

# Texas Commission on Environmental Quality

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## INTEROFFICE MEMORANDUM

**To:** Richard Garcia, Director  
Rick Hite, Air Section Manager  
TCEQ Region 13–San Antonio

**Date:** September 2, 2005

**From:** Bernard J. Kadlubar, Toxicology Section, Chief Engineer's Office

**Subject:** Health Effects Review of 2004 Ambient Air Network Monitoring in Region 13, San Antonio

### Conclusions

- Annual average concentrations of all 96 reported VOCs were below their long-term ESLs and are not expected to cause adverse health effects.

### Background Information

This memorandum conveys the Toxicology Section's evaluation of ambient air sampling conducted at the network monitoring site in Region 13–San Antonio during 2004. We reviewed summary results for volatile organic compounds (VOCs) from 24-hour canister samples collected every sixth day from the Community Air Toxics Monitoring Network (CATMN) site at:

- 254 Seale Road in San Antonio (Van Dyke Service Center), AIRS No. 48-029-0051

This site has been active since January 1, 1996. The enclosed table (Appendix A) is a list of the target analytes that were evaluated for this review. Twenty-four-hour air samples, collected every sixth day, are designed to provide representative long-term average concentrations appropriate for evaluating potential chronic health concerns. However, these samples do not show short-term or peak concentrations, and thus limiting their use in evaluating the potential for acute or odor-related health effects.

The measured chemical concentrations were compared to TCEQ health-based Effects Screening Levels (ESLs). 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; however, if an air concentration of a pollutant is above the health-based ESL, adverse effects will not necessarily occur, but rather, further evaluation may be warranted.

### Evaluation

All annual average concentrations for the 96 reported VOCs were below their long-term ESLs and are not a health concern. In addition, 24-hour concentrations for all reported VOCs were below levels that would cause acute health effects or odors. However, the potential for acute health effects and odors could not be fully evaluated because 24-hour composite samples do not provide information about shorter-term and peak concentrations. TCEQ's objective for data completeness for this monitoring site is 75 percent data return, or 45 valid samples per year. All monitored chemicals met the data completeness objective, except for 1,1-dichloroethane (4%), 3-heptanone (20%), and 3-pentanone (63%).

If you have any questions about this evaluation, please do not hesitate to contact me at (512)-239-1075.

**Appendix A: Target Analytes for Community Air Toxic Monitoring Network**

CATMN VOCs	
"1,1,1-Trichloroethane"	Isopentane
"1,1,2,2-Tetrachloroethane"	Isoprene
"1,1,2-Trichloroethane"	Isopropylbenzene
"1,1-Dichloroethylene"	Methyl Butyl Ketone (MBK)
"1,2,3-Trimethylbenzene"	Methyl t-Butyl ether
"1,2,4-Trimethylbenzene"	Methylcyclohexane
"1,2-Dibromoethane"	Methylcyclopentane
"1,2-Dichloroethane"	Methylene Chloride
"1,2-Dichloropropane"	Methylisobutylketone
"1,3,5-Trimethylbenzene"	Propane
"1,3-Butadiene"	Propylene
1-Butene	Styrene
1-Hexene+2-methyl-1-pentene	Tetrachloroethylene - Perchloroethylene
1-Pentene	Toluene
"2,2,4-Trimethylpentane"	Trichloroethylene
"2,2-Dimethylbutane - Neohexane"	Trichlorofluoromethane
"2,3,4-Trimethylpentane"	Vinyl Chloride
"2,3-Dimethylbutane"	c-2-Butene
"2,3-Dimethylpentane"	c-2-Hexene
"2,4-Dimethylpentane"	c-2-Pentene
2-Butanone	Dichlorodifluoromethane
2-Chloropentane	Isobutyraldehyde
2-Methyl-2-Butene	m-Diethylbenzene
2-Methylheptane	m-Ethyltoluene
2-Methylhexane	Methyl Chloride
2-Methylpentane - Isohexane	n-Butane
2-Methyl-3-hexanone	n-Decane
3-Methyl-1-Butene	n-Heptane
3-Methylheptane	n-Hexane
3-Methylhexane	n-Nonane
3-Methylpentane	n-Octane
3-Hexanone	n-Pentane
3-Pentanone	n-Propyl Acetate
4-Methyl-1-Pentene	n-Propylbenzene
Acetylene	n-Undecane
Benzene	o-Ethyltoluene
Bromomethane	o-Xylene
Butyl Acetate	p-Diethylbenzene
Butyraldehyde	p-Ethyltoluene
"Cis 1,3-Dichloropropylene"	p-Xylene + m-Xylene
Carbon Tetrachloride	t-2-Butene
Chlorobenzene	t-2-Hexene
Chloroform	t-2-Pentene
Chloroprene	trans-1-3-Dichloropropylene
Cyclohexane	
Cyclopentane	
Cyclopentene	
Ethane	
Ethyl Acetate	
Ethyl Benzene	
Ethylene	
Isobutane	

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Rick Hite, Air Section Manager  
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cc (via email):  
Brulloths, Anna Maria  
Brymer, David  
Casso, Reuben  
Henneke, Jody  
Hyde, Richard  
Leidig, Mark  
Porter, Tom  
Ruggeri, Dom  
Sadlier, John  
Sidnell, Jennifer  
Seal, Derek  
Spaw, Steve  
Toxicology Section  
Wade, Brent  
Wadick, Ashley K.