

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Lorinda Gardner, Director, Region 16 – Laredo
Rose Luna-Pirtle, Air/Water/Waste Section Manager,
Region 16 – Laredo
Carlos Rubinstein, Texas Border Area Director

Date: May 15, 2007

From: Vincent Leopold, Toxicology Section, Chief Engineer's Office

Subject: Health Effects Review of Air Monitoring Data Collected in TCEQ Region 16 – Laredo during 2006

Conclusions

In TCEQ Region 16 – Laredo during 2006, air monitoring was conducted for volatile organic compounds (VOCs), polycyclic aromatic hydrocarbons (PAHs), and metals in total suspended particulate (TSP). Exposure to the reported annual average concentrations of these chemicals would not be expected to cause adverse health effects.

Background

This memorandum conveys the Toxicology Section's evaluation of ambient air sampling conducted at two Community Air Toxics Monitoring Network (CATMN) sites in Laredo during 2006. Table 1 contains information regarding the two sites located in TCEQ Region 16. We reviewed air monitoring summary results for VOCs from 24-hour canister samples collected every sixth day, PAHs from 24-hour samples collected every sixth day, and speciated metals from 24-hour TSP samples collected every sixth day at the West End Washington Street site in Laredo (Figure 1). In addition, we reviewed air monitoring summary results for VOCs from 24-hour canister samples collected every sixth day at the Zaragosa Street – Laredo Bridge site (Figure 2). For a complete list of all examined chemicals, please see Table 2. This memorandum evaluates air monitoring data on a chemical-by-chemical basis.

Table 1. TCEQ Region 16 Monitoring Sites Evaluated in this Memorandum

County	City and Site Location	EPA Site ID	Monitored Compounds
Webb	Laredo, West End Washington Street	48-479-0016	VOCs, PAHs, Metals (TSP)
Webb	Laredo, 700 Zaragosa Street, Bridge	48-479-0017	VOCs

The TCEQ Monitoring Operations Division reported the data for all chemicals evaluated in this memorandum. All data collected for VOCs, PAHs, and TSP metals met the data completeness requirement for estimating representative annual average concentrations at both the Laredo sites. For all VOCs, PAHs, and speciated TSP metals, annual average concentrations were compared

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to their respective long-term ESLs. Because 24-hour air samples are designed to provide representative long-term average concentrations, annual 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.

Information on the ESLs can be obtained by contacting the Toxicology Section at 512-239-1795 or by visiting the TCEQ ESL website:

<http://www.tceq.state.tx.us/implementation/tox/esl/ESLMain.html>.

Evaluation

Washington Street Site

At the Washington Street site, 46 of the 95 VOCs and arsenic were not detected. The 2006 annual average concentrations for all detected VOCs, PAHs, and TSP antimony were less than their respective long-term health-based ESLs and are not a health concern.

Zaragosa Street – Bridge Site

At the Zaragosa Street – Bridge site, 38 of the 95 VOCs were not detected. The 2006 annual average concentrations for all detected VOCs were less than their respective long-term health-based ESLs and are not a health concern. The previous annual evaluation commented on the 2005 annual average benzene concentration of 1.10 ppbv which slightly exceeded the ESL and noted that the predominant benzene source was automobile exhaust. To update you specifically on benzene, the 2006 annual average at the Zaragosa Street – Bridge Site was 1.06 which does not significantly exceed the ESL.

If you have any questions about this evaluation, please call me at (512) 239-1784 or e-mail me at [vleopold@tceq.state.tx.us](mailto: vleopold@tceq.state.tx.us).

Table 2. VOCs, PAHs and TSP Metals Evaluated

VOCs		
1,1,1-Trichloroethane	3-Hexanone	Toluene
1,1,2,2-Tetrachloroethane	3-Pentanone	Trichloroethylene
1,1,2-Trichloroethane	4-Methyl-1-Pentene	Trichlorofluoromethane
1,1-Dichloroethane	Acetylene	Vinyl Chloride
1,1-Dichloroethylene	Benzene	c-2-Butene
1,2,3-Trimethylbenzene	Bromomethane	c-2-Hexene
1,2,4-Trimethylbenzene	Butyl Acetate	c-2-Pentene
1,2-Dibromoethane	cis 1,3-Dichloropropylene	Dichlorodifluoromethane
1,2-Dichloroethane	Carbon Tetrachloride	Isobutyraldehyde
1,2-Dichloropropane	Chlorobenzene	m-Diethylbenzene
1,3,5-Trimethylbenzene	Chloroform	m-Ethyltoluene
1,3-Butadiene	Cyclohexane	Methyl Chloride
1-Butene	Cyclopentane	n-Butane
1-Hexene+2-methyl-1-pentene	Cyclopentene	n-Decane
1-Pentene	Ethane	n-Heptane
2,2,4-Trimethylpentane	Ethyl Acetate	n-Hexane
2,2-Dimethylbutane - Neohexane	Ethyl Benzene	n-Nonane
2,3,4-Trimethylpentane	Ethylene	n-Octane
2,3-Dimethylbutane	Isobutane	n-Pentane
2,3-Dimethylpentane	Isopentane	n-Propyl Acetate
2,4-Dimethylpentane	Isoprene	n-Propylbenzene
2-Butanone	Isopropylbenzene	n-Undecane
2-Chloropentane	Methyl Butyl Ketone (MBK)	o-Ethyltoluene
2-Methyl-2-Butene	Methyl t-Butyl ether	o-Xylene
2-Methylheptane	Methylcyclohexane	p-Diethylbenzene
2-Methylhexane	Methylcyclopentane	p-Ethyltoluene
2-Methylpentane - Isohexane	Methylene Chloride	p-Xylene + m-Xylene
2-Methyl-3-Hexanone	Methylisobutylketone	t-2-Butene
3-Methyl-1-Butene	Propane	t-2-Hexene
3-Methylheptane	Propylene	t-2-Pentene
3-Methylhexane	Styrene	trans-1-3-Dichloropropylene
3-Methylpentane	Tetrachloroethylene, Perchloroethylene	
PAHs		
Acenaphthene	Benzo (g,h,i) perylene	Indeno (1,2,3-c,d) pyrene
Acenaphthylene	Benzo (k) fluoranthene	Naphthalene
Anthracene	Chrysene	Phenanthrene
Benzo (a) anthracene	Dibenzo (a,h) anthracene	Pyrene
Benzo (a) pyrene	Fluoranthene	
Benzo (b) fluoroanthene	Fluorene	
TSP Metals		
Antimony	Arsenic	

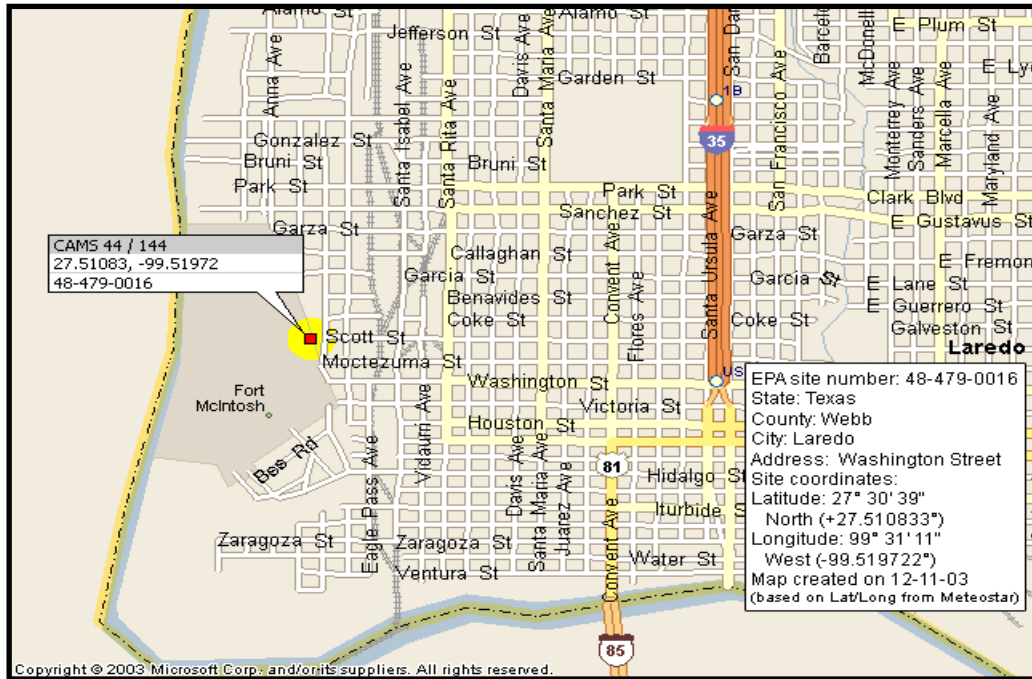


Figure 1. Location of West End Washington Street Monitor

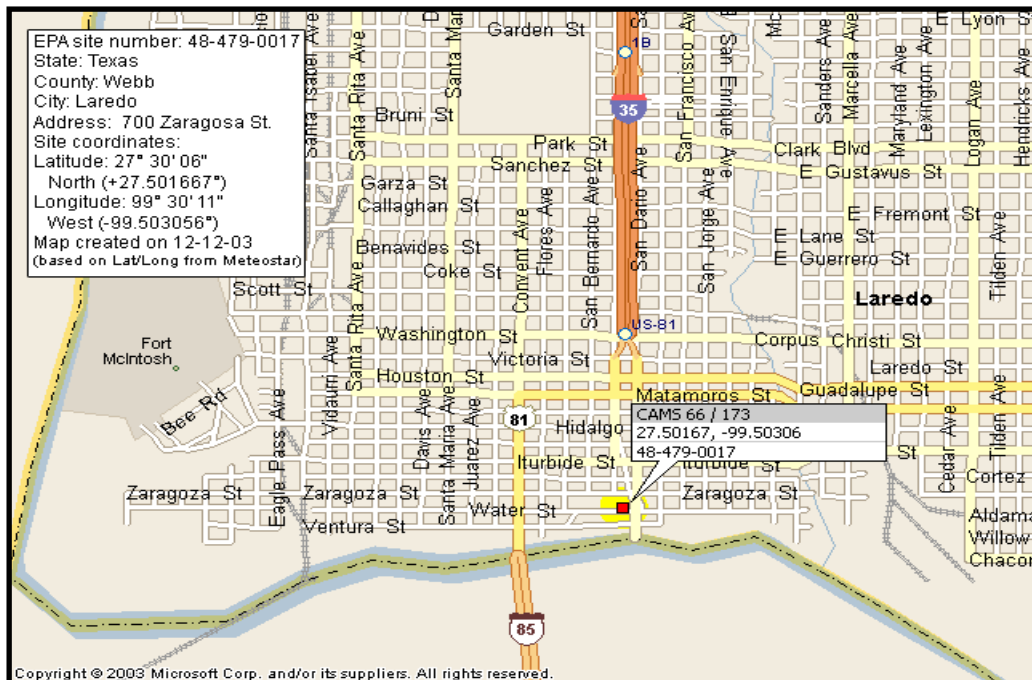


Figure 2. Location of Zaragoza Street – Laredo Bridge Monitor

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