

TCEQ Interoffice Memorandum

To: Winona Henry, Regional Director

From: Sabine Lange, Ph.D. *SL*
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Date: July 17, 2014

Subject: Health Effects Review of 2013 Ambient Air Network Monitoring Data in Region 3, Abilene

Conclusion

- Three canister monitors in Region 3, Abilene were activated in the fourth quarter of 2013. Lacking a full year's worth of data prevents the assessment of long-term human health and vegetation effects for the monitored chemicals. However, based on the available data, we would not expect to see short-term health effects from the measured volatile organic compounds (VOCs).

Background

TCEQ Region 3, Abilene began collecting VOC samples at three canister sites that were activated in the fourth quarter of 2013. This memorandum conveys the Toxicology Division's (TD) evaluation of ambient air samples collected at those three monitoring sites during 2013. The TD reviewed air monitoring summary results from VOC canister samples collected on a 24-hour every sixth-day schedule. TCEQ Region 3 monitoring site information is presented in Table 1, along with hyperlinks to detailed information regarding the monitoring sites and their maps. List 1, which can be found in Attachment A, displays the target analytes for the monitoring sites.

The TCEQ Monitoring Division reported the data for all chemicals evaluated in this memorandum. Because the monitors in Region 3 only became active at the end of 2013, none of the monitoring sites met the data completeness objective of 75 percent data return, or at least 45 valid samples per year. Since 24-hour samples collected using the every sixth-day schedule are designed to provide a representative long-term ambient concentration for chemicals of concern, annual averages from all 24-hour samples could not be compared to long-term Air Monitoring Comparison Values (AMCVs). Therefore, the potential to adversely impact long-term human health and vegetation effects could not be evaluated. However, TCEQ has developed 24-hour AMCVs for specific chemicals. As such, 24-hour samples were compared to the available TCEQ 24-hour AMCVs for 1,3-butadiene and benzene. More information about AMCVs is available at: <http://www.tceq.state.tx.us/toxicology/AirToxics.html#amcv>.

Table 1. Monitoring Sites Located in TCEQ Region 3

City and Site Location	County	Monitor ID	Monitored Compounds
Abilene North 3 rd Street	Taylor	48-441-1509	VOCs ^a
Bowie Patterson Street	Montague	48-337-1507	VOCs ^a
Wichita Falls MWSU	Wichita	48-485-1508	VOCs ^a

^a24-hour canister

Evaluation

The available data from the fourth quarter of 2013 for all 84 VOCs collected as 24-hour canister samples at the Region 3 monitors were at levels where we would not expect to see short-term health effects. Because full-year data is not available, no conclusions can be drawn about long-term adverse human health or vegetation effects at these monitoring sites. The 24 hour samples of 1,3-butadiene and benzene were below their respective 24 hour AMCVs.

If you have any questions or comments regarding this evaluation, please feel free to contact me at (512) 239-3108 or sabine.lange@tceq.texas.gov.

Attachment A**List 1. Target VOC Analytes in Canister Samples**

1,1,2,2-Tetrachloroethane	Bromomethane	Methyl Chloroform (1,1,1-Trichloroethane)
1,1,2-Trichloroethane	Carbon Tetrachloride	Methylcyclohexane
1,1-Dichloroethane	Chlorobenzene	Methylcyclopentane
1,1-Dichloroethylene	Chloroform	N-Butane
1,2,3-Trimethylbenzene	Chloromethane (Methyl Chloride)	N-Decane
1,2,4-Trimethylbenzene	Cis 1,3-Dichloropropene	N-Heptane
1,2-Dichloropropane	Cis-2-Butene	N-Hexane
1,3,5-Trimethylbenzene	Cis-2-Hexene	N-Nonane
1,3-Butadiene	Cis-2-Pentene	N-Octane
1-Butene	Cyclohexane	N-Pentane
1-Hexene+2-Methyl-1-Pentene	Cyclopentane	N-Propylbenzene
1-Pentene	Cyclopentene	N-Undecane
2,2,4-Trimethylpentane	Dichlorodifluoromethane	O-Ethyltoluene
2,2-Dimethylbutane (Neohexane)	Dichloromethane (Methylene Chloride)	O-Xylene
2,3,4-Trimethylpentane	Ethane	P-Diethylbenzene
2,3-Dimethylbutane	Ethylbenzene	P-Ethyltoluene
2,3-Dimethylpentane	Ethylene	Propane
2,4-Dimethylpentane	Ethylene Dibromide (1,2-Dibromoethane)	Propylene
2-Chloropentane	Ethylene Dichloride (1,2-Dichloroethane)	Styrene
2-Methyl-2-Butene	Isobutane	Tetrachloroethylene
2-Methylheptane	Isopentane (2-Methylbutane)	Toluene
2-Methylhexane	Isoprene	Trans-1-3-Dichloropropylene
2-Methylpentane (Isohexane)	Isopropylbenzene (Cumene)	Trans-2-Butene
3-Methyl-1-Butene	M-Diethylbenzene	Trans-2-Hexene
3-Methylheptane	M-Ethyltoluene	Trans-2-Pentene
3-Methylhexane	M/P Xylene	Trichloroethylene
3-Methylpentane		Trichlorofluoromethane
4-Methyl-1-Pentene		Vinyl Chloride
Acetylene		
Benzene		