94	12.87
330.0	45.04	19.73	28.80
335.0	104.47	31.09	43.33
340.0	174.86	39.89	54.82
345.0	252.91	47.30	64.64
350.0	334.85	53.67	73.14
355.0	416.39	59.10	80.40

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

Station WTGM (licensed)

Latitude: 38-25-44 N

Longitude: 075-37-26 W

Conductivity Database Used: US M3

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
to the end of region. E - map data; M - measurement data.										
Azimuth										
0.0	2.0M	60.3	4.0E	255.8	2.0E	296.4	4.0E	687.1	10.0E	781.6
4.9	2.0M	60.3	4.0E	106.1	5000.0E	117.6	4.0E	142.7	5000.0E	149.6
5.0	2.0M	43.3	1.0M	62.8	4.0E	105.9	5000.0E	117.2	4.0E	143.2
5.1	2.0M	43.3	1.0M	62.8	4.0E	105.8	5000.0E	116.8	4.0E	143.7
10.0	2.0M	43.3	1.0M	62.8	4.0E	97.2	5000.0E	107.8	4.0E	158.7
14.9	2.0M	43.3	1.0M	62.8	4.0E	74.3	5000.0E	101.9	4.0E	275.4
⁵³ 15.0	2.0M	43.3	1.0M	62.8	4.0E	74.2	5000.0E	101.8	4.0E	275.2
20.0	2.0M	43.3	1.0M	62.8	4.0E	71.3	5000.0E	99.0	4.0E	275.1
⁵⁴ 25.0	1.5M	28.4	1.0M	61.6	4.0E	65.5	5000.0E	95.2	4.0E	484.8
25.1	1.5M	28.4	1.0M	61.6	4.0E	65.4	5000.0E	95.1	4.0E	481.0
30.0	1.5M	28.4	1.0M	61.6	4.0E	61.7	5000.0E	99.8	4.0E	259.9
34.9	1.5M	28.4	1.0M	61.6	5000.0E	101.8	4.0E	223.6	5000.0E	223.8
35.0	1.5M	28.4	1.0M	61.6	5000.0E	101.9	4.0E	223.5	5000.0E	223.9
35.1	1.5M	25.8	1.0M	41.9	0.5M	48.4	4.0E	60.0	5000.0E	101.9
40.0	1.5M	25.8	1.0M	41.9	0.5M	48.4	4.0E	58.9	5000.0E	97.3
	4.0E	129.9	5000.0E	131.5	4.0E	164.5	5000.0E	164.8	4.0E	193.9
⁵⁵ 45.0	1.5M	25.8	1.0M	41.9	0.5M	48.4	4.0E	59.6	5000.0E	81.4
	4.0E	116.8	5000.0E	397.6	0.5E	415.6	5000.0E	471.9	2.0E	496.2
49.9	1.5M	25.8	1.0M	41.9	0.5M	48.4	4.0E	61.8	5000.0E	573.2
50.0	1.5M	25.8	1.0M	41.9	0.5M	48.4	4.0E	61.8	5000.0E	574.4
50.1	1.5M	48.9	0.5M	55.3	4.0E	61.7	5000.0E	575.5	2.0E	602.7
55.0	1.5M	48.9	0.5M	55.3	4.0E	58.7	5000.0E	1609.2	1.0E	1609.3
⁵⁶ 60.0	1.5M	48.9	0.5M	55.3	4.0E	56.3	5000.0E	2500.0		
65.0	1.5M	48.9	0.5M	55.3	5000.0E	2500.0				
70.0	1.5M	48.9	0.5M	55.3	5000.0E	2500.0				
70.1	2.0E	52.7	5000.0E	2500.0						
75.0	2.0E	51.6	5000.0E	2500.0						
79.9	2.0E	51.0	5000.0E	2500.0						
80.0	1.5M	32.0	2.0E	51.0	5000.0E	2500.0				
85.0	1.5M	32.0	2.0E	50.7	5000.0E	2500.0				
⁵⁷ 90.0	1.5M	32.0	2.0E	45.0	5000.0E	2500.0				
95.0	1.5M	32.0	2.0E	43.2	5000.0E	2500.0				
100.0	1.5M	32.0	2.0E	45.8	5000.0E	2500.0				
100.1	2.0E	45.8	5000.0E	2500.0						
104.9	2.0E	47.4	5000.0E	2500.0						
105.0	1.5M	33.5	2.0E	47.3	5000.0E	2500.0				
110.0	1.5M	33.5	2.0E	46.4	5000.0E	2500.0				
⁵⁸ 115.0	1.5M	33.5	2.0E	43.9	5000.0E	44.3	2.0E	45.9	5000.0E	2500.0
120.0	1.5M	33.5	2.0E	43.3	5000.0E	45.2	2.0E	45.7	5000.0E	2500.0
125.0	1.5M	33.5	2.0E	43.0	5000.0E	2500.0				
125.1	2.0E	43.0	5000.0E	2500.0						
128.9	2.0E	43.1	5000.0E	2500.0						

⁵³ WPEN Minor change application dated May 1999 – Appendix A (N 15° E Radial; +10/-10).

⁵⁴ WPEN Minor change application dated May 1999 – Appendix A; (N 25° E Radial; +10/-10) Appendix A attached.

⁵⁵ WTGM Radial (N 45° E Radial; +5/-10).Appendix A attached.

⁵⁶ WPEN Minor change application dated November 2005 – Appendix A. (N 60° E Radial; +10/-10).

⁵⁷ WTGM - Antenna proof-of-performance and license file. (N 90° E Radial; +10/-10).

⁵⁸ WTGM - Antenna proof-of-performance and license file. (N 115° E Radial; +10/-10).

KHANNA & GULL, Inc. – Consulting Engineers

Ground Conductivity Data:									
Region conductivity in mS/m followed by distance in km									
Azimuth	to the end of region. E - map data; M - measurement data.								

129.0	1.5M	32.5	2.0E	43.1	5000.0E	2500.0			
130.0	1.5M	32.5	2.0E	43.1	5000.0E	2500.0			
135.0	1.5M	32.5	2.0E	43.5	5000.0E	2500.0			
⁵⁹ 140.0	1.5M	32.5	2.0E	44.3	5000.0E	2500.0			
145.0	1.5M	32.5	2.0E	45.9	5000.0E	2500.0			
149.0	1.5M	32.5	2.0E	47.8	5000.0E	2500.0			
149.1	2.0E	47.8	5000.0E	2500.0					
150.0	2.0E	48.3	5000.0E	2500.0					
154.9	2.0E	51.3	5000.0E	2500.0					
155.0	2.0M	33.0	2.0E	51.4	5000.0E	2500.0			
160.0	2.0M	33.0	2.0E	55.4	5000.0E	2500.0			
⁶⁰ 165.0	2.0M	33.0	2.0E	60.5	5000.0E	2500.0			
170.0	2.0M	33.0	2.0E	69.1	5000.0E	2500.0			
175.0	2.0M	33.0	2.0E	78.0	5000.0E	2500.0			
175.1	2.0E	77.6	5000.0E	2500.0					
179.9	2.0E	88.7	5000.0E	2500.0					
180.0	1.5M	33.9	2.0E	88.5	5000.0E	2500.0			
185.0	1.5M	33.9	2.0E	51.9	5000.0E	56.2	2.0E	59.8	5000.0E 68.3
⁶¹ 190.0	2.0E	100.8	5000.0E	245.3	4.0E	254.0	5000.0E	279.4	4.0E 321.2
	1.5M	33.9	2.0E	52.1	5000.0E	71.5	2.0E	73.8	5000.0E 76.9
	2.0E	79.4	5000.0E	81.1	2.0E	85.8	5000.0E	86.7	2.0E 118.3
	5000.0E	178.9	4.0E	209.7	5000.0E	210.6	4.0E	215.3	5000.0E 218.8
195.0	4.0E	244.7	5000.0E	250.4	4.0E	259.4	5000.0E	275.3	4.0E 347.4
	1.5M	33.9	2.0E	54.5	5000.0E	107.7	2.0E	110.1	5000.0E 174.4
	4.0E	261.2	5000.0E	264.0	4.0E	270.1	5000.0E	283.1	4.0E 331.8
	5000.0E	343.1	4.0E	348.1	5000.0E	355.8	4.0E	375.5	5000.0E 376.7
200.0	1.5M	33.9	2.0E	40.8	5000.0E	46.6	2.0E	60.5	5000.0E 175.5
	4.0E	178.8	5000.0E	186.4	4.0E	280.4	5000.0E	284.9	4.0E 348.4
200.1	2.0E	40.9	5000.0E	46.9	2.0E	60.2	5000.0E	175.7	4.0E 178.7
	5000.0E	186.8	4.0E	279.8	5000.0E	284.4	4.0E	348.2	5000.0E 353.1
205.0	2.0E	34.2	5000.0E	35.2	2.0E	44.1	5000.0E	48.9	2.0E 49.1
	5000.0E	135.5	2.0E	136.4	5000.0E	155.6	4.0E	174.9	5000.0E 182.3
	4.0E	195.8	5000.0E	196.6	4.0E	240.6	2.0E	354.3	4.0E 553.2
210.0	2.0E	36.1	5000.0E	42.4	2.0E	44.4	5000.0E	120.9	2.0E 132.8
	5000.0E	136.0	2.0E	136.5	5000.0E	141.1	2.0E	150.6	5000.0E 154.1
	2.0E	169.3	4.0E	171.1	5000.0E	178.8	2.0E	391.4	4.0E 607.3
214.9	2.0E	38.5	5000.0E	114.9	2.0E	149.9	5000.0E	153.6	2.0E 165.8
	5000.0E	173.3	2.0E	393.2	4.0E	444.8	2.0E	514.3	4.0E 789.0
215.0	2.0M	24.3	2.0E	38.6	5000.0E	114.9	2.0E	149.8	5000.0E 153.5
	2.0E	166.0	5000.0E	174.0	2.0E	393.2	4.0E	444.6	2.0E 516.0
220.0	2.0M	24.3	2.0E	27.8	5000.0E	30.8	2.0E	41.7	5000.0E 86.4
	4.0E	87.3	5000.0E	92.4	4.0E	112.6	5000.0E	118.9	2.0E 145.8
⁶² 225.0	2.0M	24.3	2.0E	29.9	5000.0E	38.0	2.0E	40.3	5000.0E 79.4
	4.0E	82.6	5000.0E	83.5	4.0E	89.4	5000.0E	90.8	4.0E 113.9
	5000.0E	119.5	2.0E	143.3	5000.0E	145.6	2.0E	405.1	4.0E 446.7
230.0	2.0M	24.3	2.0E	32.0	5000.0E	82.6	4.0E	112.7	5000.0E 117.7
	2.0E	362.8	4.0E	1248.7	1.0E	1318.1	5000.0E	2500.0	
235.0	2.0M	24.3	2.0E	29.4	5000.0E	35.5	2.0E	36.0	5000.0E 86.7
	4.0E	116.6	5000.0E	119.6	2.0E	345.3	4.0E	557.9	2.0E 690.6
235.1	2.0E	29.3	5000.0E	35.4	2.0E	36.0	5000.0E	86.8	4.0E 116.6
	5000.0E	119.5	2.0E	345.3	4.0E	554.9	2.0E	692.9	4.0E 1191.1
239.9	2.0E	25.8	5000.0E	31.3	2.0E	36.0	5000.0E	42.0	2.0E 43.3
	5000.0E	71.8	4.0E	76.1	5000.0E	93.5	4.0E	117.5	5000.0E 120.1
	2.0E	344.2	4.0E	437.7	2.0E	884.1	1.0E	921.2	2.0E 1112.6
240.0	2.0M	21.2	2.0E	25.7	5000.0E	31.2	2.0E	36.0	5000.0E 41.9
	2.0E	43.3	5000.0E	71.8	4.0E	76.2	5000.0E	94.0	4.0E 117.5
	5000.0E	120.2	2.0E	344.3	4.0E	437.3	2.0E	883.7	1.0E 919.0
245.0	2.0M	21.2	2.0E	23.0	5000.0E	28.0	2.0E	36.4	5000.0E 40.0
	2.0E	44.0	5000.0E	69.0	4.0E	77.7	5000.0E	90.7	4.0E 119.1

⁵⁹ WTGM - Antenna proof-of-performance and license file (N 139° E Radial; +10/-10).

⁶⁰ WTGM - Antenna proof-of-performance and license file. (N 165° E Radial; +10/-10).

⁶¹ WTGM - Antenna proof-of-performance and license file. (N 190° E Radial; +10/-10).

⁶² WTGM - Antenna proof-of-performance and license file. (N 225° E Radial; +10/-10).

KHANNA & GUILL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										

⁶³ 250.0	2.0M	21.2	5000.0E	25.6	2.0E	34.2	5000.0E	38.6	2.0E	45.2
	5000.0E	69.9	4.0E	78.4	5000.0E	79.7	4.0E	84.9	5000.0E	93.2
	4.0E	120.9	5000.0E	123.2	4.0E	127.4	2.0E	673.0	4.0E	701.4
255.0	2.0M	21.2	2.0E	32.7	5000.0E	35.7	2.0E	47.1	5000.0E	70.3
	4.0E	91.3	5000.0E	109.3	4.0E	133.0	2.0E	534.9	4.0E	701.4
	2.0E	863.6	4.0E	1263.4	8.0E	1514.8	4.0E	1609.2	15.0E	1609.3
260.0	2.0M	21.2	2.0E	33.1	5000.0E	33.5	2.0E	49.6	5000.0E	74.8
	4.0E	90.3	5000.0E	90.9	4.0E	97.6	5000.0E	99.2	4.0E	105.3
	5000.0E	118.4	4.0E	139.6	2.0E	839.3	4.0E	1250.8	8.0E	1500.9
260.1	2.0E	33.1	5000.0E	33.4	2.0E	49.6	5000.0E	75.2	4.0E	90.2
	5000.0E	90.6	4.0E	97.6	5000.0E	99.1	4.0E	105.3	5000.0E	118.4
	4.0E	139.7	2.0E	838.5	4.0E	1250.4	8.0E	1503.4	4.0E	1609.2
265.0	2.0E	56.9	5000.0E	66.5	4.0E	74.6	5000.0E	79.5	4.0E	106.1
	5000.0E	109.6	4.0E	117.4	5000.0E	121.9	4.0E	144.7	2.0E	721.1
270.0	2.0E	59.1	5000.0E	70.2	4.0E	79.3	5000.0E	81.5	4.0E	83.8
	5000.0E	88.5	4.0E	121.3	5000.0E	127.3	4.0E	128.5	5000.0E	131.7
	4.0E	141.8	5000.0E	145.5	4.0E	147.4	2.0E	703.2	8.0E	785.2
275.0	2.0E	62.0	5000.0E	75.8	4.0E	90.9	5000.0E	96.5	4.0E	140.4
	5000.0E	143.8	4.0E	148.7	2.0E	695.2	8.0E	1195.7	15.0E	1320.3
280.0	2.0E	56.3	5000.0E	78.2	4.0E	129.4	5000.0E	133.4	4.0E	138.8
	5000.0E	139.2	4.0E	144.8	2.0E	675.1	8.0E	1132.7	15.0E	1282.1
285.0	2.0E	50.0	5000.0E	57.1	40.0E	80.0	4.0E	124.4	5000.0E	127.0
	4.0E	139.4	2.0E	306.3	4.0E	424.0	2.0E	557.1	4.0E	579.7
	2.0E	588.9	8.0E	897.7	15.0E	948.9	8.0E	1111.0	15.0E	1221.4
290.0	2.0E	49.7	4.0E	61.1	40.0E	82.5	4.0E	127.7	5000.0E	130.1
	4.0E	135.5	2.0E	278.6	4.0E	404.0	2.0E	460.2	4.0E	549.6
292.9	2.0E	45.1	4.0E	57.3	40.0E	85.8	4.0E	133.8	2.0E	268.3
	4.0E	532.5	8.0E	666.2	15.0E	745.2	8.0E	1078.4	15.0E	1113.7
293.0	2.0M	33.0	2.0E	44.9	4.0E	56.5	40.0E	86.1	4.0E	133.7
	2.0E	268.0	4.0E	532.0	8.0E	666.6	15.0E	744.8	8.0E	1077.6
295.0	2.0M	33.0	2.0E	42.3	4.0E	45.0	40.0E	68.2	4.0E	68.5
	40.0E	87.6	4.0E	132.8	2.0E	265.3	4.0E	522.4	8.0E	674.2
300.0	2.0M	33.0	2.0E	36.4	4.0E	52.7	40.0E	68.8	4.0E	71.2
	40.0E	88.4	4.0E	131.2	2.0E	260.5	4.0E	501.7	8.0E	689.5
	15.0E	757.3	8.0E	840.2	4.0E	903.6	2.0E	1004.3	8.0E	1146.0
⁶⁴ 305.0	2.0M	33.0	4.0E	53.1	40.0E	66.4	4.0E	71.8	40.0E	100.7
	4.0E	130.5	2.0E	257.8	4.0E	485.6	8.0E	674.0	10.0E	731.8
308.9	2.0M	33.0	4.0E	59.9	40.0E	65.2	4.0E	72.7	40.0E	99.4
	4.0E	130.3	2.0E	259.3	4.0E	325.9	2.0E	399.4	4.0E	479.3
309.0	2.0M	32.7	4.0E	59.9	40.0E	65.8	4.0E	72.7	40.0E	100.2
	4.0E	130.3	2.0E	259.4	4.0E	325.9	2.0E	402.5	4.0E	479.4
	8.0E	1609.3	30.0E	1609.3	15.0E	1609.3	30.0E	1609.3	40.0E	2500.0
310.0	2.0M	32.7	4.0E	59.9	40.0E	72.7	4.0E	73.0	40.0E	95.2
	4.0E	99.1	40.0E	109.3	4.0E	130.3	2.0E	260.2	4.0E	325.7
313.0	2.0M	32.7	4.0E	59.8	40.0E	61.5	4.0E	66.7	40.0E	94.4
	4.0E	103.4	40.0E	107.8	4.0E	130.7	2.0E	263.1	4.0E	327.5
313.1	2.0M	32.7	4.0E	59.8	40.0E	61.4	4.0E	66.8	40.0E	94.5
	4.0E	102.3	40.0E	107.5	4.0E	130.7	2.0E	263.2	4.0E	327.6
315.0	2.0M	32.7	4.0E	59.8	40.0E	60.0	4.0E	67.1	40.0E	69.9
	4.0E	70.8	40.0E	102.1	4.0E	112.6	40.0E	113.8	4.0E	118.7
	40.0E	120.1	4.0E	131.1	2.0E	266.4	4.0E	329.9	2.0E	495.8
⁶⁵ 320.0	2.0M	32.7	4.0E	64.6	40.0E	73.5	4.0E	80.1	40.0E	119.1
	4.0E	135.0	2.0E	175.4	4.0E	207.3	2.0E	277.2	4.0E	337.5
324.9	2.0M	32.7	4.0E	81.9	40.0E	87.8	4.0E	95.2	40.0E	118.5
	4.0E	141.6	2.0E	160.6	4.0E	212.5	2.0E	306.6	4.0E	321.3
325.0	1.5M	24.6	1.0M	34.2	1.5M	59.7	4.0E	81.9	40.0E	87.9
	4.0E	95.9	40.0E	118.8	4.0E	141.8	2.0E	160.1	4.0E	212.6
	2.0E	309.8	4.0E	319.8	2.0E	435.2	4.0E	529.5	8.0E	568.5
325.1	1.5M	24.6	1.0M	34.2	1.5M	59.7	4.0E	82.0	40.0E	88.0
	4.0E	96.6	40.0E	119.2	4.0E	142.0	2.0E	159.6	4.0E	212.8
330.0	1.5M	24.6	1.0M	34.2	1.5M	59.7	4.0E	85.1	40.0E	88.2
	4.0E	105.8	40.0E	114.8	4.0E	122.4	40.0E	123.2	4.0E	220.8

⁶³ WTGM - Antenna proof-of-performance and license file. (N 250° E Radial; +10/-10)

⁶⁴ WTGM - Antenna proof-of-performance and license file (N 303° E Radial; +10/-10).

⁶⁵ WTGM - Antenna proof-of-performance and license file (N 319° E Radial; +6/-10).

KHANNA & GUILL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										

⁶⁶ 335.0	1.5M	24.6	1.0M	34.2	1.5M	59.7	4.0E	89.3	40.0E	89.8
	4.0E	110.0	40.0E	117.6	4.0E	127.1	40.0E	127.7	4.0E	232.0
	2.0E	361.9	4.0E	543.5	8.0E	629.7	15.0E	663.3	6.0E	735.1
340.0	1.5M	24.6	1.0M	34.2	1.5M	59.7	4.0E	111.4	40.0E	122.0
	4.0E	122.3	40.0E	126.8	4.0E	238.4	2.0E	341.6	4.0E	504.6
344.9	1.5M	24.6	1.0M	34.2	1.5M	59.7	4.0E	108.4	40.0E	110.7
	4.0E	116.7	40.0E	120.8	4.0E	123.1	40.0E	130.7	4.0E	238.9
	2.0E	330.0	4.0E	559.8	8.0E	595.9	15.0E	644.7	4.0E	722.8
345.0	2.0M	60.3	4.0E	108.3	40.0E	110.6	4.0E	116.8	40.0E	120.9
	4.0E	123.4	40.0E	130.7	4.0E	238.9	2.0E	329.7	4.0E	559.9
	8.0E	595.6	15.0E	644.7	4.0E	722.7	1.0E	889.8	2.0E	1165.6
345.1	2.0M	60.3	4.0E	108.3	40.0E	110.6	4.0E	116.9	40.0E	121.0
	4.0E	123.6	40.0E	130.7	4.0E	238.8	2.0E	329.4	4.0E	560.0
	8.0E	595.3	15.0E	644.7	4.0E	722.6	1.0E	890.3	2.0E	1165.1
	6.0E	1290.0	2.0E	1609.2	5000.0E	1609.3	2.0E	1609.3	5000.0E	2500.0
350.0	2.0M	60.3	4.0E	122.9	40.0E	126.5	4.0E	238.5	2.0E	302.5
	4.0E	551.3	8.0E	584.1	15.0E	619.5	4.0E	622.6	15.0E	630.0
	4.0E	634.0	15.0E	635.7	10.0E	641.6	15.0E	643.2	10.0E	649.8
⁶⁷ 355.0	2.0M	60.3	4.0E	244.8	2.0E	289.1	4.0E	572.0	8.0E	602.9
	4.0E	606.9	8.0E	626.5	4.0E	641.8	15.0E	652.9	10.0E	681.7

⁶⁶ WPEN – Application dated May 1999 – Appendix A (N 335° E Radial; +10/-10).

⁶⁷ WPEN – Application dated May 1999 – Appendix A (N 355° E Radial; +10/-10).

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

SALISBURY , MD

Call: WTGM

Coordinates: N 38 25 44 W 75 37 26

Frequency: 960 kHz Number of contours: 2

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.250
0.0	312.74	38.88	53.08
4.9	333.55	40.02	54.64
5.0	334.02	40.05	43.30
5.0	334.02	40.05	43.30
5.1	334.48	40.07	43.30
10.0	358.88	41.36	43.30
14.9	385.99	42.73	44.61
15.0	386.57	42.76	44.65
15.0	386.57	42.76	44.65
20.0	416.58	43.30	46.23
25.0	448.79	34.60	47.86
25.0	448.79	34.60	47.86
25.1	449.46	34.63	47.89
30.0	483.47	35.84	49.55
34.9	520.35	37.09	51.27
35.0	521.14	37.12	51.30
35.0	521.14	37.12	51.30
35.1	521.92	37.15	44.05
40.0	562.31	38.47	45.64
45.0	607.23	39.88	47.33
49.9	654.61	41.31	49.56
50.0	655.61	41.34	49.62
50.0	655.61	41.34	49.62
50.1	656.61	47.92	49.11
55.0	706.55	48.90	50.83
60.0	758.64	48.90	52.56
65.0	810.12	48.90	54.21
70.0	859.14	48.90	58.40
70.1	860.08	114.04	245.18
75.0	904.03	130.40	262.00
79.9	942.74	142.70	274.67
80.0	943.47	108.51	240.48
85.0	976.58	116.72	248.79
90.0	1003.00	159.66	291.90
95.0	1022.88	176.53	308.90
100.0	1036.74	160.43	292.88
100.1	1036.96	197.34	329.80
104.9	1045.30	187.60	320.10
105.0	1045.43	150.27	282.77
110.0	1049.98	157.26	289.79
115.0	1051.52	164.29	296.83
120.0	1051.12	176.17	308.71
125.0	1049.77	180.91	313.44
125.1	1049.74	221.28	353.81
128.9	1048.58	220.73	353.25
129.0	1048.55	181.32	313.84
130.0	1048.27	180.95	313.47
135.0	1047.22	177.74	310.25
140.0	1046.96	172.16	304.67
145.0	1047.56	161.27	293.79

KHANNA & GUILL, Inc. – Consulting Engineers

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.250
149.0	1048.55	148.81	281.33
149.1	1048.58	184.86	317.38
150.0	1048.85	181.45	313.97
154.9	1050.34	160.60	293.13
155.0	1050.37	160.13	292.67
160.0	1051.44	134.12	266.66
165.0	1051.19	102.78	235.32
170.0	1048.59	66.88	187.85
175.0	1042.51	66.71	143.55
175.1	1042.34	66.71	145.05
179.9	1032.13	66.41	95.45
180.0	1031.87	61.65	85.34
185.0	1015.69	72.11	95.65
190.0	993.24	81.39	105.43
195.0	964.13	89.41	182.68
200.0	928.42	81.76	190.42
200.1	927.64	119.26	199.43
205.0	886.67	160.60	195.13
210.0	839.94	138.86	165.47
214.9	790.74	126.81	148.07
215.0	789.72	126.75	147.99
220.0	737.78	108.44	135.37
225.0	685.95	106.14	132.75
230.0	635.89	104.71	130.25
235.0	588.82	108.56	131.84
235.1	587.92	108.58	131.80
239.9	546.23	105.95	129.17
240.0	545.40	106.13	129.31
245.0	505.67	92.89	115.96
250.0	469.27	80.19	109.43
255.0	435.63	54.03	89.48
260.0	404.31	43.96	84.13
260.1	403.71	43.88	84.29
265.0	375.19	42.19	62.06
270.0	348.55	40.82	55.73
275.0	325.03	39.56	54.01
280.0	305.41	38.47	52.52
285.0	290.31	37.61	58.71
290.0	279.97	37.00	50.76
292.9	276.02	36.76	51.87
293.0	275.91	36.76	51.91
295.0	274.00	36.64	69.64
300.0	271.49	36.51	58.21
305.0	271.24	37.75	61.22
308.9	271.81	37.80	55.66
309.0	271.82	37.92	55.77
310.0	272.01	37.93	55.79
313.0	272.53	37.97	55.85
313.1	272.55	37.97	55.85
315.0	272.80	38.00	55.88
320.0	273.03	38.01	55.90
324.9	272.55	37.97	55.85
325.0	272.53	27.37	44.01
325.0	272.53	27.37	44.01
325.1	272.51	27.37	44.01
330.0	271.65	27.33	43.94
335.0	271.15	27.30	43.91
340.0	272.15	27.35	43.98
344.9	275.80	27.52	44.25
345.0	275.91	36.76	50.18
345.0	275.91	36.76	50.18
345.1	276.02	36.76	50.19
350.0	283.54	37.21	50.80
355.0	295.78	37.92	51.77

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

Station WADV (licensed)

Latitude: 40-22-22 N

Longitude: 076-21-53 W

Conductivity Database Used: US M3

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth	to the end of region. E - map data; M - measurement data.									
0.0	4.0E	14.4	2.0E	88.6	4.0E	349.1	8.0E	409.7	4.0E	413.2
5.0	4.0E	14.6	2.0E	83.6	4.0E	446.7	10.0E	535.3	4.0E	602.0
10.0	4.0E	15.0	2.0E	79.9	4.0E	508.0	10.0E	592.1	4.0E	615.3
15.0	4.0E	15.5	2.0E	78.1	4.0E	534.0	10.0E	598.9	4.0E	618.2
20.0	4.0E	16.1	2.0E	78.0	4.0E	550.2	10.0E	626.1	4.0E	712.8
25.0	4.0E	17.1	2.0E	79.9	4.0E	631.9	6.0E	768.7	4.0E	848.7
30.0	4.0E	18.4	2.0E	84.8	4.0E	333.9	2.0E	602.5	4.0E	862.6
35.0	4.0E	20.2	2.0E	94.9	4.0E	360.3	2.0E	524.5	0.5E	642.4
40.0	4.0E	22.4	2.0E	109.8	4.0E	388.6	2.0E	459.6	1.0E	553.1
45.0	4.0E	25.5	2.0E	131.4	4.0E	390.7	1.0E	583.9	2.0E	723.4
50.0	4.0E	31.4	2.0E	182.1	4.0E	345.8	1.0E	548.8	2.0E	829.9
55.0	4.0E	46.3	2.0E	200.9	4.0E	304.1	1.0E	529.2	2.0E	545.6
60.0	4.0E	130.6	2.0E	203.4	4.0E	257.3	1.0E	320.7	2.0E	535.3
65.0	4.0E	135.8	2.0E	194.2	4.0E	238.7	1.0E	307.2	2.0E	511.6
70.0	4.0E	144.4	2.0E	183.9	4.0E	235.7	1.0E	299.8	2.0E	302.9
75.0	4.0E	222.2	5000.0E	240.9	4.0E	252.1	5000.0E	256.7	4.0E	260.1
80.0	4.0E	196.3	5000.0E	201.9	0.5E	329.0	5000.0E	2500.0		
85.0	4.0E	177.1	5000.0E	2500.0						
90.0	4.0E	201.7	5000.0E	2500.0						
95.0	4.0E	200.5	5000.0E	2500.0						
100.0	4.0E	196.8	5000.0E	2500.0						
105.0	4.0E	199.3	5000.0E	2500.0						
110.0	4.0E	201.8	5000.0E	2500.0						
115.0	4.0E	197.2	5000.0E	2500.0						
120.0	4.0E	109.9	5000.0E	112.5	4.0E	196.3	5000.0E	2500.0		
125.0	4.0E	102.7	5000.0E	106.1	4.0E	196.0	5000.0E	2500.0		
130.0	4.0E	100.8	5000.0E	103.7	4.0E	196.7	5000.0E	2500.0		
135.0	4.0E	102.3	5000.0E	105.7	4.0E	201.1	5000.0E	2500.0		
140.0	4.0E	104.6	5000.0E	108.6	4.0E	169.7	5000.0E	193.6	4.0E	204.7
145.0	4.0E	117.3	5000.0E	2500.0						
150.0	4.0E	164.7	5000.0E	165.9	4.0E	218.4	2.0E	227.8	5000.0E	2500.0
155.0	4.0E	99.8	40.0E	102.0	4.0E	212.8	2.0E	255.6	5000.0E	2500.0
160.0	4.0E	94.6	40.0E	98.2	4.0E	103.0	40.0E	106.6	4.0E	208.3
165.0	4.0E	94.5	40.0E	111.2	4.0E	113.0	40.0E	115.2	4.0E	203.6
170.0	4.0E	106.4	40.0E	114.6	4.0E	138.2	40.0E	139.9	4.0E	200.7
175.0	4.0E	101.1	40.0E	113.1	4.0E	114.0	40.0E	125.0	4.0E	146.6
180.0	4.0E	114.7	40.0E	201.4	5000.0E	241.6	4.0E	255.6	5000.0E	268.6
185.0	4.0E	118.7	40.0E	119.2	4.0E	126.7	40.0E	136.5	4.0E	143.8
190.0	4.0E	95.3	2.0E	101.1	4.0E	124.6	40.0E	127.8	4.0E	232.6
195.0	4.0E	90.7	2.0E	136.5	4.0E	221.8	5000.0E	227.0	4.0E	256.8
200.0	4.0E	89.6	2.0E	177.5	4.0E	207.8	5000.0E	211.9	4.0E	226.8
205.0	4.0E	91.6	2.0E	500.7	4.0E	589.2	2.0E	747.2	4.0E	955.9
210.0	4.0E	95.1	2.0E	456.4	4.0E	667.6	2.0E	820.9	4.0E	1199.7
215.0	4.0E	99.7	2.0E	445.7	4.0E	543.5	2.0E	585.6	4.0E	876.2
220.0	4.0E	104.1	2.0E	806.3	4.0E	1351.5	1.0E	1404.3	5000.0E	1412.0
225.0	4.0E	105.4	2.0E	978.7	1.0E	1070.1	2.0E	1128.8	4.0E	1295.7
230.0	4.0E	93.2	2.0E	581.2	4.0E	627.8	2.0E	1184.3	4.0E	1306.6
235.0	4.0E	69.7	2.0E	607.9	4.0E	739.0	2.0E	930.1	4.0E	1003.9
240.0	4.0E	57.1	2.0E	198.5	4.0E	284.5	2.0E	887.5	4.0E	1244.2
245.0	4.0E	49.3	2.0E	162.5	4.0E	344.8	2.0E	834.7	4.0E	1274.0
250.0	4.0E	43.7	2.0E	144.5	4.0E	379.2	2.0E	682.2	8.0E	757.2

KHANNA & GUILL, Inc. – Consulting Engineers

Ground Conductivity Data:									
Region conductivity in mS/m followed by distance in km									
to the end of region. E - map data; M - measurement data.									
Azimuth									
255.0	4.0E	39.5	2.0E	132.2	4.0E	333.9	2.0E	652.3	8.0E 809.0
260.0	4.0E	35.8	2.0E	124.2	4.0E	334.3	2.0E	409.4	4.0E 438.0
265.0	4.0E	31.3	2.0E	117.9	4.0E	195.8	2.0E	203.5	4.0E 467.8
270.0	4.0E	27.9	2.0E	114.5	4.0E	180.3	2.0E	220.5	4.0E 412.5
275.0	4.0E	25.4	2.0E	113.0	4.0E	171.8	2.0E	239.6	4.0E 372.6
280.0	4.0E	23.5	2.0E	113.6	4.0E	165.2	2.0E	262.8	4.0E 341.4
285.0	4.0E	22.0	2.0E	116.0	4.0E	159.7	2.0E	298.6	4.0E 321.4
290.0	4.0E	20.8	2.0E	126.4	4.0E	147.9	2.0E	316.5	8.0E 507.3
295.0	4.0E	19.6	2.0E	318.0	8.0E	470.5	10.0E	525.1	20.0E 589.0
300.0	4.0E	18.6	2.0E	319.0	4.0E	382.3	8.0E	432.4	10.0E 498.0
305.0	4.0E	17.8	2.0E	257.8	4.0E	362.7	8.0E	393.2	10.0E 460.6
310.0	4.0E	17.2	2.0E	199.5	4.0E	330.1	8.0E	371.3	10.0E 417.9
315.0	4.0E	16.7	2.0E	167.4	4.0E	322.5	8.0E	357.8	10.0E 395.6
320.0	4.0E	16.4	2.0E	145.6	4.0E	321.9	8.0E	352.3	10.0E 368.1
325.0	4.0E	16.0	2.0E	131.4	4.0E	324.1	8.0E	379.6	20.0E 394.3
330.0	4.0E	15.4	2.0E	121.4	4.0E	316.7	8.0E	408.0	15.0E 442.1
335.0	4.0E	14.9	2.0E	115.1	4.0E	282.5	8.0E	396.4	15.0E 433.4
340.0	4.0E	14.6	2.0E	111.0	4.0E	295.1	8.0E	382.5	15.0E 425.2
345.0	4.0E	14.4	2.0E	106.4	4.0E	334.7	8.0E	371.0	15.0E 419.7
350.0	4.0E	14.3	2.0E	100.9	4.0E	329.5	8.0E	364.1	15.0E 394.2
355.0	4.0E	14.3	2.0E	95.3	4.0E	331.5	8.0E	366.8	15.0E 422.0

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

LEBANON, PA

Call: WADV

Coordinates: N 40 22 22 W 76 21 53

Frequency: 940 kHz Number of contours: 2

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.250
0.0	294.51	42.15	55.97
5.0	294.51	42.23	56.05
10.0	294.51	42.35	56.17
15.0	294.51	42.52	56.34
20.0	294.51	42.75	56.57
25.0	294.51	43.08	56.90
30.0	294.51	43.54	57.36
35.0	294.51	44.13	57.95
40.0	294.51	44.90	58.72
45.0	294.51	45.93	59.75
50.0	294.51	47.84	61.66
55.0	294.51	52.19	66.01
60.0	294.51	54.37	72.82
65.0	294.51	54.37	72.82
70.0	294.51	54.37	72.82
75.0	294.51	54.37	72.82
80.0	294.51	54.37	72.82
85.0	294.51	54.37	72.82
90.0	294.51	54.37	72.82
95.0	294.51	54.37	72.82
100.0	294.51	54.37	72.82
105.0	294.51	54.37	72.82
110.0	294.51	54.37	72.82
115.0	294.51	54.37	72.82
120.0	294.51	54.37	72.82
125.0	294.51	54.37	72.82
130.0	294.51	54.37	72.82
135.0	294.51	54.37	72.82
140.0	294.51	54.37	72.82
145.0	294.51	54.37	72.82
150.0	294.51	54.37	72.82
155.0	294.51	54.37	72.82
160.0	294.51	54.37	72.82
165.0	294.51	54.37	72.82
170.0	294.51	54.37	72.82
175.0	294.51	54.37	72.82
180.0	294.51	54.37	72.82
185.0	294.51	54.37	72.82
190.0	294.51	54.37	72.82
195.0	294.51	54.37	72.82
200.0	294.51	54.37	72.82
205.0	294.51	54.37	72.82
210.0	294.51	54.37	72.82
215.0	294.51	54.37	72.82
220.0	294.51	54.37	72.82
225.0	294.51	54.37	72.82
230.0	294.51	54.37	72.82
235.0	294.51	54.37	72.05
240.0	294.51	54.37	68.91
245.0	294.51	53.03	66.85

KHANNA & GUILL, Inc. – Consulting Engineers

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.250
250.0	294.51	51.47	65.29
255.0	294.51	50.26	64.08
260.0	294.51	49.19	63.00
265.0	294.51	47.79	61.61
270.0	294.51	46.72	60.54
275.0	294.51	45.90	59.72
280.0	294.51	45.26	59.08
285.0	294.51	44.75	58.57
290.0	294.51	44.35	58.17
295.0	294.51	43.95	57.76
300.0	294.51	43.59	57.41
305.0	294.51	43.32	57.14
310.0	294.51	43.10	56.92
315.0	294.51	42.95	56.77
320.0	294.51	42.85	56.67
325.0	294.51	42.71	56.53
330.0	294.51	42.49	56.31
335.0	294.51	42.33	56.15
340.0	294.51	42.21	56.03
345.0	294.51	42.14	55.96
350.0	294.51	42.10	55.92
355.0	294.51	42.10	55.92

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

Station WHYL (licensed)

Latitude: 40-11-34 N

Longitude: 077-10-28 W

Conductivity Database Used: US M3

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										
Azimuth										
0.0	2.0E	125.8	4.0E	344.9	8.0E	378.2	15.0E	408.5	4.0E	515.5
5.0	2.0E	124.8	4.0E	347.7	8.0E	388.0	15.0E	448.4	10.0E	470.6
7.9	2.0E	125.3	4.0E	366.7	8.0E	437.1	15.0E	456.1	10.0E	490.2
8.0	5.0M	11.8	3.0M	26.0	2.0E	125.4	4.0E	367.3	8.0E	438.0
10.0	5.0M	11.8	3.0M	26.0	2.0E	126.1	4.0E	375.1	8.0E	411.5
⁶⁸ 15.0	5.0M	11.8	3.0M	26.0	2.0E	128.3	4.0E	522.9	10.0E	622.8
20.0	5.0M	11.8	3.0M	26.0	2.0E	129.9	4.0E	571.6	10.0E	638.7
25.0	5.0M	11.8	3.0M	26.0	2.0E	129.5	4.0E	594.8	10.0E	703.8
28.0	5.0M	11.8	3.0M	26.0	2.0E	129.3	4.0E	612.0	10.0E	718.5
28.1	2.0E	129.2	4.0E	612.6	10.0E	714.2	6.0E	813.7	4.0E	904.7
30.0	2.0E	128.6	4.0E	701.3	6.0E	849.7	4.0E	1019.8	2.0E	1242.7
35.0	2.0E	127.9	4.0E	386.4	2.0E	666.6	4.0E	1021.9	2.0E	1224.2
37.9	2.0E	128.2	4.0E	394.1	2.0E	599.2	0.5E	696.6	4.0E	866.6
38.0	5.0M	18.5	3.0M	31.4	2.0E	128.2	4.0E	394.7	2.0E	596.9
40.0	5.0M	18.5	3.0M	31.4	2.0E	128.5	4.0E	411.8	2.0E	570.5
45.0	5.0M	18.5	3.0M	31.4	2.0E	132.9	4.0E	452.1	2.0E	503.2
⁶⁹ 50.0	5.0M	18.5	3.0M	31.4	2.0E	147.6	4.0E	442.9	1.0E	620.8
52.9	5.0M	18.5	3.0M	31.4	2.0E	174.9	4.0E	417.1	1.0E	613.0
53.0	5.0M	18.5	3.0M	31.4	2.0E	176.1	4.0E	416.3	1.0E	612.8
53.1	5.0M	67.6	3.0M	148.0	1.5M	188.0	4.0E	415.5	1.0E	612.5
55.0	5.0M	67.6	3.0M	148.0	1.5M	188.0	2.0E	206.1	4.0E	400.8
60.0	5.0M	67.6	3.0M	148.0	1.5M	188.0	2.0E	270.2	4.0E	354.7
⁷⁰ 65.0	5.0M	67.6	3.0M	148.0	1.5M	188.0	4.0E	201.7	2.0E	271.3
70.0	5.0M	67.6	3.0M	148.0	1.5M	188.0	4.0E	213.3	2.0E	256.6
72.9	5.0M	67.6	3.0M	148.0	1.5M	188.0	4.0E	225.5	2.0E	249.2
73.0	5.0M	31.4	2.0E	31.6	4.0E	226.1	2.0E	248.8	4.0E	305.4
73.1	5.0M	31.4	2.0E	31.6	4.0E	226.6	2.0E	248.4	4.0E	304.2
75.0	5.0M	31.4	4.0E	283.1	5000.0E	289.6	4.0E	292.8	5000.0E	298.3
⁷¹ 80.0	5.0M	31.4	4.0E	262.2	5000.0E	291.1	0.5E	308.5	5000.0E	2500.0
85.0	5.0M	31.4	4.0E	271.1	5000.0E	2500.0				
88.0	5.0M	31.4	4.0E	269.3	5000.0E	2500.0				
88.1	2.0E	25.1	4.0E	269.2	5000.0E	2500.0				
90.0	2.0E	24.6	4.0E	267.8	5000.0E	2500.0				
95.0	2.0E	23.5	4.0E	263.0	5000.0E	2500.0				
97.9	2.0E	22.9	4.0E	262.3	5000.0E	2500.0				
98.0	5.0M	30.6	4.0E	262.2	5000.0E	2500.0				
100.0	5.0M	30.6	4.0E	262.9	5000.0E	2500.0				
105.0	5.0M	30.6	4.0E	154.9	5000.0E	158.5	4.0E	254.6	5000.0E	2500.0
⁷² 110.0	5.0M	30.6	4.0E	150.5	5000.0E	153.9	4.0E	249.8	5000.0E	2500.0
115.0	5.0M	30.6	4.0E	148.3	5000.0E	155.9	4.0E	244.4	5000.0E	2500.0
118.0	5.0M	30.6	4.0E	155.8	5000.0E	161.1	4.0E	243.5	5000.0E	2500.0

⁶⁸ WHYL - Antenna proof-of-performance and license file (N 18° E Radial; +10/-10).

⁶⁹ WHYL - Antenna proof-of-performance and license file (N 48° E Radial; +5/-10).

⁷⁰ WHYL - Antenna proof-of-performance and license file (N 63° E Radial; +10/-10).

⁷¹ WHYL - Antenna proof-of-performance and license file (N 78° E Radial; +10/-5).

⁷² WHYL - Antenna proof-of-performance and license file (N 108° E Radial; +10/-10).

KHANNA & GUILL, Inc. – Consulting Engineers

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
to the end of region. E - map data; M - measurement data.										
Azimuth										
118.1	2.0E	21.1	4.0E	155.8	5000.0E	161.5	4.0E	243.6	5000.0E	2500.0
120.0	2.0E	21.1	4.0E	156.5	5000.0E	173.4	4.0E	219.3	5000.0E	227.8
125.0	2.0E	21.1	4.0E	120.7	40.0E	125.5	4.0E	130.1	40.0E	133.3
129.9	2.0E	21.3	4.0E	117.7	40.0E	131.6	4.0E	137.9	40.0E	138.2
130.0	3.0M	32.0	4.0E	117.7	40.0E	131.5	4.0E	137.6	40.0E	138.4
135.0	3.0M	32.0	4.0E	121.9	40.0E	128.5	4.0E	240.2	2.0E	261.7
⁷³ 140.0	3.0M	32.0	4.0E	119.5	40.0E	130.3	4.0E	148.8	40.0E	149.3
145.0	3.0M	32.0	4.0E	83.6	2.0E	92.6	4.0E	119.2	40.0E	137.1
150.0	3.0M	32.0	4.0E	73.3	2.0E	99.2	4.0E	125.4	40.0E	168.0
150.1	2.0E	23.5	4.0E	73.3	2.0E	99.3	4.0E	125.0	40.0E	168.8
152.9	2.0E	24.1	4.0E	71.0	2.0E	103.1	4.0E	116.6	40.0E	131.1
153.0	2.0M	32.0	4.0E	71.0	2.0E	103.2	4.0E	116.4	40.0E	120.0
155.0	2.0M	32.0	4.0E	69.6	2.0E	106.3	4.0E	113.1	40.0E	121.7
160.0	2.0M	32.0	4.0E	66.6	2.0E	113.1	4.0E	145.7	40.0E	146.0
⁷⁴ 165.0	2.0M	32.0	4.0E	64.4	2.0E	120.2	4.0E	204.4	5000.0E	208.2
170.0	2.0M	32.0	4.0E	62.8	2.0E	129.8	4.0E	216.8	5000.0E	231.4
173.0	2.0M	32.0	4.0E	62.1	2.0E	137.3	4.0E	213.2	5000.0E	225.8
173.1	2.0E	31.8	4.0E	62.0	2.0E	137.6	4.0E	212.9	5000.0E	225.7
175.0	2.0E	33.0	4.0E	61.7	2.0E	143.1	4.0E	149.3	5000.0E	163.6
180.0	2.0E	37.0	4.0E	58.7	2.0E	160.6	4.0E	175.3	5000.0E	177.7
185.0	2.0E	42.4	4.0E	55.9	2.0E	542.6	4.0E	669.7	5000.0E	2500.0
190.0	2.0E	525.3	4.0E	586.3	2.0E	610.1	4.0E	714.5	5000.0E	2500.0
194.9	2.0E	511.8	4.0E	553.0	2.0E	650.2	4.0E	824.6	5000.0E	1356.8
195.0	4.0M	9.8	1.5M	30.9	2.0E	511.6	4.0E	552.6	2.0E	651.1
200.0	4.0M	9.8	1.5M	30.9	2.0E	423.1	4.0E	548.4	2.0E	701.5
⁷⁵ 205.0	4.0M	9.8	1.5M	30.9	2.0E	399.5	4.0E	620.4	2.0E	759.3
210.0	4.0M	9.8	1.5M	30.9	2.0E	393.6	4.0E	481.3	2.0E	538.4
215.0	4.0M	9.8	1.5M	30.9	2.0E	731.4	4.0E	1241.8	2.0E	1289.4
215.1	2.0E	732.6	4.0E	1243.9	2.0E	1289.5	1.0E	1369.9	5000.0E	2500.0
220.0	2.0E	801.4	4.0E	1299.0	1.0E	1355.0	5000.0E	1366.9	1.0E	1370.1
225.0	2.0E	903.0	1.0E	903.3	2.0E	1110.3	4.0E	1166.6	8.0E	1336.0
230.0	2.0E	509.8	4.0E	682.4	2.0E	866.8	4.0E	1227.7	2.0E	1563.2
235.0	2.0E	106.1	4.0E	216.9	2.0E	620.7	4.0E	661.6	2.0E	1118.4
240.0	2.0E	84.6	4.0E	256.2	2.0E	807.6	4.0E	1192.3	2.0E	1294.7
245.0	2.0E	74.4	4.0E	295.1	2.0E	646.8	8.0E	709.0	2.0E	742.9
250.0	2.0E	66.8	4.0E	302.8	2.0E	604.9	8.0E	679.5	4.0E	1161.1
255.0	2.0E	61.3	4.0E	260.3	2.0E	579.0	8.0E	743.5	4.0E	861.5
260.0	2.0E	57.6	4.0E	254.6	2.0E	546.8	8.0E	1609.2	15.0E	1609.3
265.0	2.0E	54.8	4.0E	414.6	8.0E	1043.3	15.0E	1186.3	8.0E	1452.7
270.0	2.0E	52.6	4.0E	130.4	2.0E	132.0	4.0E	364.0	8.0E	975.9
275.0	2.0E	50.9	4.0E	118.4	2.0E	147.1	4.0E	330.3	8.0E	488.4
280.0	2.0E	49.7	4.0E	112.9	2.0E	164.2	4.0E	303.3	8.0E	487.6
285.0	2.0E	48.9	4.0E	109.6	2.0E	183.7	4.0E	282.2	8.0E	488.6
290.0	2.0E	49.4	4.0E	107.4	2.0E	211.8	4.0E	267.2	8.0E	634.3
295.0	2.0E	50.3	4.0E	106.0	2.0E	258.7	4.0E	261.3	8.0E	450.2
300.0	2.0E	51.6	4.0E	105.4	2.0E	262.8	8.0E	423.9	10.0E	474.0
305.0	2.0E	53.5	4.0E	105.1	2.0E	268.9	8.0E	325.3	4.0E	348.5
310.0	2.0E	56.8	4.0E	104.2	2.0E	274.4	4.0E	331.7	8.0E	367.6
315.0	2.0E	61.5	4.0E	98.8	2.0E	257.8	4.0E	322.0	8.0E	347.2
320.0	2.0E	73.5	4.0E	85.0	2.0E	213.5	4.0E	301.3	8.0E	335.9
325.0	2.0E	187.1	4.0E	293.1	8.0E	329.5	10.0E	364.4	20.0E	424.4
330.0	2.0E	169.7	4.0E	297.9	8.0E	330.1	10.0E	346.5	20.0E	390.3
335.0	2.0E	156.9	4.0E	303.5	8.0E	334.3	20.0E	339.1	8.0E	354.6
340.0	2.0E	146.1	4.0E	312.2	8.0E	396.3	15.0E	430.5	6.0E	518.5
345.0	2.0E	137.7	4.0E	294.8	8.0E	391.4	15.0E	427.3	6.0E	522.1
350.0	2.0E	132.4	4.0E	279.3	8.0E	384.3	15.0E	425.4	6.0E	506.8
355.0	2.0E	128.4	4.0E	337.8	8.0E	379.1	15.0E	427.0	4.0E	506.3

⁷³ WHYL - Antenna proof-of-performance and license file. (N 140° E Radial; +10/-10)

⁷⁴ WHYL - Antenna proof-of-performance and license file (N 163° E Radial; +10/-10).

⁷⁵ WHYL - Antenna proof-of-performance and license file. (N 163° E Radial; +10/-10)

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

CARLISLE ,PA

Call: WHYL

Coordinates: N 40 11 34 W 77 10 28

Frequency: 960 kHz Number of contours: 2

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.250
0.0	389.37	42.90	58.56
5.0	354.73	41.15	56.17
7.9	331.91	39.94	54.52
8.0	331.12	45.04	59.60
10.0	315.55	44.18	58.44
15.0	291.50	42.82	56.58
20.0	292.11	42.86	56.62
25.0	321.87	44.53	58.92
28.0	353.97	46.25	61.26
28.1	355.17	41.17	56.20
30.0	380.33	42.45	57.95
35.0	467.95	46.60	63.58
37.9	526.30	49.12	67.00
38.0	528.37	55.35	73.26
40.0	570.41	57.07	75.58
45.0	678.16	61.18	81.12
50.0	784.29	64.89	86.07
52.9	842.72	66.81	88.63
53.0	844.68	66.87	88.72
53.1	846.63	73.49	98.85
55.0	882.82	74.83	100.61
60.0	968.45	77.87	104.58
65.0	1036.73	80.19	107.61
70.0	1084.21	81.75	109.63
72.9	1101.27	82.30	110.34
73.0	1101.71	98.24	129.33
73.1	1102.15	98.29	129.38
75.0	1108.62	98.59	129.75
80.0	1109.07	98.60	129.77
85.0	1086.01	97.78	128.72
88.0	1061.60	96.89	127.57
88.1	1060.66	81.57	112.24
90.0	1041.26	81.08	111.54
95.0	977.75	79.18	108.96
97.9	933.83	77.71	106.99
98.0	932.23	91.86	121.13
100.0	899.38	90.55	119.43
105.0	810.65	86.84	114.61
110.0	716.46	82.64	109.12
115.0	621.79	78.06	103.12
118.0	566.83	75.22	99.37
118.1	565.03	61.74	85.86
120.0	531.59	59.94	83.47
125.0	450.62	55.23	77.23
129.9	384.40	50.92	71.53
130.0	383.20	55.14	75.72
130.0	383.20	55.14	75.72

KHANNA & GUILL, Inc. – Consulting Engineers

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.250
135.0	337.96	52.00	71.54
140.0	305.78	49.61	68.36
145.0	288.40	48.26	66.56
150.0	289.43	48.34	66.67
150.0	289.43	48.34	66.67
150.1	289.46	43.06	61.39
152.9	289.42	42.81	61.13
153.0	289.38	39.59	57.91
155.0	288.08	39.49	57.78
160.0	287.86	39.47	57.75
165.0	287.99	39.48	57.77
170.0	279.88	38.83	56.91
173.0	279.04	38.77	56.82
173.1	279.02	38.84	56.89
175.0	278.91	38.36	56.41
180.0	282.42	37.19	55.33
185.0	295.97	37.93	54.87
190.0	324.81	39.55	53.99
194.9	370.56	41.96	57.28
195.0	371.67	37.61	52.95
195.0	371.67	37.61	52.95
200.0	435.92	40.73	57.19
205.0	514.51	44.22	61.92
210.0	603.24	47.82	66.79
215.0	697.40	51.33	71.50
215.0	697.40	51.33	71.50
215.1	699.31	55.80	75.99
220.0	792.09	59.01	80.28
225.0	882.31	61.92	84.16
230.0	963.13	64.40	87.44
235.0	1029.94	66.35	90.02
240.0	1078.72	67.73	93.77
245.0	1106.30	68.50	97.93
250.0	1110.64	69.17	100.35
255.0	1090.98	70.12	101.11
260.0	1047.98	69.68	100.22
265.0	983.62	68.16	98.00
270.0	901.13	65.61	94.51
275.0	804.79	62.11	89.81
280.0	699.72	57.76	84.00
285.0	591.77	52.69	77.26
290.0	487.65	47.47	69.57
295.0	395.30	43.19	61.70
300.0	324.48	39.53	54.71
305.0	288.97	37.53	51.23
310.0	288.66	37.51	51.20
315.0	308.17	38.63	52.73
320.0	346.96	40.74	55.61
325.0	383.10	42.59	58.14
330.0	416.60	44.23	60.36
335.0	449.64	45.77	62.45
340.0	470.98	46.73	63.76
345.0	473.07	46.82	63.89
350.0	455.17	46.02	62.80
355.0	423.61	44.56	60.81

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

Station WELI (licensed)

Latitude: 41-22-14 N

Longitude: 072-56-15 W

Conductivity Database Used: US M3

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth	to the end of region. E - map data; M - measurement data.									
0.0	4.0M	4.1	1.5M	31.0	2.0E	57.6	1.0E	172.0	4.0E	174.6
	2.0E	403.6	4.0E	456.6	6.0E	470.1	10.0E	531.1	4.0E	572.4
5.0	4.0M	4.1	1.5M	31.0	2.0E	63.5	1.0E	241.7	2.0E	405.8
7.0	4.0M	4.1	1.5M	31.0	2.0E	65.4	1.0E	285.2	2.0E	286.7
	0.5E	394.4	2.0E	407.6	4.0E	491.0	6.0E	587.4	4.0E	637.2
7.1	2.0E	65.5	1.0E	286.6	0.5E	402.1	2.0E	407.7	4.0E	491.6
	6.0E	588.2	4.0E	638.3	2.0E	757.9	2.0E	1531.2	2.0E	1609.2
10.0	2.0E	68.6	1.0E	288.8	0.5E	411.4	4.0E	521.7	6.0E	602.2
	4.0E	674.6	2.0E	800.5	2.0E	1545.2	2.0E	1609.2	5000.0E	2500.0
14.9	2.0E	74.0	1.0E	313.7	0.5E	420.4	4.0E	642.0	5000.0E	674.7
	4.0E	761.4	2.0E	890.1	2.0E	1586.3	2.0E	1609.2	5000.0E	2500.0
15.0	3.0M	5.0	2.0M	29.8	2.0E	74.2	1.0E	314.4	0.5E	420.6
	4.0E	643.2	5000.0E	681.6	4.0E	763.0	2.0E	892.0	2.0E	1587.2
20.0	3.0M	5.0	2.0M	29.8	2.0E	81.9	1.0E	358.9	0.5E	464.1
	4.0E	480.9	1.0E	481.1	4.0E	778.0	2.0E	805.5	5000.0E	893.0
⁷⁶ 25.0	3.0M	5.0	2.0M	29.8	2.0E	96.4	1.0E	722.9	2.0E	933.0
30.0	3.0M	5.0	2.0M	29.8	2.0E	122.1	1.0E	279.1	2.0E	427.3
35.0	3.0M	5.0	2.0M	29.8	2.0E	136.5	1.0E	261.8	2.0E	505.0
35.1	2.0E	136.7	1.0E	261.4	2.0E	507.4	1.0E	687.7	2.0E	919.1
40.0	2.0E	149.8	1.0E	241.1	2.0E	264.4	5000.0E	266.1	2.0E	338.5
	5000.0E	365.1	2.0E	378.4	5000.0E	388.3	2.0E	555.4	1.0E	635.8
45.0	2.0E	244.8	5000.0E	416.7	2.0E	425.3	5000.0E	430.7	2.0E	437.3
	5000.0E	473.7	2.0E	487.4	5000.0E	489.3	2.0E	502.7	5000.0E	505.2
49.9	2.0E	229.3	5000.0E	591.3	1.0E	596.2	5000.0E	682.0	2.0E	695.2
50.0	4.0M	31.4	2.0E	229.3	5000.0E	685.9	2.0E	691.8	5000.0E	703.9
55.0	4.0M	31.4	2.0E	189.7	5000.0E	193.8	2.0E	196.6	5000.0E	696.2
⁷⁷ 60.0	4.0M	31.4	2.0E	200.1	5000.0E	623.8	2.0E	962.9	4.0E	1046.0
65.0	4.0M	31.4	2.0E	204.5	5000.0E	641.1	2.0E	672.8	5000.0E	696.2
70.0	4.0M	31.4	2.0E	137.5	5000.0E	138.8	2.0E	201.6	5000.0E	236.9
	2.0E	241.0	5000.0E	2500.0						
70.1	2.0E	137.5	5000.0E	138.8	2.0E	201.9	5000.0E	236.9	2.0E	242.0
	5000.0E	2500.0								
75.0	2.0E	130.0	5000.0E	141.0	2.0E	145.7	5000.0E	151.0	2.0E	205.5
	5000.0E	249.1	2.0E	252.6	5000.0E	2500.0				
80.0	2.0E	127.0	5000.0E	146.1	2.0E	181.4	5000.0E	193.4	2.0E	248.5
	5000.0E	2500.0								
85.0	2.0E	126.0	5000.0E	2500.0						
90.0	2.0E	45.9	5000.0E	46.4	2.0E	60.1	5000.0E	60.9	2.0E	69.8
	5000.0E	70.8	2.0E	108.7	5000.0E	2500.0				
95.0	2.0E	46.9	5000.0E	49.2	2.0E	61.5	5000.0E	66.1	2.0E	68.8
	5000.0E	2500.0								
100.0	2.0E	48.4	5000.0E	52.8	2.0E	54.4	5000.0E	2500.0		
104.9	2.0E	40.8	5000.0E	2500.0						
105.0	1.0M	2.8	3.0M	26.5	2.0E	40.7	5000.0E	2500.0		
110.0	1.0M	2.8	3.0M	26.5	2.0E	35.3	5000.0E	92.9	0.5E	94.9
	5000.0E	2500.0								

⁷⁶ WELI - Antenna proof-of-performance and license file (N 25° E Radial).

⁷⁷ WELI - Antenna proof-of-performance and license file (N 60° E Radial).

Ground Conductivity Data:										
Region conductivity in mS/m followed by distance in km										
Azimuth to the end of region. E - map data; M - measurement data.										

⁷⁸ 115.0	1.0M	2.8	3.0M	26.5	2.0E	26.9	5000.0E	56.7	0.5E	61.9
	5000.0E	85.5	0.5E	89.6	5000.0E	2500.0				
120.0	1.0M	2.8	3.0M	26.5	5000.0E	54.0	0.5E	57.5	5000.0E	71.8
	0.5E	85.5	5000.0E	2500.0						
125.0	1.0M	2.8	3.0M	26.5	5000.0E	52.4	0.5E	56.6	5000.0E	69.5
	0.5E	80.6	5000.0E	2500.0						
125.0	1.0M	2.8	3.0M	26.5	5000.0E	52.4	0.5E	56.6	5000.0E	69.5
	0.5E	80.6	5000.0E	2500.0						
125.1	2.0E	20.8	5000.0E	52.4	0.5E	56.6	5000.0E	69.3	0.5E	80.5
	5000.0E	2500.0								
130.0	2.0E	19.3	5000.0E	51.3	0.5E	56.1	5000.0E	62.8	0.5E	76.7
	5000.0E	2500.0								
134.9	2.0E	18.0	5000.0E	50.7	0.5E	56.1	5000.0E	63.7	0.5E	73.8
	5000.0E	2500.0								
135.0	1.5M	1.6	2.0M	15.0	4.0M	70.7	0.5E	73.8	5000.0E	2500.0
135.0	1.5M	1.6	2.0M	15.0	4.0M	70.7	0.5E	73.8	5000.0E	2500.0
140.0	1.5M	1.6	2.0M	15.0	4.0M	70.7	0.5E	71.5	5000.0E	2500.0
⁷⁹ 145.0	1.5M	1.6	2.0M	15.0	4.0M	70.7	5000.0E	2500.0		
150.0	1.5M	1.6	2.0M	15.0	4.0M	70.7	5000.0E	2500.0		
151.9	1.5M	1.6	2.0M	15.0	4.0M	70.7	5000.0E	2500.0		
152.0	1.5M	1.6	2.0M	15.0	4.0M	70.7	5000.0E	2500.0		
155.0	1.5M	1.3	3.0M	6.6	2.0M	12.7	3.0M	68.6	0.5E	68.7
	5000.0E	2500.0								
155.0	1.5M	1.3	3.0M	6.6	2.0M	12.7	3.0M	68.6	0.5E	68.7
	5000.0E	2500.0								
155.1	1.5M	1.3	3.0M	6.6	2.0M	12.7	3.0M	68.6	0.5E	68.7
	5000.0E	2500.0								
⁸⁰ 160.0	1.5M	1.3	3.0M	6.6	2.0M	12.7	3.0M	68.6	5000.0E	2500.0
165.0	1.5M	1.3	3.0M	6.6	2.0M	12.7	3.0M	68.6	5000.0E	2500.0
169.9	1.5M	1.3	3.0M	6.6	2.0M	12.7	3.0M	68.6	5000.0E	2500.0
170.0	1.5M	1.3	3.0M	6.6	2.0M	12.7	3.0M	68.6	5000.0E	2500.0
172.0	3.0M	66.2	0.5E	67.3	5000.0E	2500.0				
172.1	3.0M	66.2	0.5E	67.4	5000.0E	2500.0				
175.0	3.0M	66.2	0.5E	67.8	5000.0E	2500.0				
⁸¹ 180.0	3.0M	66.2	0.5E	69.1	5000.0E	2500.0				
185.0	3.0M	66.2	0.5E	71.0	5000.0E	2500.0				
188.9	3.0M	66.2	0.5E	73.0	5000.0E	2500.0				
189.0	3.0M	66.2	0.5E	73.0	5000.0E	2500.0				
190.0	2.0M	16.3	3.0M	70.7	4.0M	84.5	5000.0E	2500.0		
190.1	2.0M	16.3	3.0M	70.7	4.0M	84.5	5000.0E	2500.0		
195.0	2.0M	16.3	3.0M	70.7	4.0M	84.5	5000.0E	2500.0		
⁸² 200.0	2.0M	16.3	3.0M	70.7	4.0M	84.5	5000.0E	2500.0		
205.0	2.0M	16.3	3.0M	70.7	4.0M	84.5	0.5E	85.3	5000.0E	622.9
	4.0E	629.5	5000.0E	658.1	4.0E	660.5	5000.0E	662.4	4.0E	728.0
208.9	2.0M	16.3	3.0M	70.7	4.0M	84.5	0.5E	90.1	5000.0E	562.2
	4.0E	651.6	5000.0E	652.3	4.0E	672.8	5000.0E	682.7	4.0E	741.2
209.0	2.0M	16.3	3.0M	70.7	4.0M	84.5	0.5E	90.2	5000.0E	561.1
	4.0E	651.7	5000.0E	652.0	4.0E	673.2	5000.0E	683.5	4.0E	741.8
209.1	3.0M	71.3	2.0M	111.3	5000.0E	560.7	4.0E	651.7	5000.0E	651.9
	4.0E	673.1	5000.0E	684.4	4.0E	741.9	5000.0E	746.0	4.0E	837.6
210.0	3.0M	71.3	2.0M	111.3	5000.0E	207.4	4.0E	221.7	5000.0E	232.8
	4.0E	235.7	5000.0E	366.7	2.0E	373.3	5000.0E	376.5	2.0E	378.0
	5000.0E	380.7	2.0E	460.8	5000.0E	462.3	2.0E	488.6	5000.0E	503.8
215.0	3.0M	71.3	2.0M	111.3	5000.0E	158.7	4.0E	296.4	5000.0E	340.2
	4.0E	368.8	2.0E	442.8	5000.0E	519.6	2.0E	531.3	5000.0E	533.8
⁸³ 220.0	3.0M	71.3	2.0M	111.3	0.5E	111.5	5000.0E	138.1	4.0E	303.8
	5000.0E	329.9	4.0E	396.8	2.0E	435.7	5000.0E	462.3	4.0E	468.7
	5000.0E	481.9	4.0E	509.1	5000.0E	513.3	2.0E	797.7	4.0E	836.4

⁷⁸ WELI - Antenna proof-of-performance and license file (N 115° E Radial).

⁷⁹ WELI - Antenna proof-of-performance and license file (N 145° E Radial); WPEN Application dated May 1999 Appendix A.

⁸⁰ WELI - Antenna proof-of-performance and license file (N 162° E Radial); WPEN Application dated May 1999 Appendix A.

⁸¹ WELI - Antenna proof-of-performance and license file (N 180° E Radial); WPEN Application dated May 1999 Appendix A.

⁸² WELI - Antenna proof-of-performance and license file (N 199° E Radial); WPEN Application dated May 1999 Appendix A.

⁸³ WELI - Antenna proof-of-performance and license file (N 219° E Radial); WPEN Application dated May 1999 Appendix A.

KHANNA & GULL, Inc. – Consulting Engineers

Ground Conductivity Data:											
Region conductivity in mS/m followed by distance in km											
Azimuth	to the end of region. E - map data; M - measurement data.										

225.0	3.0M	71.3	2.0M	111.3	5000.0E	111.3	0.5E	123.0	5000.0E	143.7	
	4.0E	303.7	5000.0E	310.9	4.0E	384.5	40.0E	384.7	4.0E	396.5	
	40.0E	399.1	4.0E	402.7	40.0E	407.1	4.0E	407.7	40.0E	433.0	
228.9	3.0M	4.7	2.0M	32.1	1.0E	42.1	5000.0E	85.8	4.0E	90.5	
	5000.0E	97.4	4.0E	112.2	0.5E	120.1	5000.0E	125.5	4.0E	141.7	
	5000.0E	148.7	4.0E	294.7	5000.0E	300.6	4.0E	370.4	40.0E	371.6	
229.0	4.0E	377.8	40.0E	405.4	4.0E	406.1	40.0E	409.3	4.0E	410.0	
	3.0M	4.7	2.0M	32.1	1.0E	42.3	5000.0E	85.8	4.0E	90.2	
	5000.0E	97.5	4.0E	112.7	0.5E	119.6	5000.0E	125.3	4.0E	142.1	
229.1	5000.0E	148.8	4.0E	294.6	5000.0E	300.5	4.0E	370.2	40.0E	370.4	
	4.0E	377.5	40.0E	405.0	4.0E	406.3	40.0E	409.3	4.0E	411.2	
	40.0E	413.6	4.0E	493.0	5000.0E	499.7	4.0E	502.5	2.0E	723.6	
84	3.0M	4.7	2.0M	32.1	1.0E	42.4	5000.0E	85.9	4.0E	89.9	
	5000.0E	97.6	4.0E	113.1	0.5E	119.1	5000.0E	125.2	4.0E	142.6	
	5000.0E	148.8	4.0E	247.8	5000.0E	248.0	4.0E	294.5	5000.0E	300.5	
230.0	4.0E	377.3	40.0E	404.6	4.0E	406.6	40.0E	409.4	4.0E	412.4	
	3.0M	4.7	2.0M	32.1	1.0E	43.8	5000.0E	86.4	4.0E	87.3	
	5000.0E	98.6	4.0E	100.2	5000.0E	102.1	4.0E	114.6	5000.0E	124.3	
235.0	4.0E	146.5	5000.0E	148.9	4.0E	254.4	5000.0E	259.4	4.0E	285.5	
	5000.0E	298.6	4.0E	336.6	40.0E	338.8	4.0E	374.7	40.0E	394.9	
	3.0M	4.7	2.0M	32.1	1.0E	75.8	4.0E	392.8	2.0E	1482.1	
240.0	3.0M	4.7	2.0M	32.1	1.0E	74.2	4.0E	375.3	2.0E	875.7	
242.0	3.0M	4.7	2.0M	32.1	1.0E	73.8	4.0E	136.6	2.0E	144.5	
242.1	4.0E	393.8	2.0E	942.3	4.0E	1037.5	2.0E	1476.3	4.0E	1537.4	
	2.0E	6.1	1.0E	73.7	4.0E	135.3	2.0E	145.0	4.0E	394.8	
	2.0E	948.1	4.0E	1037.1	2.0E	1473.0	4.0E	1537.4	2.0E	1609.2	
245.0	2.0E	6.0	1.0E	73.2	4.0E	127.7	2.0E	156.3	4.0E	406.8	
250.0	2.0E	5.8	1.0E	72.3	4.0E	120.9	2.0E	168.0	4.0E	355.0	
255.0	2.0E	460.5	4.0E	678.0	2.0E	1007.0	8.0E	1095.4	4.0E	1567.3	
	2.0E	5.7	1.0E	71.5	4.0E	114.8	2.0E	178.5	4.0E	215.8	
	2.0E	421.3	4.0E	624.5	2.0E	958.7	8.0E	1109.3	4.0E	1257.5	
259.9	2.0E	5.6	1.0E	71.1	4.0E	110.0	2.0E	406.9	4.0E	466.6	
260.0	2.0E	522.8	4.0E	785.5	8.0E	1609.2	15.0E	1609.3	8.0E	1609.3	
	4.0M	3.5	1.0M	32.0	1.0E	71.1	4.0E	109.9	2.0E	407.0	
	4.0E	465.8	2.0E	523.4	4.0E	782.1	8.0E	1609.2	15.0E	1609.3	
260.0	4.0M	3.5	1.0M	32.0	1.0E	71.1	4.0E	109.9	2.0E	407.0	
265.0	4.0E	465.8	2.0E	523.4	4.0E	782.1	8.0E	1609.2	15.0E	1609.3	
	4.0M	3.5	1.0M	32.0	1.0E	70.6	4.0E	110.7	2.0E	197.9	
	4.0E	277.9	2.0E	550.0	4.0E	661.7	8.0E	1369.0	15.0E	1545.7	
85	270.0	4.0M	3.5	1.0M	32.0	1.0E	69.9	4.0E	117.9	2.0E	159.5
275.0	4.0E	320.1	2.0E	589.6	4.0E	590.5	8.0E	832.3	15.0E	902.8	
	4.0M	3.5	1.0M	32.0	1.0E	67.6	4.0E	475.1	2.0E	571.9	
	280.0	4.0M	3.5	1.0M	32.0	1.0E	65.2	4.0E	607.2	8.0E	692.7
280.1	2.0E	5.8	1.0E	65.2	4.0E	605.7	8.0E	690.1	10.0E	769.9	
284.9	2.0E	6.0	1.0E	63.5	4.0E	523.2	8.0E	575.9	10.0E	603.3	
285.0	4.0M	3.4	1.0M	27.8	1.0E	63.4	4.0E	522.6	8.0E	574.6	
290.0	4.0M	3.4	1.0M	27.8	1.0E	62.2	4.0E	493.8	8.0E	524.0	
86	10.0E	532.6	20.0E	535.1	10.0E	542.5	20.0E	632.2	4.0E	687.7	
	4.0M	3.4	1.0M	27.8	1.0E	60.8	4.0E	418.7	8.0E	547.8	
	15.0E	597.6	10.0E	623.1	4.0E	671.8	6.0E	774.5	10.0E	815.3	
300.0	4.0M	3.4	1.0M	27.8	1.0E	59.9	4.0E	430.1	8.0E	521.2	
305.0	4.0M	3.4	1.0M	27.8	1.0E	59.4	4.0E	388.4	8.0E	447.4	
305.1	2.0E	7.3	1.0E	59.4	4.0E	387.4	8.0E	446.3	15.0E	521.0	
310.0	6.0E	634.0	4.0E	680.4	10.0E	798.3	4.0E	805.0	10.0E	932.3	
	2.0E	7.9	1.0E	59.5	4.0E	374.7	8.0E	403.1	15.0E	440.1	
	4.0E	441.1	15.0E	444.7	4.0E	447.5	15.0E	452.7	4.0E	453.4	
315.0	2.0E	8.7	1.0E	60.0	4.0E	373.3	8.0E	409.5	15.0E	443.7	
315.9	10.0E	455.4	15.0E	455.6	4.0E	542.0	1.0E	712.4	2.0E	1490.9	
	2.0E	8.8	1.0E	60.1	4.0E	380.4	8.0E	411.0	15.0E	442.6	
	10.0E	456.6	4.0E	536.1	1.0E	709.2	2.0E	1446.2	2.0E	1609.2	
316.0	4.0M	3.9	1.5M	26.1	1.0E	60.1	4.0E	381.2	8.0E	411.1	
320.0	4.0M	3.9	1.5M	26.1	1.0E	61.6	4.0E	398.9	8.0E	399.2	

⁸⁴ WELI - Antenna proof-of-performance and license file (N 232° E Radial).

⁸⁵ WELI - Antenna proof-of-performance and license file (N 270° E Radial).

⁸⁶ WELI - Antenna proof-of-performance and license file (N 295° E Radial).

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Ground Conductivity Data:									
Region conductivity in mS/m followed by distance in km									
to the end of region. E - map data; M - measurement data.									
Azimuth									
⁸⁷ 325.0	4.0M	3.9	1.5M	26.1	1.0E	64.7	4.0E	411.3	10.0E 447.8
	4.0E	522.3	1.0E	562.1	4.0E	604.9	1.0E	673.4	2.0E 1015.1
330.0	4.0M	3.9	1.5M	26.1	1.0E	68.5	4.0E	204.1	2.0E 236.5
	4.0E	421.7	10.0E	462.6	4.0E	605.6	2.0E	937.9	6.0E 1096.5
335.0	4.0M	3.9	1.5M	26.1	1.0E	73.5	4.0E	197.9	2.0E 244.9
	4.0E	431.4	10.0E	504.4	4.0E	542.6	2.0E	891.3	6.0E 991.0
336.0	4.0M	3.9	1.5M	26.1	1.0E	74.7	4.0E	197.1	2.0E 247.3
	4.0E	432.0	10.0E	503.0	4.0E	538.3	2.0E	881.0	6.0E 971.9
336.1	2.0E	16.9	1.0E	74.8	4.0E	197.0	2.0E	247.5	4.0E 432.0
	10.0E	502.8	4.0E	538.0	2.0E	880.0	6.0E	970.0	2.0E 1228.3
340.0	2.0E	20.4	1.0E	79.9	4.0E	194.4	2.0E	259.7	4.0E 431.0
345.0	2.0E	28.1	1.0E	88.3	4.0E	189.9	2.0E	282.5	4.0E 418.7
	10.0E	488.8	4.0E	508.6	2.0E	709.9	2.0E	1561.6	5000.0E 2500.0
346.9	2.0E	32.8	1.0E	92.1	4.0E	188.3	2.0E	295.3	4.0E 415.0
347.0	4.0M	4.1	1.5M	31.0	2.0E	33.1	1.0E	92.4	4.0E 188.2
	2.0E	296.0	4.0E	414.8	10.0E	477.4	4.0E	499.7	2.0E 696.9
350.0	4.0M	4.1	1.5M	31.0	2.0E	41.3	1.0E	103.0	4.0E 185.9
	2.0E	320.9	4.0E	410.1	10.0E	465.0	4.0E	494.7	2.0E 683.8
⁸⁸ 355.0	4.0M	4.1	1.5M	31.0	2.0E	50.9	1.0E	128.5	4.0E 180.6
	2.0E	365.9	4.0E	404.9	10.0E	486.8	4.0E	528.4	2.0E 679.5

⁸⁷ WELI - Antenna proof-of-performance and license file (N 326° E Radial).

⁸⁸ WELI - Antenna proof-of-performance and license file (N 357° E Radial).

EXHIBITS 14 & 15 - AMENDED
INTERFERENCE
WPEN, PHILADELPHIA, PENNSYLVANIA
950 kHz 43 kW D/21 kW N DA-2
MARCH 2008

NEW HAVEN , CT

Call: WELI

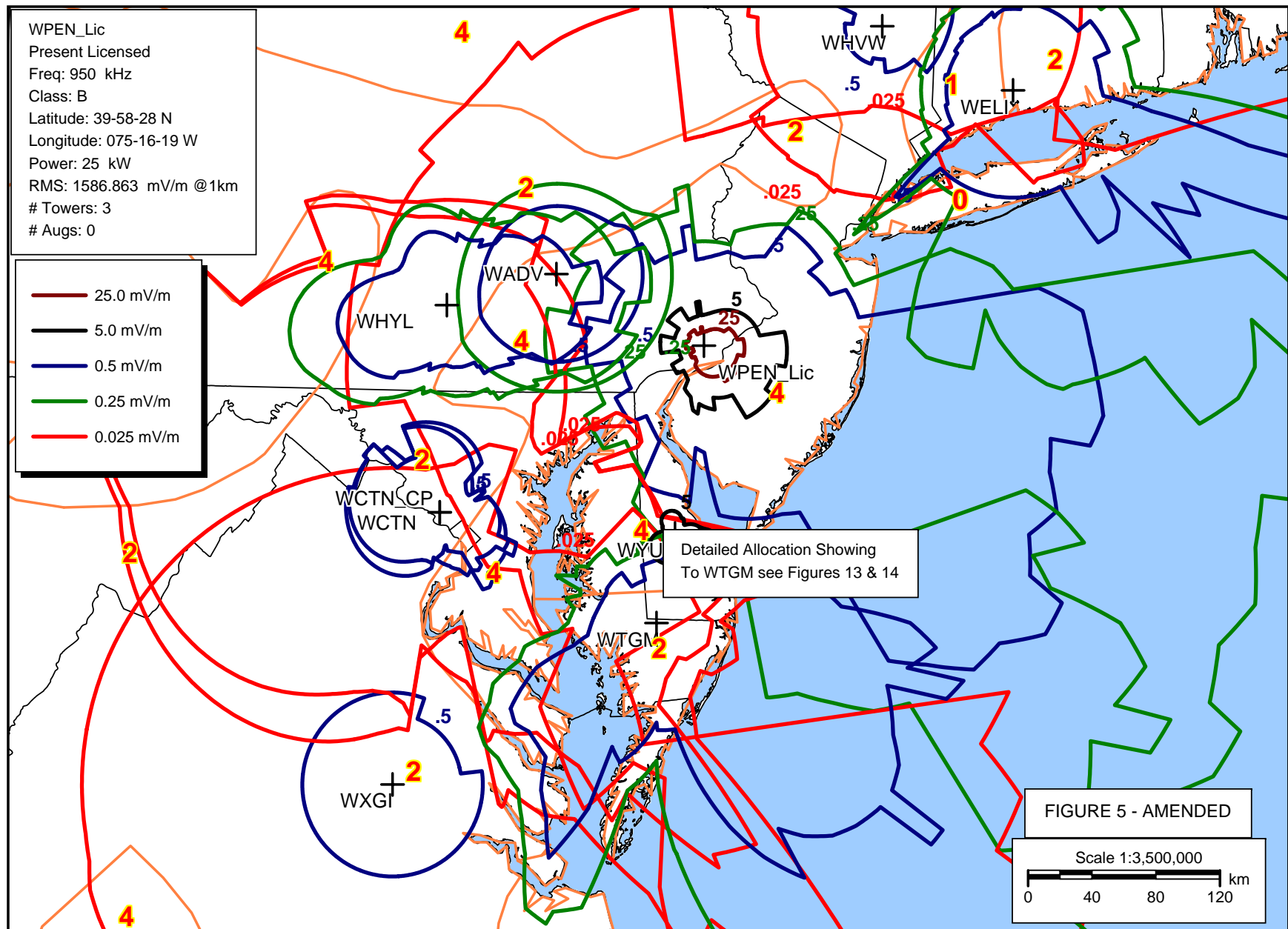
Coordinates: N 41 22 14 W 72 56 15

Frequency: 960 kHz Number of contours: 2

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.250
0.0	676.54	50.57	67.93
5.0	676.54	50.57	69.10
7.0	676.54	50.57	69.48
7.1	676.54	54.98	73.04
10.0	676.54	54.98	73.65
14.9	676.54	54.98	74.73
15.0	676.54	54.98	74.75
20.0	676.54	54.98	74.90
25.0	676.54	54.98	74.90
30.0	676.54	54.98	74.90
35.0	676.54	54.98	74.90
35.1	676.54	54.98	74.90
40.0	676.54	54.98	74.90
45.0	676.54	54.98	74.90
49.9	676.54	54.98	74.90
50.0	676.54	64.96	84.87
55.0	676.54	64.96	84.87
60.0	676.54	64.96	84.87
65.0	676.54	64.96	84.87
70.0	676.54	64.96	84.87
70.1	676.54	54.98	74.90
75.0	676.54	54.98	74.90
80.0	676.54	54.98	74.90
85.0	676.54	54.98	74.90
90.0	676.54	55.40	76.81
95.0	676.54	56.94	142.57
100.0	676.54	88.25	217.39
104.9	676.54	157.65	286.79
105.0	676.54	209.24	338.39
110.0	676.54	233.97	363.11
115.0	676.54	212.16	341.30
120.0	676.54	121.27	250.42
125.0	676.54	140.57	269.71
125.1	676.54	139.00	268.14
130.0	676.54	112.35	241.49
134.9	676.54	155.50	284.64
135.0	676.54	77.61	206.75
135.1	676.54	77.61	206.75
140.0	676.54	100.18	229.32
145.0	676.54	108.39	237.53
150.0	676.54	108.39	237.53
151.9	676.54	108.39	237.53
152.0	676.54	108.39	237.53
155.0	676.54	66.69	185.18
155.1	676.54	66.69	185.49
160.0	676.54	66.69	186.00
165.0	676.54	66.69	186.00
169.9	676.54	66.69	186.00
170.0	676.54	66.69	186.00
172.0	676.54	66.49	187.71
172.1	676.54	66.49	187.59

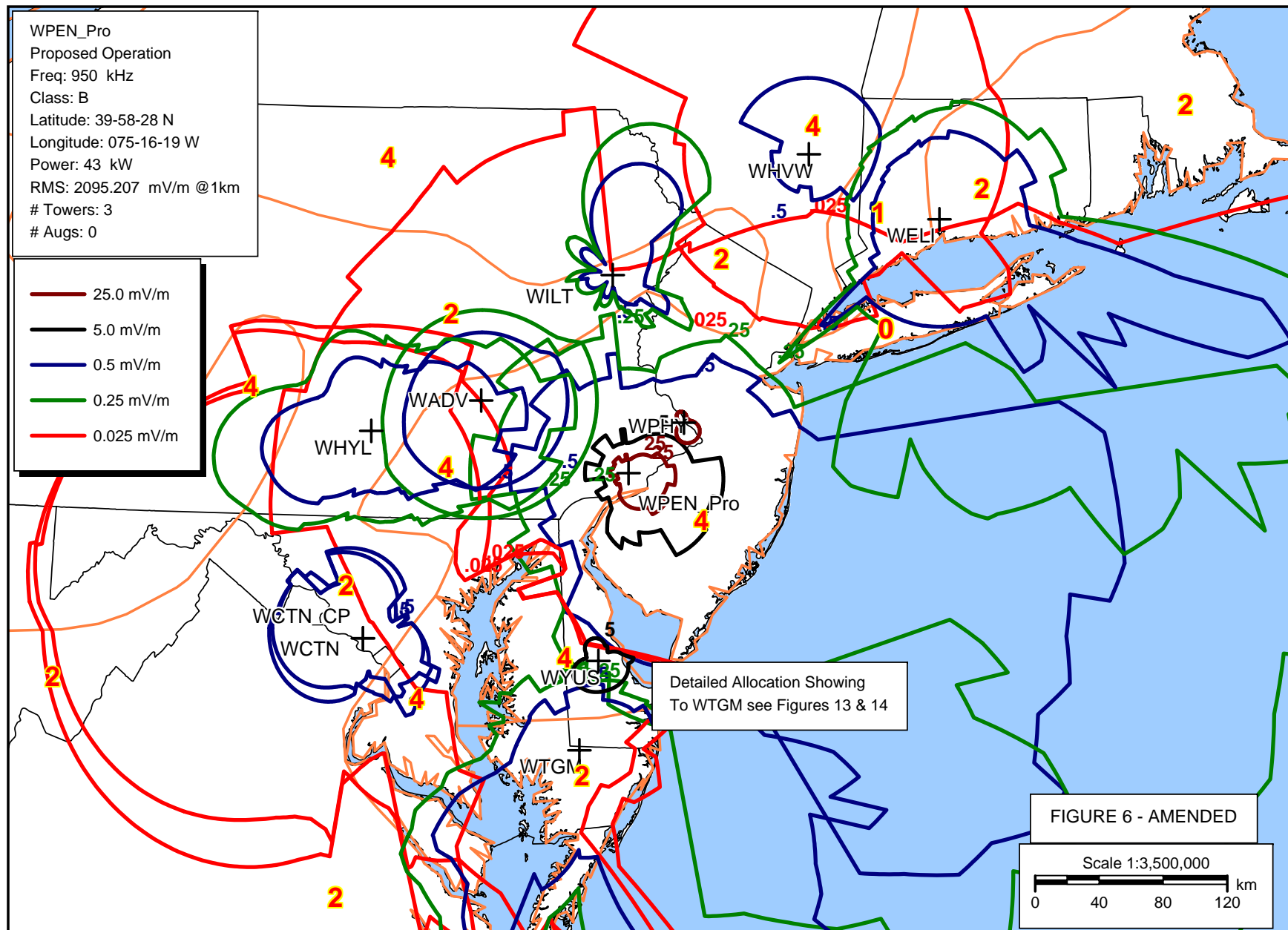
KHANNA & GUILL, Inc. – Consulting Engineers

Azimuth	Radiation (mV/m at one km)	Distances to Contours in Kilometers :	
		Contour levels in mV/m.	
		.500	.250
175.0	676.54	66.49	183.24
180.0	676.54	66.49	171.28
185.0	676.54	66.49	154.57
188.9	676.54	66.49	137.89
189.0	676.54	66.49	137.41
190.0	676.54	66.69	174.10
190.1	676.54	66.69	174.10
195.0	676.54	66.69	174.10
200.0	676.54	66.69	174.10
205.0	676.54	66.69	167.18
208.9	676.54	66.69	127.85
209.0	676.54	66.69	126.84
209.1	676.54	66.69	74.90
210.0	676.54	66.69	74.90
215.0	676.54	66.69	74.90
220.0	676.54	66.69	74.90
225.0	676.54	66.69	74.90
228.9	676.54	97.89	118.54
229.0	676.54	98.02	118.82
229.1	676.54	98.15	119.10
230.0	676.54	99.19	134.38
235.0	676.54	50.17	66.11
240.0	676.54	50.17	66.11
242.0	676.54	50.17	66.11
242.1	676.54	43.58	59.51
245.0	676.54	43.54	59.48
250.0	676.54	43.49	59.43
255.0	676.54	43.46	59.39
259.9	676.54	43.44	59.37
260.0	676.54	41.95	57.88
265.0	676.54	41.95	57.88
270.0	676.54	41.95	57.88
275.0	676.54	41.95	57.88
280.0	676.54	41.95	57.88
280.1	676.54	43.49	59.42
284.9	676.54	43.53	59.47
285.0	676.54	41.95	57.88
290.0	676.54	41.95	57.88
295.0	676.54	41.95	57.88
300.0	676.54	41.95	57.88
305.0	676.54	41.95	57.88
305.1	676.54	43.93	60.13
310.0	676.54	44.11	60.39
315.0	676.54	44.34	60.46
315.9	676.54	44.39	60.46
316.0	676.54	45.87	62.81
320.0	676.54	45.87	61.90
325.0	676.54	45.87	61.80
330.0	676.54	45.87	61.80
335.0	676.54	45.87	61.80
336.0	676.54	45.87	61.80
336.1	676.54	46.63	62.56
340.0	676.54	47.51	63.44
345.0	676.54	49.28	65.21
346.9	676.54	50.32	66.26
347.0	676.54	46.92	62.86
350.0	676.54	48.65	64.59
355.0	676.54	50.57	66.57



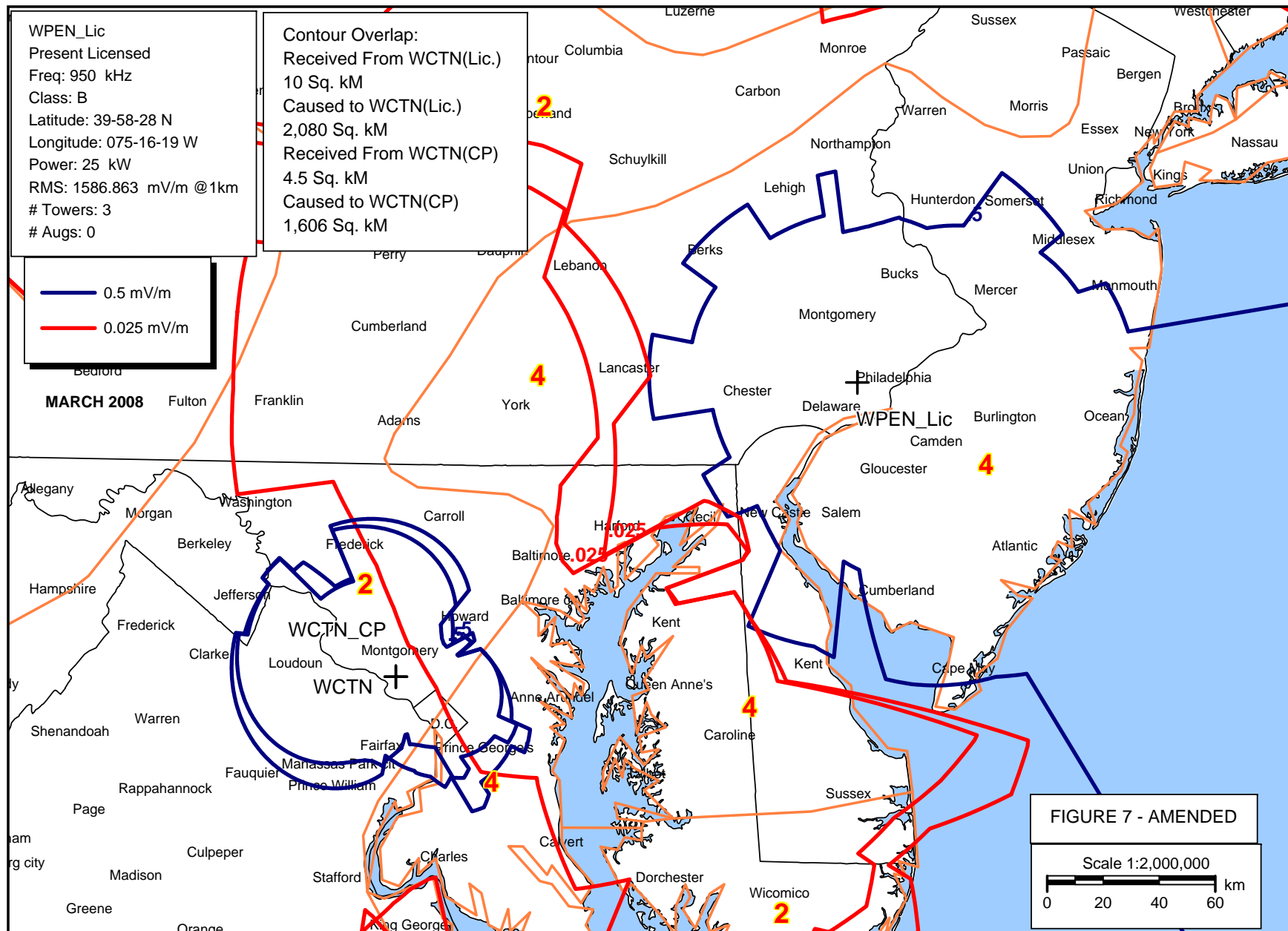
March 2008

ALLOCATION MAP SHOWING THE PRESENT LICENSED 25 kW OPERATION OF WPEN, PHILADELPHIA, PA

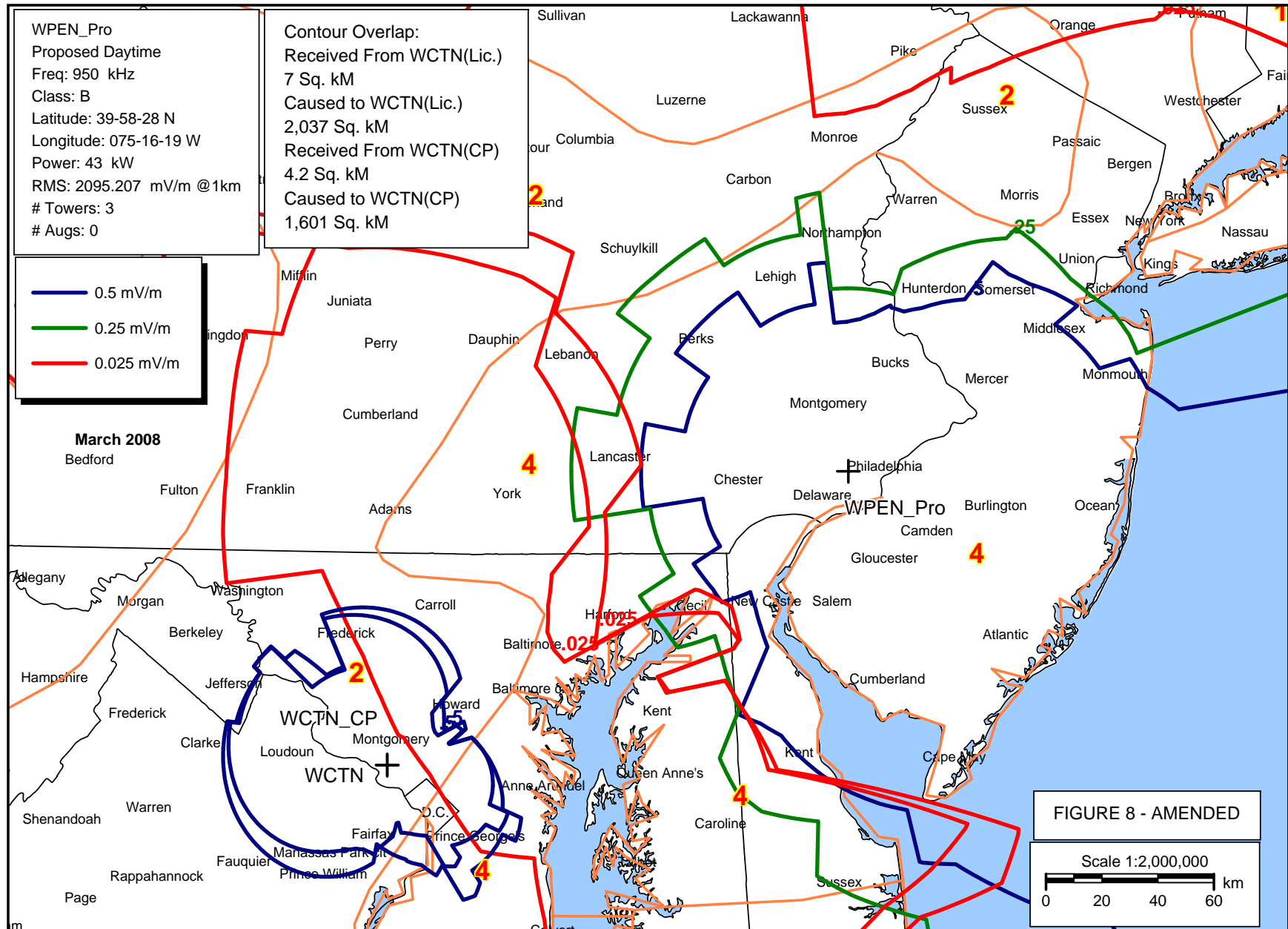


MARCH 2008

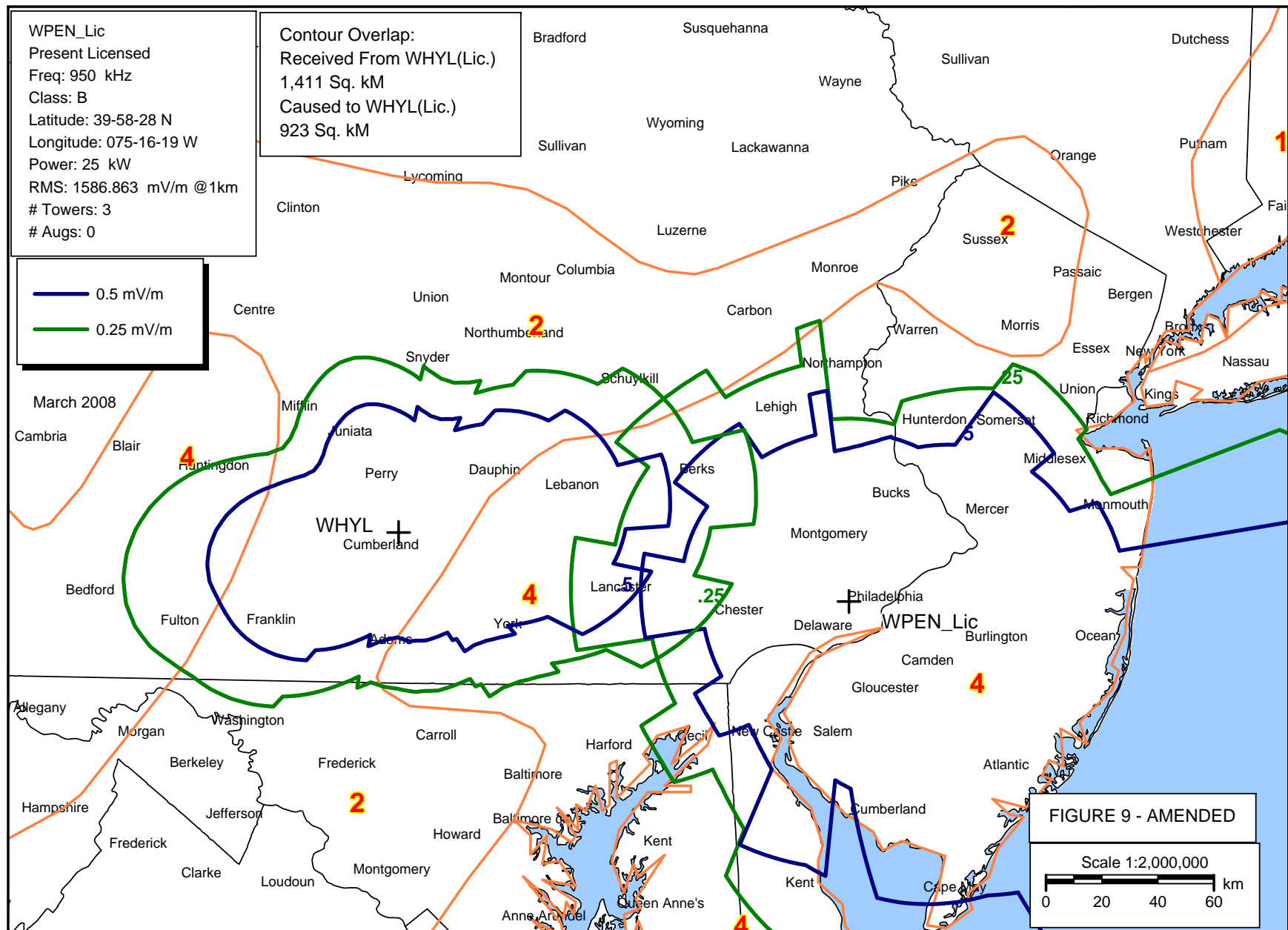
ALLOCATION MAP SHOWING THE PROPOSED 43 kW DAYTIME OPERATION OF WPEN, PHILADELPHIA, PA



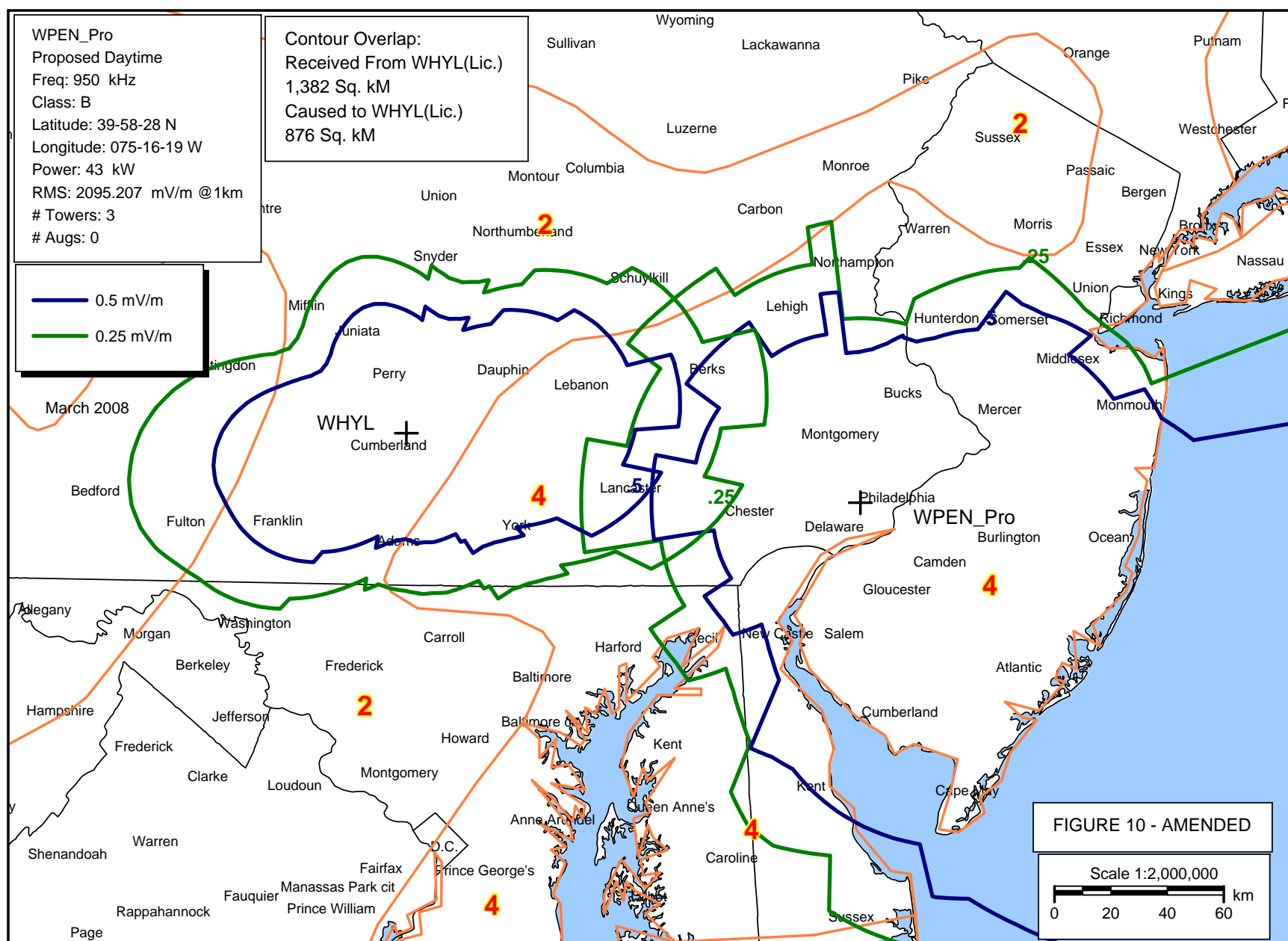
DETAIL WCTN CO-CHANNEL ALLOCATION MAP SHOWING THE PRESENT 25 kW OPERATION OF WPEN, PHILADELPHIA, PA



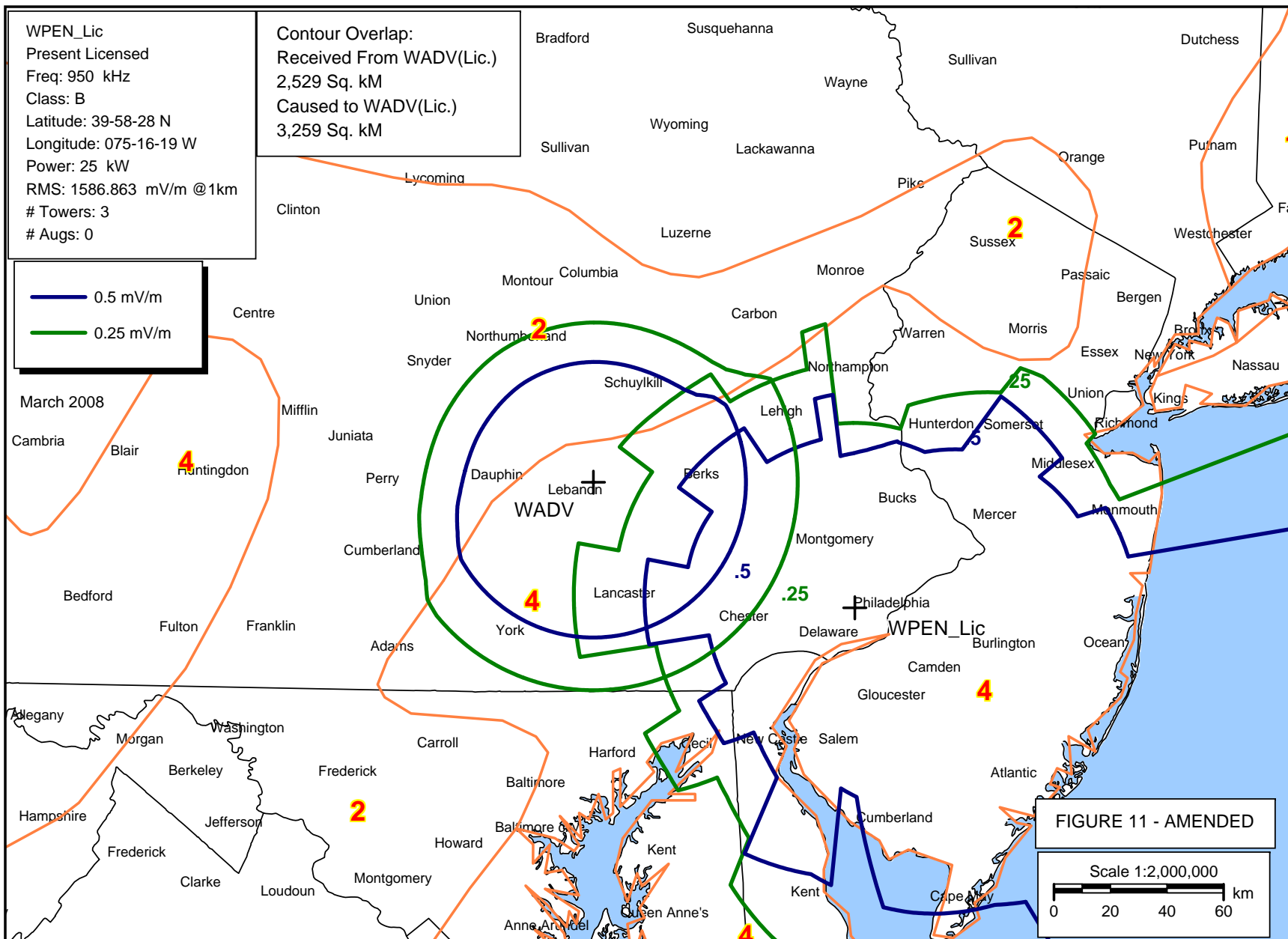
DETAIL WCTN CO-CHANNEL ALLOCATION MAP SHOWING THE PROPOSED 43 kW OPERATION OF WPEN, PHILADELPHIA, PA



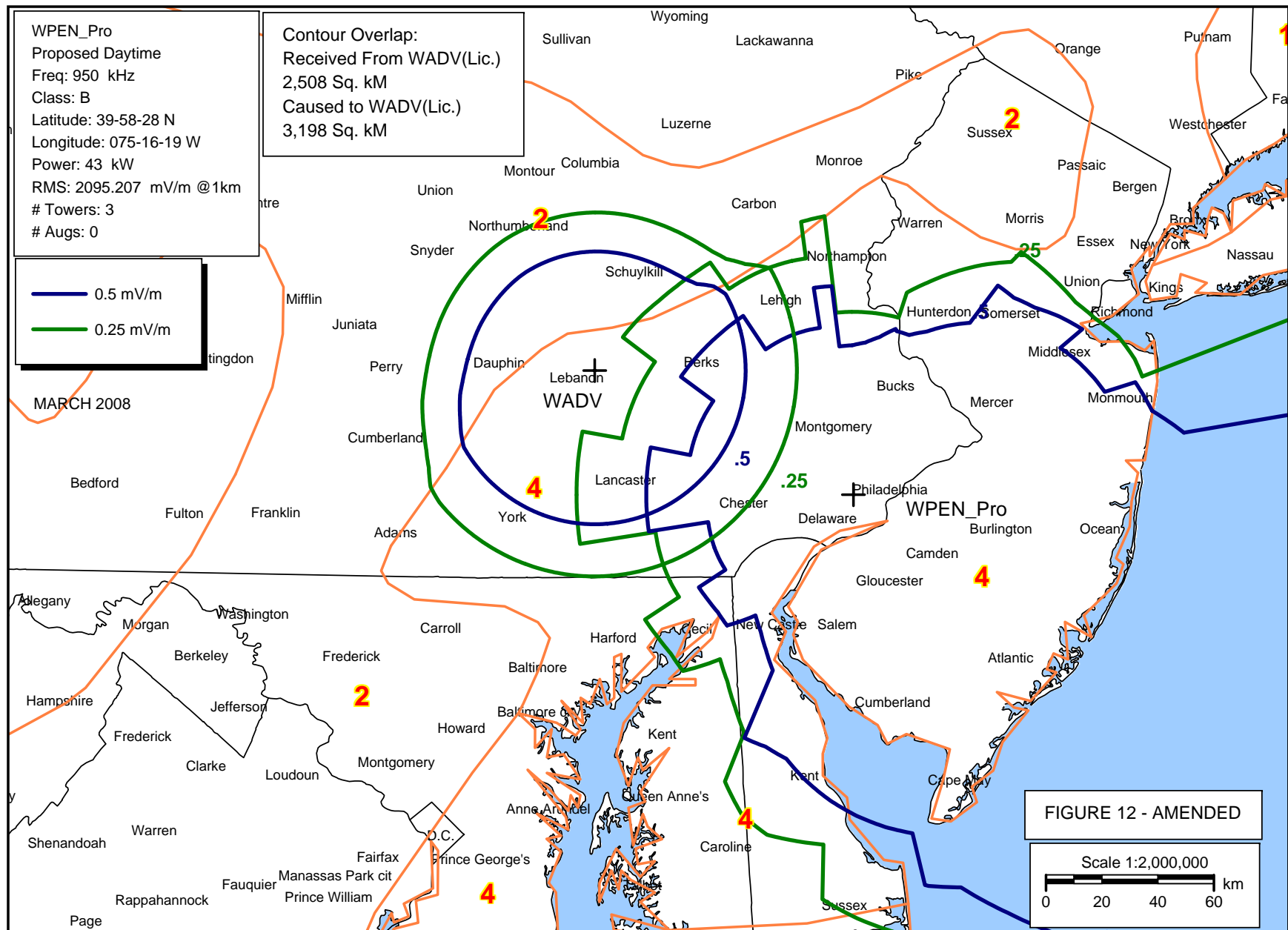
DETAIL WHYL ADJACENT CHANNEL ALLOCATION MAP SHOWING THE PRESENT 25 kW OPERATION OF WPEN, PHILADELPHIA, PA



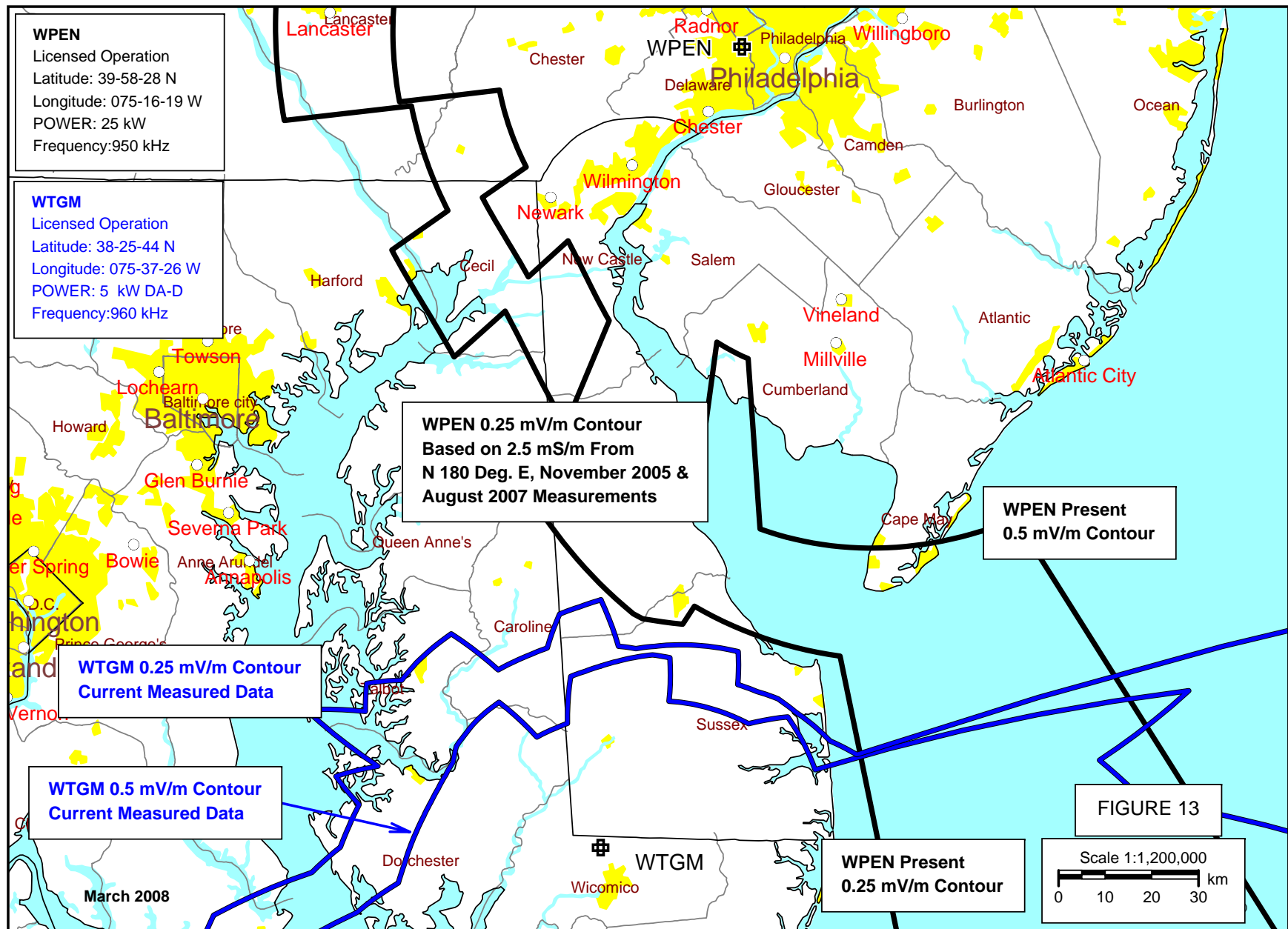
DETAIL WHYL ADJACENT CHANNEL ALLOCATION MAP SHOWING THE PROPOSED 43 KW OPERATION OF WPEN, PHILADELPHIA, PA



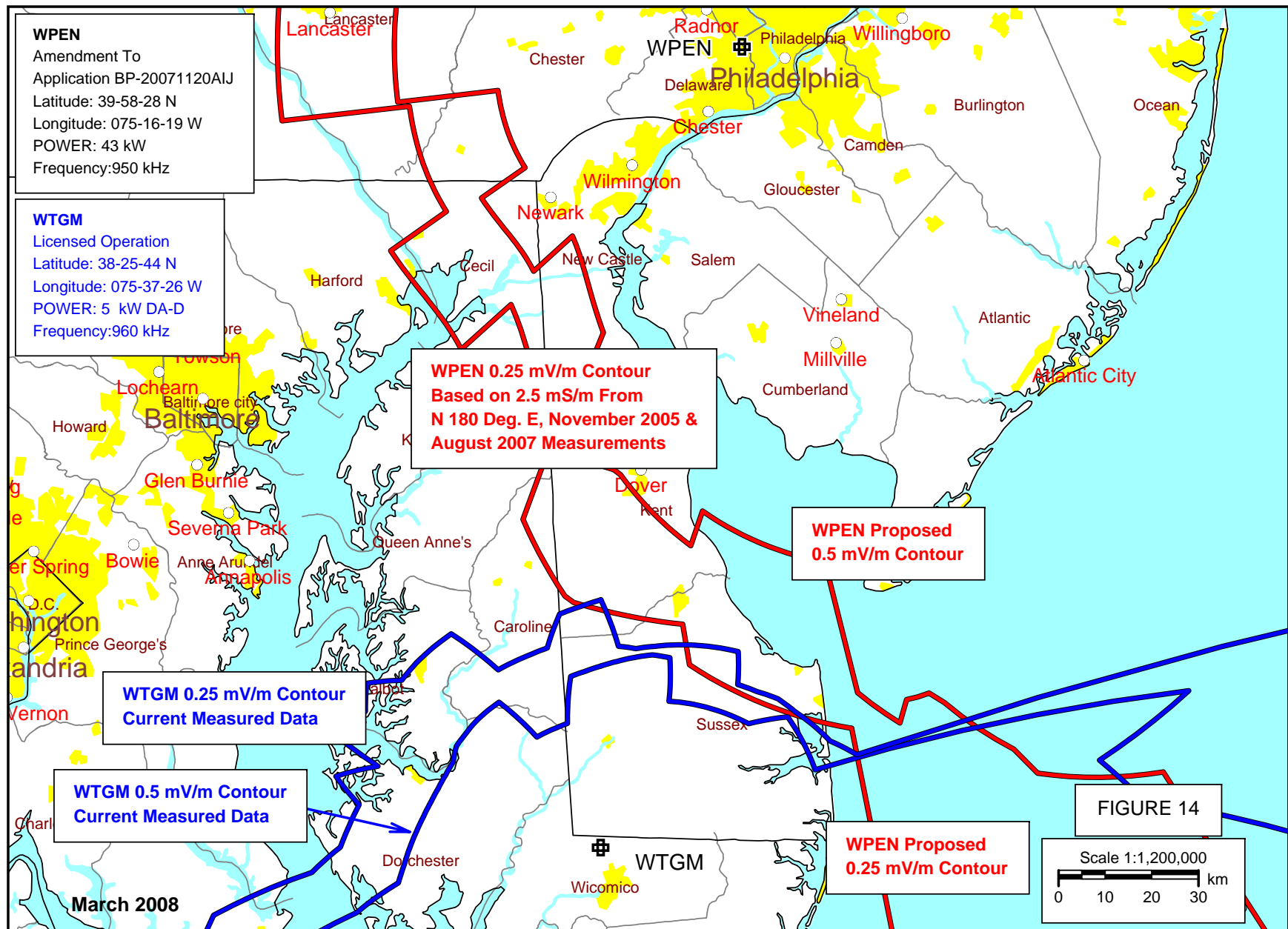
DETAIL WADV ADJACENT CHANNEL ALLOCATION MAP SHOWING THE PRESENT 25 kW OPERATION OF WPEN, PHILADELPHIA, PA



DETAIL WADV ADJACENT CHANNEL ALLOCATION MAP SHOWING THE PROPOSED 43 kW OPERATION OF WPEN, PHILADELPHIA, PA



DETAIL WTGM ADJACENT CHANNEL ALLOCATION MAP SHOWING THE LICENSED 25 kW OPERATION OF WPEN, PHILADELPHIA, PA



DETAIL WTGM ADJACENT CHANNEL ALLOCATION MAP SHOWING THE PROPOSED 43 kW OPERATION OF WPEN, PHILADELPHIA, PA