

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Randy Ammons, Regional Director
Jeff Bertl, Air Section Manager
TCEQ Region 2 - Lubbock
Brent Wade, West Texas Area Director

Date: September 26, 2006

From: Michael S. Aplin, M.S.
Toxicology Section, Chief Engineer's Office

Subject: Health Effects Review of 2005 Ambient Air Network Monitoring Data in Region 2 - Lubbock

Conclusion

All fourteen evaluated metals from particulate matter less than or equal to 2.5 microns (PM_{2.5}) were monitored at levels below health-based screening values and would not be expected to cause adverse health effects. The only ambient air monitor in Region 2 was deactivated on June 22, 2005 and will be relocated. Therefore, this interoffice memorandum only covers data collected until the June 22, 2005 deactivation date. An alternative location for the Region 2 air monitor is being secured and data collection is expected to resume in 2007.

Background

This memorandum conveys the Toxicology Section (TS) evaluation of ambient air sampling conducted at a monitoring network site in Region 2 - Lubbock during 2005. The Lubbock monitor was deactivated on June 22, 2005; therefore, this evaluation only covers data collected until that date. Summary results for metals from PM_{2.5} samples collected every sixth day from a site located at 5th Street at Avenue K in Lubbock, Texas were evaluated. Information about the Lubbock monitoring site is presented in Table 1. The specific metals evaluated are listed in Table 2 and the location of the site is shown in Figure 1. This memorandum evaluates air monitoring data on a chemical-by-chemical basis.

Table 1. Monitoring Site Information for TCEQ Region 2

| County | City and Site Location | EPA Site ID | Monitored Compounds ^a |
|---------|--|-------------|----------------------------------|
| Lubbock | Lubbock, 5th Street at Ave. K | 48-303-0001 | Metals (PM _{2.5}) |

^a The Lubbock air monitoring site was deactivated June 22, 2005

Although only the first six months of 2005 were monitored, the data was used for estimating annual average concentrations. A total of thirty two 24-hour samples were reported for each metal. For all metals the six-month average concentrations were compared to their respective

long-term TCEQ health-based effects screening levels (ESLs). Because 24-hour air samples are designed to provide representative long-term average concentrations, the six-month averages from 24-hour samples were evaluated for potential chronic health concerns. Short-term or peak concentrations are not captured by 24-hour samples; therefore, daily maximum concentrations have limited use in evaluating the potential for acute health effects.

Table 2. Metals Evaluated in PM_{2.5} Samples

| Metals | | |
|----------|------------|----------|
| Antimony | Chromium | Nickel |
| Arsenic | Cobalt | Selenium |
| Aluminum | Copper | Tin |
| Barium | Manganese | Zinc |
| Cadmium | Molybdenum | |

Evaluation

Assuming that the first six months of data are representative of annual averages, all annual average concentrations for the fourteen metals were measured below their long-term ESLs. Overall, we do not anticipate any long-term health concerns from the monitored levels of PM_{2.5} metals in Lubbock.

Information on the ESLs can be obtained by contacting the TS (512-239-1795) or visiting the TCEQ ESL website: www.tceq.state.tx.us/implementation/tox/esl/ESLMain.html.

If you have any questions about this evaluation, please call me at (512) 239-1792 or e-mail me at maplin@tceq.state.tx.us.

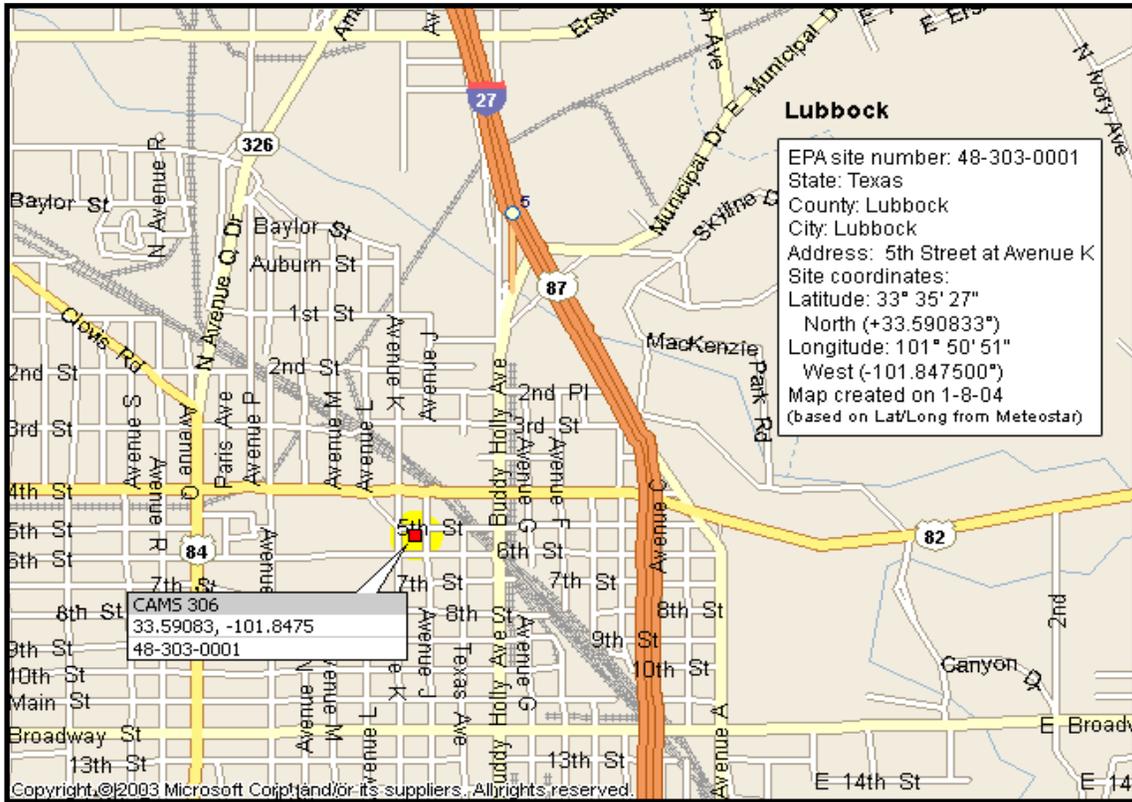


Figure 1. Location of PM_{2.5} Monitor in Lubbock (Deactivated June 22, 2005)

cc: Casso, Ruben – EPA Region 6, Dallas (via e-mail)
Prosperie, Susan – Department of State Health Services (via e-mail)