

# Texas Commission on Environmental Quality

## INTEROFFICE MEMORANDUM

**To:** Jim Estes, Director  
Randy Ammons, Air Manager  
TCEQ Region 2–Lubbock

**Date:** September 15, 2004

**From:** Nathan Pechacek, M.S.  
Toxicology Section, Chief Engineer’s Office

**Subject:** Health Effects Review of 2003 Data Collected from Ambient Air Network Monitoring Sites in Region 2, Lubbock

### Conclusions

- All metals from particulate matter less than or equal to 2.5 microns (PM<sub>2.5</sub>) were monitored at levels below health-based screening values.

### Background

This memorandum conveys the Toxicology Section’s evaluation of ambient air sampling conducted at a monitoring network site in Region 2–Lubbock during 2003. We reviewed summary results for metals from PM<sub>2.5</sub> samples collected every sixth day from a site located at 5th Street at Avenue K in Lubbock, Texas. The following metals were analyzed from PM<sub>2.5</sub> samples: arsenic, cadmium, chromium, lead, manganese, nickel, and mercury. This memorandum evaluated air monitoring data on a chemical-by-chemical basis. Evaluation of the potential for cumulative effects will be presented in a later report.

For all metals except lead, the 24-hour maximum and annual average concentrations were compared to their respective short-term and long-term TCEQ Effects Screening Levels (ESLs). It should be noted that 24-hour air samples are designed to provide representative long-term average concentrations. Therefore, annual averages from 24-hour samples were evaluated for potential chronic health concerns. Twenty-four-hour samples do not show short-term or peak concentrations, and therefore, daily maximum concentrations have limited use in evaluating the potential for acute health effects.

An ESL is a guideline concentration which is protective of the general public including sensitive members of the population, such as the elderly, children, and persons with pre-existing health conditions. Health-based ESLs are guideline comparison levels set well below levels at which adverse health effects have been reported in the scientific literature. If an air concentration of a pollutant is below the ESL, we do not expect adverse health effects to occur. If an air concentration of a pollutant is above the health-based ESL, it is not indicative that adverse effects will necessarily occur, but rather, that further evaluation may be warranted.

Lead is a criteria pollutant with a corresponding National Ambient Air Quality Standard (NAAQS) and was not evaluated in this memorandum.

### Evaluation

All metals were measured well below applicable ESLs. We do not anticipate any health concerns from monitored levels.

Jim Estes, Director  
Randy Ammons, Air Manager  
Page 2  
September 15, 2004

If you have any questions about this evaluation, please call me at (512) 239-1336 or email me at [npechace@tceq.state.tx.us](mailto:npechace@tceq.state.tx.us).

cc: (via email) Brymer, David  
Eden, Dan  
Henneke, Jody  
McGinley, Ann  
Porter, Tom  
Leidig, Mark  
Rodriguez, Anna Maria  
Ruggeri, Dom  
Sidnell, Jennifer  
Seal, Derek  
Spaw, Steve  
Sullivan, Dave  
Toxicology Section  
Wadick, Ashley K.  
Wade, Brent