## Exhibit 13 Clearance to WSRV

This instant translator application clears all allocation constraints of Section 74.1204. On first glance, it appears that interference is created to WSRV, Gainesville, GA. However, Section 74.1204(d) instructs us:
"In addition, an application otherwise precluded by this section will be accepted if it can be demonstrated that no actual interference will occur due to intervening terrain, lack of population or such other factors as may be applicable."

Through the use of the proposed Elevation Radiation Pattern from the antenna manufacturer and graphing the actual interfering contour, we will prove that the interference area never touches the ground and therefore there is no population being affected in this small interference area.

WSRV (BLH-19980825KB) uses a center of radiation of 797 M AMSL with 100 KW ERP. WSRV places a signal of 69.8 dBu over the proposed translator site. Adding the 40 $\mathrm{dBu} \mathrm{U} / \mathrm{D}$ ratio to the 69.8 dBu signal produces an interfering contour of 109.8 dBu .

The applicant consulted Shively, the manufacturer of the 6812B 5-bay antenna that is being proposed. The Elevation Pattern for this antenna is attached. This includes a relative field for each degree of elevation. Knowing the relative field at each degree of elevation allows us to calculate the power at each degree of elevation. From that, the distance to the 109.8 dBu interfering contour was calculated. The Excel spreadsheet program was instrumental in graphing the interfering contour. Using trigonometry, points on the 109.8 interfering contour were transformed to point values that could be graphed on an $\mathrm{X}, \mathrm{Y}$ axis. X is the distance from the antenna and Y is the height above ground.

There is a point where the 109.8 dBu interfering signal actually touches the ground close to the tower. This occurs at a distance of 29.7 meters ( 97.4 feet) from the tower base. At this distance the interference is still in the immediate vicinity of the tower, guy wires and co-located AM ground system. There are no residents within this proximity of the tower. Further away from the tower the interfering signal does not touch the ground again and stays aloft. The interfering signal extends for a distance of approximately 355.6 meters. The character of the land under this interfering signal is rural. Much of the land is one farm. There are chicken houses, barns and a farm residence under the interfering contour. The interference area remains in the air over this residence and rural land.

The following photograph is of the tower, transmitter building and adjacent land. It is quickly seen that there are no close in residents


In conclusion, based on the foregoing explanation and related exhibits showing that no persons will receive interference because the interfering contour never touches the ground, it is thought this application is in compliance will Section 74.1204 using Section 74.1204(d).

## Shively Labs

Antenna Mfr.: Shively Labs
Antenna Type: 6812B or 6602B 5-Bay, full-wave-spaced
Frequency: 98.1

6812B Gain (Max) 6602B Gain (Max)

Date: 12/29/2004
2.61
5.22
4.17 dB
7.17 dB


Elevation Pattern Tabulation, 6602B and 6812B 5-Bay full-Wave-Spaced
Relative field at $0^{\circ}$ Depression $=1.000$

| Degrees | Rel. Field |
| :---: | :---: |
| 1 | 0.991 |
| 2 | 0.965 |
| 3 | 0.922 |
| 4 | 0.865 |
| 5 | 0.793 |
| 6 | 0.711 |
| 7 | 0.620 |
| 8 | 0.523 |
| 9 | 0.423 |
| 10 | 0.323 |
| 11 | 0.225 |
| 12 | 0.133 |
| 13 | 0.048 |
| 14 | 0.028 |
| 15 | 0.094 |
| 16 | 0.147 |
| 17 | 0.188 |
| 18 | 0.216 |


| Degrees | Rel. Field |
| :---: | :---: |
| 19 | 0.232 |
| 20 | 0.236 |
| 21 | 0.228 |
| 22 | 0.212 |
| 23 | 0.187 |
| 24 | 0.156 |
| 25 | 0.120 |
| 26 | 0.082 |
| 27 | 0.042 |
| 28 | 0.003 |
| 29 | 0.034 |
| 30 | 0.068 |
| 31 | 0.098 |
| 32 | 0.123 |
| 33 | 0.142 |
| 34 | 0.155 |
| 35 | 0.162 |
| 36 | 0.163 |


| Degrees | Rel. Field |
| :---: | :---: |
| 37 | 0.159 |
| 38 | 0.149 |
| 39 | 0.135 |
| 40 | 0.117 |
| 41 | 0.096 |
| 42 | 0.073 |
| 43 | 0.048 |
| 44 | 0.023 |
| 45 | 0.002 |
| 46 | 0.027 |
| 47 | 0.050 |
| 48 | 0.071 |
| 49 | 0.090 |
| 50 | 0.106 |
| 51 | 0.119 |
| 52 | 0.130 |
| 53 | 0.137 |
| 54 | 0.142 |


| Degrees | Rel. Field |
| :---: | :---: |
| 55 | 0.144 |
| 56 | 0.143 |
| 57 | 0.139 |
| 58 | 0.134 |
| 59 | 0.127 |
| 60 | 0.118 |
| 61 | 0.107 |
| 62 | 0.096 |
| 63 | 0.084 |
| 64 | 0.072 |
| 65 | 0.060 |
| 66 | 0.047 |
| 67 | 0.035 |
| 68 | 0.024 |
| 69 | 0.013 |
| 70 | 0.003 |
| 71 | 0.007 |
| 72 | 0.015 |


| Degrees | Rel. Field |
| :---: | :---: |
| 73 | 0.022 |
| 74 | 0.028 |
| 75 | 0.033 |
| 76 | 0.037 |
| 77 | 0.040 |
| 78 | 0.041 |
| 79 | 0.042 |
| 80 | 0.042 |
| 81 | 0.041 |
| 82 | 0.038 |
| 83 | 0.036 |
| 84 | 0.032 |
| 85 | 0.028 |
| 86 | 0.023 |
| 87 | 0.018 |
| 88 | 0.012 |
| 89 | 0.006 |
| 90 | 0.000 |

## Tabulation of Interference Calculations

| Elevation <br> Angle | Relative <br> Field | Power <br> Watts | Slant <br> Distance* | Dist. On <br> Ground* (Horizontal) | Dist Above Ground to Contour* (Vertical) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | . 991 | 245.520 | 355.7 | 355.6 | 32.8 |
| 2 | . 965 | 232.806 | 346.3 | 346.1 | 26.9 |
| 3 | . 922 | 212.521 | 330.9 | 330.4 | 21.7 |
| 4 | . 865 | 187.056 | 310.4 | 309.6 | 17.3 |
| 5 | . 793 | 157.212 | 284.6 | 283.5 | 14.2 |
| 6 | . 711 | 126.380 | 255.2 | 253.8 | 12.3 |
| 7 | . 620 | 96.100 | 222.5 | 220.8 | 11.9 |
| 8 | . 523 | 68.382 | 187.7 | 185.9 | 12.9 |
| 9 | . 423 | 44.732 | 151.8 | 149.9 | 15.3 |
| 10 | . 323 | 26.082 | 115.9 | 114.1 | 18.9 |
| 12 | . 133 | 4.422 | 47.7 | 46.7 | 29.1 |
| 14 | . 028 | 0.196 | 10.0 | 9.7 | 36.6 |
| 16 | . 147 | 5.402 | 52.8 | 50.8 | 24.4 |
| 18 | . 216 | 11.664 | 77.5 | 73.7 | 15.1 |
| 20 | . 236 | 13.924 | 84.7 | 79.6 | 10.0 |
| 25 | . 120 | 3.600 | 43.1 | 39.1 | 20.8 |
| 30 | . 068 | 1.156 | 24.4 | 21.1 | 26.8 |
| 35 | . 162 | 6.561 | 58.1 | 47.6 | 5.7 |
| 40 | . 117 | 3.422 | 42.0 | 32.2 | 12.0 |
| 45 | . 002 | 0.001 | 0.7 | 0.5 | 38.5 |
| 50 | . 106 | 2.809 | 38.0 | 24.4 | 9.9 |
| 55 | . 144 | 5.184 | 51.7 | 29.7 | -3.4 |
| 60 | . 118 | 3.481 | 42.3 | 21.2 | 2.4 |
| 65 | . 060 | 0.900 | 21.5 | 9.1 | 19.5 |


| 70 | .003 | 0.002 | 1.0 | 0.3 | 38.1 |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 75 | .033 | 0.272 | 11.8 | 3.1 | 27.6 |
| 80 | .042 | 0.441 | 15.1 | 2.6 | 24.1 |
| 85 | .028 | 0.196 | 10.0 | 0.9 | 29.0 |
| 90 | 0.00 | 0.000 | 0.0 | 0.0 | 39.0 |

*All distances calculated in meters


