# 9.2 AIR QUALITY OBSERVATIONS FROM AN OFFICE TOWER DURING TEXAQS2000

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Texas clean air regulators say because Houston has some of the poorest air quality in the United States, the state faces the loss of $2 billion in federal highway money unless it dramatically lowers ozone levels in the Houston metropolitan area by 2007.

To try to improve understanding of the problem and develop cost effective mitigation strategies, more than thirty public and private organizations joined forces in the summer of 2000 to conduct one of the largest air quality studies ever.

This paper will describe the results from an extensive month-long measurement program at the top of a Houston office tower. The tower measurements were made from the 62nd floor of the Williams Tower in the Galleria area of uptown Houston. A view of the building is provided in Figure 1. Gas-phase measurements made at this site included O3, NO/NOy, PAN, SO2, CO, CH2O, HNO3, HONO, H2O2, and organic peroxide. Temperature, pressure and moisture were also monitored. A new aerosol collector system was deployed for this study that has a time resolution on the order of minutes. The collected samples are analyzed automatically by scanning electron microscopy with energy dispersed X-ray analysis and time of flight secondary ionization mass spectrometer. This paper will utilize the suite of gas and aerosol measurements to characterize the Houston air west of the major emission sources, and to describe air chemistry occurring above and within the nocturnal boundary layer.

**Figure 1. Site of office tower measurements. Data were collected from the parapet near the top of the building.**

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