TCEQ Interoffice Memorandum

To: Jaime Garza, Regional Director, R16

From: Anthony Tran, M.S.
Toxicology, Risk Assessment, and Research Division, Office of the Executive Director

Date: May 8, 2025

Subject: Health Effects Review of 2023 Ambient Air Network Monitoring Data in Region 16, Laredo

Conclusions

- All 24-hour and annual average concentrations of volatile organic compounds (VOCs) from canister samples were below their respective Texas Commission on Environmental Quality (TCEQ) air monitoring comparison values (AMCVs) and would not be expected to cause acute or chronic adverse health or welfare effects.

Background

This memorandum conveys the Toxicology, Risk Assessment, and Research Division's (TD's) evaluation of ambient air toxics sampling conducted at the Laredo Bridge monitoring site in Region 16-Laredo during 2023. TCEQ Region 16 monitoring site information is presented in Table 1 along with a hyperlink to detailed information regarding the monitoring site (including a map). List 1, which can be found in Attachment A, displays the target analytes for the monitoring site. The TD reviewed air monitoring results from a VOC canister sampler that collects data on a 24-hour every sixth-day schedule.

The TCEQ Monitoring Division reported the data for all chemicals evaluated in this memorandum. Data discussed in this evaluation include 84 VOCs (from a canister sampler) for the Laredo Bridge monitoring site; all data met the data completeness objective of 75 percent data return. To enable evaluation of 24-hour monitoring data more fully, TCEQ has developed 24-hour AMCVs for specific chemicals. As such, 24-hour samples were compared to the available TCEQ 24-hour AMCVs (1,3-butadiene; 2,2-dimethylbutane; 2,3-dimethylbutane; 2-methylpentane; 3-methylpentane; benzene; carbon tetrachloride; ethylene dibromide; ethylene dichloride; and n-hexane). However, because short-term or peak concentrations are not necessarily captured by 24-hour sample, daily concentrations have limited use in evaluating the potential for more acute health effects. Twenty-four-hour air samples collected every sixth day over a year are designed to provide representative long-term average concentrations. The TD evaluated the reported annual average concentrations calculated from 24-hour samples for each target analyte for potential chronic health and vegetation concerns by comparing calculated annual averages of measured chemical concentrations to long-term AMCVs. Additional information regarding the derivation and application of AMCVs is available on the TD's AMCV webpage (https://www.tceq.texas.gov/toxicology/amcv/about).

Table 1. Monitoring Site Located in TCEQ Region 16

City and Site Location	County	Monitor ID	Monitored Compounds
Laredo Bridge 700 Zaragosa Street	Webb	48-479-0017	VOCs [a]

[a] Every sixth-day, 24-hour canister

Evaluation

VOCs

The 24-hour and calculated annual average concentrations for all 84 VOCs reported at the Laredo Bridge monitoring site for 2023 were below their respective short- and long- term AMCVs. Adverse human health or welfare effects would not be expected to occur as a result of short- or long-term exposure to the reported levels of these chemicals at this monitoring site.

If you have any questions or comments regarding this evaluation, please feel free to contact me at (512) 239-1790 or anthony.tran@tceq.texas.gov.

Attachment A

List 1. Target VOC Analytes in Canister Samples

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