

# TCEQ Interoffice Memorandum

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**To:** Winona Henry, Regional Director, R3

**From:** Nnamdi Nnoli, Ph.D. *nn*  
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Office of the Executive Director

**Date:** March 17, 2021

**Subject:** Health Effects Review of 2017-2019 Ambient Air Network Monitoring  
Data in Region 3, Abilene

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## Conclusion

- In Region 3, Abilene, from 2017-2019, all 24-hour, annual and three-year average concentrations of 84 volatile organic compounds (VOCs) were below their respective Texas Commission on Environmental Quality (TCEQ) air monitoring comparison values (AMCVs) and would not be expected to cause adverse health effects or welfare effects.

## Background

Ambient air sampling conducted at three monitoring network sites in Region 3, Abilene, during 2017-2019 was evaluated by the Toxicology, Risk Assessment, and Research Division (TD). 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. All data collected met the data completeness objective of 75 percent data return, or at least 45 valid samples per year, except for the 2018 and 2019 data from the Abilene Industrial Boulevard monitoring site. This monitoring site was deactivated from 8/29/2018 to 4/29/2019. However, the three-year average measurements of all monitored VOCs at this site met the 75 percent data completeness objective. Because short-term or peak concentrations are not necessarily captured by 24-hour samples, daily concentrations have limited use in evaluating the potential for acute health effects. Rather, 24-hour air samples collected every-sixth day for a year are intended to provide representative long-term average concentrations. Therefore, the TD evaluated the reported annual average concentrations from 24-hour samples for each target analyte for potential chronic health and vegetation concerns by comparing measured chemical concentrations to long-term AMCVs. In order to be able to evaluate 24-hour monitoring data more fully, TCEQ has also developed 24-hour acute AMCVs for specific chemicals. As such, 24-hour samples were compared to the available TCEQ 24-hour AMCVs for 1,3-butadiene, 2,2-dimethylbutane, 2,3-dimethylbutane, 2-methylpentane, 3-methylpentane, benzene, ethylene dibromide, ethylene dichloride, and n-hexane. More information about AMCVs is available online at: <https://www.tceq.texas.gov/toxicology/AirToxics.html>.

**Table 1. Monitoring Sites Located in TCEQ Region 3**

Site Name and Location	County	Monitor ID	Monitored Compounds
<a href="#">Abilene Industrial Boulevard</a> 1939 Industrial Blvd	Taylor	48-441-1509	VOCs (24-h canister)
<a href="#">Bowie Patterson Street</a> 1032 Patterson Street	Montague	48-337-1507	VOCs (24-h canister)
<a href="#">Wichita Falls MWSU</a> MWSU grounds	Wichita	48-485-1508	VOCs (24-h canister)

## Evaluation

At the Abilene Industrial Boulevard, Bowie Patterson, and Wichita Falls sites, all annual and three-year average concentrations of the monitored 84 VOCs were below their AMCVs and would not be expected to cause adverse chronic health or vegetation effects.

If you have any questions or comments regarding this evaluation, please feel free to contact Nnamdi Nnoli at [nnamdi.nnoli@tceq.texas.gov](mailto:nnamdi.nnoli@tceq.texas.gov) or (512) 239-1785.

## 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		