

## **EXHIBIT 22 – RADIATION EMISSIONS SUMMARY**

We are ineligible to use the provided RF worksheets because there is an inhabited building within a 315 meter radius higher than the level of the terrain at the base of the tower. The following evaluation demonstrates the compliance of our facility with the guidelines described in OET Bulletin 65 given the radiation pattern of our antenna.

From equation (9) from OET Bulletin 65, we find that the  $200 \mu\text{W} / \text{cm}^2$  power density limit at 91.1 MHz for general population/uncontrolled exposure is predicted to be exceeded no further than 115.6 meters from the center of radiation with our total ERP (horizontal and vertical) of 200,000 watts. Figures 1 and 2 show this contour over the area surrounding our tower. The buildings of interest within this area are Georgia Institute of Technology residence halls: the Undergraduate Living Center (580 Turner Place, N.W.), Woodruff Residence Hall (890 Curran St., N.W.), and the south building of Maulding Residence Hall (501 Sixth St., N.W.).

Our antenna is a Jampro JSCP-12 with 12 sections and full-wave spacing. The center of radiation has an elevation of 78 meters. The computed elevation pattern for this antenna is attached (JSCP-12, 12-bay FM Antenna, 91.1 MHz Computed Elevation Pattern with Tabulation, 3 pages).

Using the OET FM Model and assuming the Jampro Double V" antenna type, no location at ground level is predicted to exceed the general population/uncontrolled exposure limit (Figure 3). Access to the transmitter building and to the tower is physically restricted, and warning signs are clearly posted.

The Undergraduate Living Center (building A on Figures 1 and 2), is no closer than 21 meters to the tower. The rooftop of this four-story building is no taller than 13

meters above the tower base. According to the OET FM Model, the power density is predicted not to exceed  $75 \mu\text{W} / \text{cm}^2$ . See Figure 4.

Woodruff Residence Hall (building B on Figures 1 and 2) is a five-story structure no taller than 16 meters above the tower base. It is situated no closer than 70 meters from the tower. According to the OET FM Model, the predicted power density is negligible in relation to the limit for general population/uncontrolled exposure. See Figure 5.

Maulding Residence Hall (building C on Figures 1 and 2) is a four-story structure with elevation not exceeding that of the Undergraduate Living Center in relation to the tower. Referring to Figure 4, the power density is not predicted to exceed the limit for general population/uncontrolled exposure. Based upon this and further evaluation using equation (10) from OET Bulletin 65 and the relative field factors for our antenna supplied by the manufacturer, we assert that the WREK facility complies with the guidelines for RF exposure as described in OET Bulletin 65.

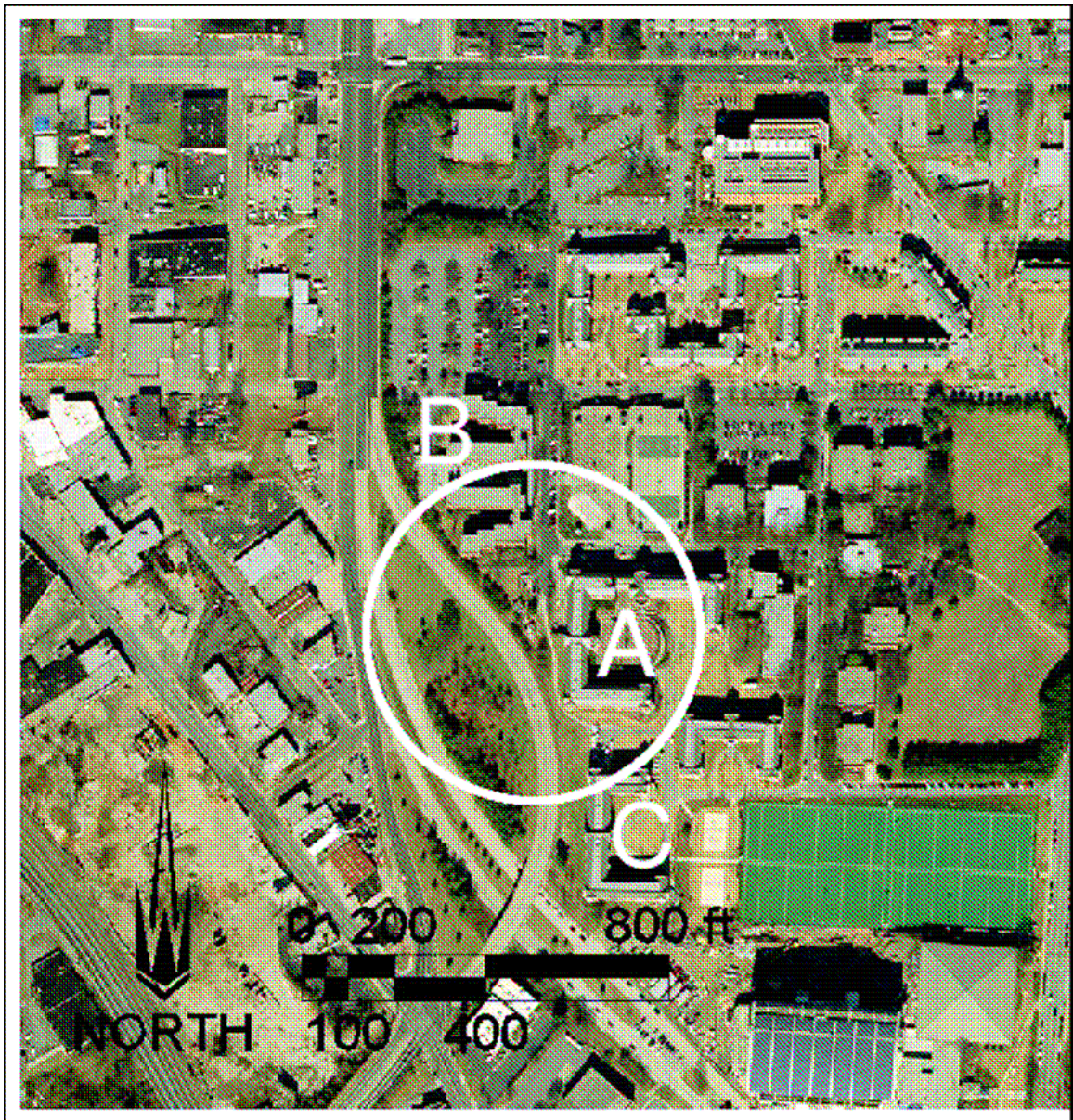


Figure 1: An aerial photograph showing the area of evaluation.



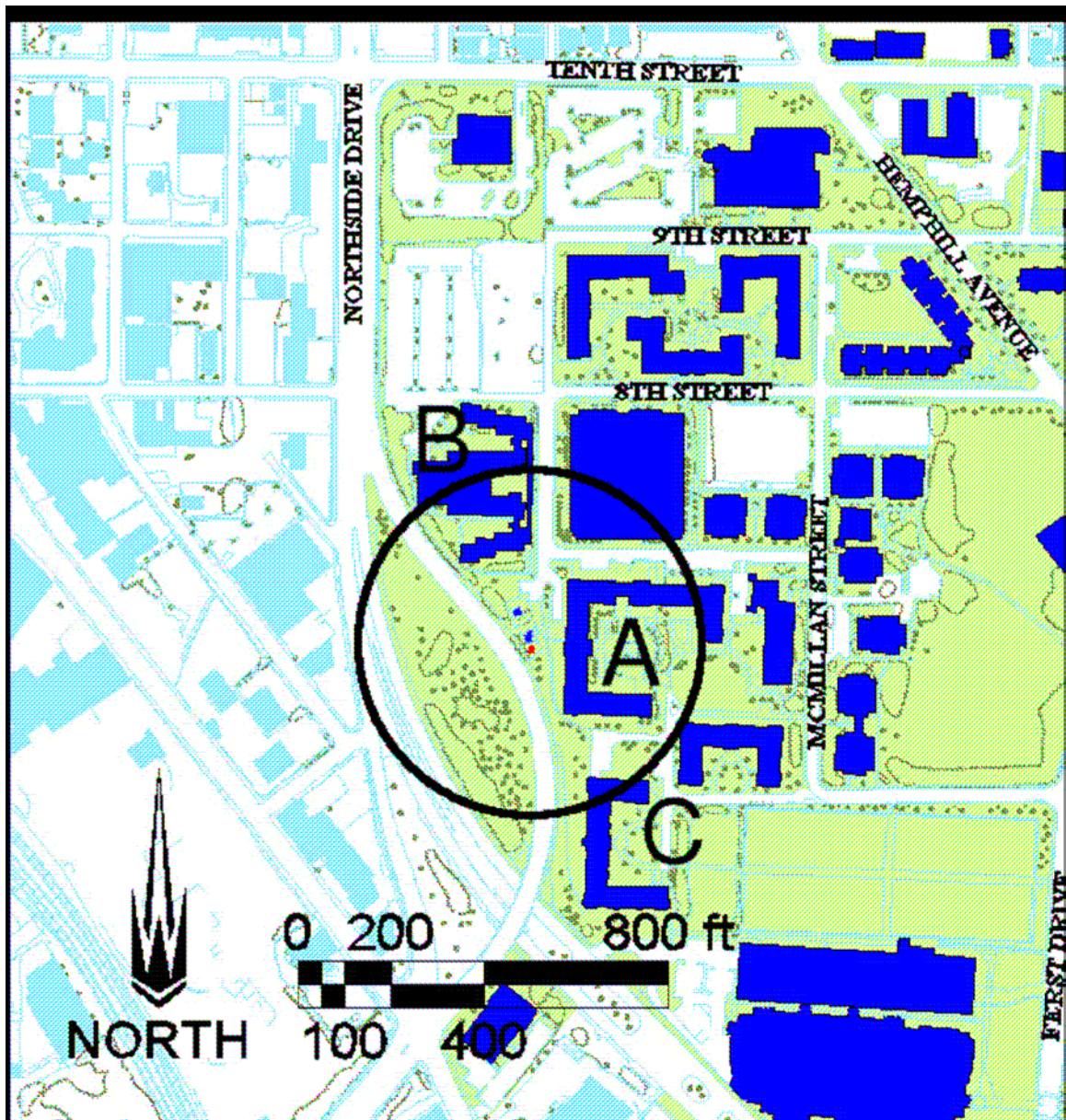
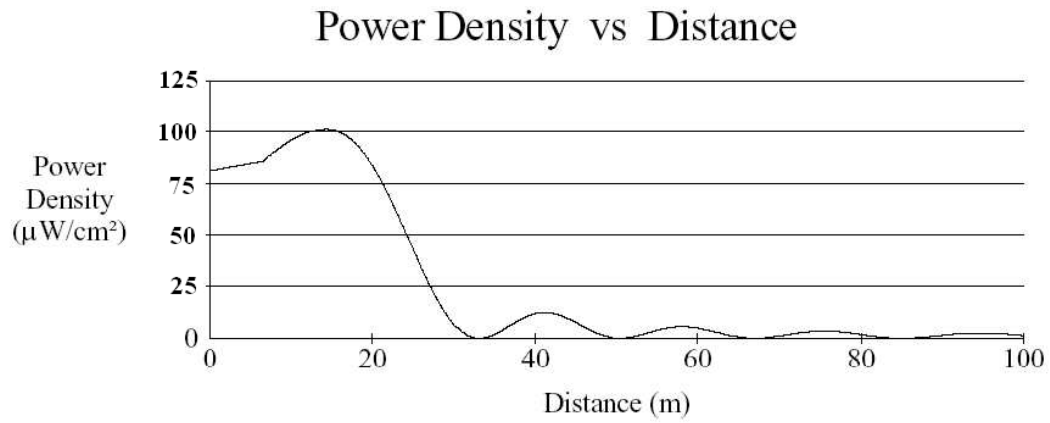
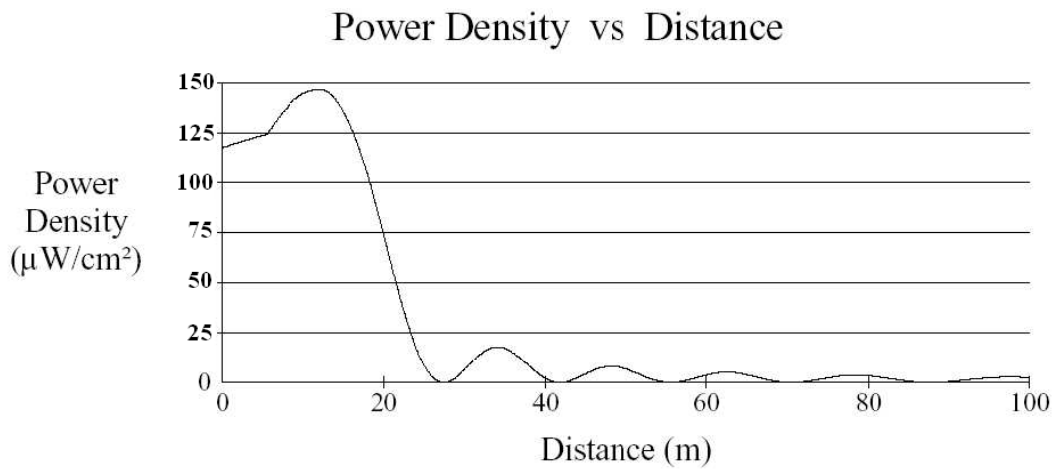


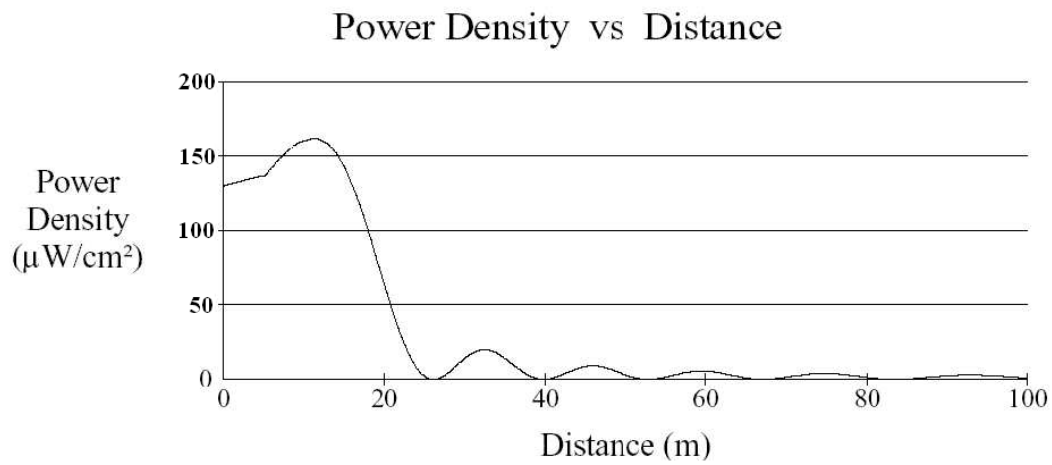
Figure 2: A map showing the area of evaluation.



**Figure 3: Predicted power density at ground level.**



**Figure 4: Predicted power density at 13 meters elevation.**



**Figure 5: Predicted power density at 16 meters elevation.**