

TCEQ Interoffice Memorandum

To: Jaime Garza, Regional Director, R15

From: Nnamdi Nnoli, Ph.D. *nn*
Toxicology, Risk Assessment, and Research Division,
Office of the Executive Director

Date: February 15, 2022

Subject: Health Effects Review of 2020 Ambient Air Network Monitoring Data in
Region 15, Harlingen

Conclusions

- All measured 24-hour and annual average concentrations of the 84 volatile organic compounds (VOCs) monitored were below their respective Texas Commission on Environmental Quality (TCEQ) air monitoring comparison values (AMCVs) in Region 15, Harlingen in 2020 and would not be expected to cause adverse health or vegetation effects.

Background

Ambient air sampling conducted at two monitoring network sites in Region 15, Harlingen in 2020 was evaluated by the Toxicology, Risk Assessment, and Research Division (TD). TCEQ Region 15 monitoring sites information is presented in Table 1, along with a hyperlink to the monitoring sites map and detailed information. The TD reviewed air monitoring summary results for VOCs from 24-hour canister samples collected every sixth-day. For a complete list of all examined chemicals, please see List 1 in Attachment A.

The TCEQ Monitoring Division reported the data for all chemicals evaluated in this memorandum. All data collected from the Brownsville and Mission monitoring sites met the data completeness objective of 75 percent data return. 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/amcv/about>.

Table 1. Monitoring Sites Located in TCEQ Region 15

Site Name and Location	County	EPA Site ID	Monitored Compounds
Brownsville 344 Porter Drive	Cameron	48-061-0006	VOCs (24-h canister)
Mission 2300 North Glasscock	Hidalgo	48-215-0043	VOCs (24-h canister)

Evaluation

At the Brownsville and Mission sites, all measured 24-hour and annual average concentrations of the monitored 84 VOCs were below their AMCVs and would not be expected to cause adverse chronic health or welfare effects.

If you have any questions regarding the contents of this review, please do not hesitate to contact Nnamdi Nnoli via email at nnamdi.nnoli@tceq.texas.gov or by phone at (512) 239-1785.

Attachment A

List 1. Target VOC Analytes in Canister Samples

1,1,2,2-Tetrachloroethane	Acetylene	Trichloroethylene
1,1,2-Trichloroethane	Benzene	Trichlorofluoromethane
1,1-Dichloroethane	Bromomethane	Vinyl Chloride
1,1-Dichloroethylene	Carbon Tetrachloride	cis-1,3-Dichloropropene
1,2,3-Trimethylbenzene	Chlorobenzene	cis-2-Butene
1,2,4-Trimethylbenzene	Chloroform	cis-2-Hexene
1,2-Dichloropropane	Chloromethane	cis-2-Pentene
1,3,5-Trimethylbenzene	Cyclohexane	m-Diethylbenzene
1,3-Butadiene	Cyclopentane	m-Ethyltoluene
1-Butene	Cyclopentene	m/p Xylene
1-Hexene & 2-Methyl-1-Pentene	Dichlorodifluoromethane	n-Butane
1-Pentene	Dichloromethane	n-Decane
2,2,4-Trimethylpentane	Ethane	n-Heptane
2,2-Dimethylbutane	Ethylbenzene	n-Hexane
2,3,4-Trimethylpentane	Ethylene	n-Nonane
2,3-Dimethylbutane	Ethylene Dibromide	n-Octane
2,3-Dimethylpentane	Ethylene Dichloride	n-Pentane
2,4-Dimethylpentane	Isobutane	n-Propylbenzene
2-Chloropentane	Isopentane	n-Undecane
2-Methyl-2-Butene	Isoprene	o-Ethyltoluene
2-Methylheptane	Isopropylbenzene	o-Xylene
2-Methylhexane	Methyl Chloroform	p-Diethylbenzene
2-Methylpentane	Methylcyclohexane	p-Ethyltoluene
3-Methyl-1-Butene	Methylcyclopentane	trans-1,3-Dichloropropene
3-Methylheptane	Propane	trans-2-Butene
3-Methylhexane	Propylene	trans-2-Hexene
3-Methylpentane	Styrene	trans-2-Pentene
4-Methyl-1-Pentene	Tetrachloroethylene	
	Toluene	