

Texas Commission on Environmental Quality

INTEROFFICE MEMORANDUM

To: Patty Reeh, Regional Director, R11
Barry Kalda, Regional Air Manager, R11
Ramiro Garcia, Border and South Central Texas
Area Director

Date: October 29, 2008

From: Tracie Phillips, Ph.D.
Toxicology Section, Chief Engineer's Office

Subject: Health Effects Review of 2007 Ambient Air Network Monitoring Data in
Region 11 – Austin

Conclusions:

- Exposure to the reported annual average concentrations of the 95 reported volatile organic compounds (VOCs) and 14 metals reported as particulate matter less than 2.5 microns in diameter (PM_{2.5}) for Region 11 – Austin would not be expected to cause chronic adverse health effects.

Background:

This memorandum conveys the Toxicology Section's (TS) evaluation of ambient air sampling conducted at two monitoring sites in Region 11 – Austin during 2007. The TS evaluated summary results for 95 VOCs collected at a 24-hour every sixth day Community Air Toxics Monitoring Network (CATMN) site located at 2600 B Webberville Road in Austin, Texas (Figure 1). Summary results for 14 metals (PM_{2.5}) were evaluated from a second monitoring site located at 12200 Lime Creek Road in Austin, Texas (Audubon) (Figure 2). TCEQ Region 11 monitoring site information is presented in Table 1. Table 2 lists the target analytes for both monitoring sites.

Table 1. Monitoring Site Information

City and Site Location	County	EPA Monitor ID	Monitored Compounds
Austin, Webberville Road	Travis	48-453-0021	VOCs
Austin, Audubon	Travis	48-453-0020	PM _{2.5} Metals

The TCEQ Monitoring Operations Division reported the data for all chemicals evaluated in this memorandum. The data collected for both monitoring sites met the data completeness objective of 75 percent data return, or 45 valid samples per year. Because 24-hour air samples that are collected every six days are designed to provide representative long-term average concentrations, annual averages from 24-hour samples were evaluated for potential chronic health concerns. Annual average concentrations of the reported VOCs and metals (PM_{2.5}) were compared to their appropriate comparison values. Information on the values used can be obtained by contacting the TS at (512) 239-1795.

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Evaluation:

VOCs

Of the 95 reported VOCs, annual average concentrations of 34 VOCs were detected. The 2007 annual average concentrations for all detected VOCs were less than their appropriate comparison values and therefore would not be expected to cause long-term adverse health effects.

Metals

Of the 14 reported PM_{2.5} metals, annual average concentrations of 9 metals (PM_{2.5}) were detected. The 2007 annual average concentrations for all detected metals (PM_{2.5}) were less than their appropriate comparison values and therefore would not be expected to cause long-term adverse health effects.

If you have any questions regarding this memorandum, please contact me at (512) 239-2269 or tphillip@tceq.state.tx.us.

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

Table 2. VOCs and PM_{2.5} Metals Evaluated

CATMN 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	
PM _{2.5} Metals		
Aluminum	Chromium	Nickel
Antimony	Cobalt	Selenium
Arsenic	Copper	Tin
Barium	Manganese	Zinc
Cadmium	Molybdenum	



Figure 1. Location of Austin Webberville Road Monitor

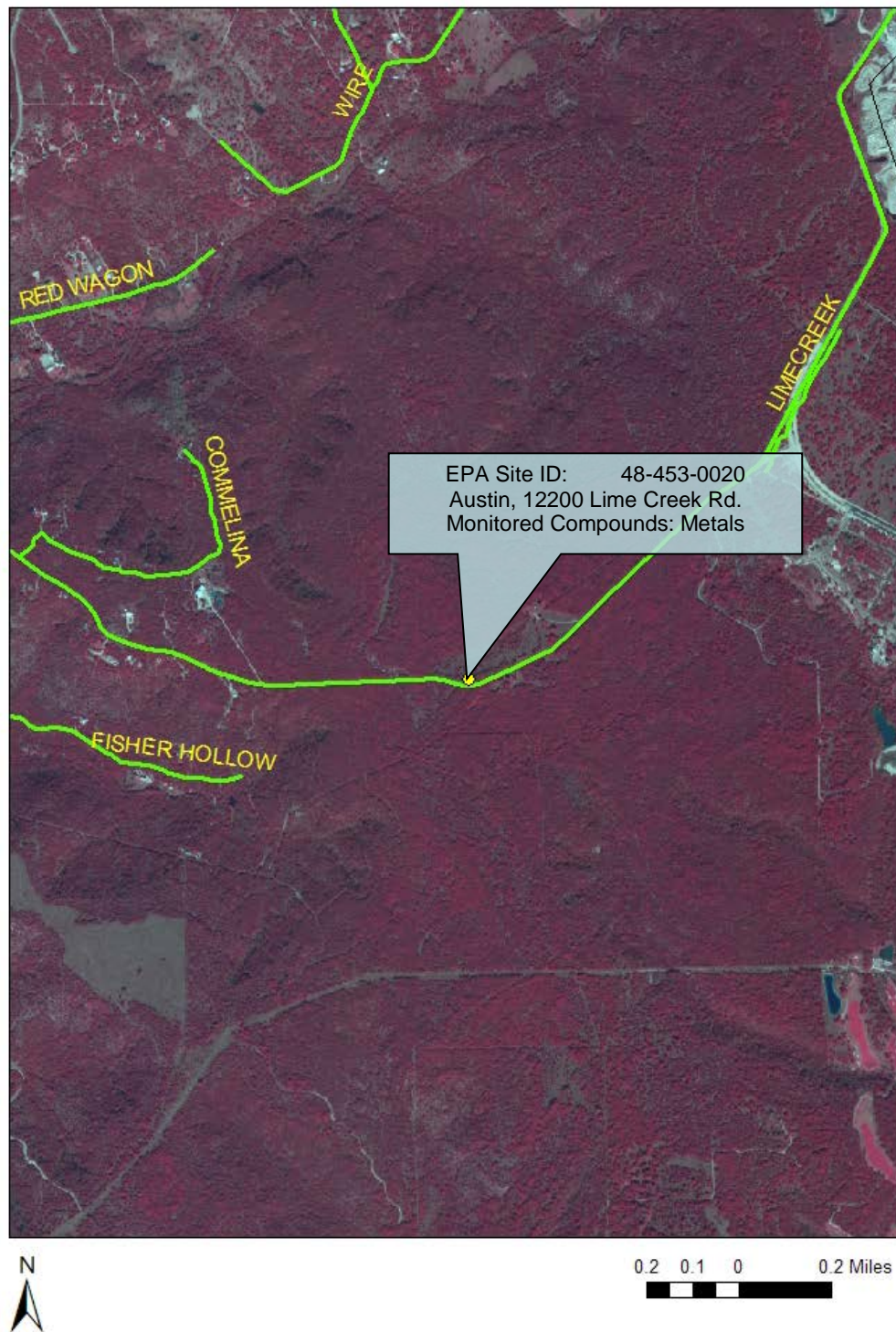


Figure 2. Location of Austin Audubon Monitor