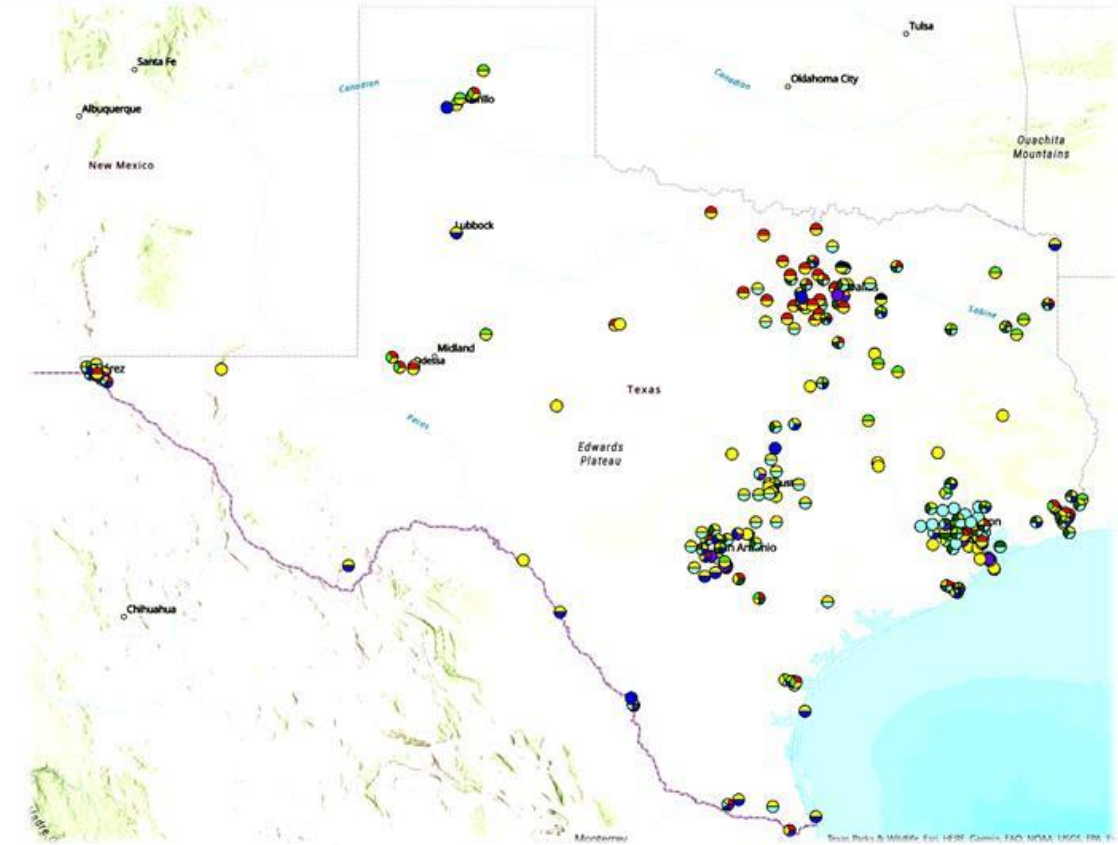
Texas Commission on Environmental Quality
Annual Monitoring Network Plan



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Texas Commission on Environmental Quality 2021 Annual Monitoring Network Plan

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List of Acronyms and Abbreviations

– number
% – percent
> – greater than
≥ – greater than or equal to
< – less than
µg/m^3 – micrograms per cubic meter
AMNP – annual monitoring network plan
autoGC – automated gas chromatograph
CBSA – core based statistical area
CFR – Code of Federal Regulations
CO – carbon monoxide
DFW – Dallas-Fort Worth
DRR – Data Requirements Rule
EI – emissions inventory
EPA – United States Environmental Protection Agency
FEM – federal equivalent method
FRM – federal reference method
LBJ – Lyndon B. Johnson
LLC – limited liability company
MSA – metropolitan statistical area
NA – not applicable
NAAQS – National Ambient Air Quality Standards
NCore – National Core Multipollutant Monitoring Stations
NEI – National Emissions Inventory
NO_2 – nitrogen dioxide
NO – nitrogen oxide
NO_x – oxides of nitrogen
NO_y – total reactive nitrogen compounds
O_3 – ozone
PAMS – Photochemical Assessment Monitoring Stations
Pb – lead
PM_{10} – particulate matter of 10 micrometers or less in diameter
$PM_{2.5}$ – particulate matter of 2.5 micrometers or less in diameter

$PM_{10-2.5}$ – coarse particulate matter
ppb – parts per billion
PWEI – population weighted emissions index
QC – quality control
RA-40 – Regional Administrator 40
SE – southeast
SETRPC – Southeast Texas Regional Planning Commission
SLAMS – State or Local Air Monitoring Stations
SO_2 – sulfur dioxide
SPM – special purpose monitor
TAD – technical assistance document
TCEQ – Texas Commission on Environmental Quality
TEOM – tapered element oscillating microbalance
tpy – tons per year
TSP – total suspended particulate
U.S. – United States
UTEP – University of Texas at El Paso
VOC – volatile organic compound

Introduction

Title 40 Code of Federal Regulations (CFR) Section 58.10 requires states to submit an annual monitoring network plan (AMNP) to the United States (U.S.) Environmental Protection Agency (EPA) by July 1 of each year. This monitoring plan is required to provide the implementation and maintenance framework for an air quality surveillance system, known commonly as the ambient air quality monitoring network.

The TCEQ reviews its ambient air quality monitoring network annually and creates the AMNP to demonstrate how Texas is meeting or will meet federal air monitoring requirements specified in 40 CFR Part 58 and its appendices. The AMNP presents the current federal network established for use in evaluations to determine compliance with the National Ambient Air Quality Standards (NAAQS). The monitoring plan includes proposed changes from the previous year and future proposed changes to the monitoring network. Specific air monitors used to meet federal air quality standards as well as other monitors that provide additional information on air quality and the weather are discussed in the AMNP. Because the AMNP is focused on federally required monitoring, it does not include a review of state-initiated monitoring conducted in addition to federal requirements. This plan is limited to the portion of the TCEQ air monitoring network designed to comply with federal monitoring requirements and supported by federal funding.

The Texas Commission on Environmental Quality (TCEQ) posts the annual plan to solicit public comment for at least 30 days prior to submission to the EPA. The TCEQ submits the AMNP to the EPA for final review and approval with comments received during the 30-day inspection period, responses to the comments, and with any appropriate changes based on the received comments. This plan includes the recommended federal monitoring network changes from July 1, 2020, through December 31, 2022, summarized in AMNP Appendix A. Historical air monitoring network plans, associated public comments, and TCEQ responses are available on the TCEQ webpage TCEQ Monitoring Network Plans and Lead Waiver Requests - Texas Commission on Environmental Quality - www.tceq.texas.gov.

The TCEQ continues to evaluate additional ambient air monitoring requested during previous AMNP public inspection and comment periods. Details regarding the potential monitors under consideration are included in this plan to solicit further public comment. Any future implementation of these monitoring considerations may be included as part of the TCEQ federal ambient air monitoring network or as state-initiative special studies. These monitoring proposals are under consideration, and the proposals and implementation of said proposals are subject to change.

The TCEQ monitoring network includes more than double the number of monitors required by federal rule. The TCEQ also operates a robust network of state-initiative monitors that support a variety of purposes, including potential health effects evaluation; however, these monitors are outside the scope of this document and are not included. The latest information regarding the Texas air monitoring network, monitoring data, and air quality forecast conditions for Texas' metropolitan areas is featured on the TCEQ webpage Air Quality and Monitoring - Texas Commission on Environmental Quality - www.tceq.texas.gov.

Title 40 CFR Part 58, Appendix D provides the minimum design requirements for air monitoring networks including State or Local Air Monitoring Stations (SLAMS), Photochemical Assessment Monitoring Stations (PAMS), and National Core Multi-

Pollutant Monitoring Stations (NCore). AMNP Appendix B lists existing monitors established to meet federal monitoring requirements and objectives.

Based on annual internal audits performed to date, all monitoring sites supporting federal requirements and monitoring objectives are meeting the requirements defined in 40 CFR Part 58 and Appendices A, B, C, D, and E, with the following exceptions:

- The TCEQ is working with the property owner to make changes at the Midlothian Old Fort Worth (OFW) site to meet siting criteria and assessing possible sites for relocation.
- The TCEQ will relocate the Odessa Gonzales particulate matter of 2.5 micrometers or less in diameter ($PM_{2.5}$) monitor approximately eight feet to meet siting criteria by September 2021.

The following sites will be relocated at the request of the property owner.

- The TCEQ Nederland High School site will be relocated less than one mile from the current site and renamed Nederland 17th Street, approved by the EPA in a letter dated March 17, 2021, due to the property owner's revocation of the TCEQ's use of the property for ambient air monitoring purposes.
- The TCEQ Brownsville site will be relocated with a new site name due to the property owner's revocation of the TCEQ's use of the property for ambient air monitoring purposes.

AMNP Appendix C lists Texas core based statistical areas (CBSAs) or metropolitan statistical areas (MSAs), 2019 U.S. Census Bureau population estimates, and associated required monitor counts. The TCEQ uses these data to evaluate the networks as documented in the AMNP. The U.S. Office of Management and Budget defined CBSAs and MSAs overlap in Texas, and the terms are used interchangeably in this assessment according to usage in federal regulations.

Regulatory Network Review

Nitrogen Dioxide

The TCEQ nitrogen dioxide (NO_2) network includes monitoring for nitrogen oxide (NO), NO_2, true NO_2, and total reactive nitrogen compound (NO_y) pollutants sited in compliance with federal monitoring requirements, as discussed further in this section. The TCEQ NO_2 network is designed to meet area-wide, Regional Administrator 40 (RA-40), near-road, PAMS, and NCore monitoring requirements. The TCEQ is required to operate 20 monitors that measure NO, NO_2, true NO_2, and NO_y and exceeds the requirements with 58 monitors that measure those pollutants. AMNP Appendix D lists the monitoring requirements for NO, NO_2, true NO_2, and NO_y in each Texas CBSA. The TCEQ utilizes a variety of instruments to measure these pollutants including a oxides of nitrogen (NO_x) monitor that reports NO_2, NO, and NO_x; an instrument that measures NO_2 directly, and a NO_y instrument that reports NO_y and NO. Appendix B lists the air monitoring sites where NO_x, NO, NO_2, true NO_2, and NO_y are measured.

Monitoring Requirements

Area-Wide Monitoring Requirements

Title 40 CFR Part 58, Appendix D, Section 4.3.3 requires one area-wide ambient air quality monitoring site in each CBSA with a population of 1,000,000 or more persons. The requirements stipulate that these sites be located in the areas with the highest expected NO_2 concentration that are also representative of a neighborhood or larger (urban) spatial scale. Title 40 CFR Part 58, Appendix D, Section 4.3.5 (3) and (4), define neighborhood scale monitoring as representative of ambient air concentrations in an area between 0.5 and 4.0 kilometers with relatively uniform land use. Urban scale monitoring is representative of ambient air concentrations over large portions of an urban area with dimensions between 4 and 50 kilometers.

Based on 2019 U.S. Census Bureau population estimates for Texas as noted in Appendix D, area-wide neighborhood or urban scale NO_2 monitoring is required in four Texas CBSAs. The NO_2 monitors at the following sites meet these area-wide requirements.

- Dallas-Fort Worth-Arlington (DFW) CBSA: Dallas Hinton
- Houston-The Woodlands-Sugar Land (Houston) CBSA: Clinton
- San Antonio-New Braunfels (San Antonio) CBSA: San Antonio Northwest
- Austin-Round Rock (Austin) CBSA: Austin North Hills Drive

Regional Administrator Monitoring Requirements

Title 40 CFR Part 58, Appendix D, Section 4.3.4 states that the EPA Regional Administrators collaborate with the states to designate a minimum of 40 NO_2 monitoring stations nationwide that are positioned to protect susceptible and vulnerable populations (referred to as RA-40 monitoring requirements). The TCEQ collaborated with the EPA to identify the four Texas monitoring sites listed below to meet the portion of this requirement attributed to Texas.

- DFW CBSA: Arlington Municipal Airport
- Houston CBSA: Clinton
- El Paso CBSA: Ascarate Park Southeast (SE)
- Beaumont-Port Arthur (Beaumont) CBSA: Nederland High School

Near-Road Monitoring Requirements

Title 40 CFR Part 58, Appendix D, Section 4.3.2 requires one microscale near-road NO_2 monitor located near a major road with high annual average daily traffic counts in each CBSA with a population of 1,000,000 or more persons. An additional near-road monitor is required in each CBSA with a population of 2,500,000 or more persons. The TCEQ near-road monitoring network meets these requirements with the six current sites and one pending site listed below.

- DFW CBSA: Dallas LBJ Freeway and Fort Worth California Parkway North
- Houston CBSA: Houston Southwest Freeway and Houston North Loop
- San Antonio CBSA: San Antonio Interstate 35 and the pending new site listed in the AMNP NO_2 Previously Recommended Changes section below
- Austin CBSA: Austin North Interstate 35

NCore and PAMS Monitoring Requirements

The TCEQ meets NCore monitoring requirements listed in 40 CFR Part 58, Appendix D, Section 3(b) with NO and NO_y measured at the NCore sites listed in Table 1.

The EPA revisions to the PAMS program under the final rule published October 26, 2015, and listed in 40 CFR Part 58, Appendix D, Section 5, require state agencies to collect and report NO, true NO_2, and NO_y measurements at NCore sites in CBSAs with 1,000,000 or more persons. The TCEQ meets the PAMS network monitoring requirements with hourly averaged NO, NO_2, and NO_y measured at the Dallas Hinton and Houston Deer Park number #2 sites.

Table 1: NCore and PAMS Sites

Core Based Statistical Area	Site Name	2019 Population Estimates*	NCore	PAMS
Dallas-Fort Worth-Arlington	Dallas Hinton	7,573,136	Yes	Yes
Houston-The Woodlands-Sugar Land	Houston Deer Park #2	7,066,141	Yes	Yes
El Paso	El Paso Chamizal	844,124	Yes	No

*United States Census Bureau population estimates as of July 1, 2019.
– number
NCore – National Core Multipollutant Monitoring Station
PAMS – Photochemical Assessment Monitoring Stations

Previously Recommended Changes

The TCEQ 2019 AMNP recommended deploying a NO_x monitor to a new Houston West End site, named Houston Harvard Street. The EPA approved the request in a letter dated November 4, 2019, and the monitor was deployed January 25, 2021. The TCEQ Austin Northwest NO_x monitor was temporarily shut down on February 18, 2020, due to the property owner's revocation of the TCEQ's use of the property for ambient air monitoring purposes. The air monitoring station was relocated one-tenth of a mile to Austin North Hills Drive on October 15, 2020, and the NO_x monitor was activated on October 21, 2020. This site relocation was approved by the EPA in a letter dated April 10, 2020.

The TCEQ 2020 AMNP recommended deploying a second near-road monitoring station in the San Antonio CBSA to meet the near-road monitoring requirement in CBSAs with 2,500,000 or more persons. The EPA approved the request in a letter dated October 22, 2020. The TCEQ continues to explore possible new sites adjacent to the highest possible ranked road segment and expects to deploy the site and NO_x monitor before December 31, 2021.

Regulatory NO_2 Monitoring Network Changes

The TCEQ evaluated the current NO_2 monitoring network with the changes described above and determined the existing NO_2 network, with the addition of a second pending San Antonio near-road NO_2 monitoring site, meets all federal monitoring requirements; therefore, no changes are recommended. The TCEQ will provide additional information regarding potential San Antonio near-road NO_2 monitoring sites to EPA Region 6 for review and approval, as they become available.

Sulfur Dioxide

The TCEQ sulfur dioxide (SO_2) network includes monitors sited to meet federal ambient SO_2 and high-sensitivity SO_2 monitoring requirements. The TCEQ SO_2 network is designed to meet the population weighted emissions index (PWEI) by CBSA, 2015 *Data Requirements Rule (DRR) for the 1-Hour Sulfur Dioxide Primary NAAQS*, and NCore monitoring requirements, as discussed further in this section. The TCEQ is required to operate a total of 19 SO_2 monitors and exceeds the requirements with 31 monitors. A summary of the PWEI calculations, monitoring requirements, and current number of SO_2 monitors in each CBSA is shown in AMNP Appendix E. AMNP Appendix B lists the air monitoring sites where SO_2 is measured.

Monitoring Requirements

Population Weighted Emissions Index Requirements

Title 40 CFR Part 58, Appendix D, Section 4.4.2 requires states to establish an SO_2 monitoring network based on the PWEI calculations for Texas CBSAs. These indices are calculated by multiplying the CBSA population by the emissions inventory (EI) data for counties within that CBSA. The calculated values are divided by one million to obtain the CBSA PWEI. The PWEI monitoring requirements include the following:

- one monitor in CBSAs with a PWEI equal to or greater than 5,000, but less than 100,000;
- two monitors in CBSAs with a PWEI equal to or greater than 100,000, but less than 1,000,000; and
- three monitors in CBSAs with a PWEI equal to or greater than 1,000,000.

The TCEQ used the most recent quality assured data available – the 2019 U.S. Census Bureau population estimates and 2017 National Emissions Inventory (NEI) data with 2019 TCEQ point-source EI data to calculate the PWEIs and to determine the minimum monitoring requirements for each CBSA. The TCEQ meets the PWEI requirements with six monitors, as shown in AMNP Appendix E.

Data Requirements Rule (DRR) Requirements

Title 40 CFR Part 51 Subpart BB (the DRR) required air agencies to characterize air quality around specified sources that emitted 2,000 tons per year (tpy) or more of SO_2 in the latest emissions inventory year (2014, at that time, for Texas). The TCEQ identified 24 sources for air quality characterization, including 13 sources identified for evaluation by monitoring. To meet the DRR requirement for characterization of air quality around those sources, 11 SO_2 source-oriented monitors, located near these 13 sources, were installed and operating by January 1, 2017. Details for the TCEQ's DRR SO_2 source evaluation, modeling, and monitoring recommendations are in the TCEQ 2017 AMNP.

One of the 11 sites, the TCEQ Rockdale John D. Harper SO_2 monitor (and entire site), was decommissioned on June 5, 2020, due to the sale/lease of the property. This monitor was eligible for decommission based on a preliminary design value less than 50% of the 2010 one-hour SO_2 NAAQS from data collected during the first three-year period of operation, as provided by 40 CFR Section 51.1203(c)(3). Additionally, the facility near this site that required DRR SO_2 air quality characterization was shut down

in 2017. The EPA approved of this site decommissioning in a letter dated May 29, 2020.

Title 40 CFR Section 51.1205(b) requires the TCEQ to submit an annual report for areas where modeling of actual SO_2 emissions served as the basis for designating such area as attainment. The report must document the annual SO_2 emissions of each applicable source, provide an assessment of the cause of any emissions increase from the previous year, and make a recommendation regarding further modeling needs. The DRR-required assessment and recommendation are provided in AMNP Appendix F. Where allowable SO_2 emissions served as the basis for designating the area as attainment, air agencies are not subject to ongoing data requirements, *see* 40 CFR Section 51.1205(c).

NCore Requirements

Title 40 CFR Part 58, Appendix D, Section 3 requires states to monitor SO_2 at NCore sites. The TCEQ meets this requirement with three high-sensitivity SO_2 monitors at the NCore sites listed in Table 1.

Previously Recommended Changes

The TCEQ Austin Northwest SO_2 monitor was temporarily shut down on February 18, 2020, due to the property owner's revocation of the TCEQ's use of the property for ambient air monitoring purposes. The air monitoring station was relocated one-tenth of a mile to Austin North Hills Drive on October 15, 2020, and the SO_2 monitor was activated on October 21, 2020. The site relocation was approved by the EPA in a letter dated April 10, 2020.

The TCEQ 2020 AMNP recommended decommissioning the Baytown Garth SO_2 monitor and changing two SO_2 monitor network designations. The EPA approved the requested changes in a letter dated October 22, 2020. The Baytown Garth SO_2 monitor was decommissioned on October 21, 2020, based on the most recent passing quality assurance checks. The Houston Croquet SO_2 monitor network designation was changed from SPM to SLAMS to meet area PWEI requirements, and the Corsicana Airport SO_2 monitor was changed from state-initiative to federal SPM on January 1, 2021.

Regulatory SO_2 Monitoring Network Changes

The TCEQ recommends decommissioning the San Antonio Gardner Road SO_2 monitor by December 31, 2021. This monitor is eligible for decommission based on the 2017-2019 design value of 22 ppb, which is 29% of the one-hour SO_2 NAAQS, as provided by 40 CFR Section 51.1203(c)(3). In addition, the SO_2 source requiring DRR SO_2 air quality characterization was shut down in late 2018. The San Antonio-New Braunfels CBSA PWEI required monitor, located at the Calaveras Lake air monitoring site, will remain operational.

The TCEQ recommends decommissioning the Fairfield Farm to Market (FM) 2570 Ward Ranch SO_2 monitor by December 31, 2021. This monitor is eligible for decommission based on the 2018-2020 design value of 17 ppb, which is 23% of the one-hour SO_2 NAAQS, as provided by 40 CFR Section 51.1203(c)(3). In addition, the SO_2 source requiring DRR SO_2 air quality characterization ceased operations in early 2018 and was recently demolished.

Lead

The TCEQ lead (Pb) network includes total suspended particulate (TSP) monitors sited in compliance with federal source-oriented SLAMS requirements, as discussed further in this section. The TCEQ Pb network is required to operate three TSP Pb monitors and meets this requirement. AMNP Appendix G lists the Pb network monitoring requirements and the total number of TSP Pb monitors. AMNP Appendix B lists the air monitoring sites where Pb is measured.

Monitoring Requirements

The TCEQ Pb network meets 40 CFR Part 58, Appendix D, Section 4.5 monitoring requirements. This section requires state agencies to conduct ambient air Pb monitoring near Pb sources that have been shown or are expected to contribute to a maximum ambient air Pb concentration in excess of the standard. Title 40 CFR Part 58, Appendix D, Section 4.5(a) requires a minimum of one source-oriented ambient air Pb monitoring site to measure maximum concentrations near each non-airport facility emitting 0.50 tpy or more of Pb annually, based on either the most recent NEI data or annual EI data submitted to meet state reporting requirements.

The TCEQ evaluated the 2017, 2018, and 2019 Pb point source EI data. All 2019 point source emissions are below the 0.50 tpy threshold. Table 2 includes information regarding Pb point source EI data and source-oriented monitoring.

Table 2: 2017-2019 Lead Point Source Emissions Inventory Data

Facility Name	County	2017 Pb Emissions (tpy)	2018 Pb Emissions (tpy)	2019 Pb Emissions (tpy)	TCEQ Comments
Lower Colorado River Authority	Fayette	0.6300	0.5793	0.1800	Pb waiver renewal approved on October 26, 2015, see Pb Waivers section below for detail
Conecsus, LLC	Kaufman	0.2617	0.2812	0.1804	Pb is currently monitored at the Terrell Temtex site

LLC – limited liability company
Pb – lead
TCEQ – Texas Commission on Environmental Quality
tpy – tons per year

Pb Waivers

Under 40 CFR Part 58, Appendix D, Section 4.5(a)(ii), the EPA Regional Administrator may waive the requirement in 40 CFR Part 58, Appendix D, 4.5(a) for monitoring near specific Pb sources with sufficient demonstration that the Pb source will not contribute to a maximum concentration in ambient air greater than 50% of the NAAQS based on historical monitoring data, modeling, or other approved means. All approved waivers must be renewed every five years as part of the network assessment required under 40 CFR Part 58.10(d).

The request to renew the Lower Colorado River Authority Fayette Power Plant Pb waiver in the 2015 TCEQ *Texas Five-Year Ambient Monitoring Network Assessment* was approved by the EPA Region 6 in a letter dated October 26, 2015. The TCEQ submitted a Pb modeling analysis for the Lower Colorado River Authority Fayette Power Plant in

the 2020 TCEQ *Texas Five-Year Ambient Monitoring Network Assessment.* The Pb modeling analysis demonstration, necessary to request a waiver from the source oriented Pb monitoring requirement, indicated the predicted maximum ground level concentration for a rolling three-month average continues to remain below 50% of the NAAQS. The TCEQ has not received a response from EPA Region 6 on the 2020 Pb waiver request.

Collocation Requirements

Title 40 CFR Part 58, Appendix A, Section 3.4.4 requires a primary quality assurance organization to select 15% of the Pb monitoring sites within the network for collocated quality control (QC) monitoring, with the first of these monitors measuring the highest Pb concentrations in the network. Based on the current network of primary Pb monitors, the TCEQ is required to maintain one collocated QC Pb monitor. The TCEQ operates collocated QC Pb monitors at Frisco Eubanks and Terrell Temtex. Terrell Temtex measured the highest 2019 network Pb concentrations.

Previously Recommended Changes

The TCEQ 2020 AMNP recommended decommissioning the Pb monitors at El Paso UTEP and Ojo De Agua due to a lack of area point sources and near-nondetectable Pb monitoring data. The EPA approved the requests in a letter dated October 22, 2020. The El Paso UTEP and Ojo De Agua Pb monitors were decommissioned on October 31, 2020, and the air monitoring sites will continue monitoring for other pollutants, as listed in AMNP Appendix B.

Regulatory Pb Monitoring Network Changes

The TCEQ evaluated the current Pb monitoring network and determined the existing Pb network meets all federal monitoring requirements; therefore, no changes are recommended.

Ozone

The TCEQ ozone (O_3) network is designed to meet SLAMS, PAMS, and NCore monitoring requirements, as discussed further in this section. The TCEQ O_3 monitoring network is required to operate a total of 27 O_3 monitors and exceeds this requirement with 72 O_3 monitors. AMNP Appendix H lists the O_3 requirements and monitors in each MSA in the state. AMNP Appendix B lists the air monitoring sites where O_3 is measured.

Monitoring Requirements

SLAMS Requirements

Title 40 CFR Part 58, Appendix D, Section 4.1 requires O_3 monitoring in each MSA with a population of 350,000 or more persons. Monitoring is also required in MSAs with lower populations if the design value for that MSA is equal to or greater than 85% of the NAAQS. Monitoring requirements are outlined in Table 3. According to 2019 U.S. Census Bureau population estimates and 2017-2019 eight-hour O_3 design values, the TCEQ must operate a minimum of 24 O_3 monitors to meet SLAMS network requirements. AMNP Appendix B lists the monitors in each MSA.

Table 3: Ozone Monitoring Requirements

MSA Population	Monitors required for MSAs with most recent 3-year design value concentrations ≥85% of any O_3 NAAQS[1]	Monitors required for MSAs with most recent 3-year design value concentrations <85% of any O_3 NAAQS[2, 3]
>10,000,000	4	2
4,000,000 to 10,000,000	3	1
350,000 to <4,000,000	2	1
50,000 to <350,000	1	0

[1]The ozone (O_3) National Ambient Air Quality Standards (NAAQS) levels are defined in 40 CFR Part 50.
[2]These minimum monitoring requirements apply in the absence of a design value.
[3]MSA must contain an urbanized area of 50,000 or more population.
≥ - greater than or equal to
< - less than
> - greater than
% - percent

NCore and PAMS Requirements

In addition to SLAMS O_3 requirements, 40 CFR Part 58, Appendix D, Sections 3 and 5 require O_3 monitoring at NCore sites to meet NCore design criteria, and at NCore sites in CBSAs with a population of 1,000,000 or more persons to meet PAMS requirements. The TCEQ meets combined NCore and PAMS requirements with O_3 monitors at the three NCore sites listed in Table 1.

Previously Recommended Changes

The TCEQ 2019 AMNP recommended deploying O_3 SPM monitors to a new Houston West End site, named Houston Harvard Street, and to the Ojo De Agua air monitoring site in El Paso, Texas. The EPA approved the requests in a letter dated November 4, 2019, and the monitors were activated on January 19, 2021 and March 24, 2021, respectively.

The TCEQ Austin Northwest O_3 monitor was temporarily shut down on February 18, 2020, due to the property owner's revocation of the TCEQ's use of the property for ambient air monitoring purposes. The air monitoring station was relocated one-tenth of a mile to Austin North Hills Drive on October 15, 2020, and the O_3 monitor was activated on October 22, 2020. The site relocation was approved by the EPA in a letter dated April 10, 2020.

Regulatory O_3 Monitoring Network Changes

The TCEQ evaluated the current O_3 monitoring network and determined the existing O_3 network meets all federal monitoring requirements; therefore, no changes are recommended.

Carbon Monoxide

The TCEQ carbon monoxide (CO) network includes ambient CO and high-sensitivity CO monitoring to meet federal monitoring requirements, as discussed in this section. The TCEQ CO network is designed to meet NCore and near-road monitoring requirements. The agency is required to operate seven total CO monitors and exceeds the requirements with 12 monitors: seven ambient CO monitors and five high-sensitivity CO monitors. AMNP Appendix I lists the required and current CO monitors in each CBSA. AMNP Appendix B lists the air monitoring sites where CO is measured.

Monitoring Requirements

NCore Requirements

Title 40 CFR Part 58, Appendix D, Section 3 requires CO monitoring at NCore sites. The EPA's *Technical Assistance Document (TAD) for Precursor Gas Measurements in the NCore Multi-Pollutant Monitoring Network – Version 4* (September 2005) recommends high-sensitivity CO monitors at the NCore sites. The TCEQ meets this technical recommendation with high-sensitivity CO monitors at the three NCore sites listed in Table 1.

Near-Road Requirements

Title 40 CFR Part 58, Appendix D, Section 4.2 requires collocating one CO monitor with one required near-road NO_2 monitor in CBSAs with populations of 1,000,000 or more persons. The TCEQ meets this requirement with CO monitors at the following near-road sites.

- DFW CBSA: Fort Worth California Parkway North
- Houston CBSA: Houston North Loop
- San Antonio CBSA: San Antonio Interstate 35
- Austin CBSA: Austin North Interstate 35

Previously Recommended Changes

The TCEQ 2019 AMNP recommended replacing the San Antonio Interstate 35 CO monitor with a high-sensitivity CO monitor. The EPA approved this request in a letter dated November 4, 2019. The existing San Antonio Interstate 35 CO monitor will be replaced with a high-sensitivity CO monitor Summer 2021.

Regulatory CO Monitoring Network Changes

The TCEQ evaluated the current CO monitoring network and determined the existing CO network meets all federal monitoring requirements; therefore, no changes are recommended.

Particulate Matter of 10 Micrometers or Less

The TCEQ particulate matter of 10 micrometers or less in diameter (PM_{10}) network is designed to meet SLAMS monitoring requirements based on MSA populations, as discussed further in this section. The TCEQ is required to operate between 11 and 32 PM_{10} monitors and exceeds the minimum requirements with 20 monitors. AMNP Appendix J lists the required and current PM_{10} monitors in each MSA. AMNP Appendix B lists the air monitoring sites where PM_{10} is measured.

Monitoring Requirements

The TCEQ PM_{10} network is designed to meet the area requirements of 40 CFR Part 58, Appendix D, Section 4.6, which specifies the number of PM_{10} monitors required in MSAs based on population and available measured concentrations. Monitoring requirements are listed in Table 4. Compliance with the PM_{10} standard is based on the number of measured exceedances of the 150 $\mu g/m^3$ standard averaged over three years. The evaluation of PM_{10} monitoring requirements was completed using the most

recent quality assured data - 2019 U.S. Census Bureau population estimates and 2017-2019 PM_{10} data. The evaluation and associated maximum 2017-2019 concentrations for each MSA are listed in AMNP Appendix J, Table 1.

Table 4: Particulate Matter of 10 Micrometers or Less Minimum Monitoring Requirements

MSA Population	PM_{10} monitors required for MSAs with high concentration[1]	PM_{10} monitors required for MSAs with medium concentration[2]	PM_{10} monitors required for MSAs with low concentration[3]
>1,000,000	6-10	4-8	2-4
500,000 to 1,000,000	4-8	2-4	1-2
250,000 to 500,000	3-4	1-2	0-1
100,000 to 250,000	1-2	0-1	0

[1]High Concentration areas are those for which ambient PM_{10} data show ambient concentrations exceeding the PM_{10} National Ambient Air Quality Standards (NAAQS) by 20 percent or more.
[2]Medium Concentration areas are those for which ambient PM_{10} data show ambient concentrations exceeding 80 percent of the PM_{10} NAAQS.
[3]Low Concentration areas are those for which ambient PM_{10} data show ambient concentrations less than 80 percent of the PM_{10} NAAQS.
PM_{10} – particulate matter of 10 micrometers or less in diameter
> – greater than

Collocation Requirements

Title 40 CFR Part 58, Appendix A, Section 3.3.4 requires a primary quality assurance organization to select 15% of the PM_{10} monitoring sites within the network for collocated QC sampling. At least 50% of the selected sites should have an annual mean particulate matter concentration among the highest in the network. AMNP Appendix J, Table 2 lists the maximum concentration measurements during the three-year period from 2017-2019 and includes the 2017, 2018, and 2019 annual mean concentrations for each PM_{10} site. The TCEQ evaluates the PM_{10} concentration data annually to ensure the PM_{10} collocated QC monitors continue to meet 40 CFR Part 58, Appendix A, Section 3.3.4.2. Based on the current network of PM_{10} monitors, the TCEQ is required to operate three PM_{10} collocated QC monitors and exceeds this requirement with four monitors.

The PM_{10} annual measured mean concentration data were evaluated from 2017-2019 to determine network collocated QC sites, shown in AMNP Appendix J, Table 2. The PM_{10} measurement concentrations at Clinton and Socorro Hueco had 2019 annual mean concentrations among the highest in the network and continue to satisfy collocation QC requirements. AMNP Appendix J, Table 1 lists the current collocated QC monitors.

Previously Recommended Changes

The TCEQ 2019 AMNP recommended adding a PM_{10} continuous federal equivalent method (FEM) monitor to Houston North Wayside, approved by the EPA in a letter dated November 4, 2019. This monitor is expected to be operational in Summer 2021. The TCEQ recommended deploying a PM_{10} federal reference method (FRM) monitor to a new air monitoring site, Dallas Bexar Street, in the Dallas County southern sector industrial corridor to provide improved spatial coverage and air quality information. The new Dallas Bexar Street air monitoring site and PM_{10} monitor, approved by the EPA in a letter dated September 2, 2020, are expected be operational Summer 2021.

Due to industrial and population growth in the Gregory-Portland area north of Corpus Christi, the TCEQ continues to evaluate the potential placement of a particulate matter monitor in San Patricio County, as previously recommended.

The TCEQ 2020 AMNP recommended decommissioning the Houston Westhollow and the Edinburg East Freddy Gonzales Drive PM_{10} FRM monitors. The EPA approved the requests in a letter dated October 22, 2020, and both monitors were decommissioned on October 31, 2020.

Regulatory PM_{10} Monitoring Network Changes

The TCEQ evaluated the current PM_{10} monitoring network and determined the existing PM_{10} network meets all federal monitoring requirements; therefore, no changes are recommended.

Particulate Matter of 2.5 Micrometers or Less

The TCEQ $PM_{2.5}$ monitoring network includes a combination of non-continuous FRM, continuous FEM, and non-NAAQS comparable monitors designed to meet area, regional background, regional transport, NCore, and near-road network requirements, as discussed further in this section. The TCEQ is required to operate 28 FRM, FEM, coarse particulate matter ($PM_{10-2.5}$), or speciated $PM_{2.5}$ monitors and exceeds the requirements with 70 monitors. An analysis of $PM_{2.5}$ monitoring and siting requirements using the most recent 2019 U.S. Census Bureau population estimates and 2019 $PM_{2.5}$ design values is provided in AMNP Appendix K. AMNP Appendix B lists the air monitoring sites where $PM_{2.5}$ is measured.

Monitoring Requirements

General and Continuous Requirements

Title 40 CFR Part 58, Appendix D, Section 4.7 requires $PM_{2.5}$ monitoring in MSAs with populations of 500,000 or more persons and in MSAs with lower populations if measured $PM_{2.5}$ design values for an MSA equal or exceed 85% of the NAAQS. Monitoring requirements are outlined in Table 5. Under 40 CFR Part 58, Appendix D, Section 4.7.2, the TCEQ must operate continuous $PM_{2.5}$ monitors equal to at least one-half the required number of SLAMS-required sites. At least one of these required continuous monitors in each MSA must be collocated with one of the required FRM/FEM monitors unless the FEM monitor is itself a continuous monitor. Additionally, 40 CFR Part 58, Appendix D, Section 4.7.3 requires each state to install and operate at least one $PM_{2.5}$ site to monitor for regional background and at least one $PM_{2.5}$ site to monitor regional transport. AMNP Appendix B lists monitors meeting the regional background and transport requirements.

Table 5: Particulate Matter of 2.5 Micrometers or Less Minimum Monitoring Requirements

MSA population	$PM_{2.5}$ monitors required for MSAs with most recent 3-year design value ≥85% of any $PM_{2.5}$ NAAQS	$PM_{2.5}$ monitors required for MSAs with most recent 3-year design value <85% of any $PM_{2.5}$ NAAQS
>1,000,000	3	2
500,000 to 1,000,000	2	1
50,000 to <500,000	1	0

< – less than
> – greater than
≥ – greater than or equal to
% - percent
MSA – metropolitan statistical area
NAAQS – National Ambient Air Quality Standards
$PM_{2.5}$ – particulate matter of 2.5 micrometers or less in diameter

NCore Monitoring Requirements

Title 40 CFR Part 58, Appendix D, Section 3 requires $PM_{2.5}$ FRM mass, $PM_{2.5}$ FEM mass continuous, speciated $PM_{2.5}$, and $PM_{10-2.5}$ mass monitoring at all NCore sites. The TCEQ meets this requirement with $PM_{2.5}$ monitors at the three NCore sites listed in Table 1.

Near-Road $PM_{2.5}$ Requirements

Title 40 CFR Part 58, Appendix D, Section 4.7.1(b)(2) requires collocating one FRM or FEM $PM_{2.5}$ monitor with one required near-road NO_2 monitor in CBSAs with populations of 1,000,000 or more persons. The TCEQ meets this requirement with $PM_{2.5}$ monitors at the near-road sites listed below.

- DFW CBSA: Fort Worth California Parkway North
- Houston CBSA: Houston North Loop
- San Antonio CBSA: San Antonio Interstate 35
- Austin CBSA: Austin North Interstate 35

Collocation Requirements

Title 40 CFR Part 58, Appendix A, Section 3.2.3 requires a primary quality assurance organization to select 15% of the $PM_{2.5}$ primary monitors of each method designation (FRM or FEM) for collocated QC sampling. Based on the current network of 11 $PM_{2.5}$ FRM monitors, the TCEQ is required to operate two collocated $PM_{2.5}$ FRM (FRM/FRM collocation) monitors and meets this requirement with two monitors. For each primary monitor designated as an FEM, 50% of the monitors designated for collocation shall be collocated with an FRM (FRM/FEM) and 50% shall be collocated with a monitor having the same method designation as the FEM primary monitor (FEM/FEM). Fifty percent of the collocated QC monitors must be deployed at sites with annual average or daily concentrations estimated to be within plus or minus 20% of either the annual or 24-hour standard.

Based on the current $PM_{2.5}$ network of 34 FEM monitors, the TCEQ is required to operate five collocated QC monitors pursuant to 40 CFR Part 58, Appendix A, Section 3.2.3.2(b). The TCEQ meets this requirement with two same method collocated $PM_{2.5}$ (FEM/FEM collocation) monitors and three different method collocated $PM_{2.5}$ (FEM/FRM collocation) monitors with $PM_{2.5}$ monitors at the five air monitoring sites listed in Table

6. Information regarding the $PM_{2.5}$ collocation designations is listed in AMNP Appendix B.

Table 6: Particulate Matter of 2.5 Micrometers or Less FEM Quality Control Collocation Monitor Types and Site Names

Primary Monitor Type and Method Code	QC Collocated Monitor Type and Method Code	Site Name
$PM_{2.5}$ FEM, method 209	$PM_{2.5}$ FRM, method 141	Austin Webberville Road
$PM_{2.5}$ FEM, method 209	$PM_{2.5}$ FEM, method 209	Corpus Christi Huisache
$PM_{2.5}$ FEM, method 209	$PM_{2.5}$ FRM, method 141	San Antonio Northwest
$PM_{2.5}$ FEM, method 209	$PM_{2.5}$ FEM, method 209	Fort Worth California Parkway North
$PM_{2.5}$ FEM, method 209	$PM_{2.5}$ FRM, method 141	Houston Aldine

FEM – federal equivalent method
FRM – federal reference method
$PM_{2.5}$ – particulate matter of 2.5 micrometers or less
QC – quality control

Previously Recommended Changes

The TCEQ 2019 AMNP recommended several $PM_{2.5}$ changes that were approved by the EPA in a letter dated November 4, 2019. Reallocation of the discontinued Houston Aldine $PM_{2.5}$ speciation monitor to the Clinton Drive air monitoring site was activated January 1, 2021.

The TCEQ Austin Northwest $PM_{2.5}$ monitor was temporarily shut down on February 18, 2020, due to the property owner's revocation of the TCEQ's use of the property for ambient air monitoring purposes. The air monitoring station was relocated one-tenth of a mile to Austin North Hills Drive on October 15, 2020, and the $PM_{2.5}$ non-NAAQS comparable monitor was upgraded to a FEM continuous monitor on that date. The TCEQ recommended deploying a $PM_{2.5}$ non-NAAQS comparable monitor to a new air monitoring site, Dallas Bexar Street, in the Dallas County southern sector industrial corridor to provide improved spatial coverage and air quality information. The new Dallas Bexar Street air monitoring site and $PM_{2.5}$ monitor, approved by the EPA in a letter dated September 2, 2020, are expected to be operational Summer 2021. The TCEQ recommended deploying a $PM_{2.5}$ continuous monitor to Houston North Wayside, which was approved by the EPA in a letter dated November 4, 2019. This monitor was activated May 4, 2021.

The TCEQ 2020 AMNP recommended several $PM_{2.5}$ changes approved by the EPA in a letter dated October 20, 2020. The Clinton and Houston Aldine collocated QC $PM_{2.5}$ FRM monitor's sampling frequency were reduced to 1-in-12 days, effective January 5, 2021, and January 1, 2021, respectively. The TCEQ aligned the Dona Park $PM_{2.5}$ speciation network affiliation from Chemical Speciation Network for Supplemental Speciation Stations to SPM, reflecting current data usage, effective January 1, 2021.

The TCEQ continues to replace aging $PM_{2.5}$ FRM non-continuous monitors and non-NAAQS comparable $PM_{2.5}$ continuous monitors ($PM_{2.5}$ TEOMs) with $PM_{2.5}$ FEM continuous monitors, as indicated and approved in previous AMNPs. The status of approved changes is listed in Table 7.

Table 7: Particulate Matter of 2.5 Micrometers or Less Summary of Approved Changes

Site Name	Monitor(s) Replaced	New Monitor	Action	Status
Austin North Hills Drive	$PM_{2.5}$ TEOM	$PM_{2.5}$ FEM continuous	Relocation and method code change	Completed October 15, 2020
Houston Westhollow	PM_{10}	$PM_{2.5}$ FEM continuous	New $PM_{2.5}$ monitor	Completed January 19, 2021
Dallas Bexar Street	None – new monitor	$PM_{2.5}$ TEOM	Deploy	Expected Summer 2021
Houston North Wayside	None – new monitor	$PM_{2.5}$ FEM continuous	Deploy	Completed May 4, 2021
Ascarate Park Southeast	$PM_{2.5}$ TEOM	$PM_{2.5}$ FEM continuous	Method code change	Pending
Clinton	$PM_{2.5}$ speciation	Deploy	Deploy	Completed January 1, 2021
Clinton	$PM_{2.5}$ TEOM	$PM_{2.5}$ FEM continuous	Method code change	Pending
Conroe Relocated	$PM_{2.5}$ TEOM	$PM_{2.5}$ FEM continuous	Method code change	Pending
Convention Center	$PM_{2.5}$ FRM	$PM_{2.5}$ FEM continuous	Method code change	Pending
Corsicana Airport	$PM_{2.5}$ TEOM	$PM_{2.5}$ FEM continuous	Method code change	Pending
Dona Park	$PM_{2.5}$ TEOM	$PM_{2.5}$ FEM continuous	Method code change	Pending
Edinburg East Freddy Gonzalez	$PM_{2.5}$ FRM	$PM_{2.5}$ FEM continuous	Method code change	Pending
El Paso UTEP	$PM_{2.5}$ TEOM	$PM_{2.5}$ FEM continuous	Method code change	Pending
Houston North Loop	$PM_{2.5}$ FRM	$PM_{2.5}$ FEM continuous	Method code change	Completed May 12, 2021
Karnack	$PM_{2.5}$ FRM and $PM_{2.5}$ TEOM pair	$PM_{2.5}$ FEM continuous	Method code change	Completed May 24, 2021
Kaufman	$PM_{2.5}$ TEOM	$PM_{2.5}$ FEM continuous	Method code change	Pending

Site Name	Monitor(s) Replaced	New Monitor	Action	Status
Midlothian OFW	$PM_{2.5}$ TEOM	$PM_{2.5}$ FEM continuous	Method code change	Pending
Seabrook Friendship Park	$PM_{2.5}$ TEOM	$PM_{2.5}$ FEM continuous	Method code change	Pending
Socorro Hueco	$PM_{2.5}$ TEOM	$PM_{2.5}$ FEM continuous	Method code change	Pending

FEM – federal equivalent method
FRM – federal reference method
OFW – Old Fort Worth
$PM_{2.5}$ – particulate matter of 2.5 micrometers or less in diameter
TEOM – tapered element oscillating microbalance
UTEP – University of Texas at El Paso

Regulatory $PM_{2.5}$ Monitoring Network Changes

The TCEQ continues to replace aging $PM_{2.5}$ non-NAAQS comparable equipment with new FEM monitors to provide continuous NAAQS comparable data to the public that is suitable for Air Quality Index reporting and the EPA's AirNow webpage. The increase in NAAQS equivalent monitors optimizes the monitoring resources in affected MSAs. The TCEQ recommends deploying QC collocated FEM monitors at the three sites described in Table 8 to meet the 15% collocation requirements as primary FEM monitor counts reach thresholds. The TCEQ considered $PM_{2.5}$ network monitors' annual mean, 24-hour concentrations, and area spatial coverage with these recommendations.

Table 8: Particulate Matter of 2.5 Micrometers or Less Recommendations

Site Name	Current Primary Monitor	Recommendation	Recommended Primary Monitor Method Code	Recommended QC Collocated Method Code	Estimated Completion Date
Port Arthur Memorial School	$PM_{2.5}$FEM	Add same method $PM_{2.5}$ FEM continuous QC collocated monitor	209	209	August 31, 2021
El Paso UTEP	$PM_{2.5}$ FRM	Deploy $PM_{2.5}$ FEM and change existing $PM_{2.5}$ FRM to QC collocated	209	141	December 31, 2021
Mission	$PM_{2.5}$ FEM	Add same method $PM_{2.5}$ FEM continuous QC collocated monitor	209	209	December 31, 2022

FEM – federal equivalent method
FRM – federal reference method
$PM_{2.5}$ – particulate matter of 2.5 micrometers or less in diameter
QC – quality control
UTEP – University of Texas at El Paso

Volatile Organic Compounds

The TCEQ volatile organic compound (VOC) network is designed to meet PAMS requirements, as discussed further in this section. The TCEQ is required to operate two VOC monitors and exceeds this requirement with 12 monitors. For purposes of meeting federal PAMS requirements, the TCEQ VOC network includes eight automated gas chromatograph (autoGC) continuous monitors and four non-continuous canister monitors. AMNP Appendix L, Table 1 lists the required and current VOC monitors in each Texas CBSA. AMNP Appendix B lists the air monitoring sites where VOCs are measured.

Monitoring Requirements

Title 40 CFR Part 58, Appendix D, Section 5 requires state agencies to collect speciated VOC hourly- averaged measurements at NCore sites located in CBSAs with a population of 1,000,000 or more persons as part of the PAMS network requirements. The TCEQ exceeds PAMS required VOC monitoring requirements with autoGCs at the three NCore sites listed in Table 1 and at five other sites as listed in AMNP Appendix B.

Previously Recommended Changes

The TCEQ 2020 AMNP recommended no changes to the VOC monitoring network.

Regulatory VOC Monitoring Network Changes

The TCEQ evaluated the current VOC monitoring network and determined the existing VOC network meets all federal monitoring requirements; therefore, no changes are recommended.

Carbonyls

The TCEQ carbonyl monitoring network is designed to meet PAMS requirements, as discussed further in this section. The TCEQ is required to operate two carbonyl monitors and exceeds this requirement with four monitors. AMNP Appendix L, Table 2 lists the required and current carbonyl monitors in each Texas CBSA. AMNP Appendix B lists the air monitoring sites where carbonyls are measured.

Monitoring Requirements

Title 40 CFR Part 58, Appendix D, Section 5 requires state agencies to collect PAMS carbonyl measurements with three eight-hour averaged samples taken every third day at each NCore site located in a CBSA with a population of 1,000,000 or more persons. The TCEQ exceeds carbonyl monitoring requirements with carbonyl monitors at the two required PAMS sites listed in Table 1 and at two other sites listed in AMNP Appendix B.

Previously Recommended Changes

The TCEQ 2020 AMNP recommended no changes to the carbonyl monitoring network.

Regulatory Carbonyl Monitoring Network Changes

The TCEQ evaluated the current carbonyl monitoring network and determined the existing carbonyl network meets all federal monitoring requirements; therefore, no changes are recommended.

Meteorology

The TCEQ meteorology monitoring network includes surface meteorology parameters (solar radiation, wind speed, wind direction, and temperature), upper air measurements (mixing height), and other meteorological parameters, as discussed further in this section. Surface meteorology is measured at most air monitoring stations and additional meteorology parameters are required at PAMS monitoring stations. All meteorology monitors in the TCEQ network are included in AMNP Appendix B.

Monitoring Requirements

Title 40 CFR Part 58, Appendix D, Section 5 requires state agencies to collect PAMS surface and upper air meteorology measurements at all NCore sites in CBSAs with a population of 1,000,000 or more persons. Meteorological PAMS measurements at the required PAMS sites (or alternatively approved waiver locations) include measurements of wind speed, wind direction, outdoor temperature, atmospheric pressure, relative humidity, precipitation, hourly averaged mixing-height, solar radiation, and ultraviolet radiation. The TCEQ meets these meteorological monitoring requirements with measurements collected at the Dallas Hinton, Houston Deer Park #2, and La Porte Airport sites.

Previously Recommended Changes

The TCEQ 2019 AMNP recommended several meteorology monitoring changes that were approved by the EPA in a letter dated November 4, 2019. The TCEQ Austin Northwest wind speed, wind direction, and outdoor temperature monitors were temporarily shut down on February 18, 2020, due to the property owner's revocation of the TCEQ's use of the property for ambient air monitoring purposes. The air monitoring station and the meteorological monitors were relocated one-tenth of a mile to Austin North Hills Drive on October 15, 2020. The site relocation was approved by the EPA in a letter dated April 10, 2020. The TCEQ recommended deploying wind speed, wind direction, and outdoor temperature monitors to a new air monitoring site, Dallas Bexar Street, in the Dallas County southern sector industrial corridor. The new Dallas Bexar Street air monitoring site and wind speed, wind direction, and outdoor temperature monitors were approved by the EPA in a letter dated September 2, 2020, and are expected Summer 2021. The TCEQ San Antonio Northwest ceilometer is expected to be operational Fall 2021.

The TCEQ 2020 AMNP recommended deploying wind speed, wind direction, and outdoor temperature monitors to a second near-road monitoring station in the San Antonio MSA to meet the near-road requirements. The recommendation was approved by the EPA in a letter dated April 10, 2020. The TCEQ continues to explore possible new sites adjacent to the highest possible ranked road segment and expects to deploy the site and meteorological monitors before December 31, 2021.

Regulatory Meteorology Monitoring Network Changes

The TCEQ recommends decommissioning the San Antonio Gardner Road and the Fairfield FM 2570 Ward Ranch wind speed, wind direction, and outdoor temperature monitors by December 31, 2021.

Additional Monitoring Considerations

The TCEQ reviews its ambient air quality monitoring network annually and created this AMNP to demonstrate how Texas is meeting or will meet federal air monitoring requirements specified in 40 CFR Part 58 and its appendices. Additional ambient air monitoring requested during previous AMNP public inspection and comment periods continue to be evaluated for potential inclusion in the TCEQ ambient air monitoring network. Any future implementation of these monitoring considerations may be included as part of the TCEQ federal air monitoring network or as state-initiative special studies.

The TCEQ is considering the following proposed air monitors based on previously received AMNP comments. These monitoring proposals are under consideration and are subject to change. Details regarding the potential monitors under consideration are included in this plan and summarized in Appendix M to solicit further public comment.

- Deployment of a $PM_{2.5}$ FEM continuous monitor to the existing Houston Bayland Park site.
- Establishment of a new air monitoring site in the Houston Fifth Ward to measure VOCs, $PM_{2.5}$ continuous, and meteorological parameters.
- Establishment of a new air monitoring site in the Houston Pleasantville neighborhood area to measure $PM_{2.5}$ continuous and meteorological parameters.
- Establishment of a new air monitoring site in the Gregory-Portland area to measure VOCs, $PM_{2.5}$ continuous, and meteorological parameters; the recommendation to measure PM_{10} is no longer under consideration.

Conclusion

As discussed in this report, the TCEQ has evaluated all federal requirements for ambient air quality monitoring and reviewed the TCEQ ambient air quality monitoring network. After consideration of the federal regulations, 2019 U.S. Census Bureau population data, and 2019 design values, the TCEQ has determined that it will meet or exceed all monitoring requirements with the above-mentioned recommendations for the next calendar year.

Appendix A

2021 Summary of Proposed Network Changes

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix A: 2021 Summary of Proposed Network Changes

Air Monitoring Site Name	Proposed Action	Parameter(s)	Estimated Completion Date
Port Arthur Memorial School	Deploy QC collocated monitor	$PM_{2.5}$ FEM continuous	August 31, 2021
El Paso UTEP	Deploy $PM_{2.5}$ FEM primary monitor and change existing $PM_{2.5}$ FRM network designation to QC collocated, sample every 12th day	$PM_{2.5}$ FRM and FEM continuous	December 31, 2021
Mission	Deploy QC collocated monitor	$PM_{2.5}$ FEM continuous	December 31, 2022
Fairfield FM 2570 Ward Ranch	Decommission monitor	SO_2	December 31, 2021
San Antonio Gardner Road	Decommission monitor	SO_2	December 31, 2021
Fairfield FM 2570 Ward Ranch	Decommission monitor	wind speed, wind direction, and outdoor temperature	December 31, 2021
San Antonio Gardner Road	Decommission monitor	wind speed, wind direction, and outdoor temperature	December 31, 2021

FEM – federal equivalent method
FRM – federal reference method
FM - farm to market
$PM_{2.5}$ – particulate matter of 2.5 micrometers or less in diameter
QC – quality control
SO_2 – sulfur dioxide
UTEP – University of Texas at El Paso

Appendix B

Ambient Air Monitoring Network Site List

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix B: Ambient Air Monitoring Network Site List

Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Amarillo	483751025	Amarillo 24th Avenue	4205 NE 24th Avenue, Amarillo	SO2	SLAMS	Pulsed Fluorescence	Continuous	Suburban	Population Exposure	Neighborhood	35.23674	-101.78741
Amarillo	483751025	Amarillo 24th Avenue	4205 NE 24th Avenue, Amarillo	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	35.23674	-101.78741
Amarillo	483751025	Amarillo 24th Avenue	4205 NE 24th Avenue, Amarillo	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	35.23674	-101.78741
Amarillo	483750320	Amarillo A&M	6500 Amarillo Blvd West, Amarillo	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Urban and Center City	Population Exposure	Urban Scale	35.20159	-101.90927
Amarillo	483751077	Amarillo Xcel El Rancho	Folsom Rd. & El Rancho Rd., Amarillo	SO2	SLAMS	Pulsed Fluorescence	Continuous	Rural	Source Oriented	Neighborhood	35.31650	-101.74180
Amarillo	483751077	Amarillo Xcel El Rancho	Folsom Rd. & El Rancho Rd., Amarillo	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	35.31650	-101.74180
Amarillo	483751077	Amarillo Xcel El Rancho	Folsom Rd. & El Rancho Rd., Amarillo	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	35.31650	-101.74180
Austin-Round Rock-Georgetown	484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	O3	SLAMS	UV Photometric	Continuous	Rural	Population Exposure	Neighborhood	30.48316	-97.87508
Austin-Round Rock-Georgetown	484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Rural	Population Exposure	Neighborhood	30.48316	-97.87508
Austin-Round Rock-Georgetown	484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	Solar Radiation	SPM	Photovoltaic	Continuous	Rural	Population Exposure	Urban Scale	30.48316	-97.87508
Austin-Round Rock-Georgetown	484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	Population Exposure	Urban Scale	30.48316	-97.87508
Austin-Round Rock-Georgetown	484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	Population Exposure	Urban Scale	30.48316	-97.87508
Austin-Round Rock-Georgetown	484530014	Austin North Hills Drive	3824 North Hills Dr, Austin	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure	Urban Scale	30.35494	-97.76180
Austin-Round Rock-Georgetown	484530014	Austin North Hills Drive	3824 North Hills Dr, Austin	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	30.35494	-97.76180
Austin-Round Rock-Georgetown	484530014	Austin North Hills Drive	3824 North Hills Dr, Austin	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Suburban	Population Exposure	Neighborhood	30.35494	-97.76180
Austin-Round Rock-Georgetown	484530014	Austin North Hills Drive	3824 North Hills Dr, Austin	SO2	SLAMS	Pulsed Fluorescence	Continuous	Suburban	Population Exposure	Urban Scale	30.35494	-97.76180
Austin-Round Rock-Georgetown	484530014	Austin North Hills Drive	3824 North Hills Dr, Austin	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	30.35494	-97.76180

Appendix B: Ambient Air Monitoring Network Site List

Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Austin-Round Rock-Georgetown	484530014	Austin North Hills Drive	3824 North Hills Dr, Austin	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	30.35494	-97.76180
Austin-Round Rock-Georgetown	484531068	Austin North Interstate 35	8912 N IH 35 service road southbound, Austin	CO	Near Road, SLAMS	Gas Filter Correlation	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	30.35386	-97.69166
Austin-Round Rock-Georgetown	484531068	Austin North Interstate 35	8912 N IH 35 service road southbound, Austin	NO/NO2/NOx	Near Road, SLAMS	Chemilumine-scence	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	30.35386	-97.69166
Austin-Round Rock-Georgetown	484531068	Austin North Interstate 35	8912 N IH 35 service road southbound, Austin	PM2.5 (Beta)	Near Road, SLAMS	Beta Attenuation	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	30.35386	-97.69166
Austin-Round Rock-Georgetown	484531068	Austin North Interstate 35	8912 N IH 35 service road southbound, Austin	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	30.35386	-97.69166
Austin-Round Rock-Georgetown	484531068	Austin North Interstate 35	8912 N IH 35 service road southbound, Austin	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	30.35386	-97.69166
Austin-Round Rock-Georgetown	484530021	Austin Webberville Rd	2600B Webberville Rd, Austin	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Urban and Center City	Population Exposure	Neighborhood	30.26320	-97.71289
Austin-Round Rock-Georgetown	484530021	Austin Webberville Rd	2600B Webberville Rd, Austin	PM2.5 (Beta)	SLAMS	Beta Attenuation	Continuous	Urban and Center City	Population Exposure	Neighborhood	30.26320	-97.71289
Austin-Round Rock-Georgetown	484530021	Austin Webberville Rd	2600B Webberville Rd, Austin	PM2.5 (FRM)	QA Collocated, SLAMS	Sequential FRM Gravimetric	24 Hours; 1/12 Days	Urban and Center City	Population Exposure	Neighborhood	30.26320	-97.71289
Austin-Round Rock-Georgetown	484530021	Austin Webberville Rd	2600B Webberville Rd, Austin	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Population Exposure	Neighborhood	30.26320	-97.71289
Austin-Round Rock-Georgetown	484530021	Austin Webberville Rd	2600B Webberville Rd, Austin	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Population Exposure	Neighborhood	30.26320	-97.71289
Beaumont-Port Arthur	482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure	Neighborhood	30.03642	-94.07106
Beaumont-Port Arthur	482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	Max Precursor Emissions Impact; Population Exposure	Neighborhood	30.03642	-94.07106
Beaumont-Port Arthur	482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	SO2	SLAMS	Pulsed Fluorescence	Continuous	Suburban	Population Exposure	Neighborhood	30.03642	-94.07106

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Beaumont-Port Arthur	482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	30.03642	-94.07106
Beaumont-Port Arthur	482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	Speciated VOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Suburban	Max Precursor Emissions Impact; Population Exposure	Neighborhood	30.03642	-94.07106
Beaumont-Port Arthur	482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	30.03642	-94.07106
Beaumont-Port Arthur	482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	TNMOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Suburban	Max Precursor Emissions Impact; Population Exposure	Neighborhood	30.03642	-94.07106
Beaumont-Port Arthur	482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	30.03642	-94.07106
Beaumont-Port Arthur	482450022	Hamshire	12552 Second St, Not In A City	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	General, Background; Regional Transport	Neighborhood, Urban Scale	29.86396	-94.31780
Beaumont-Port Arthur	482450022	Hamshire	12552 Second St, Not In A City	O3	SLAMS	UV Photometric	Continuous	Suburban	General, Background; Regional Transport	Urban Scale	29.86396	-94.31780
Beaumont-Port Arthur	482450022	Hamshire	12552 Second St, Not In A City	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Suburban	Population Exposure	Neighborhood	29.86396	-94.31780
Beaumont-Port Arthur	482450022	Hamshire	12552 Second St, Not In A City	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	General, Background	Neighborhood	29.86396	-94.31780
Beaumont-Port Arthur	482450022	Hamshire	12552 Second St, Not In A City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	29.86396	-94.31780
Beaumont-Port Arthur	482450022	Hamshire	12552 Second St, Not In A City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	29.86396	-94.31780
Beaumont-Port Arthur	482450018	Jefferson County Airport	End of 90th Street at Jefferson County Airport, Port Arthur	Precipitation	PAMS, SLAMS	Rain Gauge	Continuous	Suburban	General, Background	Neighborhood	29.94280	-94.00077
Beaumont-Port Arthur	482450018	Jefferson County Airport	End of 90th Street at Jefferson County Airport, Port Arthur	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	29.94280	-94.00077

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Beaumont-Port Arthur	482450018	Jefferson County Airport	End of 90th Street at Jefferson County Airport, Port Arthur	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	29.94280	-94.00077
Beaumont-Port Arthur	482451035	Nederland High School	1800 N. 18th Street, Nederland	Barometric Pressure	PAMS, SLAMS	Barometric pressure transducer	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	29.97893	-94.01087
Beaumont-Port Arthur	482451035	Nederland High School	1800 North 18th Street, Nederland	Dew Point	SPM	Derived at site	Continuous	Suburban	Population Exposure	Neighborhood	29.97893	-94.01087
Beaumont-Port Arthur	482451035	Nederland High School	1800 North 18th Street, Nederland	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Suburban	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.97893	-94.01087
Beaumont-Port Arthur	482451035	Nederland High School	1800 North 18th Street, Nederland	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	29.97893	-94.01087
Beaumont-Port Arthur	482451035	Nederland High School	1800 North 18th Street, Nederland	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	29.97893	-94.01087
Beaumont-Port Arthur	482451035	Nederland High School	1800 North 18th Street, Nederland	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	29.97893	-94.01087
Beaumont-Port Arthur	482451035	Nederland High School	1800 North 18th Street, Nederland	Speciated VOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Suburban	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.97893	-94.01087
Beaumont-Port Arthur	482451035	Nederland High School	1800 North 18th Street, Nederland	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	29.97893	-94.01087
Beaumont-Port Arthur	482451035	Nederland High School	1800 North 18th Street, Nederland	TNMOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Suburban	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.97893	-94.01087
Beaumont-Port Arthur	482451035	Nederland High School	1800 North 18th Street, Nederland	UV Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	29.97893	-94.01087
Beaumont-Port Arthur	482451035	Nederland High School	1800 North 18th Street, Nederland	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	29.97893	-94.01087
Beaumont-Port Arthur	483611083	Orange 1st Street	2239 1st Street, Orange	SO2	SLAMS	Pulsed Fluorescence	Continuous	Urban and Center City	Source Oriented	Neighborhood	30.15368	-93.72590
Beaumont-Port Arthur	483611083	Orange 1st Street	2239 1st Street, Orange	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	General, Background	Neighborhood	30.15368	-93.72590

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Beaumont-Port Arthur	483611083	Orange 1st Street	2239 1st Street, Orange	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	General, Background	Neighborhood	30.15368	-93.72590
Beaumont-Port Arthur	482450021	Port Arthur Memorial School	2200 Jefferson Drive, Port Arthur	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Suburban	Population Exposure	Neighborhood	29.92289	-93.90902
Beaumont-Port Arthur	482450011	Port Arthur West	623 Ellias Street, Port Arthur	O3	SLAMS	UV Photometric	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.89752	-93.99108
Beaumont-Port Arthur	482450011	Port Arthur West	623 Ellias Street, Port Arthur	SO2	SLAMS	Pulsed Fluorescence	Continuous	Urban and Center City	Source Oriented	Neighborhood	29.89752	-93.99108
Beaumont-Port Arthur	482450011	Port Arthur West	623 Ellias Street, Port Arthur	Solar Radiation	SPM	Photovoltaic	Continuous	Urban and Center City	Population Exposure; Source Oriented	Neighborhood	29.89752	-93.99108
Beaumont-Port Arthur	482450011	Port Arthur West	623 Ellias Street, Port Arthur	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Source Oriented	Neighborhood	29.89752	-93.99108
Beaumont-Port Arthur	482450011	Port Arthur West	623 Ellias Street, Port Arthur	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Population Exposure; Source Oriented	Neighborhood	29.89752	-93.99108
Beaumont-Port Arthur	482451071	Port Arthur West 7th Street Gate 2	West 7th Street, Chevron Port Arthur Gate 2, Port Arthur	SO2	SLAMS	Pulsed Fluorescence	Continuous	Rural	Source Oriented	Neighborhood	29.84420	-93.96520
Beaumont-Port Arthur	482451071	Port Arthur West 7th Street Gate 2	West 7th Street, Chevron Port Arthur Gate 2, Port Arthur	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	29.84420	-93.96520
Beaumont-Port Arthur	482451071	Port Arthur West 7th Street Gate 2	West 7th Street, Chevron Port Arthur Gate 2, Port Arthur	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	29.84420	-93.96520
Beaumont-Port Arthur	482450101	SETRPC 40 Sabine Pass	5200 Mechanic, Not In A City	O3	PAMS, SLAMS	UV Photometric	Continuous	Rural	Max Ozone Concentration	Neighborhood	29.72793	-93.89408
Beaumont-Port Arthur	483611100	SETRPC 42 Mauriceville	Intersection of TX Hwys 62 & 12, Port Arthur	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Suburban	Regional Transport; Upwind Background	Regional Scale	30.19456	-93.86724
Beaumont-Port Arthur	482450102	SETRPC 43 Jefferson Co Airport	Jefferson County Airport, Port Arthur	O3	SPM	UV Photometric	Continuous	Suburban	Max Precursor Emissions Impact	Middle Scale	29.94275	-94.00068
Beaumont-Port Arthur	483611001	West Orange	2700 Austin Ave, West Orange	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Urban and Center City	Population Exposure	Neighborhood	30.08526	-93.76134
Beaumont-Port Arthur	483611001	West Orange	2700 Austin Ave, West Orange	O3	SLAMS	UV Photometric	Continuous	Urban and Center City	Population Exposure	Neighborhood	30.08526	-93.76134

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Beaumont-Port Arthur	483611001	West Orange	2700 Austin Ave, West Orange	Solar Radiation	SPM	Photovoltaic	Continuous	Urban and Center City	Source Oriented	Neighborhood	30.08526	-93.76134
Beaumont-Port Arthur	483611001	West Orange	2700 Austin Ave, West Orange	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Source Oriented	Neighborhood	30.08526	-93.76134
Beaumont-Port Arthur	483611001	West Orange	2700 Austin Ave, West Orange	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Source Oriented	Neighborhood	30.08526	-93.76134
Big Spring*	482271072	Big Spring Midway	1218 North Midway Rd, Big Spring	SO2	SLAMS	Pulsed Fluorescence	Continuous	Rural	Source Oriented	Neighborhood	32.28042	-101.40714
Big Spring*	482271072	Big Spring Midway	1218 North Midway Rd, Big Spring	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	32.28042	-101.40714
Big Spring*	482271072	Big Spring Midway	1218 North Midway Rd, Big Spring	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	32.28042	-101.40714
Borger*	482331073	Borger FM 1559	19440 FM 1559, Borger	SO2	SLAMS	Pulsed Fluorescence	Continuous	Rural	Source Oriented	Neighborhood	35.67620	-101.44010
Borger*	482331073	Borger FM 1559	19440 FM 1559, Borger	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	35.67620	-101.44010
Borger*	482331073	Borger FM 1559	19440 FM 1559, Borger	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	35.67620	-101.44010
Brownsville-Harlingen	480610006	Brownsville	344 Porter Drive, Brownsville	PM2.5 (Beta)	SLAMS	Beta Attenuation	Continuous	Urban and Center City	Population Exposure	Regional Scale	25.89252	-97.49383
Brownsville-Harlingen	480610006	Brownsville	344 Porter Drive, Brownsville	Solar Radiation	SPM	Photovoltaic	Continuous	Urban and Center City	Highest Concentration	Neighborhood	25.89252	-97.49383
Brownsville-Harlingen	480610006	Brownsville	344 Porter Drive, Brownsville	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Population Exposure	Urban Scale	25.89252	-97.49383
Brownsville-Harlingen	480610006	Brownsville	344 Porter Drive, Brownsville	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Highest Concentration	Neighborhood	25.89252	-97.49383
Brownsville-Harlingen	480611023	Harlingen Teege	1602 W Teege Avenue, Harlingen	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	26.20033	-97.71268
Brownsville-Harlingen	480611023	Harlingen Teege	1602 W Teege Avenue, Harlingen	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	26.20033	-97.71268
Brownsville-Harlingen	480611023	Harlingen Teege	1602 W Teege Avenue, Harlingen	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	26.20033	-97.71268

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Brownsville-Harlingen	480612004	Isla Blanca State Park Road	333174 State Park Road 100, South Padre Island	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Rural	Regional Transport	Urban Scale	26.07110	-97.15770
Brownsville-Harlingen	480612004	Isla Blanca State Park Road	333174 State Park Road 100, South Padre Island	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	Regional Transport	Regional Scale	26.07110	-97.15770
Brownsville-Harlingen	480612004	Isla Blanca State Park Road	333174 State Park Road 100, South Padre Island	Wind (3m)	SPM	Potentiometer Cup Anemometer	Continuous	Rural	Regional Transport	Regional Scale	26.07110	-97.15770
College Station-Bryan	480411086	Bryan Finfeather Road	3670 Finfeather Road, Bryan	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Rural	Population Exposure; Regional Transport	Neighborhood	30.62833	-96.36278
College Station-Bryan	480411086	Bryan Finfeather Road	3670 Finfeather Road, Bryan	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	30.62833	-96.36278
College Station-Bryan	480411086	Bryan Finfeather Road	3670 Finfeather Road, Bryan	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	30.62833	-96.36278
College Station-Bryan	483951076	Franklin Oak Grove	8127 Oak Grove Road, Franklin	SO2	SLAMS	Pulsed Fluorescence	Continuous	Rural	Source Oriented	Neighborhood	31.16889	-96.48194
College Station-Bryan	483951076	Franklin Oak Grove	8127 Oak Grove Road, Franklin	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	31.16889	-96.48194
College Station-Bryan	483951076	Franklin Oak Grove	8127 Oak Grove Road, Franklin	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	31.16889	-96.48194
Corpus Christi	483550032	Corpus Christi Huisache	3810 Huisache Street, Corpus Christi	PM2.5 (Beta)	SLAMS	Beta Attenuation	Continuous	Urban and Center City	Population Exposure	Neighborhood	27.80449	-97.43155
Corpus Christi	483550032	Corpus Christi Huisache	3810 Huisache Street, Corpus Christi	PM2.5 (Beta)	QA Collocated, SLAMS	Beta Attenuation	Continuous	Urban and Center City	Quality Assurance	Neighborhood	27.80449	-97.43155
Corpus Christi	483550032	Corpus Christi Huisache	3810 Huisache Street, Corpus Christi	SO2	SLAMS	Pulsed Fluorescence	Continuous	Urban and Center City	Highest Concentration; Population Exposure	Neighborhood	27.80449	-97.43155
Corpus Christi	483550032	Corpus Christi Huisache	3810 Huisache Street, Corpus Christi	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Population Exposure	Middle Scale	27.80449	-97.43155
Corpus Christi	483550032	Corpus Christi Huisache	3810 Huisache Street, Corpus Christi	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Population Exposure	Middle Scale	27.80449	-97.43155

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Corpus Christi	483550026	Corpus Christi Tuloso	9860 La Branch, Corpus Christi	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	27.83241	-97.55539
Corpus Christi	483550026	Corpus Christi Tuloso	9860 La Branch, Corpus Christi	SO2	SLAMS	Pulsed Fluorescence	Continuous	Suburban	Population Exposure	Neighborhood	27.83241	-97.55539
Corpus Christi	483550026	Corpus Christi Tuloso	9860 La Branch, Corpus Christi	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Highest Concentration	Neighborhood	27.83241	-97.55539
Corpus Christi	483550026	Corpus Christi Tuloso	9860 La Branch, Corpus Christi	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Highest Concentration	Neighborhood	27.83241	-97.55539
Corpus Christi	483550025	Corpus Christi West	Corpus Christi State School, 902 Airport Road, Corpus Christi	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	27.76534	-97.43426
Corpus Christi	483550025	Corpus Christi West	Corpus Christi State School, 902 Airport Road, Corpus Christi	SO2	SLAMS	Pulsed Fluorescence	Continuous	Suburban	Population Exposure	Neighborhood	27.76534	-97.43426
Corpus Christi	483550025	Corpus Christi West	Corpus Christi State School, 902 Airport Road, Corpus Christi	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	Population Exposure	Neighborhood	27.76534	-97.43426
Corpus Christi	483550025	Corpus Christi West	Corpus Christi State School, 902 Airport Road, Corpus Christi	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	27.76534	-97.43426
Corpus Christi	483550025	Corpus Christi West	Corpus Christi State School, 902 Airport Road, Corpus Christi	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	27.76534	-97.43426
Corpus Christi	483550034	Dona Park	5707 Up River Rd, Corpus Christi	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Urban and Center City	Population Exposure	Neighborhood	27.81182	-97.46570
Corpus Christi	483550034	Dona Park	5707 Up River Rd, Corpus Christi	PM2.5 (FRM)	SPM	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Urban and Center City	Population Exposure	Neighborhood	27.81182	-97.46570
Corpus Christi	483550034	Dona Park	5707 Up River Rd, Corpus Christi	PM2.5 (Speciation)	SPM	Carbons, Elements, Ions, 2025/URG	24 Hours; 1/6 Days	Urban and Center City	Population Exposure	Neighborhood	27.81182	-97.46570
Corpus Christi	483550034	Dona Park	5707 Up River Rd, Corpus Christi	PM2.5 (TEOM)[N]	SPM	TEOM Gravimetric	Continuous	Urban and Center City	Regional Transport	Neighborhood	27.81182	-97.46570

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Corpus Christi	483550034	Dona Park	5707 Up River Rd, Corpus Christi	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Highest Concentration	Regional Scale	27.81182	-97.46570
Corpus Christi	483550034	Dona Park	5707 Up River Rd, Corpus Christi	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Highest Concentration	Regional Scale	27.81182	-97.46570
Corsicana*	483491051	Corsicana Airport	Corsicana Airport, Corsicana	NO/NO2/NOx	SPM	Chemilumine-scence	Continuous	Rural	General, Background; Max Precursor Emissions Impact	Urban Scale	32.03193	-96.39914
Corsicana*	483491051	Corsicana Airport	Corsicana Airport, Corsicana	O3	SPM	UV Photometric	Continuous	Rural	General, Background; Max Ozone Concentration	Urban Scale	32.03193	-96.39914
Corsicana*	483491051	Corsicana Airport	Corsicana Airport, Corsicana	PM2.5 (TEOM)[N]	SPM	TEOM Gravimetric	Continuous	Rural	Source Oriented	Neighborhood	32.03193	-96.39914
Corsicana*	483491051	Corsicana Airport	Corsicana Airport, Corsicana	Relative Humidity	SPM	Humidity Sensor	Continuous	Rural	General, Background	Urban Scale	32.03193	-96.39914
Corsicana*	483491051	Corsicana Airport	Corsicana Airport, Corsicana	SO2	SPM	Pulsed Fluorescence	Continuous	Rural	Source Oriented	Urban Scale	32.03193	-96.39914
Corsicana*	483491051	Corsicana Airport	Corsicana Airport, Corsicana	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Urban Scale	32.03193	-96.39914
Corsicana*	483491051	Corsicana Airport	Corsicana Airport, Corsicana	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Urban Scale	32.03193	-96.39914
Corsicana*	483491081	Richland Southeast 1220 Road	Southeast 1220 Road, Richland	SO2	SLAMS	Pulsed Fluorescence	Continuous	Rural	Source Oriented	Neighborhood	31.90410	-96.35200
Corsicana*	483491081	Richland Southeast 1220 Road	Southeast 1220 Road, Richland	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	31.90410	-96.35200
Corsicana*	483491081	Richland Southeast 1220 Road	Southeast 1220 Road, Richland	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	31.90410	-96.35200
Dallas-Fort Worth-Arlington	484393011	Arlington Municipal Airport	5504 South Collins Street, Arlington	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure	Neighborhood	32.65637	-97.08859
Dallas-Fort Worth-Arlington	484393011	Arlington Municipal Airport	5504 South Collins Street, Arlington	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	32.65637	-97.08859
Dallas-Fort Worth-Arlington	484393011	Arlington Municipal Airport	5504 South Collins Street, Arlington	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	Highest Concentration	Neighborhood	32.65637	-97.08859
Dallas-Fort Worth-Arlington	484393011	Arlington Municipal Airport	5504 South Collins Street, Arlington	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Highest Concentration	Neighborhood	32.65637	-97.08859

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Dallas-Fort Worth-Arlington	484393011	Arlington Municipal Airport	5504 South Collins Street, Arlington	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Highest Concentration	Neighborhood	32.65637	-97.08859
Dallas-Fort Worth-Arlington	482510003	Cleburne Airport	1650 Airport Drive, Cleburne	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Urban Scale	32.35359	-97.43674
Dallas-Fort Worth-Arlington	482510003	Cleburne Airport	1650 Airport Drive, Cleburne	Radar Profiler	SPM	Radar Profiler	Continuous	Suburban	Regional Transport	Regional Scale	32.35359	-97.43674
Dallas-Fort Worth-Arlington	482510003	Cleburne Airport	1650 Airport Drive, Cleburne	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	General, Background	Neighborhood	32.35359	-97.43674
Dallas-Fort Worth-Arlington	482510003	Cleburne Airport	1650 Airport Drive, Cleburne	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	32.35359	-97.43674
Dallas-Fort Worth-Arlington	482510003	Cleburne Airport	1650 Airport Drive, Cleburne	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	32.35359	-97.43674
Dallas-Fort Worth-Arlington	481130050	Convention Center	717 South Akard, Dallas	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Urban and Center City	Population Exposure	Neighborhood	32.77426	-96.79769
Dallas-Fort Worth-Arlington	481130050	Convention Center	717 South Akard, Dallas	PM10 (FRM)	QA Collocated, SLAMS	HiVol Gravimetric	24 Hours; 1/12 Days	Urban and Center City	Population Exposure	Neighborhood	32.77426	-96.79769
Dallas-Fort Worth-Arlington	481130050	Convention Center	717 South Akard, Dallas	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Urban and Center City	Highest Concentration; Population Exposure	Neighborhood	32.77426	-96.79769
Dallas-Fort Worth-Arlington	481130050	Convention Center	717 South Akard, Dallas	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Population Exposure	Neighborhood	32.77426	-96.79769
Dallas-Fort Worth-Arlington	481130050	Convention Center	717 South Akard, Dallas	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Population Exposure	Neighborhood	32.77426	-96.79769
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	Barometric Pressure	PAMS, SLAMS	Barometric pressure transducer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	Carbonyl	PAMS, SLAMS	DNPH Silica HPLC	24 Hours; Seasonal, 8 Hour; Seasonal	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	Ceilometer	PAMS, SLAMS	ceilometer	Continuous	Urban and Center City	General, Background	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	CO (High Sensitivity)	NCORE, SLAMS	Gas Filter Correlation	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	32.82007	-96.86012

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dew Point	SPM	Derived at site	Continuous	Urban and Center City	Population Exposure	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	NO2 (Direct)	PAMS, SLAMS	Direct-Read NO2	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	NOy (High Sensitivity)	NCORE, PAMS, SLAMS	Chemilumine-scence API200 EU/501	Continuous	Urban and Center City	Highest Concentration	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	O3	NCORE, PAMS, SLAMS	UV Photometric	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	PM10-2.5	NCORE, SLAMS	Beta Attenuation, 185 calculated	Continuous	Urban and Center City	Population Exposure	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	PM2.5	NCORE, SLAMS	Beta Attenuation, 170	Continuous	Urban and Center City	Population Exposure	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	PM2.5 (FRM)	NCORE, SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Urban and Center City	Population Exposure	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	PM2.5 (FRM)	QA Collocated, SLAMS	Sequential FRM Gravimetric	24 Hours; 1/12 Days	Urban and Center City	Population Exposure	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	PM2.5 (Speciation)	Csn Stn, NCORE, SLAMS	Carbons, Elements, Ions, SASS/URG	24 Hours; 1/3 Days	Urban and Center City	Population Exposure	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	Precipitation	PAMS, SLAMS	Rain Gauge	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	Relative Humidity	NCORE, PAMS, SLAMS	Humidity Sensor	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	SO2 (High Sensitivity)	NCORE, SLAMS	Pulsed Fluorescence	Continuous	Urban and Center City	Population Exposure	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	Speciated VOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Urban and Center City	Highest Concentration; Max Precursor Emissions Impact	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.82007	-96.86012

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	TNMOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Urban and Center City	Highest Concentration; Max Precursor Emissions Impact	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	UV Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	Visibility	SPM	Visibility Sensor	Continuous	Urban and Center City	Population Exposure	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481130069	Dallas Hinton	1415 Hinton Street, Dallas	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.82007	-96.86012
Dallas-Fort Worth-Arlington	481131067	Dallas LBJ Freeway	8652 LBJ Freeway, Dallas	NO/NO2/NOx	Near Road, SLAMS	Chemilumine-scence	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	32.92118	-96.75355
Dallas-Fort Worth-Arlington	481131067	Dallas LBJ Freeway	8652 LBJ Freeway, Dallas	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	32.92118	-96.75355
Dallas-Fort Worth-Arlington	481131067	Dallas LBJ Freeway	8652 LBJ Freeway, Dallas	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	32.92118	-96.75355
Dallas-Fort Worth-Arlington	481130075	Dallas North #2	12532 1/2 Nuestra Drive, Dallas	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure	Neighborhood	32.91921	-96.80850
Dallas-Fort Worth-Arlington	481130075	Dallas North #2	12532 1/2 Nuestra Drive, Dallas	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Urban Scale	32.91921	-96.80850
Dallas-Fort Worth-Arlington	481130075	Dallas North #2	12532 1/2 Nuestra Drive, Dallas	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	General, Background	Neighborhood	32.91921	-96.80850
Dallas-Fort Worth-Arlington	481130075	Dallas North #2	12532 1/2 Nuestra Drive, Dallas	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	32.91921	-96.80850
Dallas-Fort Worth-Arlington	481130075	Dallas North #2	12532 1/2 Nuestra Drive, Dallas	Wind	PAMS, SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	32.91921	-96.80850
Dallas-Fort Worth-Arlington	481130087	Dallas Redbird Airport Executive	3277 W Redbird Lane, Dallas	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure	Neighborhood	32.67645	-96.87206
Dallas-Fort Worth-Arlington	481130087	Dallas Redbird Airport Executive	3277 W Redbird Lane, Dallas	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Urban Scale	32.67645	-96.87206
Dallas-Fort Worth-Arlington	481130087	Dallas Redbird Airport Executive	3277 W Redbird Lane, Dallas	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	32.67645	-96.87206
Dallas-Fort Worth-Arlington	481130087	Dallas Redbird Airport Executive	3277 W Redbird Lane, Dallas	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	32.67645	-96.87206

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Dallas-Fort Worth-Arlington	481210034	Denton Airport South	Denton Airport South, Denton	Dew Point	SPM	Derived at site	Continuous	Rural	Population Exposure	Urban Scale	33.21907	-97.19628
Dallas-Fort Worth-Arlington	481210034	Denton Airport South	Denton Airport South, Denton	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Rural	Max Ozone Concentration; Population Exposure	Urban Scale	33.21907	-97.19628
Dallas-Fort Worth-Arlington	481210034	Denton Airport South	Denton Airport South, Denton	NOy (High Sensitivity)	PAMS, SLAMS	Chemilumine-scence Teledyne API200 EU/501	Continuous	Rural	Max Ozone Concentration; Population Exposure	Urban Scale	33.21907	-97.19628
Dallas-Fort Worth-Arlington	481210034	Denton Airport South	Denton Airport South, Denton	O3	PAMS, SLAMS	UV Photometric	Continuous	Rural	Max Ozone Concentration; Population Exposure	Urban Scale	33.21907	-97.19628
Dallas-Fort Worth-Arlington	481210034	Denton Airport South	Denton Airport South, Denton	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Rural	Population Exposure	Urban Scale	33.21907	-97.19628
Dallas-Fort Worth-Arlington	481210034	Denton Airport South	Denton Airport South, Denton	Precipitation	PAMS, SLAMS	Rain Gauge	Continuous	Rural	Max Ozone Concentration	Urban Scale	33.21907	-97.19628
Dallas-Fort Worth-Arlington	481210034	Denton Airport South	Denton Airport South, Denton	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Rural	Max Ozone Concentration	Urban Scale	33.21907	-97.19628
Dallas-Fort Worth-Arlington	481210034	Denton Airport South	Denton Airport South, Denton	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Rural	Max Ozone Concentration	Urban Scale	33.21907	-97.19628
Dallas-Fort Worth-Arlington	481210034	Denton Airport South	Denton Airport South, Denton	Speciated VOC (Canister)	PAMS, SLAMS	Canister GC-MS	24 Hours; 1/6 Days	Rural	Max Ozone Concentration; Population Exposure	Urban Scale	33.21907	-97.19628
Dallas-Fort Worth-Arlington	481210034	Denton Airport South	Denton Airport South, Denton	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Rural	Max Ozone Concentration	Urban Scale	33.21907	-97.19628
Dallas-Fort Worth-Arlington	481210034	Denton Airport South	Denton Airport South, Denton	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Rural	Max Ozone Concentration	Urban Scale	33.21907	-97.19628
Dallas-Fort Worth-Arlington	484390075	Eagle Mountain Lake	14290 Morris Dido Newark Rd, Eagle Mountain	NO/NO2/NOx	SPM	Chemilumine-scence	Continuous	Rural	Max Precursor Emissions Impact	Urban Scale	32.98789	-97.47718
Dallas-Fort Worth-Arlington	484390075	Eagle Mountain Lake	14290 Morris Dido Newark Rd, Eagle Mountain	O3	SLAMS	UV Photometric	Continuous	Rural	Max Ozone Concentration	Neighborhood	32.98789	-97.47718
Dallas-Fort Worth-Arlington	484390075	Eagle Mountain Lake	14290 Morris Dido Newark Rd, Eagle Mountain	Solar Radiation	SPM	Photovoltaic	Continuous	Rural	Highest Concentration	Middle Scale	32.98789	-97.47718
Dallas-Fort Worth-Arlington	484390075	Eagle Mountain Lake	14290 Morris Dido Newark Rd, Eagle Mountain	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	Highest Concentration	Middle Scale	32.98789	-97.47718

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Dallas-Fort Worth-Arlington	484390075	Eagle Mountain Lake	14290 Morris Dido Newark Rd, Eagle Mountain	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	Highest Concentration	Middle Scale	32.98789	-97.47718
Dallas-Fort Worth-Arlington	481130061	Earhart	3434 Bickers, Dallas	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Urban and Center City	Population Exposure	Neighborhood	32.78536	-96.87657
Dallas-Fort Worth-Arlington	484391053	Fort Worth California Parkway North	1198 California Parkway North, Fort Worth	CO	Near Road, SLAMS	Gas Filter Correlation	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	32.66475	-97.33792
Dallas-Fort Worth-Arlington	484391053	Fort Worth California Parkway North	1198 California Parkway North, Fort Worth	NO/NO2/NOx	Near Road, SLAMS	Chemilumine-scence	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	32.66475	-97.33792
Dallas-Fort Worth-Arlington	484391053	Fort Worth California Parkway North	1198 California Parkway North, Fort Worth	PM2.5 (Beta)	Near Road, SLAMS	Beta Attenuation	Continuous	Urban and Center City	Population Exposure	Microscale	32.66475	-97.33792
Dallas-Fort Worth-Arlington	484391053	Fort Worth California Parkway North	1198 California Parkway North, Fort Worth	PM2.5 (Beta)	QA Collocated, SLAMS	Beta Attenuation	Continuous	Urban and Center City	Quality Assurance	Microscale	32.66475	-97.33792
Dallas-Fort Worth-Arlington	484391053	Fort Worth California Parkway North	1198 California Parkway North, Fort Worth	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	32.66475	-97.33792
Dallas-Fort Worth-Arlington	484391053	Fort Worth California Parkway North	1198 California Parkway North, Fort Worth	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	32.66475	-97.33792
Dallas-Fort Worth-Arlington	484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Carbonyl	PAMS, SLAMS	DNPH Silica HPLC	24 Hours 1/6 days; Seasonal	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.80581	-97.35653
Dallas-Fort Worth-Arlington	484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dew Point	SPM	Derived at site	Continuous	Urban and Center City	Population Exposure	Middle Scale	32.80581	-97.35653
Dallas-Fort Worth-Arlington	484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	32.80581	-97.35653
Dallas-Fort Worth-Arlington	484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	O3	PAMS, SLAMS	UV Photometric	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	32.80581	-97.35653
Dallas-Fort Worth-Arlington	484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	PM2.5 (Beta)	SLAMS	Beta Attenuation	Continuous	Urban and Center City	Population Exposure	Neighborhood	32.80581	-97.35653
Dallas-Fort Worth-Arlington	484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.80581	-97.35653

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Dallas-Fort Worth-Arlington	484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.80581	-97.35653
Dallas-Fort Worth-Arlington	484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Speciated VOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	32.80581	-97.35653
Dallas-Fort Worth-Arlington	484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.80581	-97.35653
Dallas-Fort Worth-Arlington	484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	TNMOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	32.80581	-97.35653
Dallas-Fort Worth-Arlington	484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	32.80581	-97.35653
Dallas-Fort Worth-Arlington	480850005	Frisco	6590 Hillcrest Road, Frisco	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Urban Scale	33.13240	-96.78642
Dallas-Fort Worth-Arlington	480850005	Frisco	6590 Hillcrest Road, Frisco	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	General, Background	Urban Scale	33.13240	-96.78642
Dallas-Fort Worth-Arlington	480850005	Frisco	6590 Hillcrest Road, Frisco	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Urban Scale	33.13240	-96.78642
Dallas-Fort Worth-Arlington	480850005	Frisco	6590 Hillcrest Road, Frisco	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Urban Scale	33.13240	-96.78642
Dallas-Fort Worth-Arlington	480850009	Frisco Eubanks	6601 Eubanks, Frisco	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure; Source Oriented	Neighborhood	33.14466	-96.82881
Dallas-Fort Worth-Arlington	480850009	Frisco Eubanks	6601 Eubanks, Frisco	TSP (Pb)	SLAMS	HiVol ICP-MS	24 Hours; 1/6 Days	Suburban	Population Exposure; Source Oriented	Neighborhood	33.14466	-96.82881
Dallas-Fort Worth-Arlington	480850009	Frisco Eubanks	6601 Eubanks, Frisco	TSP (Pb)	QA Collocated, SLAMS	HiVol ICP-MS	24 Hours; 1/12 Days	Suburban	Population Exposure; Source Oriented	Neighborhood	33.14466	-96.82881
Dallas-Fort Worth-Arlington	480850009	Frisco Eubanks	6601 Eubanks, Frisco	Wind (3m)	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	33.14466	-96.82881
Dallas-Fort Worth-Arlington	480850029	Frisco Stonebrook	7202 Stonebrook Parkway, Frisco	TSP (Pb)	SPM	HiVol ICP-MS	24 Hours; 1/6 Days	Suburban	Population Exposure; Source Oriented	Neighborhood	33.13602	-96.82447

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Dallas-Fort Worth-Arlington	484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Barometric Pressure	PAMS, SLAMS	Barometric pressure transducer	Continuous	Suburban	Max Ozone Concentration	Neighborhood	32.98426	-97.06372
Dallas-Fort Worth-Arlington	484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Dew Point	SPM	Derived at site	Continuous	Suburban	Highest Concentration; Max Ozone Concentration	Neighborhood	32.98426	-97.06372
Dallas-Fort Worth-Arlington	484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Suburban	Max Ozone Concentration; Population Exposure	Neighborhood	32.98426	-97.06372
Dallas-Fort Worth-Arlington	484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	Max Ozone Concentration; Population Exposure	Neighborhood	32.98426	-97.06372
Dallas-Fort Worth-Arlington	484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Suburban	Max Ozone Concentration	Neighborhood	32.98426	-97.06372
Dallas-Fort Worth-Arlington	484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	Max Ozone Concentration	Neighborhood	32.98426	-97.06372
Dallas-Fort Worth-Arlington	484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Speciated VOC (Canister)	PAMS, SLAMS	Canister GC-MS	24 Hours; 1/6 Days	Suburban	Max Ozone Concentration; Population Exposure	Neighborhood	32.98426	-97.06372
Dallas-Fort Worth-Arlington	484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	Max Ozone Concentration	Neighborhood	32.98426	-97.06372
Dallas-Fort Worth-Arlington	484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	Max Ozone Concentration	Neighborhood	32.98426	-97.06372
Dallas-Fort Worth-Arlington	482311006	Greenville	824 Sayle Street, Greenville	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure; Upwind Background	Neighborhood	33.15309	-96.11557
Dallas-Fort Worth-Arlington	482311006	Greenville	824 Sayle Street, Greenville	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure; Upwind Background	Neighborhood	33.15309	-96.11557
Dallas-Fort Worth-Arlington	482311006	Greenville	824 Sayle Street, Greenville	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	General, Background	Neighborhood	33.15309	-96.11557
Dallas-Fort Worth-Arlington	482311006	Greenville	824 Sayle Street, Greenville	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	33.15309	-96.11557
Dallas-Fort Worth-Arlington	482311006	Greenville	824 Sayle Street, Greenville	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	33.15309	-96.11557
Dallas-Fort Worth-Arlington	484391006	Haws Athletic Center	600 1/2 Congress St, Fort Worth	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Urban and Center City	Population Exposure	Neighborhood	32.75915	-97.34233

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Dallas-Fort Worth-Arlington	481391044	Italy	900 FM 667 Ellis County, Italy	Dew Point	SPM	Derived at site	Continuous	Rural	Upwind Background	Urban Scale	32.17542	-96.87019
Dallas-Fort Worth-Arlington	481391044	Italy	900 FM 667 Ellis County, Italy	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Rural	Upwind Background	Urban Scale	32.17542	-96.87019
Dallas-Fort Worth-Arlington	481391044	Italy	900 FM 667 Ellis County, Italy	O3	PAMS, SLAMS	UV Photometric	Continuous	Rural	Upwind Background	Urban Scale	32.17542	-96.87019
Dallas-Fort Worth-Arlington	481391044	Italy	900 FM 667 Ellis County, Italy	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Rural	Upwind Background	Urban Scale	32.17542	-96.87019
Dallas-Fort Worth-Arlington	481391044	Italy	900 FM 667 Ellis County, Italy	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Rural	Upwind Background	Urban Scale	32.17542	-96.87019
Dallas-Fort Worth-Arlington	481391044	Italy	900 FM 667 Ellis County, Italy	Speciated VOC (Canister)	PAMS, SLAMS	Canister GC-MS	24 Hours; 1/6 Days	Rural	Upwind Background	Urban Scale	32.17542	-96.87019
Dallas-Fort Worth-Arlington	481391044	Italy	900 FM 667 Ellis County, Italy	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Rural	Upwind Background	Urban Scale	32.17542	-96.87019
Dallas-Fort Worth-Arlington	481391044	Italy	900 FM 667 Ellis County, Italy	UV Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Rural	Upwind Background	Urban Scale	32.17542	-96.87019
Dallas-Fort Worth-Arlington	481391044	Italy	900 FM 667 Ellis County, Italy	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Rural	Upwind Background	Urban Scale	32.17542	-96.87019
Dallas-Fort Worth-Arlington	482511008	Johnson County Luisa	2420 Luisa Ln, Alvarado	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	32.46970	-97.16927
Dallas-Fort Worth-Arlington	482511008	Johnson County Luisa	2420 Luisa Ln, Alvarado	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	32.46970	-97.16927
Dallas-Fort Worth-Arlington	482570005	Kaufman	3790 S Houston St, Kaufman	Dew Point	SPM	Derived at site	Continuous	Suburban	Highest Concentration	Neighborhood	32.56497	-96.31769
Dallas-Fort Worth-Arlington	482570005	Kaufman	3790 S Houston St, Kaufman	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure; Upwind Background	Neighborhood, Urban Scale	32.56497	-96.31769
Dallas-Fort Worth-Arlington	482570005	Kaufman	3790 S Houston St, Kaufman	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	Population Exposure; Upwind Background	Urban Scale	32.56497	-96.31769
Dallas-Fort Worth-Arlington	482570005	Kaufman	3790 S Houston St, Kaufman	PM2.5 (TEOM)[N]	SPM	TEOM Gravimetric	Continuous	Suburban	Upwind Background	Regional Scale	32.56497	-96.31769
Dallas-Fort Worth-Arlington	482570005	Kaufman	3790 S Houston St, Kaufman	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Suburban	Upwind Background	Urban Scale	32.56497	-96.31769

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Dallas-Fort Worth-Arlington	482570005	Kaufman	3790 S Houston St, Kaufman	SO2	SLAMS	Pulsed Fluorescence	Continuous	Suburban	Population Exposure; Upwind Background	Neighborhood	32.56497	-96.31769
Dallas-Fort Worth-Arlington	482570005	Kaufman	3790 S Houston St, Kaufman	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	Upwind Background	Urban Scale	32.56497	-96.31769
Dallas-Fort Worth-Arlington	482570005	Kaufman	3790 S Houston St, Kaufman	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	Upwind Background	Urban Scale	32.56497	-96.31769
Dallas-Fort Worth-Arlington	482570005	Kaufman	3790 S Houston St, Kaufman	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	Upwind Background	Urban Scale	32.56497	-96.31769
Dallas-Fort Worth-Arlington	484392003	Keller	FAA Site off Alta Vista Road, Fort Worth	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Suburban	Max Precursor Emissions Impact	Urban Scale	32.92249	-97.28210
Dallas-Fort Worth-Arlington	484392003	Keller	FAA Site off Alta Vista Road, Fort Worth	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	Concentration; Population Exposure	Neighborhood	32.92249	-97.28210
Dallas-Fort Worth-Arlington	484392003	Keller	FAA Site off Alta Vista Road, Fort Worth	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	General, Background	Urban Scale	32.92249	-97.28210
Dallas-Fort Worth-Arlington	484392003	Keller	FAA Site off Alta Vista Road, Fort Worth	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	General, Background	Urban Scale	32.92249	-97.28210
Dallas-Fort Worth-Arlington	484392003	Keller	FAA Site off Alta Vista Road, Fort Worth	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Urban Scale	32.92249	-97.28210
Dallas-Fort Worth-Arlington	481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Source Oriented	Neighborhood	32.48208	-97.02690
Dallas-Fort Worth-Arlington	481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Urban Scale	32.48208	-97.02690
Dallas-Fort Worth-Arlington	481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	PM2.5 (FRM)	SPM	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Suburban	Population Exposure; Source Oriented	Regional Scale	32.48208	-97.02690
Dallas-Fort Worth-Arlington	481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	PM2.5 (Speciation)	SPM	Carbons, Elements, Ions, 2025/URG	24 Hours; 1/6 Days	Suburban	Population Exposure; Source Oriented	Neighborhood, Regional Scale	32.48208	-97.02690
Dallas-Fort Worth-Arlington	481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	PM2.5 (TEOM)[N]	SPM	TEOM Gravimetric	Continuous	Suburban	Regional Transport	Regional Scale	32.48208	-97.02690
Dallas-Fort Worth-Arlington	481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	SO2	SLAMS	Pulsed Fluorescence	Continuous	Suburban	Source Oriented	Neighborhood	32.48208	-97.02690

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Dallas-Fort Worth-Arlington	481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	General, Background	Neighborhood	32.48208	-97.02690
Dallas-Fort Worth-Arlington	481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	32.48208	-97.02690
Dallas-Fort Worth-Arlington	481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	32.48208	-97.02690
Dallas-Fort Worth-Arlington	483670081	Parker County	3033 New Authon Rd, Weatherford	O3	SLAMS	UV Photometric	Continuous	Rural	Population Exposure	Urban Scale	32.86877	-97.90593
Dallas-Fort Worth-Arlington	483670081	Parker County	3033 New Authon Rd, Weatherford	Solar Radiation	SPM	Photovoltaic	Continuous	Rural	Source Oriented	Neighborhood	32.86877	-97.90593
Dallas-Fort Worth-Arlington	483670081	Parker County	3033 New Authon Rd, Weatherford	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	Source Oriented	Neighborhood	32.86877	-97.90593
Dallas-Fort Worth-Arlington	483670081	Parker County	3033 New Authon Rd, Weatherford	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	Source Oriented	Neighborhood	32.86877	-97.90593
Dallas-Fort Worth-Arlington	481211032	Pilot Point	792 E Northside Dr, Pilot Point	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Regional Scale	33.41065	-96.94459
Dallas-Fort Worth-Arlington	481211032	Pilot Point	792 E Northside Dr, Pilot Point	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	Upwind Background	Regional Scale	33.41065	-96.94459
Dallas-Fort Worth-Arlington	481211032	Pilot Point	792 E Northside Dr, Pilot Point	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Upwind Background	Regional Scale	33.41065	-96.94459
Dallas-Fort Worth-Arlington	481211032	Pilot Point	792 E Northside Dr, Pilot Point	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Upwind Background	Regional Scale	33.41065	-96.94459
Dallas-Fort Worth-Arlington	483970001	Rockwall Heath	100 E Heath St, Rockwall	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	32.93652	-96.45921
Dallas-Fort Worth-Arlington	483970001	Rockwall Heath	100 E Heath St, Rockwall	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	Population Exposure	Neighborhood	32.93652	-96.45921
Dallas-Fort Worth-Arlington	483970001	Rockwall Heath	100 E Heath St, Rockwall	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	32.93652	-96.45921
Dallas-Fort Worth-Arlington	483970001	Rockwall Heath	100 E Heath St, Rockwall	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	32.93652	-96.45921
Dallas-Fort Worth-Arlington	482570020	Terrell Temtex	2988 Temtex Blvd, Terrell	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	32.73192	-96.31791

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Dallas-Fort Worth-Arlington	482570020	Terrell Temtex	2988 Temtex Blvd, Terrell	TSP (Pb)	SLAMS	HiVol ICP-MS	24 Hours; 1/6 Days	Rural	Population Exposure; Source Oriented	Neighborhood	32.73192	-96.31791
Dallas-Fort Worth-Arlington	482570020	Terrell Temtex	2988 Temtex Blvd, Terrell	TSP (Pb)	QA Collocated, SLAMS	HiVol ICP-MS	24 Hours; 1/12 Days	Rural	Population Exposure; Source Oriented	Neighborhood	32.73192	-96.31791
Dallas-Fort Worth-Arlington	482570020	Terrell Temtex	2988 Temtex Blvd, Terrell	Wind (3m)	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	32.73192	-96.31791
Eagle Pass*	483230004	Eagle Pass	265 Foster Maldonado, Eagle Pass	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Urban and Center City	Regional Transport	Regional Scale	28.70461	-100.45116
Eagle Pass*	483230004	Eagle Pass	265 Foster Maldonado, Eagle Pass	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Regional Transport	Regional Scale	28.70461	-100.45116
Eagle Pass*	483230004	Eagle Pass	265 Foster Maldonado, Eagle Pass	Visibility	SPM	Visibility Sensor	Continuous	Urban and Center City	Regional Transport	Regional Scale	28.70461	-100.45116
Eagle Pass*	483230004	Eagle Pass	265 Foster Maldonado, Eagle Pass	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Regional Transport	Regional Scale	28.70461	-100.45116
El Paso	481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	Barometric Pressure	PAMS, SLAMS	Barometric pressure transducer	Continuous	Suburban	Max Ozone Concentration; Upwind Background	Neighborhood	31.74678	-106.40281
El Paso	481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	Dew Point	SPM	Derived at site	Continuous	Suburban	Highest Concentration; Upwind Background	Urban Scale	31.74678	-106.40281
El Paso	481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Suburban	Highest Concentration; Upwind Background	Neighborhood, Urban Scale	31.74678	-106.40281
El Paso	481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	Max Ozone Concentration; Upwind Background	Neighborhood	31.74678	-106.40281
El Paso	481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	PM2.5 (TEOM)^{N}	SPM	TEOM Gravimetric	Continuous	Suburban	Population Exposure	Neighborhood	31.74678	-106.40281
El Paso	481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Suburban	Max Ozone Concentration; Upwind Background	Neighborhood	31.74678	-106.40281
El Paso	481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	Max Ozone Concentration; Upwind Background	Neighborhood	31.74678	-106.40281

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
El Paso	481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	Max Ozone Concentration; Upwind Background	Neighborhood	31.74678	-106.40281
El Paso	481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	Visibility	SPM	Visibility Sensor	Continuous	Suburban	Highest Concentration; Population Exposure	Urban Scale	31.74678	-106.40281
El Paso	481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	Max Ozone Concentration; Upwind Background	Neighborhood	31.74678	-106.40281
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	CO (High Sensitivity)	NCORE, SLAMS	Gas Filter Correlation	Continuous	Urban and Center City	Highest Concentration	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	Dew Point	SPM	Derived at site	Continuous	Urban and Center City	Highest Concentration; Max Precursor Emissions Impact	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Urban and Center City	Highest Concentration; Max Precursor Emissions Impact	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	NOy (High Sensitivity)	NCORE, SLAMS	Chemilumine-scence API200 EU/501	Continuous	Urban and Center City	Highest Concentration	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	O3	NCORE, PAMS, SLAMS	UV Photometric	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	PM10-2.5	NCORE, SLAMS	Beta Attenuation, 185 calculated	Continuous	Urban and Center City	Highest Concentration; Population Exposure	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	PM2.5	NCORE, SLAMS	Beta Attenuation, 170	Continuous	Urban and Center City	Highest Concentration; Population Exposure	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	PM2.5 (FRM)	NCORE, SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Urban and Center City	Highest Concentration; Population Exposure	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	PM2.5 (Speciation)	Csn Stn, NCORE, SLAMS	Carbons, Elements, Ions, SASS/URG	24 Hours; 1/3 Days	Urban and Center City	Highest Concentration	Neighborhood	31.76569	-106.45523

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El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	SO2 (High Sensitivity)	NCORE, SLAMS	Pulsed Fluorescence	Continuous	Urban and Center City	Highest Concentration	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	Speciated VOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Urban and Center City	Highest Concentration; Max Precursor Emissions Impact	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	TNMOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Urban and Center City	Highest Concentration; Max Precursor Emissions Impact	Neighborhood	31.76569	-106.45523
El Paso	481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	31.76569	-106.45523
El Paso	481410038	El Paso Mimosa	7501 Mimosa Avenue, El Paso	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Suburban	Population Exposure	Neighborhood	31.73586	-106.37791
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	CO	SPM	Gas Filter Correlation	Continuous	Urban and Center City	Highest Concentration	Neighborhood	31.76829	-106.50124
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	Dew Point	SPM	Derived at site	Continuous	Urban and Center City	Max Ozone Concentration; Population Exposure	Neighborhood	31.76829	-106.50124
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Urban and Center City	Max Ozone Concentration; Population Exposure	Neighborhood	31.76829	-106.50124
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	O3	PAMS, SLAMS	UV Photometric	Continuous	Urban and Center City	Max Ozone Concentration; Population Exposure	Neighborhood	31.76829	-106.50124
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Urban and Center City	General, Background; Population Exposure	Neighborhood	31.76829	-106.50124
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	PM2.5 (TEOM)[N]	SPM	TEOM Gravimetric	Continuous	Urban and Center City	Highest Concentration	Neighborhood	31.76829	-106.50124

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	Precipitation	PAMS, SLAMS	Rain Gauge	Continuous	Urban and Center City	Max Ozone Concentration	Neighborhood	31.76829	-106.50124
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Urban and Center City	Max Ozone Concentration	Neighborhood	31.76829	-106.50124
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Urban and Center City	Max Ozone Concentration	Neighborhood	31.76829	-106.50124
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Urban and Center City	Max Ozone Concentration	Neighborhood	31.76829	-106.50124
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	UV Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Urban and Center City	Max Ozone Concentration	Neighborhood	31.76829	-106.50124
El Paso	481410037	El Paso UTEP	250 Rim Rd, El Paso	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Ozone Concentration	Neighborhood	31.76829	-106.50124
El Paso	481410029	Ivanhoe	10834 Ivanhoe (Ivanhoe Fire Station), El Paso	O3	SPM	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	31.78577	-106.32358
El Paso	481410029	Ivanhoe	10834 Ivanhoe, El Paso	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Suburban	Population Exposure	Neighborhood	31.78577	-106.32358
El Paso	481410029	Ivanhoe	10834 Ivanhoe (Ivanhoe Fire Station), El Paso	Relative Humidity	Border Grant, SLAMS	Humidity Sensor	Continuous	Suburban	General, Background	Neighborhood	31.78577	-106.32358
El Paso	481410029	Ivanhoe	10834 Ivanhoe (Ivanhoe Fire Station), El Paso	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	31.78577	-106.32358
El Paso	481410029	Ivanhoe	10834 Ivanhoe (Ivanhoe Fire Station), El Paso	Wind	Border Grant, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	31.78577	-106.32358
El Paso	481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	CO	SLAMS	Gas Filter Correlation	Continuous	Suburban	Population Exposure	Neighborhood	31.86247	-106.54730
El Paso	481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	O3	SLAMS	UV Photometric	Continuous seasonal April-October	Suburban	Population Exposure	Neighborhood	31.86247	-106.54730
El Paso	481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Suburban	Population Exposure	Neighborhood	31.86247	-106.54730
El Paso	481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	PM10 (FRM)	QA Collocated, SLAMS	HiVol Gravimetric	24 Hours; 1/12 Days	Suburban	Population Exposure	Neighborhood	31.86247	-106.54730

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
El Paso	481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	31.86247	-106.54730
El Paso	481410058	Skyline Park	5050A Yvette Drive, El Paso	O3	Border Grant, SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	31.89391	-106.42583
El Paso	481410058	Skyline Park	5050A Yvette Drive, El Paso	Temperature (Outdoor)	Border Grant, SLAMS	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	31.89391	-106.42583
El Paso	481410058	Skyline Park	5050A Yvette Drive, El Paso	Wind	Border Grant, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	31.89391	-106.42583
El Paso	481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	31.66750	-106.28800
El Paso	481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	PM10 (FRM)	Border Grant, SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Suburban	General, Background; Population Exposure	Neighborhood	31.66750	-106.28800
El Paso	481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	PM10 (FRM)	Border Grant, QA Collocated, SLAMS	HiVol Gravimetric	24 Hours; 1/12 Days	Suburban	Population Exposure	Neighborhood	31.66750	-106.28800
El Paso	481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	PM2.5 (TEOM)[N]	SPM	TEOM Gravimetric	Continuous	Suburban	Population Exposure	Neighborhood	31.66750	-106.28800
El Paso	481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	Radar Profiler	SPM	Radar Profiler	Continuous	Suburban	Regional Transport	Regional Scale	31.66750	-106.28800
El Paso	481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	31.66750	-106.28800
El Paso	481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	31.66750	-106.28800
El Paso	481410693	Van Buren	2700 Harrison Avenue, El Paso	PM10 (FRM)	SPM	HiVol Gravimetric	24 Hours; 1/6 Days	Urban and Center City	Population Exposure	Neighborhood	31.81337	-106.46452
El Paso	481410693	Van Buren	2700 Harrison Avenue, El Paso	Relative Humidity	SPM	Humidity Sensor	Continuous	Urban and Center City	Population Exposure	Neighborhood	31.81337	-106.46452
El Paso	481410693	Van Buren	2700 Harrison Avenue, El Paso	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Population Exposure	Neighborhood	31.81337	-106.46452
El Paso	481410693	Van Buren	2700 Harrison Avenue, El Paso	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Population Exposure	Neighborhood	31.81337	-106.46452

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Granbury*	482210001	Granbury	200 N Gordon Street, Granbury	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	32.44230	-97.80353
Granbury*	482210001	Granbury	200 N Gordon Street, Granbury	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	General, Background	Middle Scale	32.44230	-97.80353
Granbury*	482210001	Granbury	200 N Gordon Street, Granbury	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Middle Scale	32.44230	-97.80353
Granbury*	482210001	Granbury	200 N Gordon Street, Granbury	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Middle Scale	32.44230	-97.80353
Houston-The Woodlands-Sugar Land	482010058	Baytown	7210 1/2 Bayway Drive, Baytown	PM2.5 (Beta)	SLAMS	Beta Attenuation	Continuous	Suburban	Population Exposure	Neighborhood	29.77070	-95.03123
Houston-The Woodlands-Sugar Land	482010058	Baytown	7210 1/2 Bayway Drive, Baytown	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Highest Concentration	Neighborhood	29.77070	-95.03123
Houston-The Woodlands-Sugar Land	482010058	Baytown	7210 1/2 Bayway Drive, Baytown	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Highest Concentration	Neighborhood	29.77070	-95.03123
Houston-The Woodlands-Sugar Land	482011017	Baytown Garth	8622 Garth Road Unit A, Baytown	O3	SLAMS	UV Photometric	Continuous	Suburban	Max Ozone Concentration	Neighborhood	29.82335	-94.98387
Houston-The Woodlands-Sugar Land	482011017	Baytown Garth	8622 Garth Road Unit A, Baytown	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	Population Exposure	Neighborhood	29.82335	-94.98387
Houston-The Woodlands-Sugar Land	482011017	Baytown Garth	8622 Garth Road Unit A, Baytown	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	29.82335	-94.98387
Houston-The Woodlands-Sugar Land	482011017	Baytown Garth	8622 Garth Road Unit A, Baytown	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	29.82335	-94.98387
Houston-The Woodlands-Sugar Land	482010026	Channelview	1405 Sheldon Road, Channelview	Dew Point	SPM	Derived at site	Continuous	Suburban	Highest Concentration	Neighborhood	29.80271	-95.12549
Houston-The Woodlands-Sugar Land	482010026	Channelview	1405 Sheldon Road, Channelview	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure	Middle Scale, Neighborhood	29.80271	-95.12549
Houston-The Woodlands-Sugar Land	482010026	Channelview	1405 Sheldon Road, Channelview	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.80271	-95.12549

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Houston-The Woodlands-Sugar Land	482010026	Channelview	1405 Sheldon Road, Channelview	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	29.80271	-95.12549
Houston-The Woodlands-Sugar Land	482010026	Channelview	1405 Sheldon Road, Channelview	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	29.80271	-95.12549
Houston-The Woodlands-Sugar Land	482010026	Channelview	1405 Sheldon Road, Channelview	Speciated VOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Suburban	Population Exposure	Neighborhood	29.80271	-95.12549
Houston-The Woodlands-Sugar Land	482010026	Channelview	1405 Sheldon Road, Channelview	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	29.80271	-95.12549
Houston-The Woodlands-Sugar Land	482010026	Channelview	1405 Sheldon Road, Channelview	TNMOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Suburban	Population Exposure	Neighborhood	29.80271	-95.12549
Houston-The Woodlands-Sugar Land	482010026	Channelview	1405 Sheldon Road, Channelview	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	Max Precursor Emissions Impact	Neighborhood	29.80271	-95.12549
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	Barometric Pressure	PAMS, SLAMS	Barometric pressure transducer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	Carbonyl	PAMS, SLAMS	DNPH Silica HPLC	24 Hours 1/6 days; Seasonal	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	CO (High Sensitivity)	SPM	Gas Filter Correlation	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	Dew Point	SPM	Derived at site	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	O3	PAMS, SLAMS	UV Photometric	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	PM10 (FRM)	QA Collocated, SLAMS	HiVol Gravimetric	24 Hours; 1/12 Days	Urban and Center City	Highest Concentration; Population Exposure	Neighborhood	29.73373	-95.25759

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Urban and Center City	Highest Concentration; Source Oriented	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/1 Days	Urban and Center City	Highest Concentration; Population Exposure; Source Oriented	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	PM2.5 (FRM)	QA Collocated, SLAMS	Sequential FRM Gravimetric	24 Hours; 1/12 Days	Urban and Center City	Highest Concentration; Population Exposure	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	PM2.5 (Speciation)	SPM		24 Hours 1/6 days; Seasonal	Urban and Center City	Highest Concentration	Middle Scale	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	PM2.5 (TEOM)[N]	SPM	TEOM Gravimetric	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	Precipitation	SPM	Rain Gauge	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	SO2	SLAMS	Pulsed Fluorescence	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	Speciated VOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Urban and Center City	Highest Concentration; Population Exposure; Source Oriented	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	TNMOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Urban and Center City	Highest Concentration; Population Exposure; Source Oriented	Neighborhood	29.73373	-95.25759

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	UV Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	482011035	Clinton	9525 1/2 Clinton Dr, Houston	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	29.73373	-95.25759
Houston-The Woodlands-Sugar Land	483390078	Conroe Relocated	9472A Hwy 1484, Conroe	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Suburban	General, Background; Population Exposure	Urban Scale	30.35030	-95.42513
Houston-The Woodlands-Sugar Land	483390078	Conroe Relocated	9472A Hwy 1484, Conroe	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	General, Background; Population Exposure	Urban Scale	30.35030	-95.42513
Houston-The Woodlands-Sugar Land	483390078	Conroe Relocated	9472A Hwy 1484, Conroe	PM2.5 (TEOM)[N]	SPM	TEOM Gravimetric	Continuous	Suburban	General, Background	Neighborhood	30.35030	-95.42513
Houston-The Woodlands-Sugar Land	483390078	Conroe Relocated	9472A Hwy 1484, Conroe	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	Highest Concentration	Neighborhood	30.35030	-95.42513
Houston-The Woodlands-Sugar Land	483390078	Conroe Relocated	9472A Hwy 1484, Conroe	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	Highest Concentration	Neighborhood	30.35030	-95.42513
Houston-The Woodlands-Sugar Land	483390078	Conroe Relocated	9472A Hwy 1484, Conroe	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	Highest Concentration	Neighborhood	30.35030	-95.42513
Houston-The Woodlands-Sugar Land	481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Dew Point	SPM	Derived at site	Continuous	Suburban	General, Background; Upwind Background	Middle Scale	29.25447	-94.86129
Houston-The Woodlands-Sugar Land	481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Suburban	General, Background; Upwind Background	Middle Scale, Urban Scale	29.25447	-94.86129
Houston-The Woodlands-Sugar Land	481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	Max Ozone Concentration; Upwind Background	Urban Scale	29.25447	-94.86129
Houston-The Woodlands-Sugar Land	481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Suburban	Regional Transport	Regional Scale	29.25447	-94.86129
Houston-The Woodlands-Sugar Land	481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Suburban	Max Ozone Concentration; Upwind Background	Urban Scale	29.25447	-94.86129
Houston-The Woodlands-Sugar Land	481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	Max Ozone Concentration; Upwind Background	Urban Scale	29.25447	-94.86129

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Houston-The Woodlands-Sugar Land	481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	Max Ozone Concentration; Upwind Background	Urban Scale	29.25447	-94.86129
Houston-The Woodlands-Sugar Land	481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	Max Ozone Concentration; Upwind Background	Urban Scale	29.25447	-94.86129
Houston-The Woodlands-Sugar Land	482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Barometric Pressure	PAMS, SLAMS	Barometric pressure transducer	Continuous	Suburban	Max Ozone Concentration	Neighborhood	29.90104	-95.32614
Houston-The Woodlands-Sugar Land	482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Dew Point	SPM	Derived at site	Continuous	Suburban	Population Exposure	Urban Scale	29.90104	-95.32614
Houston-The Woodlands-Sugar Land	482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Suburban	Max Ozone Concentration; Population Exposure	Neighborhood	29.90104	-95.32614
Houston-The Woodlands-Sugar Land	482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	NOy (High Sensitivity)	PAMS, SLAMS	Chemilumine-scence Teledyne API200 EU/501	Continuous	Suburban	Max Ozone Concentration; Population Exposure	Neighborhood	29.90104	-95.32614
Houston-The Woodlands-Sugar Land	482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	O3	PAMS, SLAMS	UV Photometric	Continuous	Suburban	Max Ozone Concentration; Population Exposure	Neighborhood	29.90104	-95.32614
Houston-The Woodlands-Sugar Land	482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	PM2.5 (Beta)	SLAMS	Beta Attenuation	Continuous	Suburban	Population Exposure	Neighborhood	29.90104	-95.32614
Houston-The Woodlands-Sugar Land	482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	PM2.5 (FRM)	QA Collocated, SLAMS	Sequential FRM Gravimetric	24 Hours; 1/12 Days	Suburban	Population Exposure	Neighborhood	29.90104	-95.32614
Houston-The Woodlands-Sugar Land	482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Suburban	Max Ozone Concentration	Neighborhood	29.90104	-95.32614
Houston-The Woodlands-Sugar Land	482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Suburban	Max Ozone Concentration	Neighborhood	29.90104	-95.32614
Houston-The Woodlands-Sugar Land	482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	Max Ozone Concentration	Neighborhood	29.90104	-95.32614
Houston-The Woodlands-Sugar Land	482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	Max Ozone Concentration	Neighborhood	29.90104	-95.32614
Houston-The Woodlands-Sugar Land	482010055	Houston Bayland Park	6400 Bissonnet Street, Houston	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure	Middle Scale, Neighborhood	29.69573	-95.49922
Houston-The Woodlands-Sugar Land	482010055	Houston Bayland Park	6400 Bissonnet Street, Houston	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Middle Scale	29.69573	-95.49922

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Houston-The Woodlands-Sugar Land	482010055	Houston Bayland Park	6400 Bissonnet Street, Houston	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	General, Background; Max Precursor Emissions Impact	Middle Scale	29.69573	-95.49922
Houston-The Woodlands-Sugar Land	482010055	Houston Bayland Park	6400 Bissonnet Street, Houston	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background; Max Precursor Emissions Impact	Middle Scale	29.69573	-95.49922
Houston-The Woodlands-Sugar Land	482010055	Houston Bayland Park	6400 Bissonnet Street, Houston	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background; Max Precursor Emissions Impact	Middle Scale	29.69573	-95.49922
Houston-The Woodlands-Sugar Land	482010051	Houston Croquet	13826 1/2 Croquet, Houston	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	29.62389	-95.47417
Houston-The Woodlands-Sugar Land	482010051	Houston Croquet	13826 1/2 Croquet, Houston	SO2	SLAMS	Pulsed Fluorescence	Continuous	Suburban	Population Exposure	Neighborhood	29.62389	-95.47417
Houston-The Woodlands-Sugar Land	482010051	Houston Croquet	13826 1/2 Croquet, Houston	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	29.62389	-95.47417
Houston-The Woodlands-Sugar Land	482010051	Houston Croquet	13826 1/2 Croquet, Houston	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	29.62389	-95.47417
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Barometric Pressure	PAMS, SLAMS	Barometric pressure transducer	Continuous	Urban and Center City	General, Background	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Carbonyl	PAMS, SLAMS	DNPH Silica HPLC	24 Hours; Seasonal, 8 Hour; Seasonal	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	CO (High Sensitivity)	NCORE, SLAMS	Gas Filter Correlation	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Dew Point	SPM	Derived at site	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	NO2 (Direct)	PAMS, SLAMS	Direct-Read NO2	Continuous	Urban and Center City	Population Exposure; Source Oriented	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	NOy (High Sensitivity)	NCORE, PAMS, SLAMS	Chemilumine-scence Teledyne API200 EU/501	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.67003	-95.12851

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	O3	NCORE, PAMS, SLAMS	UV Photometric	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	PM10-2.5	NCORE, SLAMS	Beta Attenuation, 185 calculated	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	PM2.5	NCORE, SLAMS	Beta Attenuation, 170	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	PM2.5 (FRM)	NCORE, SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Urban and Center City	Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	PM2.5 (Speciation)	Csn Stn, NCORE, SLAMS	Carbons, Elements, Ions, SASS/URG	24 Hours; 1/3 Days	Urban and Center City	Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	PM2.5 (Speciation)	Csn Stn, QA Collocated, SLAMS	Carbons, Elements, Ions, SASS/URG	24 Hours; 1/6 Days	Urban and Center City	Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Precipitation	PAMS, SLAMS	Rain Gauge	Continuous	Urban and Center City	General, Background	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Relative Humidity	NCORE, PAMS, SLAMS	Humidity Sensor	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	SO2 (High Sensitivity)	NCORE, SLAMS	Pulsed Fluorescence	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Speciated VOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Temperature (Outdoor)	NCORE, PAMS, SLAMS	Aspirated Thermister	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	TNMOC (AutoGC)	PAMS, SLAMS	GC	Continuous	Urban and Center City	Max Precursor Emissions Impact; Population Exposure	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	UV Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Urban and Center City	General, Background	Neighborhood	29.67003	-95.12851

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Houston-The Woodlands-Sugar Land	482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Wind	NCORE, PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Neighborhood	29.67003	-95.12851
Houston-The Woodlands-Sugar Land	482011034	Houston East	1262 1/2 Mae Drive, Houston	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Highest Concentration; Population Exposure	Middle Scale, Neighborhood	29.76800	-95.22058
Houston-The Woodlands-Sugar Land	482011034	Houston East	1262 1/2 Mae Drive, Houston	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	29.76800	-95.22058
Houston-The Woodlands-Sugar Land	482011034	Houston East	1262 1/2 Mae Drive, Houston	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Suburban	Population Exposure	Neighborhood	29.76800	-95.22058
Houston-The Woodlands-Sugar Land	482011034	Houston East	1262 1/2 Mae Drive, Houston	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Urban Scale	29.76800	-95.22058
Houston-The Woodlands-Sugar Land	482011034	Houston East	1262 1/2 Mae Drive, Houston	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	29.76800	-95.22058
Houston-The Woodlands-Sugar Land	482010417	Houston Harvard Street	160 Harvard Street, Houston	NO/NO2/NOx	SPM	Chemilumine-scence	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.77292	-95.39578
Houston-The Woodlands-Sugar Land	482010417	Houston Harvard Street	160 Harvard Street, Houston	O3	SPM	UV Photometric	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.77292	-95.39578
Houston-The Woodlands-Sugar Land	482010060	Houston Kirkpatrick	5565 Kirkpatrick, Houston	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	29.80741	-95.29362
Houston-The Woodlands-Sugar Land	482010060	Houston Kirkpatrick	5565 Kirkpatrick, Houston	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	29.80741	-95.29362
Houston-The Woodlands-Sugar Land	482010062	Houston Monroe	9726 1/2 Monroe, Houston	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	29.62556	-95.26722
Houston-The Woodlands-Sugar Land	482010062	Houston Monroe	9726 1/2 Monroe, Houston	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Suburban	Population Exposure	Neighborhood	29.62556	-95.26722
Houston-The Woodlands-Sugar Land	482010062	Houston Monroe	9726 1/2 Monroe, Houston	Precipitation	SPM	Rain Gauge	Continuous	Suburban	General, Background	Neighborhood	29.62556	-95.26722
Houston-The Woodlands-Sugar Land	482011052	Houston North Loop	822 North Loop, Houston	CO	Near Road, SLAMS	Gas Filter Correlation	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.81453	-95.38769
Houston-The Woodlands-Sugar Land	482011052	Houston North Loop	822 North Loop, Houston	NO/NO2/NOx	Near Road, SLAMS	Chemilumine-scence	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.81453	-95.38769

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Houston-The Woodlands-Sugar Land	482011052	Houston North Loop	822 North Loop, Houston	PM2.5 (Beta)	Near Road, SLAMS	Beta Attenuation	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.81453	-95.38769
Houston-The Woodlands-Sugar Land	482011052	Houston North Loop	822 North Loop, Houston	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.81453	-95.38769
Houston-The Woodlands-Sugar Land	482011052	Houston North Loop	822 North Loop, Houston	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.81453	-95.38769
Houston-The Woodlands-Sugar Land	482010046	Houston North Wayside	7330 1/2 North Wayside, Houston	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	29.82809	-95.28410
Houston-The Woodlands-Sugar Land	482010046	Houston North Wayside	7330 1/2 North Wayside, Houston	PM10 (TEOM 1405) pending activation	SPM	TEOM Gravimetric	Continuous	Suburban	General, Background	Neighborhood	29.82809	-95.28410
Houston-The Woodlands-Sugar Land	482010046	Houston North Wayside	7330 1/2 North Wayside, Houston	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Suburban	Population Exposure	Neighborhood	29.82809	-95.28410
Houston-The Woodlands-Sugar Land	482010046	Houston North Wayside	7330 1/2 North Wayside, Houston	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	29.82809	-95.28410
Houston-The Woodlands-Sugar Land	482010046	Houston North Wayside	7330 1/2 North Wayside, Houston	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	29.82809	-95.28410
Houston-The Woodlands-Sugar Land	482011066	Houston Southwest Freeway	5617 Westward Avenue, Houston	NO/NO2/NOx	Near Road, SLAMS	Chemilumine-scence	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.72160	-95.49265
Houston-The Woodlands-Sugar Land	482011066	Houston Southwest Freeway	5617 Westward Avenue, Houston	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.72160	-95.49265
Houston-The Woodlands-Sugar Land	482011066	Houston Southwest Freeway	5617 Westward Avenue, Houston	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.72160	-95.49265
Houston-The Woodlands-Sugar Land	482010066	Houston Westhollow	3333 1/2 Hwy 6 South, Houston	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	29.72333	-95.63583
Houston-The Woodlands-Sugar Land	482010066	Houston Westhollow	3333 1/2 Hwy 6 South, Houston	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Suburban	Population Exposure	Neighborhood	29.72333	-95.63583
Houston-The Woodlands-Sugar Land	482010066	Houston Westhollow	3333 1/2 Hwy 6 South, Houston	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	29.72333	-95.63583
Houston-The Woodlands-Sugar Land	482010066	Houston Westhollow	3333 1/2 Hwy 6 South, Houston	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	29.72333	-95.63583

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Houston-The Woodlands-Sugar Land	482011043	La Porte Airport C243	La Porte Airport, 2434 Buchanan Street, La Porte	Ceilometer	PAMS, SLAMS	ceilometer	Continuous	Suburban	Regional Transport	Regional Scale	29.67200	-95.06470
Houston-The Woodlands-Sugar Land	482011043	La Porte Airport C243	La Porte Airport, 2434 Buchanan Street, La Porte	Precipitation	PAMS, SLAMS	Rain Gauge	Continuous	Suburban	General, Background	Neighborhood	29.67200	-95.06470
Houston-The Woodlands-Sugar Land	482011043	La Porte Airport C243	La Porte Airport, 2434 Buchanan Street, La Porte	Radar Profiler	SPM	Radar Profiler	Continuous	Suburban	Regional Transport	Regional Scale	29.67200	-95.06470
Houston-The Woodlands-Sugar Land	482011043	La Porte Airport C243	La Porte Airport, 2434 Buchanan Street, La Porte	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	29.67200	-95.06470
Houston-The Woodlands-Sugar Land	482011043	La Porte Airport C243	La Porte Airport, 2434 Buchanan Street, La Porte	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	29.67200	-95.06470
Houston-The Woodlands-Sugar Land	480391016	Lake Jackson	109B Brazoria Hwy 332 West, Lake Jackson	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure; Source Oriented	Middle Scale, Neighborhood	29.04376	-95.47295
Houston-The Woodlands-Sugar Land	480391016	Lake Jackson	109B Brazoria Hwy 332 West, Lake Jackson	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure; Source Oriented	Neighborhood	29.04376	-95.47295
Houston-The Woodlands-Sugar Land	480391016	Lake Jackson	109B Brazoria Hwy 332 West, Lake Jackson	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	Highest Concentration	Middle Scale	29.04376	-95.47295
Houston-The Woodlands-Sugar Land	480391016	Lake Jackson	109B Brazoria Hwy 332 West, Lake Jackson	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Highest Concentration	Middle Scale	29.04376	-95.47295
Houston-The Woodlands-Sugar Land	480391016	Lake Jackson	109B Brazoria Hwy 332 West, Lake Jackson	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Highest Concentration	Middle Scale	29.04376	-95.47295
Houston-The Woodlands-Sugar Land	482010047	Lang	4401 1/2 Lang Rd, Houston	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure	Middle Scale, Urban Scale	29.83417	-95.48917
Houston-The Woodlands-Sugar Land	482010047	Lang	4401 1/2 Lang Rd, Houston	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Urban Scale	29.83417	-95.48917
Houston-The Woodlands-Sugar Land	482010047	Lang	4401 1/2 Lang Rd, Houston	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Suburban	Population Exposure	Neighborhood	29.83417	-95.48917
Houston-The Woodlands-Sugar Land	482011015	Lynchburg Ferry	4364 Independence Parkway South, Baytown	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Source Oriented	Middle Scale, Neighborhood	29.75889	-95.07944
Houston-The Woodlands-Sugar Land	482011015	Lynchburg Ferry	4364 Independence Parkway South, Baytown	O3	SLAMS	UV Photometric	Continuous	Suburban	Source Oriented	Middle Scale	29.75889	-95.07944

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Houston-The Woodlands-Sugar Land	482011015	Lynchburg Ferry	4364 Independence Parkway South, Baytown	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	Highest Concentration	Neighborhood	29.75889	-95.07944
Houston-The Woodlands-Sugar Land	482011015	Lynchburg Ferry	4364 Independence Parkway South, Baytown	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Highest Concentration	Neighborhood	29.75889	-95.07944
Houston-The Woodlands-Sugar Land	482011015	Lynchburg Ferry	4364 Independence Parkway South, Baytown	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Highest Concentration	Neighborhood	29.75889	-95.07944
Houston-The Woodlands-Sugar Land	480391004	Manvel Croix Park	4503 Croix Pkwy, Manvel	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure	Urban Scale	29.52044	-95.39251
Houston-The Woodlands-Sugar Land	480391004	Manvel Croix Park	4503 Croix Pkwy, Manvel	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Urban Scale	29.52044	-95.39251
Houston-The Woodlands-Sugar Land	480391004	Manvel Croix Park	4503 Croix Pkwy, Manvel	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	29.52044	-95.39251
Houston-The Woodlands-Sugar Land	480391004	Manvel Croix Park	4503 Croix Pkwy, Manvel	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	29.52044	-95.39251
Houston-The Woodlands-Sugar Land	482010029	Northwest Harris County	16822 Kitzman, Tomball	Dew Point	SPM	Derived at site	Continuous	Rural	Source Oriented	Microscale	30.03952	-95.67395
Houston-The Woodlands-Sugar Land	482010029	Northwest Harris County	16822 Kitzman, Tomball	NO/NO2/NOx	PAMS, SLAMS	Chemilumine-scence	Continuous	Rural	Extreme Downwind; Population Exposure; Upwind Background	Urban Scale	30.03952	-95.67395
Houston-The Woodlands-Sugar Land	482010029	Northwest Harris County	16822 Kitzman, Tomball	O3	PAMS, SLAMS	UV Photometric	Continuous	Rural	Extreme Downwind; Population Exposure; Upwind Background	Urban Scale	30.03952	-95.67395
Houston-The Woodlands-Sugar Land	482010029	Northwest Harris County	16822 Kitzman, Tomball	Relative Humidity	PAMS, SLAMS	Humidity Sensor	Continuous	Rural	Extreme Downwind; Upwind Background	Urban Scale	30.03952	-95.67395
Houston-The Woodlands-Sugar Land	482010029	Northwest Harris County	16822 Kitzman, Tomball	Solar Radiation	PAMS, SLAMS	Photovoltaic	Continuous	Rural	Extreme Downwind; Upwind Background	Urban Scale	30.03952	-95.67395
Houston-The Woodlands-Sugar Land	482010029	Northwest Harris County	16822 Kitzman, Tomball	Temperature (Outdoor)	PAMS, SLAMS	Aspirated Thermister	Continuous	Rural	Extreme Downwind; Upwind Background	Urban Scale	30.03952	-95.67395

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Houston-The Woodlands-Sugar Land	482010029	Northwest Harris County	16822 Kitzman, Tomball	Wind	PAMS, SLAMS	Potentiometer Cup Anemometer	Continuous	Rural	Extreme Downwind; Upwind Background	Urban Scale	30.03952	-95.67395
Houston-The Woodlands-Sugar Land	482010416	Park Place	7421 Park Place Blvd, Houston	Barometric Pressure	SPM	Barometric pressure transducer	Continuous	Urban and Center City	General, Background	Neighborhood	29.68639	-95.29472
Houston-The Woodlands-Sugar Land	482010416	Park Place	7421 Park Place Blvd, Houston	Dew Point	SPM	Derived at site	Continuous	Urban and Center City	General, Background	Neighborhood	29.68639	-95.29472
Houston-The Woodlands-Sugar Land	482010416	Park Place	7421 Park Place Blvd, Houston	NO/NO2/NOx	SPM	Chemilumine-scence	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.68639	-95.29472
Houston-The Woodlands-Sugar Land	482010416	Park Place	7421 Park Place Blvd, Houston	O3	SPM	UV Photometric	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.68639	-95.29472
Houston-The Woodlands-Sugar Land	482010416	Park Place	7421 Park Place Blvd, Houston	Precipitation	SPM	Rain Gauge	Continuous	Urban and Center City	General, Background	Neighborhood	29.68639	-95.29472
Houston-The Woodlands-Sugar Land	482010416	Park Place	7421 Park Place Blvd, Houston	Relative Humidity	SPM	Humidity Sensor	Continuous	Urban and Center City	General, Background	Neighborhood	29.68639	-95.29472
Houston-The Woodlands-Sugar Land	482010416	Park Place	7421 Park Place Blvd, Houston	SO2	SPM	Pulsed Fluorescence	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.68639	-95.29472
Houston-The Woodlands-Sugar Land	482010416	Park Place	7421 Park Place Blvd, Houston	Solar Radiation	SPM	Photovoltaic	Continuous	Urban and Center City	General, Background	Neighborhood	29.68639	-95.29472
Houston-The Woodlands-Sugar Land	482010416	Park Place	7421 Park Place Blvd, Houston	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	General, Background	Neighborhood	29.68639	-95.29472
Houston-The Woodlands-Sugar Land	482010416	Park Place	7421 Park Place Blvd, Houston	UV Radiation	SPM	Photovoltaic	Continuous	Urban and Center City	General, Background	Neighborhood	29.68639	-95.29472
Houston-The Woodlands-Sugar Land	482010416	Park Place	7421 Park Place Blvd, Houston	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	General, Background	Neighborhood	29.68639	-95.29472
Houston-The Woodlands-Sugar Land	482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure	Middle Scale, Neighborhood	29.58305	-95.01554
Houston-The Woodlands-Sugar Land	482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	29.58305	-95.01554
Houston-The Woodlands-Sugar Land	482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	PM2.5 (TEOM)[N]	SPM	TEOM Gravimetric	Continuous	Suburban	Highest Concentration	Middle Scale	29.58305	-95.01554
Houston-The Woodlands-Sugar Land	482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	Highest Concentration	Middle Scale	29.58305	-95.01554

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Houston-The Woodlands-Sugar Land	482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Highest Concentration	Middle Scale	29.58305	-95.01554
Houston-The Woodlands-Sugar Land	482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Highest Concentration	Middle Scale	29.58305	-95.01554
Houston-The Woodlands-Sugar Land	480710013	Smith Point Hawkins Camp	1850 Hawkins Camp Rd, Anahuac	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Source Oriented	Neighborhood	29.54624	-94.78697
Houston-The Woodlands-Sugar Land	480710013	Smith Point Hawkins Camp	1850 Hawkins Camp Rd, Anahuac	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Source Oriented	Neighborhood	29.54624	-94.78697
Houston-The Woodlands-Sugar Land	481670004	Texas City Fire Station	2516 Texas Avenue, Texas City	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Urban and Center City	Highest Concentration	Neighborhood	29.38444	-94.93083
Killeen-Temple-Fort Hood	480271047	Killeen Skylark Field	1605 Stone Tree Drive, Killeen	NO/NO2/NOx	SPM	Chemilumine-scence	Continuous	Urban and Center City	General, Background	Urban Scale	31.08800	-97.67973
Killeen-Temple-Fort Hood	480271047	Killeen Skylark Field	1605 Stone Tree Drive, Killeen	O3	SLAMS	UV Photometric	Continuous	Urban and Center City	Population Exposure	Urban Scale	31.08800	-97.67973
Killeen-Temple-Fort Hood	480271047	Killeen Skylark Field	1605 Stone Tree Drive, Killeen	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Population Exposure	Urban Scale	31.08800	-97.67973
Killeen-Temple-Fort Hood	480271047	Killeen Skylark Field	1605 Stone Tree Drive, Killeen	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Population Exposure	Urban Scale	31.08800	-97.67973
Killeen-Temple-Fort Hood	480271045	Temple Georgia	8406 Georgia Avenue, Temple	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Urban Scale	31.12242	-97.43105
Killeen-Temple-Fort Hood	480271045	Temple Georgia	8406 Georgia Avenue, Temple	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Suburban	Population Exposure	Urban Scale	31.12242	-97.43105
Killeen-Temple-Fort Hood	480271045	Temple Georgia	8406 Georgia Avenue, Temple	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	31.12242	-97.43105
Killeen-Temple-Fort Hood	480271045	Temple Georgia	8406 Georgia Avenue, Temple	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	31.12242	-97.43105
Kingsville*	482730314	National Seashore	20420 Park Road, Corpus Christi	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Rural	Regional Transport	Regional Scale	27.42698	-97.29869
Kingsville*	482730314	National Seashore	20420 Park Road, Corpus Christi	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	Regional Transport	Regional Scale	27.42698	-97.29869
Kingsville*	482730314	National Seashore	20420 Park Road, Corpus Christi	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	Regional Transport	Regional Scale	27.42698	-97.29869

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Laredo	484790017	Laredo Bridge	700 Zaragosa St, Laredo	PM10 (FRM)	Border Grant, SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Urban and Center City	Highest Concentration	Microscale	27.50183	-99.50298
Laredo	484790017	Laredo Bridge	700 Zaragosa St, Laredo	Speciated VOC (Canister)	Border Grant, SPM	Canister GC-MS	24 Hours; 1/6 Days	Urban and Center City	Highest Concentration	Neighborhood	27.50183	-99.50298
Laredo	484790017	Laredo Bridge	700 Zaragosa St, Laredo	Temperature (Outdoor)	Border Grant, SLAMS	Aspirated Thermister	Continuous	Urban and Center City	Population Exposure	Neighborhood	27.50183	-99.50298
Laredo	484790017	Laredo Bridge	700 Zaragosa St, Laredo	Wind	Border Grant, SLAMS	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Population Exposure	Neighborhood	27.50183	-99.50298
Laredo	484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	CO	Border Grant, SLAMS	Gas Filter Correlation	Continuous	Suburban	Population Exposure	Neighborhood	27.51746	-99.51522
Laredo	484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	O3	Border Grant, SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	27.51746	-99.51522
Laredo	484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	PM10 (FRM)	Border Grant, SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Suburban	Population Exposure	Neighborhood	27.51746	-99.51522
Laredo	484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	Temperature (Outdoor)	Border Grant, SLAMS	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	27.51746	-99.51522
Laredo	484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	Wind	Border Grant, SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	27.51746	-99.51522
Laredo	484790313	World Trade Bridge	Mines Road 11601 FM 1472, Laredo	PM2.5 (Beta)	SLAMS	Beta Attenuation	Continuous	Suburban	Source Oriented	Microscale	27.59944	-99.53333
Longview	481830001	Longview	Gregg Co Airport near Longview, Longview	NO/NO2/NOx	SPM	Chemilumine-scence	Continuous	Rural	Population Exposure	Neighborhood	32.37870	-94.71181
Longview	481830001	Longview	Gregg Co Airport near Longview, Longview	O3	SLAMS	UV Photometric	Continuous	Rural	Population Exposure	Neighborhood	32.37870	-94.71181
Longview	481830001	Longview	Gregg Co Airport near Longview, Longview	Precipitation	SPM	Rain Gauge	Continuous	Rural	General, Background	Neighborhood	32.37870	-94.71181
Longview	481830001	Longview	Gregg Co Airport near Longview, Longview	SO2	SLAMS	Pulsed Fluorescence	Continuous	Rural	General, Background; Population Exposure	Neighborhood	32.37870	-94.71181
Longview	481830001	Longview	Gregg Co Airport near Longview, Longview	Solar Radiation	SPM	Photovoltaic	Continuous	Rural	General, Background	Neighborhood	32.37870	-94.71181
Longview***	482031079	Hallsville Red Oak Road	9206 Red Oak Road, Hallsville	SO2	SLAMS	Pulsed Fluorescence	Continuous	Rural	Source Oriented	Neighborhood	32.47023	-94.48160

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Longview***	482031079	Hallsville Red Oak Road	9206 Red Oak Road, Hallsville	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	32.47023	-94.48160
Longview***	482031079	Hallsville Red Oak Road	9206 Red Oak Road, Hallsville	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	32.47023	-94.48160
Longview***	482030002	Karnack	Hwy 134 & Spur 449, Not In A City	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Rural	General, Background	Regional Scale, Urban Scale	32.66900	-94.16747
Longview***	482030002	Karnack	Hwy 134 & Spur 449, Not In A City	O3	SLAMS	UV Photometric	Continuous	Rural	General, Background	Regional Scale	32.66900	-94.16747
Longview***	482030002	Karnack	Hwy 134 & Spur 449, Not In A City	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Rural	General, Background	Regional Scale	32.66900	-94.16747
Longview***	482030002	Karnack	Hwy 134 & Spur 449, Not In A City	PM2.5 (Speciation)	Csn Supplemental, SLAMS	Carbons, Elements, Ions, SASS/URG	24 Hours; 1/3 Days	Rural	General, Background; Regional Transport	Regional Scale	32.66900	-94.16747
Longview***	482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Solar Radiation	SPM	Photovoltaic	Continuous	Rural	General, Background	Urban Scale	32.66900	-94.16747
Longview***	482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Urban Scale	32.66900	-94.16747
Longview***	482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Visibility	SPM	Visibility Sensor	Continuous	Rural	General, Background	Urban Scale	32.66900	-94.16747
Longview***	482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Urban Scale	32.66900	-94.16747
Longview***	481830001	Longview	Gregg Co Airport near Longview, Longview	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	32.37870	-94.71181
Longview***	481830001	Longview	Gregg Co Airport near Longview, Longview	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	32.37870	-94.71181
Longview***	484011082	Tatum CR 2181d Martin Creek Lake	9515 County Road 2181d, Tatum	SO2	SPM	Pulsed Fluorescence	Continuous	Rural	Source Oriented	Neighborhood	32.27793	-94.57085
Longview***	484011082	Tatum CR 2181d Martin Creek Lake	9515 County Road 2181d, Tatum	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	32.27793	-94.57085
Longview***	484011082	Tatum CR 2181d Martin Creek Lake	9515 County Road 2181d, Tatum	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	32.27793	-94.57085
Lubbock	483031028	Lubbock 12th Street	3901 East 12th Street, Lubbock	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Urban and Center City	Population Exposure	Urban Scale	33.58553	-101.78698

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Lubbock	483031028	Lubbock 12th Street	3901 East 12th Street, Lubbock	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	General, Background	Regional Scale	33.58553	-101.78698
Lubbock	483031028	Lubbock 12th Street	3901 East 12th Street, Lubbock	Wind (3m)	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	General, Background	Regional Scale	33.58553	-101.78698
McAllen-Edinburg-Mission	482151046	Edinburg East Freddy Gonzalez Drive	1491 East Freddy Gonzalez Drive, Edinburg	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Urban and Center City	Population Exposure	Regional Scale	26.28862	-98.15207
McAllen-Edinburg-Mission	482151046	Edinburg East Freddy Gonzalez Drive	1491 East Freddy Gonzalez Drive, Edinburg	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Population Exposure	Regional Scale	26.28862	-98.15207
McAllen-Edinburg-Mission	482151046	Edinburg East Freddy Gonzalez Drive	1491 East Freddy Gonzalez Drive, Edinburg	Wind (3m)	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Population Exposure	Regional Scale	26.28862	-98.15207
McAllen-Edinburg-Mission	482150043	Mission	2300 North Glasscock, Mission	O3	SLAMS	UV Photometric	Continuous	Suburban	Population Exposure	Neighborhood	26.22621	-98.29107
McAllen-Edinburg-Mission	482150043	Mission	2300 North Glasscock, Mission	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Suburban	Population Exposure	Urban Scale	26.22621	-98.29107
McAllen-Edinburg-Mission	482150043	Mission	2300 North Glasscock, Mission	PM2.5 (Beta)	SLAMS	Beta Attenuation	Continuous	Suburban	Population Exposure	Urban Scale	26.22621	-98.29107
McAllen-Edinburg-Mission	482150043	Mission	2300 North Glasscock, Mission	Solar Radiation	SPM	Photovoltaic	Continuous	Suburban	Population Exposure	Microscale	26.22621	-98.29107
McAllen-Edinburg-Mission	482150043	Mission	2300 North Glasscock, Mission	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Microscale	26.22621	-98.29107
McAllen-Edinburg-Mission	482150043	Mission	2300 North Glasscock, Mission	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Microscale	26.22621	-98.29107
Mount Pleasant*	484491078	Cookville FM 4855	385 CR 4855, Not In A City	SO2	SLAMS	Pulsed Fluorescence	Continuous	Rural	Source Oriented	Neighborhood	33.07520	-94.84740
Mount Pleasant*	484491078	Cookville FM 4855	385 CR 4855, Not In A City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	33.07520	-94.84740
Mount Pleasant*	484491078	Cookville FM 4855	385 CR 4855, Not In A City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	33.07520	-94.84740
none	480430101	Bravo Big Bend	Big Bend National Park, Big Bend Nat Park	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Rural	General, Background	Regional Scale	29.30255	-103.17791

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
none	480430101	Bravo Big Bend	Big Bend National Park, Big Bend Nat Park	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Microscale	29.30255	-103.17791
none	480430101	Bravo Big Bend	Big Bend National Park, Big Bend Nat Park	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Regional Scale	29.30255	-103.17791
none	481611084	Fairfield FM 2570 Ward Ranch	488 FM 2570, Fairfield	SO2	SPM	Pulsed Fluorescence	Continuous	Rural	Source Oriented	Neighborhood	31.79780	-96.10310
none	481611084	Fairfield FM 2570 Ward Ranch	488 FM 2570, Fairfield	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	Source Oriented	Neighborhood	31.79780	-96.10310
none	481611084	Fairfield FM 2570 Ward Ranch	488 FM 2570, Fairfield	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	Source Oriented	Neighborhood	31.79780	-96.10310
none	482551070	Karnes County	1100B East Main Avenue, Karnes City	NO/NO2/NOx	SPM	Chemilumine-scence	Continuous	Rural	Max Precursor Emissions Impact; Upwind Background	Urban Scale	28.88044	-97.88807
none	482551070	Karnes County	1100B East Main Avenue, Karnes City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	28.88044	-97.88807
none	482551070	Karnes County	1100B East Main Avenue, Karnes City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	28.88044	-97.88807
Odessa	481351014	Odessa Gonzales	2700 Disney, Odessa	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Suburban	Highest Concentration	Regional Scale	31.87026	-102.33475
Odessa	481351014	Odessa Gonzales	2700 Disney, Odessa	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	31.87026	-102.33475
Odessa	481351014	Odessa Gonzales	2700 Disney, Odessa	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	31.87026	-102.33475
San Antonio-New Braunfels	480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Rural	Source Oriented; Upwind Background	Urban Scale	29.27538	-98.31169
San Antonio-New Braunfels	480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	O3	SLAMS	UV Photometric	Continuous	Rural	Source Oriented; Upwind Background	Urban Scale	29.27538	-98.31169
San Antonio-New Braunfels	480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	PM2.5 (Beta)	SLAMS	Beta Attenuation	Continuous	Rural	Population Exposure; Source Oriented	Urban Scale	29.27538	-98.31169

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
San Antonio-New Braunfels	480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	SO2	SLAMS	Pulsed Fluorescence	Continuous	Rural	Population Exposure; Source Oriented	Neighborhood	29.27538	-98.31169
San Antonio-New Braunfels	480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	Source Oriented	Urban Scale	29.27538	-98.31169
San Antonio-New Braunfels	480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	Source Oriented	Urban Scale	29.27538	-98.31169
San Antonio-New Braunfels	480290052	Camp Bullis	F Range (1000 Yd marker off Wilderness Trail), Near Wilderness Rd, San Antonio	NO/NO2/NOx	SPM	Chemilumine-scence	Continuous	Rural	Max Precursor Emissions Impact	Urban Scale	29.63206	-98.56494
San Antonio-New Braunfels	480290052	Camp Bullis	F Range (1000 Yd marker off Wilderness Trail), Near Wilderness Rd, San Antonio	O3	SLAMS	UV Photometric	Continuous	Rural	Max Ozone Concentration; Population Exposure	Urban Scale	29.63206	-98.56494
San Antonio-New Braunfels	480290052	Camp Bullis	F Range (1000 Yd marker off Wilderness Trail), Near Wilderness Rd, San Antonio	Solar Radiation	SPM	Photovoltaic	Continuous	Rural	Highest Concentration	Urban Scale	29.63206	-98.56494
San Antonio-New Braunfels	480290052	Camp Bullis	F Range (1000 Yd marker off Wilderness Trail), Near Wilderness Rd, San Antonio	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	Highest Concentration	Urban Scale	29.63206	-98.56494
San Antonio-New Braunfels	480290052	Camp Bullis	F Range (1000 Yd marker off Wilderness Trail), Near Wilderness Rd, San Antonio	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	Highest Concentration	Urban Scale	29.63206	-98.56494
San Antonio-New Braunfels	484931038	Floresville Hospital Boulevard	1404 Hospital Blvd, Floresville	NO/NO2/NOx	SPM	Chemilumine-scence	Continuous	Rural	Max Precursor Emissions Impact; Upwind Background	Urban Scale	29.13070	-98.14810
San Antonio-New Braunfels	484931038	Floresville Hospital Boulevard	1404 Hospital Blvd, Floresville	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	29.13070	-98.14810
San Antonio-New Braunfels	484931038	Floresville Hospital Boulevard	1404 Hospital Blvd, Floresville	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	29.13070	-98.14810
San Antonio-New Braunfels	480290060	Frank Wing Municipal Court	401 South Frio St, San Antonio	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Urban and Center City	Population Exposure	Middle Scale	29.42219	-98.50542
San Antonio-New Braunfels	480290677	Old Hwy 90	911 Old Hwy 90 West, San Antonio	PM2.5 (TEOM)^{N}	SPM	1405 TEOM Gravimetric	Continuous	Urban and Center City	Population Exposure	Neighborhood	29.42394	-98.58051

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
San Antonio-New Braunfels	480291087	San Antonio Bulverde Parkway	3843 Bulverde Parkway, San Antonio	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Suburban	Population Exposure	Neighborhood	29.63500	-98.41770
San Antonio-New Braunfels	480291087	San Antonio Bulverde Parkway	3843 Bulverde Parkway, San Antonio	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Population Exposure	Neighborhood	29.63500	-98.41770
San Antonio-New Braunfels	480291087	San Antonio Bulverde Parkway	3843 Bulverde Parkway, San Antonio	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Population Exposure	Neighborhood	29.63500	-98.41770
San Antonio-New Braunfels	480291080	San Antonio Gardner Road	7145 Gardner Road, San Antonio	SO2	SLAMS	Pulsed Fluorescence	Continuous	Suburban	Source Oriented	Neighborhood	29.35291	-98.33281
San Antonio-New Braunfels	480291080	San Antonio Gardner Road	7145 Gardner Road, San Antonio	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	General, Background	Neighborhood	29.35291	-98.33281
San Antonio-New Braunfels	480291080	San Antonio Gardner Road	7145 Gardner Road, San Antonio	Wind (3m)	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	General, Background	Neighborhood	29.35291	-98.33281
San Antonio-New Braunfels	480291069	San Antonio Interstate 35	9904 IH 35 N, San Antonio	CO	Near Road, SLAMS	Gas Filter Correlation	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.52943	-98.39140
San Antonio-New Braunfels	480291069	San Antonio Interstate 35	9904 IH 35 N, San Antonio	NO/NO2/NOx	Near Road, SLAMS	Chemilumine-scence	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.52943	-98.39140
San Antonio-New Braunfels	480291069	San Antonio Interstate 35	9904 IH 35 N, San Antonio	PM2.5 (Beta)	Near Road, SLAMS	Beta Attenuation	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.52943	-98.39140
San Antonio-New Braunfels	480291069	San Antonio Interstate 35	9904 IH 35 N, San Antonio	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.52943	-98.39140
San Antonio-New Braunfels	480291069	San Antonio Interstate 35	9904 IH 35 N, San Antonio	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Max Precursor Emissions Impact	Microscale	29.52943	-98.39140
San Antonio-New Braunfels	480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	NO/NO2/NOx	SLAMS	Chemilumine-scence	Continuous	Suburban	Population Exposure	Neighborhood	29.51509	-98.62017
San Antonio-New Braunfels	480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	O3	SLAMS	UV Photometric	Continuous	Suburban	Max Ozone Concentration; Population Exposure	Urban Scale	29.51509	-98.62017
San Antonio-New Braunfels	480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	PM2.5 (Beta)	SLAMS	Beta Attenuation	Continuous	Suburban	Population Exposure	Urban Scale	29.51509	-98.62017
San Antonio-New Braunfels	480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	PM2.5 (FRM)	QA Collocated, SLAMS	Sequential FRM Gravimetric	24 Hours; 1/12 Days	Suburban	Population Exposure; Quality Assurance	Urban Scale	29.51509	-98.62017
San Antonio-New Braunfels	480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Suburban	Highest Concentration	Urban Scale	29.51509	-98.62017

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
San Antonio-New Braunfels	480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Suburban	Highest Concentration	Urban Scale	29.51509	-98.62017
San Antonio-New Braunfels	480131090	Von Ormy Highway 16	17534 North State Highway 16, Not In A City	PM2.5 (Beta)	SPM	Beta Attenuation	Continuous	Rural	Population Exposure; Source Oriented	Microscale	29.16300	-98.58916
San Antonio-New Braunfels	480131090	Von Ormy Highway 16	17534 North State Highway 16, Not In A City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	29.16300	-98.58916
San Antonio-New Braunfels	480131090	Von Ormy Highway 16	17534 North State Highway 16, Not In A City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	29.16300	-98.58916
Texarkana	480371031	Texarkana New Boston	2700 New Boston Rd, Texarkana	PM2.5 (Beta)	SLAMS	Beta Attenuation	Continuous	Urban and Center City	Population Exposure	Urban Scale	33.43611	-94.07778
Texarkana	480371031	Texarkana New Boston	2700 New Boston Rd, Texarkana	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Population Exposure	Urban Scale	33.43611	-94.07778
Texarkana	480371031	Texarkana New Boston	2700 New Boston Rd, Texarkana	Wind (3m)	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Population Exposure	Urban Scale	33.43611	-94.07778
Tyler	484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	NO/NO2/NOx	SPM	Chemilumine-scence	Continuous	Rural	General, Background	Urban Scale	32.34403	-95.41575
Tyler	484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	O3	SLAMS	UV Photometric	Continuous	Rural	General, Background	Urban Scale	32.34403	-95.41575
Tyler	484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	Precipitation	SPM	Rain Gauge	Continuous	Rural	General, Background	Neighborhood	32.34403	-95.41575
Tyler	484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	Solar Radiation	SPM	Photovoltaic	Continuous	Rural	General, Background	Neighborhood	32.34403	-95.41575
Tyler	484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	General, Background	Neighborhood	32.34403	-95.41575
Tyler	484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	General, Background	Neighborhood	32.34403	-95.41575
Victoria	484690003	Victoria	106 Mockingbird Lane, Victoria	O3	SLAMS	UV Photometric	Continuous	Urban and Center City	Population Exposure	Neighborhood	28.83621	-97.00553
Victoria	484690003	Victoria	106 Mockingbird Lane, Victoria	Solar Radiation	SPM	Photovoltaic	Continuous	Urban and Center City	Highest Concentration	Neighborhood	28.83621	-97.00553
Victoria	484690003	Victoria	106 Mockingbird Lane, Victoria	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Urban and Center City	Highest Concentration	Neighborhood	28.83621	-97.00553
Victoria	484690003	Victoria	106 Mockingbird Lane, Victoria	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Urban and Center City	Highest Concentration	Neighborhood	28.83621	-97.00553

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Texas MSA - CBSA	AQS Site Number	Site Name	Address - Location	Sampler Type	Network	Methods	Operating Schedule	Location Setting	Monitoring Objective	Spatial Scale	Latitude	Longitude
Waco	483091037	Waco Mazanec	4472 Mazanec Rd, Waco	CO	SLAMS	Gas Filter Correlation	Continuous	Rural	Upwind Background	Urban Scale	31.65309	-97.07070
Waco	483091037	Waco Mazanec	4472 Mazanec Rd, Waco	O3	SLAMS	UV Photometric	Continuous	Rural	Upwind Background	Regional Scale	31.65309	-97.07070
Waco	483091037	Waco Mazanec	4472 Mazanec Rd, Waco	PM2.5 (TEOM)[N]	SPM	1405 TEOM Gravimetric	Continuous	Rural	Regional Transport	Regional Scale	31.65309	-97.07070
Waco	483091037	Waco Mazanec	4472 Mazanec Rd, Waco	SO2	SLAMS	Pulsed Fluorescence	Continuous	Rural	Upwind Background	Urban Scale	31.65309	-97.07070
Waco	483091037	Waco Mazanec	4472 Mazanec Rd, Waco	Solar Radiation	SPM	Photovoltaic	Continuous	Rural	Regional Transport	Urban Scale	31.65309	-97.07070
Waco	483091037	Waco Mazanec	4472 Mazanec Rd, Waco	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Rural	Regional Transport	Urban Scale	31.65309	-97.07070
Waco	483091037	Waco Mazanec	4472 Mazanec Rd, Waco	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Rural	Regional Transport	Urban Scale	31.65309	-97.07070

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Symbol/Acronym	Description
*	Micropolitan Statistical Area
**	County is not a Metropolitan or Micropolitan Statistical Area
***	Marshall, Texas, is no longer a Micropolitan Statistical Area according to the United States Office of Management and Budget (OMB) and is currently designated as a part of the Longview MSA, AQS is pending updates to match the new OMB designation.
N	Monitor is not suitable for comparison against the annual $PM_{2.5}$ NAAQS as described in 40 Code of Federal Regulations Part 58.30
24-Hours; 1/12 Days	1 24-hour sample, once every twelfth day
24-Hours; 1/6 Days	1 24-hour sample, once every sixth day
24-Hours; 1/3 Days	1 24-hour sample, once every third day
24-Hours, 1/1 Days	1 24-hour sample, daily
24 Hours; Seasonal, 8 Hour; Seasonal	1 24-hour sample every sixth day seasonal, three eight-hour samples seasonal
24-Hour 1/6 Days Seasonal	1 24-hour sample, once every sixth day seasonal
AMNP	Annual Monitoring Network Plan
AQS	Air Quality System
AR	Arkansas
AutoGC	automated gas chromatograph
Ave	avenue
Blvd	boulevard
Border	The Border network designation is part of the SLAMS network for monitors within 100 kilometers of the United States/Mexico border.
CBSA	core based statistical area
CR	county road
CSN STN	Chemical Speciation Network Speciation Trends Network site (includes NCore monitors/requirements, samples analyzed by EPA contracted laboratory)
DNPH	dinitrophenylhydrazine
Dr	drive
E	east
CO	carbon monoxide
FM	farm-to-market
FRM	federal reference method
GC	gas chromatograph
GC-MS	gas chromatograph mass spectrometry
Hi-Vol	high-volume
Hi-Vol ICP-MS	high-volume with inductively coupled plasma by mass spectrometry
HPLC	high performance liquid chromatography
Hwy(s)	highway(s)
IH	Interstate Highway
LBJ	Lyndon B Johnson

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Symbol/Acronym	Description
Ln	lane
Max	maximum
MSA	metropolitan statistical area/micropolitan statistical area
NCore	National Core Multipollutant Monitoring Stations
N	north
NE	northeast
NO_2	nitrogen dioxide
$NO/NO_2/NO_x$	nitrogen oxides
NO_y	total reactive nitrogen
O_3	ozone
OFW	Old Fort Worth
PAMS	Photochemical Assessment Monitoring Stations
Pkwy	parkway
PM_{10}	particulate matter of 10 micrometers or less in diameter
$PM_{10-2.5}$	coarse particulate matter
$PM_{2.5}$	particulate matter of 2.5 micrometers or less in diameter
QA Collocated	quality assurance collocated monitor
Rd	road
S	south
SE	southeast
SETRPC	Southeast Texas Regional Planning Commission
SLAMS	State or Local Air Monitoring Stations
SO_2	sulfur dioxide (one-hour and five-minute maximum monitors)
SPM	special purpose monitor
St	street
TCEQ	Texas Commission on Environmental Quality
TEOM	tapered element oscillating microbalance (not NAAQS comparable)
TSP (Pb)	total suspended particulate (lead)
TX	Texas
UTEP	University of Texas at El Paso
UV	ultraviolet
VOC	volatile organic compound
W	west
Wind	All wind sampler types produce data for parameters 61101, 61103, 61104, 61105, and 61106.
Yd	yard

Appendix C

Population and Criteria Pollutant Monitor Requirements and Count Summary by Metropolitan Statistical Area

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix C: Population and Criteria Pollutant Monitor Requirements and Count Summary by Metropolitan Statistical Area

Texas Metropolitan Statistical Area	2019 Population Estimate[1]	NO_2 and NO/NO_y Monitors Required[2,3]	NO_2 and NO/NO_y Monitors Existing[2,3]	SO_2 Monitors Required[2]	SO_2 Monitors Existing[2,4]	Pb Monitors Required	Pb Monitors Existing	O_3 Monitors Required	O_3 Monitors Existing	CO Monitors Required[2]	CO Monitors Existing[2,4]	PM_{10} Monitors Required[4]	PM_{10} Monitors Existing[4]	$PM_{2.5}$ Monitors Required[4]	$PM_{2.5}$ Monitors Existing[4]
Dallas-Fort Worth-Arlington	7,573,136	6	17	2	3	3	3	4	18	2	2	2-4	2	7	13
Houston-The Woodlands-Sugar Land	7,066,141	6	20	3	4	0	0	4	21	2	3	2-4	5	8	16
San Antonio-New Braunfels	2,550,960	3	5	2	2	0	0	2	3	1	1	2-4	2	3	5
Austin-Round Rock-Georgetown	2,227,083	2	2	0	1	0	0	2	2	1	1	2-4	2	3	3
McAllen-Edinburg-Mission	868,707	0	0	0	0	0	0	1	1	0	0	1-2	1	2	2
El Paso	844,124	2	4	1	1	0	0	3	7	1	3	2-4	5	5	8
Killeen-Temple	460,303	0	1	0	0	0	0	2	2	0	0	0-1	0	0	1
Corpus Christi	429,024	0	0	0	3	0	0	2	2	0	0	0-1	1	0	4
Brownsville-Harlingen	423,163	0	0	0	0	0	0	1	1	0	0	0-1	0	0	2
Beaumont-Port Arthur	392,563	1	4	3	4	0	0	2	7	0	0	0-1	0	0	3
Lubbock	322,257	0	0	0	0	0	0	0	0	0	0	0-1	0	0	1
Longview (includes Marshall)	286,657	0	2	2	3	0	0	1	2	0	0	0-1	0	0	2
Laredo	276,652	0	0	0	0	0	0	0	1	0	1	0-1	2	0	1
Waco	273,920	0	0	0	1	0	0	1	1	0	1	0-1	0	0	1
Amarillo	265,053	0	0	1	2	0	0	0	0	0	0	0-1	0	0	1
College Station-Bryan	264,728	0	0	1	1	0	0	0	0	0	0	0-1	0	0	1
Tyler	232,751	0	1	0	0	0	0	1	1	0	0	0	0	0	0
Midland	182,603	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Abilene	172,060	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Odessa	166,223	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Wichita Falls	151,254	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Texarkana	148,761	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Sherman-Denison	136,212	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Angelo	122,027	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Victoria	99,742	0	0	0	0	0	0	1	1	0	0	0	0	0	0
Granbury[5]	61,643	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Eagle Pass[5]	58,722	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Corsicana[5]	50,113	0	1	1	2	0	0	0	1	0	0	0	0	0	1
Mount Pleasant[5]	45,844	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Big Spring[5]	36,664	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Kingsville[5]	31,084	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Borger[5]	20,938	0	0	1	1	0	0	0	0	0	0	0	0	0	0
Karnes County[6]	NA	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Freestone County[6]	NA	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Big Bend National Park[6]	NA	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Totals[3]		**20**	**58**	**19**	**31**	**3**	**3**	**27**	**72**	**7**	**12**	**11-32**	**20**	**28**	**70**

[1]United States Census Bureau population estimates as of July 1, 2019, link below.

[2]Required and existing counts include NO_y, high-sensitivity SO_2, and high-sensitivity CO monitors.

[3]Required monitor pending deployment is discussed in the applicable AMNP section.

[4]Individual monitors may fulfill multiple requirements and are only counted once. Collocated quality control monitors are not included in totals.

[5]Area is classified as a micropolitan statistical area and not subject to SLAMS requirements.

[6]Area not classified as a metropolitan or micropolitan statistical area, county population data is not applicable.

Metropolitan and Micropolitan Statistical Areas Totals: 2010-2019 (census.gov)

CO - carbon monoxide

NA - not applicable

NO_2 and NO/NO_y - nitrogen dioxide, nitrogen oxide, and total reactive nitrogen compounds

Pb - lead

PM_{10} - particulate matter of 10 micrometers or less

$PM_{2.5}$ - particulate matter of 2.5 micrometers or less

O_3 - ozone

SO_2 - sulfur dioxide

Appendix D

Nitrogen Dioxide, Nitrogen Oxide, and Total Reactive Nitrogen Monitor Requirements and Count Summary

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix D: Nitrogen Dioxide, Nitrogen Oxide, and Total Reactive Nitrogen Monitor Requirements and Count Summary

Core Based Statistical Areas	2019 Population Estimate[1]	Required NO_2 Area-Wide Monitors	Required NO_2 RA-40 Monitors	Required NO_2 Near-Road Monitors	Required True NO_2 PAMS Monitors	Required NO/NO_y PAMS/NCore Monitors	Total Required NO_2 and NO/NO_y Monitors	Total Existing NO_2 and NO/NO_y Monitors[2]
Dallas-Fort Worth-Arlington	7,573,136	1	1	2	1	1	6	17
Houston-The Woodlands-Sugar Land	7,066,141	1	1	2	1	1	6	20
San Antonio-New Braunfels	2,550,960	1	0	2	0	0	3	5
Austin-Round Rock-Georgetown	2,227,083	1	0	1	0	0	2	2
McAllen-Edinburg-Mission	868,707	0	0	0	0	0	0	0
El Paso	844,124	0	1	0	0	1	2	4
Killeen-Temple	460,303	0	0	0	0	0	0	1
Corpus Christi	429,024	0	0	0	0	0	0	0
Brownsville-Harlingen	423,163	0	0	0	0	0	0	0
Beaumont-Port Arthur	392,563	0	1	0	0	0	1	4
Lubbock	322,257	0	0	0	0	0	0	0
Longview	286,657	0	0	0	0	0	0	2
Laredo	276,652	0	0	0	0	0	0	0
Waco	273,920	0	0	0	0	0	0	0
Amarillo	265,053	0	0	0	0	0	0	0
College Station-Bryan	264,728	0	0	0	0	0	0	0
Tyler	232,751	0	0	0	0	0	0	1
Midland	182,603	0	0	0	0	0	0	0
Abilene	172,060	0	0	0	0	0	0	0
Odessa	166,223	0	0	0	0	0	0	0
Wichita Falls	151,254	0	0	0	0	0	0	0
Texarkana	148,761	0	0	0	0	0	0	0
Sherman-Denison	136,212	0	0	0	0	0	0	0
San Angelo	122,027	0	0	0	0	0	0	0
Victoria	99,742	0	0	0	0	0	0	0
Corsicana[3]	50,113	0	0	0	0	0	0	1
Karnes County[4]	NA	0	0	0	0	0	0	1
Totals		**4**	**4**	**7**	**2**	**3**	**20**	**58**

[1]United States Census Bureau population estimates as of July 1, 2019. Metropolitan and Micropolitan Statistical Areas Totals: 2010-2019 (census.gov)

[2]Monitors may fulfill multiple monitoring requirements and are only counted once.

[3]Area is classified as a micropolitan statistical area and not subject to SLAMS requirements.

[4]Area not classified as a metropolitan or micropolitan statistical area, county population data is not applicable.

NCore - National Core Multipollutant Monitoring Stations

NO - nitrogen oxide

NO_2 - nitrogen dioxide

NO_Y - total reactive nitrogen compounds

PAMS - Photochemical Assessment Monitoring Stations

RA-40 - Regional Administrator 40

Appendix E

Sulfur Dioxide Monitor Requirements and Count Summary

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix E: Sulfur Dioxide Monitor Requirements and Count Summary

Core Based Statistical Area	County	2019 Population Estimates[1]	2019 Point Source (tpy)	2017 NEI Data (tpy)	2017 Point Source Data (tpy)	2017 NEI Non-Point Source Data with 2019 Point Source Data (tpy)	PWEI	Required SO_2 PWEI Monitors	Required SO_2 DRR Monitors	Required SO_2 NCore Monitors (high-sensitivity)	Total Required SO_2 Monitors	Existing Monitors[2]
Dallas-Fort Worth-Arlington		7,573,136				4,878	36,941	1	0	1	2	3
	Collin		5	104	6	103						
	Dallas		343	921	347	917						
	Denton		367	69	340	96						
	Ellis		2,343	1,659	1,561	2,441						
	Hunt		1	35	1	35						
	Johnson		78	105	78	105						
	Kaufman		61	122	91	93						
	Parker		120	256	234	142						
	Rockwall		0	9	0	9						
	Tarrant		24	909	23	911						
	Wise		13	24	9	28						
Houston-The Woodlands-Sugar Land		7,066,141				39,815	281,338	2	0	1	3	4
	Austin		4	42	32	13						
	Brazoria		600	681	585	696						
	Chambers		206	203	191	219						
	Fort Bend		28,888	37,802	37,736	28,954						
	Galveston		1,493	2,382	1,819	2,055						
	Harris		6,517	8,667	7,546	7,638						
	Liberty		10	39	15	35						
	Montgomery		30	181	23	187						
	Waller		2	17	1	18						
San Antonio-New Braunfels		2,550,960				11,921	30,411	1	1	0	2	2
	Atascosa		9,179	9,316	8,779	9,715						
	Bandera		0	2	0	2						
	Bexar		1,184	13,007	12,724	1,467						
	Comal		382	428	407	403						
	Guadalupe		119	144	109	155						
	Kendall		2	7	2	8						
	Medina		0	10	0	10						
	Wilson		0	270	109	162						

Appendix E: Sulfur Dioxide Monitor Requirements and Count Summary

Core Based Statistical Area	County	2019 Population Estimates[1]	2019 Point Source (tpy)	2017 NEI Data (tpy)	2017 Point Source Data (tpy)	2017 NEI Non-Point Source Data with 2019 Point Source Data (tpy)	PWEI	Required SO_2 PWEI Monitors	Required SO_2 DRR Monitors	Required SO_2 NCore Monitors (high-sensitivity)	Total Required SO_2 Monitors	Existing Monitors[2]
Austin-Round Rock-Georgetown		2,227,083				2,089	4,652	0	0	0	0	1
	Bastrop		140	305	292	153						
	Caldwell		0	354	338	16						
	Hays		1,471	1,189	1,164	1,495						
	Travis		128	359	119	369						
	Williamson		4	57	5	56						
McAllen-Edinburg-Mission		868,707				123	107	0	0	0	0	0
	Hidalgo		40	125	42	123						
El Paso		844,124				304	256	0	0	1	1	1
	El Paso		185	390	282	293						
	Hudspeth		7	10	7	10						
Killeen-Temple		460,303				104	48	0	0	0	0	0
	Bell		40	96	43	93						
	Coryell		0	7	0	7						
	Lampasas		0	4	0	4						
Corpus Christi		429,024				922	396	0	0	0	0	3
	Nueces		683	828	689	823						
	San Patricio		45	82	28	99						
Brownsville-Harlingen		423,163				83	35	0	0	0	0	0
	Cameron		1	83	1	83						
Beaumont-Port Arthur		392,563				17,660	6,933	1	2	0	3	4
	Hardin		1	12	1	13						
	Jefferson		12,862	14,002	13,849	13,016						
	Orange		4,592	6,340	6,300	4,632						
Lubbock		322,257				89	29	0	0	0	0	0
	Crosby		0	4	0	3						
	Lubbock		9	57	4	63						
	Lynn		0	23	0	23						

Appendix E: Sulfur Dioxide Monitor Requirements and Count Summary

Core Based Statistical Area	County	2019 Population Estimates[1]	2019 Point Source (tpy)	2017 NEI Data (tpy)	2017 Point Source Data (tpy)	2017 NEI Non-Point Source Data with 2019 Point Source Data (tpy)	PWEI	Required SO_2 PWEI Monitors	Required SO_2 DRR Monitors	Required SO_2 NCore Monitors (high-sensitivity)	Total Required SO_2 Monitors	Existing Monitors[2]
Longview		286,657				50,089	14,358	1	1	0	2	3
	Gregg		20	68	23	65						
	Harrison		3,307	4,389	4,363	3,333						
	Rusk		46,661	36,599	36,578	46,682						
	Upshur		2	8	1	9						
Laredo		276,652				3,247	898	0	0	0	0	0
	Webb		471	584	390	664						
Waco		273,920				2,583	707	0	0	0	0	1
	Falls		0	7	0	7						
	McLennan		2,502	3,181	3,100	2,583						
Amarillo		265,053				10,897	2,888	0	1	0	1	2
	Armstrong		1	1	0	2						
	Carson		1	4	0	5						
	Potter		10,587	13,106	12,937	10,757						
	Randall		96	117	93	120						
	Oldham		0	14	0	14						
College Station-Bryan		264,728				9,455	2,503	0	1	0	1	1
	Brazos		14	57	12	58						
	Burleson		0	8	0	8						
	Robertson		9,382	11,254	11,248	9,389						
Tyler		232,751				463	108	0	0	0	0	0
	Smith		417	534	488	463						
Midland		182,603				1,381	252	0	0	0	0	0
	Martin		39	494	27	506						
	Midland		171	882	177	876						
Abilene		172,060				54	9	0	0	0	0	0
	Callahan		0	3	0	3						
	Jones		10	13	9	14						
	Taylor		0	37	0	37						

Appendix E: Sulfur Dioxide Monitor Requirements and Count Summary

Core Based Statistical Area	County	2019 Population Estimates[1]	2019 Point Source (tpy)	2017 NEI Data (tpy)	2017 Point Source Data (tpy)	2017 NEI Non-Point Source Data with 2019 Point Source Data (tpy)	PWEI	Required SO_2 PWEI Monitors	Required SO_2 DRR Monitors	Required SO_2 NCore Monitors (high-sensitivity)	Total Required SO_2 Monitors	Existing Monitors[2]
Odessa		166,223				1,382	230	0	0	0	0	0
	Ector		926	1,484	1,028	1,382						
Wichita Falls		151,254				712	108	0	0	0	0	0
	Archer		0	2	0	2						
	Clay		66	50	47	69						
	Wichita		510	606	526	591						
Texarkana		148,761				50	7	0	0	0	0	0
	Bowie		32	34	15	50						
Sherman-Denison		136,212				45	6	0	0	0	0	0
	Grayson		7	45	7	45						
San Angelo		122,027				269	33	0	0	0	0	0
	Irion		0	237	0	237						
	Sterling		1	10	1	10						
	Tom Green		2	21	2	22						
Victoria		99,742				11,520	1,149	0	0	0	0	0
	Goliad		11,270	12,365	12,202	11,433						
	Victoria		33	85	31	87						
Corsicana[3]		50,113				3,634	182	NA	1	0	1	2
	Navarro		3,614	3,812	3,792	3,634						
Mount Pleasant[3]		45,844				11,199	513	NA	1	0	1	1
	Titus		11,177	43,509	43,487	11,199						
Big Spring[3]		36,664				5,377	197	NA	1	0	1	1
	Howard		4,888	6,835	6,346	5,377						
Borger[3]		20,938				9,473	198	NA	1	0	1	1
	Hutchinson		9,463	11,657	11,648	9,473						

Appendix E: Sulfur Dioxide Monitor Requirements and Count Summary

Core Based Statistical Area	County	2019 Population Estimates[1]	2019 Point Source (tpy)	2017 NEI Data (tpy)	2017 Point Source Data (tpy)	2017 NEI Non-Point Source Data with 2019 Point Source Data (tpy)	PWEI	Required SO_2 PWEI Monitors	Required SO_2 DRR Monitors	Required SO_2 NCore Monitors (high-sensitivity)	Total Required SO_2 Monitors	Existing Monitors[2]
None		not available					NA	NA	NA	0	0	1
	Freestone[4]		17	47,653	47,645	24			0	0	0	1
Total Monitors								**6**	**10**	**3**	**19**	**31**

[1]United States Census Bureau population estimates as of July 1, 2019. Metropolitan and Micropolitan Statistical Areas Totals: 2010-2019 (census.gov)

[2]Monitors may fulfill multiple monitoring requirements and are only counted once.

[3]Micropolitan statistical area

[4]Area not classified as a metropolitan or micropolitan statistical area.

DRR - Data Requirements Rule

NA - not applicable

NCore - National Core Multipollutant Monitoring Stations

NEI - National Emissions Inventory

PWEI - population weighted emission index (Core Based Statistical Area Population*[2017 NEI non-point source data and 2018 point source data]/1,000,000)

SO_2 - sulfur dioxide

tpy - tons per year

Appendix F

Sulfur Dioxide Ongoing Data Requirements Annual Report

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix F: Sulfur Dioxide Ongoing Data Requirements Annual Report

As required by 40 Code of Federal Regulations (CFR) Section 51.1205(b), this report provides the Texas Commission on Environmental Quality's (TCEQ) annual assessment of sulfur dioxide (SO_2) emissions changes for areas designated attainment/unclassifiable for the 2010 SO_2 National Ambient Air Quality Standard (NAAQS), where the designations were based on characterization of air quality by modeling actual SO_2 emissions.

Out of all Texas counties (or portions of counties) currently designated attainment/unclassifiable for the 2010 SO_2 NAAQS, only the seven counties shown in Table 1 were designated based on modeled actual SO_2 emissions. The most recent (2019) total estimated SO_2 emissions, based on quality assured data from the relevant sources in each county, are listed in Table 1. The table includes emissions from the previous year (2018) and the change in SO_2 emissions from 2018 to 2019. There was no emissions increase from any relevant source in Atascosa, Fort Bend, Goliad, Lamb, Limestone, Robertson, or Wilbarger County. Since each of these seven counties had emissions decreases from the previous year, the original designations modeling for each county provides reasonable assurance that these areas all continue to meet the 2010 one-hour SO_2 primary NAAQS.

For any area where SO_2 monitoring was conducted to characterize air quality pursuant to 40 CFR Section 51.1203, the TCEQ continues to operate the monitor(s) used to meet those requirements and reports quality assured data pursuant to existing ambient monitoring regulations, unless the monitor(s) have been approved for shut down by the EPA Regional Administrator pursuant to 40 CFR Section 51.1203(c)(3) or 40 CFR Section 58.14.

The TCEQ recommends that no additional SO_2 air quality modeling is needed to determine compliance with the 2010 SO_2 NAAQS for any of the seven Texas counties listed in Table 1.

Table 1: 2018 to 2019 Emissions Comparisons

County	Relevant Source	2018 SO_2 (tpy)	2019 SO_2 (tpy)	Difference 2018 to 2019
Atascosa	San Miguel Electric Plant	11,880	8,940	-2,940
Fort Bend	W.A. Parish Electric Generating Station	38,165	28,828	-9,337
Goliad	Coleto Creek Power Station	13,213	11,264	-1,949
Lamb	Tolk Station Power Plant	9,958	7,225	-2,733
Limestone	Limestone Electric Generating Station	8,320	5,686	-2,634
Robertson	Twin Oaks Power Station	2,523	2,408	-116
Wilbarger	Oklaunion Power Station	2,191	1,779	-412

SO_2 – sulfur dioxide
tpy – tons per year

Appendix G

Total Suspended Particulate Lead Monitor Requirements and Count Summary

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix G: Total Suspended Particulate Lead Monitor Requirements and County Summary

Metropolitan Statistical Area	County	Pb Source (Facility Name) or Monitoring Requirement	2019 Pb Source Emissions (tpy)	2018 Pb Source Emissions (tpy)	2017 Pb Source Emissions (tpy)	Site Name	Required Monitors[1]	Existing Monitors[1]
Dallas-Fort Worth-Arlington							3	3
	Collin	Maintenance Area	NA	NA	NA	Frisco Eubanks[1,2]	1	1
	Collin	Maintenance Area	NA	NA	NA	Frisco Stonebrook[2]	1	1
	Kaufman	Conecsus, LLC	0.1804	0.2812	0.2617	Terrell Temtex[1]	1	1
Totals							**3**	**3**

[1]Collocated quality control monitors are not included in totals.

[2]Monitor required to fulfill State Implementation Plan commitments.

LCC - Limited Liability Company

NA - not applicable

Pb - lead

tpy - tons per year

Appendix H

Ozone Monitor Requirements and Count Summary

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix H: Ozone Monitor Requirements and Count Summary

Metropolitan Statistical Area	2019 Population Estimates[1]	2017-2019 8-Hour Design Value (ppm)	Design Value as Percent of NAAQS[2]	Total Required SLAMS Monitors	Total Required NCore/PAMS Monitors	Total Required Monitors[3]	Total Existing Monitors[4]
Dallas-Fort Worth-Arlington	7,573,136	0.077	110%	3	1	4	18
Houston-The Woodlands-Sugar Land	7,066,141	0.081	116%	3	1	4	21
San Antonio-New Braunfels	2,550,960	0.073	104%	2	0	2	3
Austin-Round Rock-Georgetown	2,227,083	0.069	99%	2	0	2	2
McAllen-Edinburg-Mission	868,707	0.055	79%	1	0	1	1
El Paso	844,124	0.075	107%	2	1	3	7
Killeen-Temple	460,303	0.069	99%	2	0	2	2
Corpus Christi	429,024	0.061	87%	2	0	2	2
Brownsville-Harlingen	423,163	0.059	84%	1	0	1	1
Beaumont-Port Arthur	392,563	0.070	100%	2	0	2	7
Lubbock	322,257	NA	NA	0	0	0	0
Longview	286,657	0.065	93%	1	0	1	2
Laredo	276,652	0.056	80%	0	0	0	1
Waco	273,920	0.065	93%	1	0	1	1
Amarillo	265,053	NA	NA	0	0	0	0
College Station-Bryan	264,728	NA	NA	0	0	0	0
Tyler	232,751	0.066	94%	1	0	1	1
Midland	182,603	NA	NA	0	0	0	0
Abilene	172,060	NA	NA	0	0	0	0
Odessa	166,223	NA	NA	0	0	0	0
Wichita Falls	151,254	NA	NA	0	0	0	0
Texarkana	148,761	NA	NA	0	0	0	0
Sherman-Denison	136,212	NA	NA	0	0	0	0
San Angelo	122,027	NA	NA	0	0	0	0
Victoria	99,742	0.063	90%	1	0	1	1
Granbury[5]	61,643	0.067	96%	0	0	0	1
Corsicana[5]	50,113	0.064	91%	0	0	0	1
Totals				**24**	**3**	**27**	**72**

[1]United States Census Bureau population estimates as of July 1, 2019. Metropolitan and Micropolitan Statistical Areas Totals: 2010-2019 (census.gov)

[2]2015 eight-hour ozone National Ambient Air Quality Standard (NAAQS) is 0.070 parts per million (ppm).

[3]Total Required Monitors is a sum of requirements for SLAMS, PAMS, and NCore.

[4]Monitors may fulfill multiple monitoring requirements and are only counted once.

[5]Area is classified as a micropolitan statistical area and is not subject to SLAMS requirements.

NA - not applicable

NCore - National Core Multipollutant Monitoring Stations

PAMS - Photochemical Assessment Monitoring Stations

SLAMS - State or Local Air Monitoring Stations

Appendix I

Carbon Monoxide Monitor Requirements and Count Summary

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix I: Carbon Monoxide Monitor Requirements and Count Summary

Core Based Statistical Area[1]	2019 Population Estimates[2]	Site Name	Required CO NCore Monitors	Required CO Near Road Monitors	Total Required Monitors[3]	Total Existing Monitors[4]
Dallas-Fort Worth-Arlington	52,600		1	1	2	2
		Dallas Hinton[5]	1	0	1	1
		Fort Worth California Parkway	0	1	1	1
Houston-The Woodlands-Sugar Land	51,639		1	1	2	3
		Clinton[5]	0	0	0	1
		Houston Deer Park #2[5]	1	0	1	1
		Houston North Loop	0	1	1	1
San Antonio-New Braunfels	50,113		0	1	1	1
		San Antonio Interstate 35	0	1	1	1
Austin-Round Rock-Georgetown	49,859		0	1	1	1
		Austin North Interstate 35	0	1	1	1
El Paso	45,844		1	0	1	3
		El Paso Chamizal[5]	1	0	1	1
		El Paso UTEP	0	0	0	1
		Ojo De Agua	0	0	0	1
Laredo	36,643		0	0	0	1
		Laredo Vidaurri	0	0	0	1
Waco	35,882		0	0	0	1
		Waco Mazanec	0	0	0	0
Totals			**3**	**4**	**7**	**12**

[1]This list does not include core based statistical areas with zero requirements and zero monitors.
[2]United States Census Bureau population estimates as of July 1, 2019.
Metropolitan and Micropolitan Statistical Areas Totals: 2010-2019 (census.gov)
[3]Total Required Monitors is a sum of requirements for NCore and Near-Road.
[4]Monitors may fulfill multiple monitoring requirements and are only counted once.
[5]High-Sensitivity CO monitor
- number
CO - carbon monoxide
NCore - National Core Multipollutant Monitoring Stations
UTEP – University of Texas at El Paso

Appendix J

Particulate Matter of 10 Micrometers or Less Monitor Requirements and Count Summary

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix J: Particulate Matter of 10 Micrometers or Less Monitor Requirements and Count Summary

Table 1: Particulate Matter of 10 Micrometers or Less Monitoring Requirements and Monitor Locations[1]

Metropolitan Statistical Area	2019 Population Estimates[2]	Site Name	2017 2019 Maximum Concentration (µg/m^3)	Percent of NAAQS[3] (%)	Required Monitors[4]	Existing Monitors[4]
Dallas-Fort Worth-Arlington	7,573,136		102	68	2-4	2
		Earhart	61	41		
		Convention Center (collocated QC pair)	102	68		
Houston-The Woodlands-Sugar Land	7,066,141		111	74	2-4	5
		Clinton (collocated QC pair)	111	74		
		Houston Monroe	97	65		
		Houston North Wayside[5]	NA	NA		
		Lang	101	67		
		Texas City Fire Station	105	70		
San Antonio-New Braunfels	2,550,960		117	78	2-4	2
		San Antonio Bulverde Parkway[5]	NA	NA		
		Frank Wing Municipal Court	117	78		
Austin-Round Rock-Georgetown	2,227,083		97	65	2-4	2
		Austin Webberville Road	97	65		
		Austin Audubon Society	90	60		
McAllen-Edinburg-Mission	868,707		93	62	1-2	1
		Mission	93	62		
El Paso	844,124		137	91	2-4	5
		El Paso Mimosa (previously Riverside)	126	84		
		Ivanhoe	85	57		
		Ojo De Agua (collocated QC pair)	137	91		
		Socorro Hueco (collocated QC pair)	114	76		
		Van Buren	134	89		
Killeen-Temple	460,303		NA	0	0-1	0
Corpus Christi	429,024		84	56	0-1	1
		Dona Park	84	56		
Brownsville-Harlingen	423,163		NA	0	0-1	0
Beaumont-Port Arthur	392,563		NA	0	0-1	0
Lubbock	322,257		NA	0	0-1	0

Appendix J: Particulate Matter of 10 Micrometers or Less Monitor Requirements and Count Summary

Table 1: Particulate Matter of 10 Micrometers or Less Monitoring Requirements and Monitor Locations[1]

Metropolitan Statistical Area	2019 Population Estimates[2]	Site Name	2017 2019 Maximum Concentration (µg/m^3)	Percent of NAAQS[3] (%)	Required Monitors[4]	Existing Monitors[4]
Dallas-Fort Worth-Arlington	7,573,136		102	68	2-4	2
		Earhart	61	41		
		Convention Center (collocated QC pair)	102	68		
Houston-The Woodlands-Sugar Land	7,066,141		111	74	2-4	5
		Clinton (collocated QC pair)	111	74		
		Houston Monroe	97	65		
		Houston North Wayside[5]	NA	NA		
		Lang	101	67		
		Texas City Fire Station	105	70		
San Antonio-New Braunfels	2,550,960		117	78	2-4	2
		San Antonio Bulverde Parkway[5]	NA	NA		
		Frank Wing Municipal Court	117	78		
Austin-Round Rock-Georgetown	2,227,083		97	65	2-4	2
		Austin Webberville Road	97	65		
		Austin Audubon Society	90	60		
McAllen-Edinburg-Mission	868,707		93	62	1-2	1
		Mission	93	62		
El Paso	844,124		137	91	2-4	5
		El Paso Mimosa (previously Riverside)	126	84		
		Ivanhoe	85	57		
		Ojo De Agua (collocated QC pair)	137	91		
		Socorro Hueco (collocated QC pair)	114	76		
		Van Buren	134	89		
Killeen-Temple	460,303		NA	0	0-1	0
Corpus Christi	429,024		84	56	0-1	1
		Dona Park	84	56		
Brownsville-Harlingen	423,163		NA	0	0-1	0
Beaumont-Port Arthur	392,563		NA	0	0-1	0
Lubbock	322,257		NA	0	0-1	0

Appendix J: Particulate Matter of 10 Micrometers or Less Monitor Requirements and Count Summary

Metropolitan Statistical Area	2019 Population Estimates[2]	Site Name	2017-2019 Maximum Concentration (µg/m^3)	Percent of NAAQS[3] (%)	Required Monitors[4]	Existing Monitors[4]
Longview	286,657		NA	0	0-1	0
Laredo	276,652		81	54	0-1	2
		Laredo Vidaurri	81	54		
		Laredo Bridge	75	50		
Waco	273,920		NA	0	0-1	0
Amarillo	265,053		NA	0	0-1	0
College Station-Bryan	264,728		NA	0	0-1	0
Totals					**11-32**	**20**

[1]This list doesn't include metropolitan statistical areas with zero requirements and zero monitors.
[2]United States Census Bureau population estimates as of July 1, 2019.
[3]Current PM_{10} NAAQS is 150 micrograms per cubic meter (µg/m^3).
[4]collocated QC quality control monitors are not counted.
[5]Monitor deployed 2020-2021, incomplete design values are not used for regulatory compliance.
% - percent
NAAQS - National Ambient Air Quality Standards
PM_{10} - particulate matter of 10 micrometers or less

Appendix J: Particulate Matter of 10 Micrometers or Less Monitor Requirements and Count Summary

Table 2: Particulate Matter of 10 Micrometers or Less Monitor Concentrations

Site Name	2017-2019 Maximum Concentration (µg/m³)	2019 Annual Mean Concentration (µg/m³)	2018 Annual Mean Concentration (µg/m³)	2017 Annual Mean Concentration (µg/m³)
Socorro Hueco (collocated QC pair)*	114	33	34	32
Clinton (collocated QC pair)*	111	28	29	27
Ivanhoe	85	27	21	19
El Paso Mimosa (previously Riverside)	126	26	29	28
Van Buren	134	26	30	20
Laredo Vidaurri	81	25	25	22
Mission	93	24	24	25
Laredo Bridge	75	21	22	19
Houston Monroe	97	21	23	21
Convention Center (collocated QC pair)	102	20	25	21
Austin Webberville Road	97	20	23	22
Ojo De Agua (collocated QC pair)	137	20	24	21
Frank Wing Municipal Court	117	19	21	22
Lang	101	19	22	21
Earhart	61	19	24	24
Texas City Fire Station	105	17	21	14
Dona Park	84	17	20	20
Austin Audubon Society	90	12	18	15
San Antonio Bulverde Parkway** (previously Selma)	NA	NA	NA	NA
Houston North Wayside**	NA	NA	NA	NA

*Highest annual mean concentrations, confirms at least half of collocated quality control (QC) monitoring occurs at network sites among the highest.

**New monitor deployed in 2020-2021, resulting in incomplete design value. Incomplete design values are not used for regulatory compliance.

µg/m³ - micrograms per cubic meter

Appendix K

Particulate Matter of 2.5 Micrometers or Less Monitor Requirements and Count Summary

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix K: Particulate Matter of 2.5 Micrometers or Less Monitor Requirements and Count Summary

Table 1: Particulate Matter of 2.5 Micrometers or Less Monitor Requirement and Count Summary

Metropolitan Statistical Area	2019 Population Estimates[1]	2017-2019 DV (μg/m^3) Annual (for Area)	2017-2019 DV (μg/m^3) 24-Hour (for Area)	Percent of NAAQS Annual[2] (for Area)	Percent of NAAQS 24-Hour[3] (for Area)	Required FRM/ FEM Monitors	Required NCore Monitors	Required Near-Road Monitors	Total Required Monitors[4]	Total Existing Monitors[4]
Dallas-Fort Worth-Arlington	7,573,136	9.2	20	77	57	2	4	1	7	13
Houston-The Woodlands-Sugar Land	7,066,141	10.3	27	86	77	3	4	1	8	16
San Antonio-New Braunfels	2,550,960	8.4	21	70	60	2	0	1	3	5
Austin-Round Rock-Georgetown	2,227,083	9.8	23	82	66	2	0	1	3	3
McAllen-Edinburg-Mission	868,707	10.8	29	90	83	2	0	0	2	2
El Paso	844,124	8.7	24	73	69	1	4	0	5	8
Killeen-Temple[5]	460,303	8.3	19	69	54	0	0	0	0	1
Corpus Christi	429,024	9.0	24	75	69	0	0	0	0	4
Brownsville-Harlingen	423,163	9.9	25	83	71	0	0	0	0	2
Beaumont-Port Arthur[5]	392,563	9.6	22	80	63	0	0	0	0	3
Lubbock[5]	322,257	6.0	17	50	49	0	0	0	0	1
Longview	286,657	8.5	18	71	51	0	0	0	0	2
Laredo[5]	276,652	10.0	27	83	77	0	0	0	0	1
Waco	273,920	NA	NA	NA	NA	0	0	0	0	1
Amarillo[5]	265,053	5.5	12	46	34	0	0	0	0	1
College Station-Bryan[5]	264,728	NA	NA	NA	NA	0	0	0	0	1
Odessa[5]	166,223	8.0	20	67	57	0	0	0	0	1
Texarkana	148,761	8.9	19	74	54	0	0	0	0	1
Eagle Pass[5,6]	58,722	7.5	23	63	66	0	0	0	0	1
Corsicana[6]	50,113	NA	NA	NA	NA	0	0	0	0	1
Kingsville[5,6]	31,084	9.9	27	83	77	0	0	0	0	1
Big Bend National Park[5,7]	NA	6.1	14	51	40	0	0	0	0	1
Totals*						**12**	**12**	**4**	**28**	**70**

[1]United States Census Bureau population estimates as of July 1, 2019. Metropolitan and Micropolitan Statistical Areas Totals: 2010-2019 (census.gov)
[2]Current $PM_{2.5}$ Annual NAAQS is 12.0 micrograms per cubic meter (μg/m^3).
[3]Current $PM_{2.5}$ 24-hour NAAQS is 35 μg/m^3.
[4]Individual monitors may fulfill multiple requirements and are only counted once. Collocated quality control monitors are not included in totals.
[5]Annual values do not meet completeness criteria; monitors deployed in 2017, 2018, or 2019. Incomplete design value information is not used for the purposes of regulatory compliance.
[6]Area is classified as a micropolitan statistical area and is not subject to SLAMS requirements.
[7]Area not classified as a metropolitan or micropolitan statistical area.
This list does not include metropolitan statistical areas with no requirement and no monitors.
DV - design value
FEM - federal equivalent method
FRM - federal reference method
NA - not applicable
NAAQS - National Ambient Air Quality Standards

Appendix K: Particulate Matter of 2.5 Micrometers or Less Monitor Requirements and Count Summary

Table 2: Particulate Matter of 2.5 Micrometers or Less Monitor Design Value, Location and Monitor Type[1]

Metropolitan Statistical Area	2019 Population Estimates[2]	Site Name	Monitor Type(s)	2017-2019 Annual DV (µg/m^3)	2017-2019 24-Hour DV (µg/m^3)	Percent of NAAQS (Annual[3])	Percent of NAAQS (24-Hour[4])	Required SLAMS FRM/FEM Monitor[5]	Continuous Monitor[6]	Continuous Requirement Met[6]	Required NCore Monitor	Required Near-Road Monitor	Total Required Monitors[5]	Total Existing Monitors[5]
Dallas-Fort Worth-Arlington	7,573,136			9.2	20	77	57	2	7	Y	4	1	7	13
		Convention Center	Partisol 2025	9.1	19	76	54	1	0		0	0	1	1
		Dallas Hinton (collocated QC pair)	Partisol 2025, BAM1020 PM2.5, BAM1020 PM10-2.5, SASS/URG Speciation[7] (Partisol 2025 QC)	9.2	20	77	57	0	1		4	0	4	4
		Denton Airport South[9]	BAM1022	7.6	14	63	40	0	1		0	0	0	1
		Fort Worth California Parkway North (collocated QC pair)	BAM1022 (BAM1022 QC)	8.5	18	71	51	0	1		0	1	1	1
		Fort Worth Northwest	BAM1022	8.5	18	71	51	1	1		0	0	1	1
		Haws Athletic Center	BAM1022	8.5	18	71	51	0	1		0	0	0	1
		Kaufman	TEOM[8]	NA	NA	NA	NA	0	1		0	0	0	1
		Midlothian OFW	Partisol 2025, TEOM[8], URG/2025 Speciation	8.0	19	67	54	0	1		0	0	0	3
Houston-The Woodlands-Sugar Land	7,066,141			10.3	27	86	77	3	11	Y	4	1	8	16
		Baytown	BAM1022	9.2	22	77	63	1	1		0	0	1	1
		Clinton (collocated QC pair)	Partisol 2025, TEOM[8], Partisol 2025 Speciation (Partisol 2025 QC)	10.3	22	86	63	1	1		0	0	1	3
		Conroe Relocated	TEOM[8]	NA	NA	NA	NA	0	1		0	0	0	1
		Galveston 99th Street	BAM1022	7.0	22	58	63	0	1		0	0	0	1

Metropolitan Statistical Area	2019 Population Estimates[2]	Site Name	Monitor Type(s)	2017-2019 Annual DV (µg/m³)	2017-2019 24-Hour DV (µg/m³)	Percent of NAAQS (Annual[3])	Percent of NAAQS (24-Hour[4])	Required SLAMS FRM/FEM Monitor[5]	Continuous Monitor[6]	Continuous Requirement Met[6]	Required NCore Monitor	Required Near-Road Monitor	Total Required Monitors[5]	Total Existing Monitors[5]
		Houston Aldine (collocated QC pair)	BAM 1022 (Partisol 2025 QC)	9.4	27	78	77	1	1		0	0	1	1
		Houston Deer Park #2 (speciation collocated QC pair[7])	Partisol 2025, BAM1020 PM2.5, BAM1020 PM10-2.5, SASS/URG Speciation[7] (SASS/URG Speciation QC[7])	8.0	21	67	60	0	1		4	0	4	4
		Houston East[9]	BAM1022	10.5	23	88	66	0	1		0	0	0	1
		Houston North Loop	BAM 1022	9.9	23	83	66	0	1		0	1	1	1
		Houston North Wayside	BAM1022	NA	NA	NA	NA	0	1		0	0	0	1
		Houston Westhollow	BAM1022	NA	NA	NA	NA	0	1		0	0	0	1
		Seabrook Friendship Park	TEOM[8]	NA	NA	NA	NA	0	1		0	0	0	1
San Antonio-New Braunfels	2,550,960			8.4	21	70	60	2	5	Y	0	1	3	5
		Calaveras Lake[9]	BAM1022	7.5	28	63	80	1	1		0	0	1	1
		Old Highway 90	TEOM 1405[8]	NA	NA	NA	NA	0	1		0	0	0	1
		San Antonio Interstate 35[9]	BAM1022	8.4	27	70	77	0	1		0	1	1	1
		San Antonio Northwest (collocated QC pair)	BAM 1022 (Partisol 2025 QC)	8.4	21	70	60	1	1		0	0	1	1
		Von Ormy Highway 16 (previously Palo Alto)[9]	BAM1022	NA	NA	NA	NA	0	1		0	0	0	1

Appendix K: Particulate Matter of 2.5 Micrometers or Less Monitor Requirements and Count Summary

Metropolitan Statistical Area	2019 Population Estimates[2]	Site Name	Monitor Type(s)	2017-2019 Annual DV (µg/m³)	2017-2019 24-Hour DV (µg/m³)	Percent of NAAQS (Annual[3])	Percent of NAAQS (24-Hour[4])	Required SLAMS FRM/FEM Monitor[5]	Continuous Monitor[6]	Continuous Requirement Met[6]	Required NCore Monitor	Required Near-Road Monitor	Total Required Monitors[5]	Total Existing Monitors[5]
Austin-Round Rock-Georgetown	2,227,083			9.8	23	82	66	2	3	Y	0	1	3	3
		Austin North Interstate 35	BAM1022	9.3	22	78	63	1	1		0	1	2	1
		Austin North Hills Drive (previously Austin Northwest)[9]	BAM1022	NA	NA	NA	NA	0	1		0	0	0	1
		Austin Webberville Road (collocated QC pair)	BAM 1022 (Partisol 2025 QC)	9.8	23	82	66	1	1		0	0	1	1
McAllen-Edinburg-Mission	868,707			10.8	29	90	83	2	1	Y	0	0	2	2
		Edinburg East Freddy Gonzalez Drive	Partisol 2025	9.6	29	80	83	1	0		0	0	1	1
		Mission	BAM1022	10.8	28	90	80	1	1		0	0	1	1
El Paso	844,124			8.7	24	73	69	1	4	Y	4	0	5	8
		Ascarate Park SE	TEOM[8]	NA	NA	NA	NA	0	1		0	0	0	1
		El Paso Chamizal	Partisol 2025, BAM1020 PM2.5, BAM1020 PM10-2.5, URG/SASS Speciation[7]	8.8	24	73	69	0	1		4	0	4	4
		El Paso UTEP	Partisol 2025, TEOM[8]	7.4	21	62	60	1	1		0	0	1	2
		Socorro Hueco	TEOM[8]	NA	NA	NA	NA	0	1		0	0	0	1
Killeen-Temple[9]	460,303			8.3	19	69	54	0	1	NA	0	0	0	1
		Temple Georgia[9]	BAM1022	8.3	19	69	54	0	1		0	0	0	1

Appendix K: Particulate Matter of 2.5 Micrometers or Less Monitor Requirements and Count Summary

Metropolitan Statistical Area	2019 Population Estimates[2]	Site Name	Monitor Type(s)	2017-2019 Annual DV (µg/m^3)	2017-2019 24-Hour DV (µg/m^3)	Percent of NAAQS (Annual[3])	Percent of NAAQS (24-Hour[4])	Required SLAMS FRM/FEM Monitor[5]	Continuous Monitor[6]	Continuous Requirement Met[6]	Required NCore Monitor	Required Near-Road Monitor	Total Required Monitors[5]	Total Existing Monitors[5]
Corpus Christi	429,024			9.0	24	75	69	0	2	NA	0	0	0	4
		Corpus Christi Huisache (collocated QC pair)	BAM1022 (BAM1022 QC)	9.0	24	75	69	0	1		0	0	0	1
		Dona Park[9]	Partisol 2025, TEOM[8], URG/2025 Speciation	7.8	23	65	66	0	1		0	0	0	3
Brownsville-Harlingen	423,163			9.9	25	83	71	0	2	NA	0	0	0	2
		Brownsville	BAM1022	9.9	25	83	71	0	1		0	0	0	1
		Isla Blanca State Park Road[9]	BAM1022	8.8	20	73	57	0	1		0	0	0	1
Beaumont-Port Arthur[9]	392,563			9.6	22	80	63	0	3	NA	0	0	0	3
		Hamshire[9]	BAM1022	8.4	21	70	60	0	1		0	0	0	1
		Port Arthur Memorial School[9]	BAM1022	9.5	21	79	60	0	1		0	0	0	1
		SETRPC 42 Mauriceville[9]	BAM1022	9.6	22	80	63	0	1		0	0	0	1
Lubbock[9]	322,257			6.0	17	50	49	0	1	NA	0	0	0	1
		Lubbock 12th Street[9]	BAM1022	6.0	17	50	49	0	1		0	0	0	1
Longview	286,657			8.5	18	71	51	0	1	NA	0	0	0	2
		Karnack	BAM1022, URG/SASS Speciation[7]	8.4	18	70	51	0	1		0	0	0	2
Laredo[9]	276,652			10.0	27	83	77	0	1	NA	0	0	0	1
		World Trade Bridge[9]	BAM1022	10.0	27	83	77	0	1		0	0	0	1

Appendix K: Particulate Matter of 2.5 Micrometers or Less Monitor Requirements and Count Summary

Metropolitan Statistical Area	2019 Population Estimates[2]	Site Name	Monitor Type(s)	2017-2019 Annual DV (µg/m^3)	2017-2019 24-Hour DV (µg/m^3)	Percent of NAAQS (Annual[3])	Percent of NAAQS (24-Hour[4])	Required SLAMS FRM/FEM Monitor[5]	Continuous Monitor[6]	Continuous Requirement Met[6]	Required NCore Monitor	Required Near-Road Monitor	Total Required Monitors[5]	Total Existing Monitors[5]
Waco	273,920			NA	NA	NA	NA	0	1	NA	0	0	0	1
		Waco Mazanec	TEOM 1405[8]	NA	NA	NA	NA	0	1		0	0	0	1
Amarillo[9]	265,053			5.5	12	46	34	0	1	NA	0	0	0	1
		Amarillo A&M[9]	BAM1022	5.5	12	46	34	0	1		0	0	0	1
College Station-Bryan[9]	264,728			NA	NA	NA	NA	0	1	NA	0	0	0	1
		Bryan Finfeather Road[9]	BAM1022	NA	NA	NA	NA	0	1		0	0	0	1
Odessa[9]	166,223			8.0	20	67	57	0	1	NA	0	0	0	1
		Odessa Gonzales[9]	BAM1022	8.0	20	67	57	0	1		0	0	0	1
Texarkana	148,761			8.9	19	74	54	0	1	NA	0	0	0	1
		Texarkana New Boston	BAM1022	9.2	19	77	54	0	1		0	0	0	1
Eagle Pass[9,10]	58,722			7.5	23	63	66	0	1	NA	0	0	0	1
		Eagle Pass[9]	BAM1022	7.5	23	63	66	0	1		0	0	0	1
Corsicana[10]	50,113			NA	NA	NA	NA	0	1	NA	0	0	0	1
		Corsicana Airport	TEOM[8]	NA	NA	NA	NA	0	1		0	0	0	1
Kingsville[9,10]	31,084			9.9	27	83	77	0	1	NA	0	0	0	1
		National Seashore[9]	BAM1022	9.9	27	83	77	0	1		0	0	0	1

Appendix K: Particulate Matter of 2.5 Micrometers or Less Monitor Requirements and Count Summary

Metropolitan Statistical Area	2019 Population Estimates[2]	Site Name	Monitor Type(s)	2017-2019 Annual DV ($\mu g/m^3$)	2017-2019 24-Hour DV ($\mu g/m^3$)	Percent of NAAQS (Annual[3])	Percent of NAAQS (24-Hour[4])	Required SLAMS FRM/FEM Monitor[5]	Continuous Monitor[6]	Continuous Requirement Met[6]	Required NCore Monitor	Required Near-Road Monitor	Total Required Monitors[5]	Total Existing Monitors[5]
Big Bend National Park[9,11]	NA			6.1	14	51	40	0	1	NA	0	0	0	1
		Bravo Big Bend[9]	BAM1022	6.1	14	51	40	0	1		0	0	0	1
Totals								**12**	**51**	**Y**	**12**	**4**	**28**	**70**

[1]This list does not include metropolitan statistical areas with no requirements and no monitors.
[2]United States Census Bureau population estimates as of July 1, 2019. Metropolitan and Micropolitan Statistical Areas Totals: 2010-2019 (census.gov)
[3]Current $PM_{2.5}$ Annual NAAQS is 12.0 micrograms per cubic meter ($\mu g/m^3$).
[4]Current $PM_{2.5}$ 24-hour NAAQS is 35 $\mu g/m^3$.
[5]Individual monitors may fulfill multiple requirements and are only counted once. Collocated quality control monitors are not included in totals.
[6]Continuous $PM_{2.5}$ monitor total must equal at least one-half the required number of SLAMS-required sites and each MSA with SLAMS-required sites must have a minimum of one.
[7]Speciation monitor for NCore or Chemical Speciation Network (CSN)
[8]$PM_{2.5}$ TEOM monitors are non-FEM/FRM (non-NAAQS comparable)
[9]Annual values do not meet completeness criteria; monitors deployed in 2017 - 2021. Incomplete design value (gray font) information is not used for regulatory compliance.
[10]Area is classified as a micropolitan statistical area and is not subject to SLAMS requirements.
[11]Area not classified as a metropolitan or micropolitan statistical area.
- number
DV - design value
FEM - federal equivalent method
FRM - federal reference method
NA - not applicable
NAAQS - National Ambient Air Quality Standards
NCore - National Core Multipollutant Monitoring Stations require $PM_{2.5}$ FRM mass, $PM_{2.5}$ FEM continuous mass, $PM_{10-2.5}$ and $PM_{2.5}$ CSN speciation
N - no
OFW - Old Fort Worth
$PM_{2.5}$ FRM mass method code 145 by Partisol 2025 or 2025i
$PM_{2.5}$ FEM mass method codes 170 and 209 by beta attenuation method (BAM)1020 or 1022
$PM_{2.5}$ non-regulatory mass method code 702 by tapered element oscillating microbalance (TEOM)
$PM_{2.5}$ speciation method codes 810, 811, 812, 826, 831, 838, 839, 840, 841, 842, 846, and 849
$PM_{10-2.5}$ method code 185 by BAM1020
QC - quality control
SASS - second generation speciation sampling system (for CSN only)
SETRPC - Southeast Texas Regional Planning Commission
SE - southeast
SLAMS - State or Local Air Monitoring Stations
URG - University Research Glassware speciation sampler
UTEP - University of Texas at El Paso
Y - yes

Appendix L

Volatile Organic Compound and Carbonyl Monitor Requirements and Count Summary

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix L: Volatile Organic Compound and Carbonyl Monitor Requirement and Count Summary

Table 1: Volatile Organic Compound Monitor Requirement and Count Summary

Core Based Statistical Area[1]	Required PAMS VOC AutoGC Monitors	Existing VOC Canister Monitors	Existing VOC AutoGC Monitors	Total Existing VOC Monitors
Dallas-Fort Worth-Arlington	1	3	2	5
Houston-The Woodlands-Sugar Land	1	0	3	3
El Paso	0	0	1	1
Beaumont-Port Arthur	0	0	2	2
Laredo	0	1	0	1
Totals	**2**	**4**	**8**	**12**

[1]This list does not include core based statistical areas with zero requirements and zero monitors.
AutoGC – automated gas chromatograph
PAMS – Photochemical Assessment Monitoring Stations
VOC – volatile organic compound

Table 2: Carbonyl Monitor Requirement and Count Summary

Core Based Statistical Area[1]	Required PAMS Carbonyl Samplers	Total Existing Carbonyl Samplers
Dallas-Fort Worth-Arlington	1	2
Houston-The Woodlands-Sugar Land	1	2
Totals	**2**	**4**

[1]This list does not include core based statistical areas with zero requirements and zero monitors.
PAMS – Photochemical Assessment Monitoring Stations

Appendix M

2021 Additional Monitoring Considerations

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Appendix M: 2021 Additional Monitoring Considerations

Air Monitoring Site Name or Area of Interest	Monitoring Consideration	Parameter(s)
Houston Bayland Park	Deploy monitor	$PM_{2.5}$ FEM continuous
Houston Fifth Ward area	Deploy new site	$PM_{2.5}$ FEM continuous and volatile organic compounds by canister
Houston Pleasantville area	Deploy new site	$PM_{2.5}$ FEM continuous
Gregory-Portland area in San Patricio County	Deploy new site	$PM_{2.5}$ FEM continuous and volatile organic compounds by canister

FEM – federal equivalent method

$PM_{2.5}$ – particulate matter of 2.5 micrometers or less in diameter

Appendix N

TCEQ Response to Comments Received on the 2021 Annual Monitoring Network Plan

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan

Introduction

As required under 40 Code of Federal Regulations (CFR) Section (§)58.10, the Texas Commission on Environmental Quality (TCEQ) posted the draft *2021 Annual Monitoring Network Plan* (AMNP) for public inspection for 30 days prior to submittal to the United States Environmental Protection Agency (EPA). The draft 2021 AMNP provided information on the current TCEQ ambient air monitoring network established to determine compliance with federal monitoring requirements specified in 40 CFR Part 58 and its appendices. This document presented the current federal network established for use in evaluations to determine compliance with the National Ambient Air Quality Standards (NAAQS) and to meet federal monitoring requirements and objectives. This plan is limited to the portion of the TCEQ air monitoring network designed to comply with federal monitoring requirements and supported by federal funding. The TCEQ also operates a robust network of state-initiative monitors that support a variety of purposes, including potential health effects evaluation; however, these monitors are outside the scope of this document and are not included. This document includes the recommended federal monitoring network changes from July 1, 2020, through December 31, 2022.

The TCEQ continues to evaluate additional ambient air monitoring requested during previous AMNP public inspection and comment periods. Details regarding the potential monitors under consideration are included in this plan to solicit further public comment. Any future implementation of these monitoring considerations may be included as part of the TCEQ federal ambient air monitoring network or as state-initiative monitors. These monitoring proposals are under consideration, and the proposals and implementation of said proposals are subject to change.

During the public comment period from April 22, 2021, to May 21, 2021, the TCEQ received 79 individual comments and a petition with 281 signatures and some comments on the posted document. Comments received by the TCEQ relating to the TCEQ federal ambient air quality network, as described in the plan, are addressed in this appendix. No changes to the 2021 AMNP were made in response to the comments.

Comment Summaries and TCEQ Responses

Comment 1: Action Network, for one Breath Partnership, on behalf of 281 petitioners, were in favor of and strongly supported the deployment of the proposed new monitoring sites in the Houston Fifth Ward and Pleasantville areas, as indicated in the TCEQ draft 2021 AMNP Appendix M. The commenters expressed that these monitors were needed to comply fully with the EPA regulatory requirements for residents and local officials to have access to air pollution data in a timely manner, and to provide sufficient data to inform the public on health policy decisions. Many of the commenters point out that there is no monitor currently in the Houston Fifth Ward, and the nearest monitor is two miles away from Pleasantville. Commenters noted that both communities' residents live with poor air quality from a range of

sources, including congested freeways, concrete batch plants, metal recyclers, diesel trucks, the Houston ship channel, and a large railyard. Commenters noted it was an issue of environmental justice and the monitors represented a new tool to aid in understanding the levels of particulate matter of 2.5 micrometers or less in diameter ($PM_{2.5}$) and volatile organic compounds (VOC) throughout the region and noted that new research from the Environmental Defense Fund and Harvard School of Public Health using ensemble and satellite data showed that Houston citizens may be exposed to higher levels of $PM_{2.5}$ than the health-based standards the EPA has set. One commenter requested air quality monitoring in east Houston and to make the data public. One commenter stated that Houston's Fifth Ward and Pleasantville are two historically disadvantaged neighborhoods of color where hard-working people live with higher rates of health issues and yet do not currently have regulatory air monitors. One commenter stated that they feel the issue was like other issues (climate change, gun safety, immigration reform, prison reform, education reform, etc.) remaining a vexing problem. One commenter stated that a facemask was needed to walk outdoors due to the nearby railyard diesel fumes. One commenter asked for monitors to be added in Kashmere Gardens. One commenter stated that monitoring air quality yielded targeted actions that led to healthier communities.

Response 1: The TCEQ appreciates the support for the proposed new sites and pollutant monitors in the Houston Fifth Ward and Pleasantville areas and agrees that the data from these monitors will be useful for assessing air quality in these areas. The TCEQ does not agree that these monitors are needed to meet federal requirements. As demonstrated in this plan, the Houston-The Woodlands-Sugar Land (Houston) metropolitan statistical area (MSA) meets and exceeds all federal requirements with 69 criteria pollutant monitors, three Photochemical Assessment Monitoring Station (PAMS) automated gas chromatographs for speciated VOCs (autoGC), and two carbonyl monitors (one for PAMS) located at 25 air monitoring sites in the Houston MSA as listed and described in the 2021 AMNP Appendix B and C.

The Houston area TCEQ federal monitoring network complies fully with EPA regulatory requirements for residents and local officials to have access to sufficient data to make health policy decisions. The TCEQ meets and exceeds the requirements of 40 CFR Part 58, Appendix D, §1.1(a) by providing air pollution data to the general public in a timely manner with data presented in the interactive monitoring map (GeoTAM) (https://tceq.maps.arcgis.com/apps/webappviewer/index.html?id=ab6f85198bda483a997a6956a8486539), Texas Air Monitoring Information System (TAMIS) (https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome), and on the TCEQ Today's Texas Air Quality Forecast (https://www.tceq.texas.gov/airquality/monops/forecast_today.html).

The TCEQ's air monitoring network is designed to measure pollutant concentrations for assessing regional air quality representative of areas frequented by the public. Air monitoring objectives determine site locations and sites are generally placed to be representative of regional air quality, rather than monitoring emissions from specific sources. The TCEQ currently operates four monitoring sites within four to six miles of the Houston Fifth Ward and one air monitoring site within two miles of the Pleasantville area. Ambient air monitors placed in the Houston Fifth Ward area would support the community of Kashmere Gardens since the areas are adjacent and are

surrounded by the same pollutant sources.

Comment 2: More than 45 individuals, some of which commented on behalf of multiple members, the Pleasantville Civic League, the Clarity Movement Company, and the Progressive Fifth Ward Community Association expressed full support of the proposed monitors in the Houston Fifth Ward and Pleasantville areas. Commentors noted that the Houston Fifth Ward was a historically disadvantaged area, this was an environmental justice issue requiring more focus on the area, and monitors would serve as a tool to advocate for clean air actions. Many commenters pointed to the concentration of heavily congested highways, concrete plants, metal recyclers, and a large railyard. Commentors also noted documentation of frequent toxic releases from facilities near both communities leading to poor air quality and the risk of potential health effects. Several commenters indicated a family history of cancer. A few commenters requested the inclusion of a lead (Pb) monitor in the area. Several commenters mentioned an odor was present on many days. One commenter noted that the data provided by the community-led Pleasantville Clarity Network monitors demonstrated the need for a (TCEQ) regulatory grade monitoring site in Pleasantville as opposed to relying on the monitor two miles away in Clinton Park. Commenters noted that the best tool was better information and that deploying new sites in the Houston Fifth Ward and Pleasantville areas would help to provide information to make informed decisions on land use, community planning, and public health.

Response 3: The TCEQ appreciates the support for the proposed new sites and pollutant monitors in the Houston Fifth Ward and Pleasantville areas and agrees that the data from these monitors will be useful for assessing air quality in these areas. As demonstrated in the plan, the TCEQ is meeting and exceeding all federal monitoring requirements in the Houston MSA (see response 1). Federal Pb monitoring rules under 40 CFR Part 58 require monitoring near Pb sources with emissions greater than 0.50 tons per year (tpy) or near sources expected to exceed the Pb NAAQS. No sources meeting these criteria are in the Houston Fifth Ward. The TCEQ is meeting federal requirements for Pb monitoring.

Comment 3: Shelia Jackson Lee, Member of Congress, requested the TCEQ deploy the proposed new monitoring sites in the Houston's Greater Fifth Ward and Pleasantville areas noting that the monitors were needed to comply fully with the EPA regulatory requirements so that residents and local officials have access to air pollution data in a timely manner and to provide sufficient data to inform public health policy decisions. The congresswoman noted that each community had unique exposures placing them at risk for high levels of particulate matter (soot) and lived with poor air quality from a range of sources including congested freeways, metal recyclers, concrete facilities, and diesel trucks. The congresswoman further noted that with the cumulative burden of the industrial and transportation sector sources near Pleasantville, the state federal reference monitor located two miles away in Clinton Park was likely unable to capture what was observed within the Pleasantville community. The congresswoman noted that the monitors represented a new tool needed to understand regional levels of $PM_{2.5}$ and VOCs and to advocate for actions that will clean our air and further noted that new research from the Environmental Defense Fund and Harvard School of Public Health using ensemble and satellite data indicated that Houston citizens may be exposed to higher levels of $PM_{2.5}$ than they should, higher than the health-based standards the EPA has set. The congresswoman

further commented that the best tool was information, and the new sites in Houston Fifth Ward and Pleasantville areas would help provide it.

Response 3: The TCEQ appreciates the support for the proposed new sites and pollutant monitors in the Houston Fifth Ward and Pleasantville areas and agrees that the data from these monitors will be useful for assessing air quality in these areas. As demonstrated in this plan, the TCEQ is meeting and exceeding all federal monitoring requirements in the Houston MSA (see response 1 for detailed information). The TCEQ meets and exceeds the requirements of 40 CFR Part 58, Appendix D, §1.1(a) to provide air pollution data to the general public and local officials in a timely manner with data presented in the interactive monitoring map (GeoTAM) (https://tceq.maps.arcgis.com/apps/webappviewer/index.html?id=ab6f85198bda483a997a6956a8486539), TAMIS (https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome), and on the TCEQ Today's Texas Air Quality Forecast (https://www.tceq.texas.gov/airquality/monops/forecast_today.html).

Comment 4: Tarsha Jackson, Houston City Council Member, expressed support for installing new air monitors in the Houston Fifth Ward and Pleasantville areas and noted that the monitors were needed to comply fully with the EPA regulatory requirements and to ensure that local officials and residents have access to critical air pollution data that will inform public health policy decisions. The city council member further commented that the communities have a right to know what is in the air and a right to breath clean air.

Response 4: The TCEQ appreciates the support for the proposed new sites and pollutant monitors in the Houston Fifth Ward and Pleasantville areas and agrees that the data from these monitors will be useful for assessing air quality in these areas. As demonstrated in this plan, the TCEQ is meeting and exceeding all federal monitoring requirements in the Houston MSA (see response 1 for detailed information). The TCEQ meets and exceeds the requirements of 40 CFR Part 58, Appendix D, §1.1(a) to provide air pollution data to the general public and local officials in a timely manner with data presented in the interactive monitoring map (GeoTAM) (https://tceq.maps.arcgis.com/apps/webappviewer/index.html?id=ab6f85198bda483a997a6956a8486539), TAMIS (https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome), and on the TCEQ Today's Texas Air Quality Forecast (https://www.tceq.texas.gov/airquality/monops/forecast_today.html).

Comment 5: The Houston Health Department (HHD) appreciated the opportunity to submit comments and fully supported the proposed new air monitoring site in the Houston Fifth Ward to measure VOCs, $PM_{2.5}$, and meteorological parameters. HHD received numerous area dust complaints during public meetings, and area emissions sources include a concrete batch plant, a rock crusher, an asphalt paving plant, and metal recycling facilities. HHD commented that due to the risk of potential health effects associated with high particulate levels from area $PM_{2.5}$ and VOC contamination, a new air monitoring site was needed to measure the levels of VOCs and $PM_{2.5}$ air pollution, and currently, there were no monitors to measure the level of pollutants in the Houston Fifth Ward area.

Response 5: The TCEQ appreciates the HHD comments and support for the proposed new site and pollutant monitors in the Houston Fifth Ward area and agrees that the data from these monitors will be useful for assessing air quality in these areas.

Comment 6: Port Houston appreciated the opportunity to submit comments and fully supported the proposed new air monitoring sites proposed in the Houston Fifth Ward and Pleasantville communities. Port Houston noted that a data-driven approach to reducing ground-level ozone (O_3), particulate matter, and other toxic air pollutants using a comprehensive air quality monitoring network played a critical role in ensuring clean air for all communities in the Houston-Galveston-Brazoria region.

Response 6: The TCEQ appreciates the Port Houston comments and support for the proposed new sites and pollutant monitors in the Houston Fifth Ward and Pleasantville areas and agrees that the data from these monitors will be useful for assessing air quality in these areas.

Comment 7: The Central Texas Clean Air Coalition (CAC) appreciated the opportunity to comment on the TCEQ draft 2021 AMNP, understood the resource constraints faced by the TCEQ, and requested that the TCEQ consider deploying additional O_3 and $PM_{2.5}$ monitors in the Austin-Round Rock-Georgetown MSA due to regional O_3 levels occasionally exceeding the NAAQS and regional $PM_{2.5}$ levels higher than most of the state. The CAC hoped that the request for additional regional monitoring would be a moderate TCEQ priority, to be considered if additional resources were received from the legislature or if there was opportunity to reallocate resources. In addition, the CAC stated that speciated $PM_{2.5}$ data would be useful to better understand the region's pollution level contributors.

Response 7: The TCEQ appreciates the CAC comments and understanding of resource constraints faced by the TCEQ. The TCEQ continues to assess regional monitoring needs and will make further recommendations for additional monitoring as resources allow. The TCEQ points out that Austin region historical speciated $PM_{2.5}$ data is available from the Austin Audubon Society air monitoring site from 2005 to 2013. Information from this data set may assist with understanding regional pollution level contributions.

Comment 8: Harris County Pollution Control Services (HCPCS) appreciated the opportunity to submit comments on the TCEQ draft 2021 AMNP. HCPCS supported the addition of a $PM_{2.5}$ FEM continuous monitor at Houston Bayland Park and indicated it would be beneficial to characterize $PM_{2.5}$ concentrations in this area given the proximity to Interstate 69 and other heavily traveled thoroughfares. HCPCS indicated this location would also benefit the Harris County's Community Air Monitoring Program (CAMP) by providing data for comparison to the CAMP $PM_{2.5}$ monitor. HCPCS also encouraged adding a monitoring site to the Houston Fifth Ward with VOC and $PM_{2.5}$ due to the proximity of two major interstates and a major rail facility with chemical service. HCPCS also supported the addition of a monitoring site with $PM_{2.5}$ detection capability near the Pleasantville residential area due to the proximity of Loop 610, Interstate 10, and a brewery to residences and also recommended the addition of a gas chromatograph or similar VOC analyzer at the site due to the proximity of a pipeline terminal and refinery.

Response 8: The TCEQ appreciates the HCPCS comments and support for the proposed $PM_{2.5}$ FEM continuous monitor at Houston Bayland Park and for the

establishment of new air monitoring sites in the Houston Fifth Ward and Pleasantville areas and agrees that the data from these monitors will be useful for assessing air quality in these areas. The TCEQ is considering adding $PM_{2.5}$ FEM and VOC monitoring to the Houston Fifth Ward and $PM_{2.5}$ FEM to Pleasantville; however, the TCEQ will continue to assess future pollutant monitoring options for both areas.

Comment 9: One citizen commented that Corpus Christi needed a vehicle emissions testing program and that the vehicle fleet is not turning over fast enough to protect citizens' health. The commenter also stated that a lack of $PM_{2.5}$ monitors in the area is not showing the problem and requested that more monitors be added along South Padre Island Drive along with a vehicle emission testing program.

Response 9: As stated previously, this AMNP is limited in scope to demonstrating compliance with federal air monitoring requirements under 40 CFR Part 58. The Corpus Christi MSA, meets or exceeds federal monitoring requirements as detailed in the 2021 AMNP and in Appendix C of this plan, therefore no additional monitors are proposed at this time. Air monitoring objectives determine site locations, and sites are generally placed to be representative of regional air quality, rather than monitoring emissions from specific sources. Comments relating to vehicle emission testing programs and vehicle fleet turnover are outside the scope of this plan.

Comment 10: San Antonio Metropolitan Health District (SAMHD) recommended that the TCEQ consider relocating the Camp Bullis air monitoring station since it measures urban area O_3 levels but is located near a local minor source that could contribute to elevated O_3 levels. SAMHD indicated that spill event and air monitoring data showed a correlation of some O_3 exceedances with high levels of isoprene typically found in wastewater pond algae blooms and was evidence to suggest that the wastewater treatment plant near Camp Bullis was a potential local source of ozone-forming emissions that could have caused past exceedances not representative of area air quality. Alternatively, SAMHD requested the TCEQ consider decommissioning the O_3 monitor at Camp Bullis since two area O_3 SLAMS monitors are required in the San Antonio-New Braunfels MSA. Currently, there are three O_3 monitors, and this would maintain compliance with the requirement for two O_3 monitors.

Response 10: The TCEQ appreciates the comments from SAMHD and will further evaluate the Camp Bullis air monitoring location for possible minor source influences on O_3 measurements. The TCEQ agrees that the San Antonio-New Braunfels MSA requires a minimum of two O_3 monitors; however, the three existing O_3 monitors continue to be required under 40 CFR §58.14(c), as this section only allows discontinuation, subject to the review of the EPA regional administrator, for monitors in areas designated attainment. The Camp Bullis O_3 monitor does not meet the requirements under 40 CFR §58.14(c).

Comment 11: Sierra Club, Environmental Defense Fund, Air Alliance Houston, Environmental Integrity Project, Public Citizen, and Earthjustice (Sierra Club et al.) asserted that the TCEQ's draft 2021 Plan must be included in the applicable State Implementation Plan (SIP) revision and as such federal law requires TCEQ to provide notice and undertake a public hearing before promulgating the plan. The comment states that the Federal Clean Air Act and its implementing regulation make it clear that a State's monitoring plan is part of its SIP, 42 United States Code (USC) Part 7410(1). Sierra Club et al. requested that TCEQ remand the Draft 202<sic> Plan and

revise it through notice and comment rulemaking. In addition, the comment states TCEQ's lack of outreach disenfranchises Texas communities deprived of proportionate representation in environmental regulation, including native and non-English speaking communities who are deprived of air quality and public health information by TCEQ's refusal to publish air quality monitoring data and the monitoring plan itself in Spanish and other languages. The commenter requested that the TCEQ hold a public hearing, with Spanish interpretation services available, in Houston or El Paso to afford the public an opportunity to ask questions about the Plan to the TCEQ staff responsible for its creation and implementation.

Response 11: The 2021 AMNP is not a revision to the SIP subject to notice and comment rulemaking procedures. This was affirmed by the Court of Appeals for the District of Columbia Circuit in a decision issued on May 31, 2019, in the case *Sierra Club v. Environmental Protection Agency*, 925 F.3d 490 (D.C. Cir. 2019). Sierra Club petitioned for review of EPA's Revision to Ambient Monitoring Quality Assurance and Other Requirements, 81 *Federal Register* 17,248 (March 28, 2016), which modified 40 CFR Part 58.

One of the Sierra Club's issues in this case concerned whether AMNPs should be subject to notice and comment rulemaking. The Court stated that the EPA adopted regulations in 2006 that specifically place these plans outside the SIP-review process [see Revisions to Ambient Air Monitoring Regulations, 71 *Federal Register* 61,236 (October 17, 2006)]. Because the Clean Air Act requires that petitions for review of agency regulations be filed within sixty days of a challenged action appearing in the Federal Register, the Sierra Club could not re-open the issue more than ten years later. The court found that the EPA's 2006 rulemaking makes clear that the annual monitoring network plans are not components of a SIP that require notice and comment. Instead a state must make the plan "available for public inspection," without requiring the formal notice and comment procedures that are necessary for SIP revisions. The court also found that the EPA's rulemaking that was under review in this case did not change these requirements and that there was no indication the EPA intended to address or change the non-SIP approach for annual monitoring network plans.

Therefore, because SIP notice and comment procedures are not required under federal rule and the TCEQ's current public comment process for the AMNP complies with 40 CFR §58.10(a)(1), the TCEQ is not compelled to hold public hearings on the AMNP. The TCEQ is responding to the comments that were received during the provided notice period for the plan and is submitting all comments and responses to the EPA.

TCEQ appreciates the comments regarding the need for greater outreach, especially the provision of information in Spanish. One way the TCEQ does this is by providing a link to Spanish-language information on TCEQ's main website, which includes a link to the EPA's Spanish-language page. Individuals needing basic information of the EPA's requirements can search the EPA's website for information concerning environmental topics or can request such information from the TCEQ. The TCEQ will work to add specific information regarding air monitoring to our Spanish language webpage.

Comment 12: The Sierra Club et al. strongly supported TCEQ's placement of a new

$PM_{2.5}$ FEM in west Houston, suggested a $PM_{2.5}$ monitor should also be placed at the TCEQ Bayland Park monitoring station, existing $PM_{2.5}$ monitors should be maintained at their current locations, and that the TCEQ should work with the City of Houston, Harris County, and the EPA to support the installation of lower cost community monitors throughout Houston to provide communities early warning and aid regulators to take action against polluters. The Sierra Club et al. suggested the TCEQ should initiate a $PM_{2.5}$ speciation source apportionment study to determine the sources of $PM_{2.5}$ in west Houston and develop a plan to reduce $PM_{2.5}$ emissions in that area. Sierra Club et al. noted that recent peer-reviewed, published research and an ensemble model of satellite and 2000 to 2015 data identified a high concentration of $PM_{2.5}$ in areas of Houston not previously identified due to a lack of monitors and that the existing Houston network does not meet EPA regulatory requirements. Even though the ensemble model utilized older data, it is highly likely the areas of maximum concentration are located in west Houston. The TCEQ should finalize the monitor it proposed at the Westhollow site and install a new monitor at the Bayland Park site.

Response 12: The TCEQ appreciates the support from the Sierra Club et al. to add a $PM_{2.5}$ FEM monitor in west Houston at the Houston Westhollow site. This monitor was activated in January 2021. The TCEQ proposed adding a $PM_{2.5}$ FEM monitor at the Houston Bayland Park site in the Additional Monitoring Considerations section and in Appendix M of the draft 2021 AMNP.

The TCEQ Houston area $PM_{2.5}$ federal monitoring network includes 16 area $PM_{2.5}$ monitors to measure ambient $PM_{2.5}$ concentration data through gravimetric, speciation, and continuous measurements to determine maximum concentrations, concentrations in areas of high population density, and background and transport concentrations. The TCEQ exceeds the Houston area federal requirement for eight monitors, as listed in the 2021 AMNP Appendices B, C, and K. Additional Houston area network upgrades include replacing non-NAAQS comparable continuous $PM_{2.5}$ monitors with $PM_{2.5}$ FEM monitors at Conroe Relocated and Seabrook Friendship Park, replacing the Houston North Loop $PM_{2.5}$ federal reference method monitor (sampling every third day) with a continuous $PM_{2.5}$ FEM, and additional $PM_{2.5}$ speciation at the Clinton site. Additionally, a new $PM_{2.5}$ FEM monitor was activated at Houston North Wayside in April 2021. The TCEQ notes that the 2021 AMNP does not recommend any $PM_{2.5}$ FEM monitor location changes or decommissions, only additions.

The TCEQ operates Houston area $PM_{2.5}$ monitors in areas with expected maximum concentrations fulfilling requirements listed in 40 CFR Part 58, Appendix D, Section 4.7. Specifically, 40 CFR Part 58, Appendix D, Section 4.7.1(b)(1), requires at least one monitoring station sited in an area of expected maximum concentration. Historically the Houston $PM_{2.5}$ maximum concentrations are measured at the Clinton or Houston East sites. The active Houston Westhollow $PM_{2.5}$ FEM monitor and the proposed second monitor at Houston Bayland Park, will provide data for west Houston, an area indicated as possibly containing maximum concentrations higher than other Houston monitors in recent peer-reviewed reports and modeling. Data from these monitors will be useful to determine if additional west Houston area $PM_{2.5}$ monitoring or speciation analyses is needed to characterize the area. The TCEQ will further assess Houston area $PM_{2.5}$ monitoring needs again in 2022.

As stated in the introduction, the 2021 AMNP is intended to demonstrate the TCEQ's

compliance with federal air monitoring requirements under 40 CFR Part 58. With the addition of the new west Houston $PM_{2.5}$ FEM monitor at Houston Westhollow, the $PM_{2.5}$ Houston network meets or exceeds all federal requirements. Comments related to community-placed monitors, which are not required and may not be NAAQS comparable, and $PM_{2.5}$ speciation source apportionment studies to determine the sources of $PM_{2.5}$ in west Houston are beyond the scope of the AMNP.

Comment 13: Sierra Club et al. requested that the TCEQ place Pb, particulate matter (PM) and VOC monitors in the Fifth Ward, a community in east Houston near a superfund site and stated that residents needed air quality data so they can take action to protect their health from elevated levels of Pb and VOCs and to alert regulatory officials when they needed to take specific action against potential emitters. Commenters indicated there was evidence of public health threats in the Fifth Ward from Pb and other toxic contaminants and that the area was a Pb poisoning hot spot and due to the location of metal recycling facilities and brownfields in the community, there was a clear need for PM monitoring in this part of Houston.

Sierra Club et al. additionally requested that the TCEQ place a reference grade air monitor in the Pleasantville environmental justice community to provide data to understand residential exposure, assist efforts to reduce population exposure, and improve the residents' health and well-being. The commenter noted that the community operates a low-cost air monitoring network, also collocated at Clinton Park, and data since 2019 demonstrated the need for a regulatory grade monitor (site) independent of the Clinton monitor that may not fully capture pollution sources from the 610 East Loop Freeway separating the two areas.

Response 13: As previously stated, this plan addresses federally required monitoring and demonstrates the TCEQ's compliance with requirements under 40 CFR Part 58, and comments unrelated to federally required monitoring are beyond the scope of this plan. Federal Pb monitoring rules require monitoring near Pb sources with emissions greater than 0.50 tpy or near sources expected to exceed the Pb NAAQS. No sources meeting these criteria are in the Houston Fifth Ward. The TCEQ is meeting federal requirements for Pb monitoring.

The TCEQ proposed adding "regulatory grade" monitors to a new air monitoring site in the Houston Fifth Ward to measure $PM_{2.5}$ FEM and VOCs and to a new air monitoring site in Pleasantville to measure $PM_{2.5}$ FEM in the Additional Monitoring Considerations section and in Appendix M of the draft 2021 AMNP and agrees that the data from these monitors will be useful for assessing air quality in these areas that may not be captured by the Clinton monitors.

Comment 14: Sierra Club et al. appreciated the enhanced particulate matter of 10 micrometers or less in diameter (PM_{10}) monitoring proposed in the Portland-Gregory area but commented that recent permitting actions with staggering permitted emission limits urgently warranted enhanced VOC monitoring, as emissions of VOCs will far exceed new emissions of PM_{10} by a factor greater than five, and potentially $PM_{2.5}$ monitoring, since one purpose of the air monitoring network was to support compliance with ambient air quality standards and emissions strategy development, as provided by 40 CFR Part 58, Appendix D, Section 1.1(b). The area north of Corpus Christi needs monitoring for both PM and VOC, and the TCEQ should add monitors to

the region as part of this plan.

Response 14: The TCEQ proposed the establishment of a new air monitoring site in the Gregory-Portland area to measure VOCs, $PM_{2.5}$ continuous, and meteorological parameters in the Additional Monitoring Considerations section and in Appendix M of the draft 2021 AMNP and agrees that the data from these monitors will be useful for assessing air quality in this area; the recommendation to measure PM_{10} was noted in the plan as no longer under consideration.

Due to the defined scope of this document, only PAMS-related VOC monitoring is included in this plan. PAMS monitoring objectives include collecting data to evaluate and support air quality model development and O_3 precursor concentration trend assessment for O_3 NAAQS attainment efforts. No current federal PAMS VOC or $PM_{2.5}$ monitoring requirements are applicable for the Gregory-Portland area and comments unrelated to federally required monitoring are beyond the scope of this plan.

The TCEQ notes that three new air monitoring stations have been deployed in the Gregory-Portland area through a public-private partnership between area industry, the Gregory-Portland ISD, the University of Texas at Austin, and independent monitoring contractors. These three air monitoring stations, located at the Gregory High School, Stephen F. Austin Elementary, and at the Old East Cliff Elementary School, measure $PM_{2.5}$, nitrogen oxides (NO_x), sulfur dioxide (SO_2), and 46 speciated VOCs. Data from the stations are provided on a publicly available website, https://gpair.ceer.utexas.edu/. Per the partnership, the University of Texas at Austin provides independent air monitoring data analyses and ensures data are obtained using methods and quality assurance protocols that meet or exceed the EPA's air quality monitoring requirements.

Comment 15: Sierra Club et al. commented that there was a compelling need for additional VOC monitors along the Houston ship channel, an area with concentrated operations, to protect the public from cumulative risks. Sierra Club et al. commented that recent data indicated possible systematic air emissions underreporting errors by facilities along the channel and noted that some communities along the channel were exposed to greater pollution than others. The commenters also noted that daily unauthorized emissions are compounded by the steady stream of preventable disasters at channel facilities. The commenters stated that the chronic allowable emissions exceedances render the TCEQ air permit review process incapable of protecting public health because the technical assumptions upon which air permits are issued likely underestimate actual pollution levels and that enhanced VOC monitoring in the Houston ship channel communities was necessary to fill regulatory gaps.

Sierra Club et al. commented that no VOC monitors were located along the Houston ship channel on the southbound side of Interstate Highway 610 and requested that a VOC monitor be placed near JR Harris Elementary school. Commenters also requested additional monitoring in Manchester, Pasadena, Deer Park, and Baytown.

Response 15: As previously stated, this plan addresses federally required monitoring and demonstrates the TCEQ's compliance with requirements under 40 CFR Part 58. PAMS-related VOC monitoring is included in this plan and comments unrelated to federally required monitoring are beyond the scope of this plan. PAMS monitoring objectives include collecting data to evaluate and support air quality model

development and O_3 precursor concentration trend assessment for O_3 NAAQS attainment efforts. The TCEQ is required to have one Houston Metro area PAMS autoGC for speciated VOCs at the TCEQ National Core Multipollutant Network Houston Deer Park number (#) 2 site. The TCEQ operates two additional area autoGCs at Clinton and Channelview, exceeding federal PAMS VOC monitoring requirements and comments unrelated to federally required monitoring are beyond the scope of this plan.

The TCEQ also operates a robust network of state-initiative monitors that support a variety of purposes. Though the TCEQ state-initiative monitors are outside of the scope of this document, this state-initiative monitoring network provides valuable information for assessing public health. Data from these state-initiative monitors are located on the TAMIS webpage (https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome). The TCEQ is significantly enhancing its state-initiative air monitoring capabilities along the Houston ship channel with three new autoGC sites capable of continuous measurement of 46 VOCs. The new Channelview Drive Water Tower site and autoGC monitor were active in February 2021. The second and third autoGCs are anticipated to be active by early fall 2021 at the new Manchester East Avenue N and Pasadena Richey Elementary School sites in the Houston Manchester and Pasadena communities, both of which are on the southbound side of Interstate Highway 610. While an autoGC is not planned at the John R Harris Elementary School, the new Manchester East Avenue N air monitoring site is located one mile to the east of the school.

In addition to the new TCEQ autoGC sites, the TCEQ collaborated with Houston Regional Monitoring (HRM) Corporation to provide additional publicly available continuous VOC monitoring data in Deer Park and Baytown via the TAMIS webpage. This includes data from an autoGC at HRM Site 16 in Deer Park and a new autoGC placed at their existing HRM Site 7 in Baytown (HRM information and site locations are provided in the TAMIS and at http://hrm.aecom.com/index.htm). The Houston Deer Park area is historically supported by an autoGC at the TCEQ Houston Deer Park #2 air monitoring site. The new state-initiative equipment and HRM collaboration has expanded TCEQ's ability to rapidly assess air quality and provide data to monitor daily ambient air quality conditions in the Houston ship channel and surrounding areas.

Comment 16: Sierra Club et al. encouraged the TCEQ to participate in federal air toxics monitoring programs such as the EPA's National Air Toxic Trends Sites (NATTS), the Urban Air Toxics Monitoring Program (UATMP), and the Community-Scale Air Toxics Ambient Monitoring (CSATAM) program as such federal ambient air toxics monitoring programs were tools that help evaluate inter-regional trends in hazardous air pollutant exposure as well as providing valuable data for human exposure models and assessments. Sierra Club et al. also suggested that in addition to re-enrollment in the NATTS program at Deer Park, the site should be equipped with the capability to monitor ethylene oxide concentrations.

Response 16: While the TCEQ may no longer participate in the NATTS program (the TCEQ notes that the NATTS program is not a required element of 40 CFR Part 58 and is beyond the scope of this plan), the TCEQ continues to participate in other trends programs. The TCEQ measures O_3 precursors (and air toxics by autoGC) as a part of

the PAMS program at the Houston Deer Park #2 site and participates in the NCore program at Dallas Hinton, El Paso Chamizal, and Houston Deer Park #2. NCore is a multi-pollutant trends assessment network that integrates advanced measurement systems for particles, pollutant gases and meteorology with the following monitoring objectives:

- timely reporting of data to public by supporting AIRNow, air quality forecasting, and other public reporting mechanisms;
- support for development of emission strategies through air quality model evaluation and other observational methods;
- accountability of emission strategy progress through tracking long-term trends of criteria and non-criteria pollutants and their precursors;
- support for long-term health assessments that contribute to ongoing reviews of the NAAQS;
- compliance through establishing nonattainment/attainment areas through comparison with the NAAQS;
- support to scientific studies ranging across technological, health, and atmospheric process disciplines; and
- support to ecosystem assessments, recognizing that national air quality networks benefit ecosystem assessments and, in turn, benefit from data specifically designed to address ecosystem analyses.

The TCEQ also participates in the Chemical Speciation Network (CSN) Speciation Trend Network (STN) at the Dallas Hinton, El Paso Chamizal, Houston Deer Park #2, and Karnack sites. The CSN data are used for multiple objectives, including:

- trends assessment;
- development of effective SIPs and determination of regulatory compliance;
- development of emission control strategies and tracking progress of control programs;
- aiding in the interpretation of health studies by linking effects to $PM_{2.5}$ constituents;
- characterizing annual and seasonal spatial variation of aerosols; and
- comparison to chemical speciation data collected from the Interagency Monitoring of Protected Visual Environments (IMPROVE) network.

As previously stated, the 2021 AMNP is intended to demonstrate the TCEQ's compliance with federal air monitoring requirements under 40 CFR Part 58 and its monitoring objectives, which do not include monitoring for ethylene oxide;, therefore, comments related to ethylene oxide monitoring and the NATTS program are outside the scope of this document.

Comment 17: Sierra Club et al. commented that the TCEQ must add additional O_3 monitors to the San Antonio area to provide air pollution data to the public in a timely manner, to show compliance with ambient air quality standards, support compliance with air quality standards and emissions strategy development, and to provide information about air pollution transport into, and outside of, a city or region, as provided by 40 CFR Part 58, Appendix D, §1(a), §1(b), and §1.1.1. The Sierra Club et al. commented that the TCEQ should also add O_3 monitors in surrounding counties, at a minimum in New Braunfels, to ensure that the approximately 300,000 people who live in Guadalupe and Comal counties have localized air quality data. In addition, Sierra Club et al. commented that TCEQ should add an O_3 monitor north of

the San Miguel Electric Plant to help assess the potential impact on Bexar County air quality.

Response 17: The TCEQ does not agree with these comments. The TCEQ is federally required to operate a minimum of two O_3 monitors in the San Antonio-New Braunfels Metropolitan Statistical Area (MSA), based on the most recent MSA population estimates and the three-year O_3 design value, and currently operates three O_3 monitors: one upwind and one downwind of the greater San Antonio area and one downwind of city center, illustrated in Figure 1, below, with O_3 monitors noted by a light blue section. The data from these three monitors are provided to the public in a timely manner (see Response 1), support compliance with ambient air quality standards and emissions strategy development, support air pollution research studies, and provide information about air pollution transport into and around the area. The San Miguel Electric Plant is located in Atascosa County. The counties of Atascosa and Bexar are delineated by the United States Office of Management and Budget (OMB) under the San Antonio-New Braunfels MSA. The TCEQ exceeds O_3 monitoring requirements in this MSA, as noted above.

The TCEQ strengthened its O_3 precursor monitoring efforts by adding two upwind NO_x monitors at the Floresville Hospital Boulevard and Karnes County monitoring sites, illustrated in Figure 1, below, with NO_x monitors noted by a green section, (downwind of the Eagle Ford Shale area, Karnes County is just outside of the image in Figure 1) to its federal program in 2020. Additionally, as part of the TCEQ state-initiative monitoring, two autoGCs measuring VOCs (illustrated with a red section in Figure 1) operate at these same sites, further supporting emissions strategy development.

Local and industry entities also support additional O_3 monitoring (sites shown in Figure 1) with eight non-regulatory monitors (these monitors do not meet criteria specified in 40 CFR Part 58 for data evaluation) spread throughout the region in Bexar, Comal, and Guadalupe counties. Though the data from these non-regulatory monitors do not meet requirements for comparing the data to the NAAQS, the TCEQ considers the data as supporting information for the area's air quality decisions. Data from these additional O_3 monitors are located on the TAMIS webpage (https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome).

The TCEQ does not agree with the comment that O_3 monitors should be added to New Braunfels due to the combined populations of Comal and Guadalupe Counties. Federal monitoring requirements for O_3 outlined under 40 CFR Part 58, Appendix D, Section 4.1(a) apply specifically to MSAs. MSAs are delineated by the OMB and used by the Census Bureau when reporting population estimates. The OMB delineated the San Antonio-New Braunfels MSA as containing multiple counties, including Comal and Guadalupe. Federal O_3 monitoring requirements are triggered by the MSA population based on the latest available census figures (see 40 CFR Part 58.50(c) and Table D-2 of Appendix D to Part 58). The individual county populations of Comal and Guadalupe do not trigger additional O_3 monitoring requirements and comments unrelated to federally required monitoring are beyond the scope of this plan.

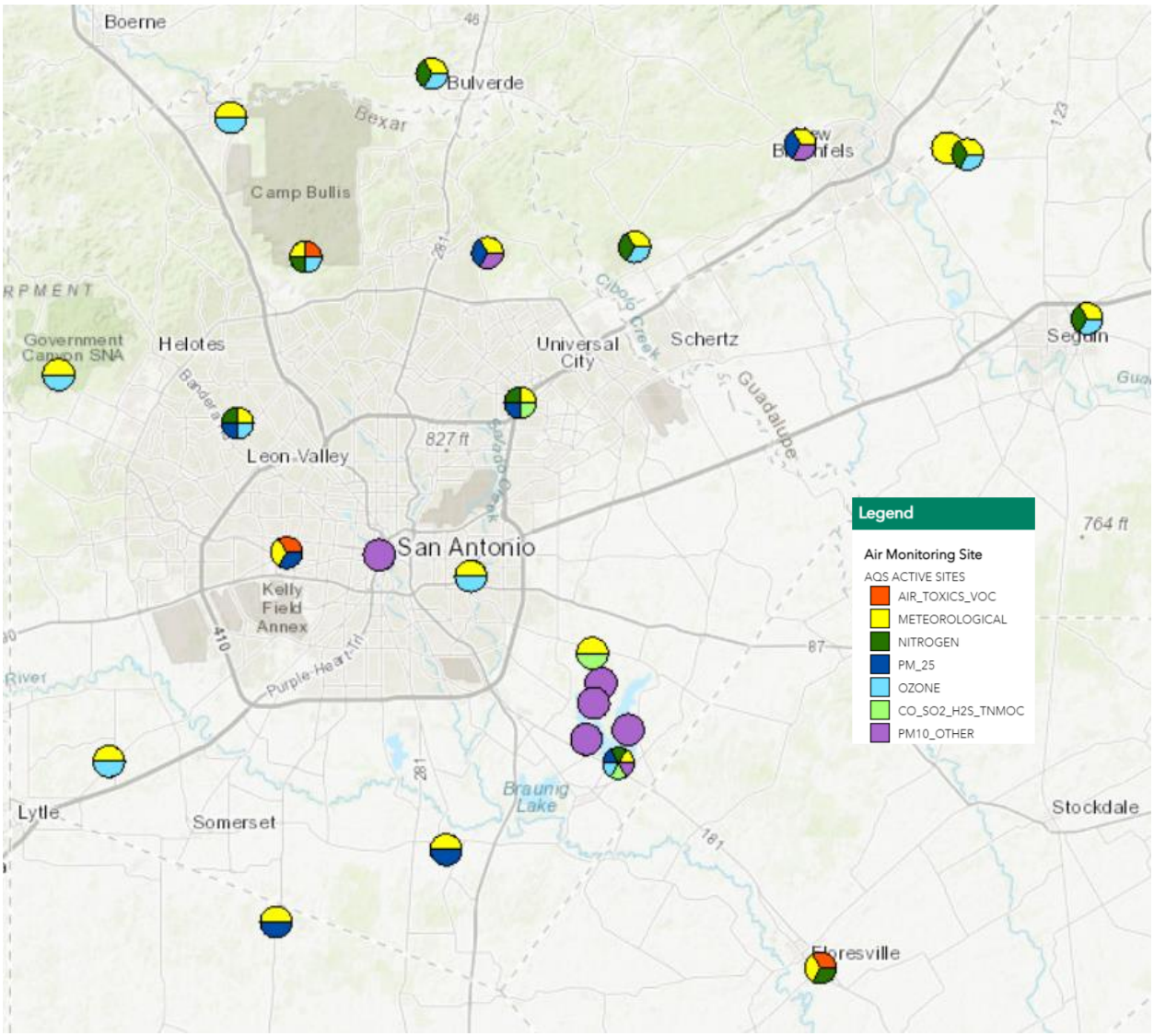

Figure 1: San Antonio Area Active Sites and Monitors

Comment 18: Sierra Club et al. commented that the TCEQ should use population data for the Midland-Odessa combined statistical area (CSA) composed of Martin and Midland Counties (Midland MSA) and Ector County (Odessa MSA) to determine O_3 federal monitoring requirements and that the population of the Midland-Odessa CSA exceeds 350,000. The commenter stated that failing to consider Midland and Odessa as a single unit would be arbitrary and capricious. Other metropolitan areas that span much greater distances are treated as a single unit for the purpose of 40 CFR Part 58, Appendix D, Section 4.1,Table D-2, and that regardless of whether TCEQ treats Midland and Odessa as separate units for purposes of Table D-2, the end result is the same: two O_3 monitors must be added because both MSAs have more than 50,000 people and installing at least one O_3 monitor in Midland-Odessa is necessary to meet basic monitoring objectives of public data reporting, air quality mapping, compliance, and understanding ozone-related atmospheric processes.

The Sierra Club et al. also commented that the total number of monitoring sites needed to support monitoring objectives will require more sites than minimum

requirements, 40 CFR Part 58, Appendix D, Section 4.1. Sierra Club et al. additionally commented that Midland and Odessa each have a population greater than 50,000, and the nearest O_3 monitor in Hobbs, New Mexico has a design value greater than 85 percent (%) of the NAAQS and that the TCEQ must use the best available estimate of regional O_3 values. Sierra Club et al. asserts that two O_3 monitors must be added, one in the Midland MSA and the second in the Odessa MSA.

Response 18: The TCEQ does not agree with these comments. Minimum federal monitoring requirements for O_3 outlined under 40 CFR Part 58, Appendix D, Section 4.1(a) apply specifically to MSAs. According to the final rule, 71 *Federal Register* 61,236 (October 17, 2006), page 61,267, the EPA investigated the current network compared with using either CSA or MSA as the basis for applying the minimum network requirements. The results demonstrated that using MSA would ensure a few more sites in the small number of large CSAs that have high populations and large geographical areas without unnecessarily requiring new sites. Since using MSAs would not impose a significant new burden on the States and would make it more likely that within-MSA gradient characterization of O_3 would be characterized in high concentration areas, the EPA adopted MSA as the appropriate unit of a metropolitan area to apply to the minimum O_3 monitoring requirements. In addition, while the final rule required fewer O_3 monitors, the EPA did not intend to encourage net reductions, but that the surplus in the existing networks relative to minimum requirements give States more flexibility to choose where to apply O_3 monitoring resources. The final rule further states that the EPA will work with each State to determine what affordable monitoring activities above minimum requirements would best meet the diverse needs of the program as well as the needs of other data users. The EPA Region 6 concurred with the TCEQ monitoring activities as listed in the 2020 AMNP, and the TCEQ concludes that the approved monitoring activities meet the diverse needs of the TCEQ program and data users.

MSAs are delineated by the OMB and used by the Census Bureau when reporting population estimates. The OMB delineated the Midland MSA as containing Midland and Martin Counties and a separate Odessa MSA as containing Ector County. Federal O_3 monitoring requirements are triggered by the MSA population based on the latest available census figures (see 40 CFR §58.50(c) and Table D-2 of Appendix D to Part 58) and comments unrelated to federally required monitoring are beyond the scope of this plan. The Midland and Odessa individual MSA populations do not trigger O_3 monitoring for MSA populations with greater than 350,000 persons. Hobbs, New Mexico, is delineated by the OMB as a micropolitan statistical area and is not associated with the Midland or Odessa MSAs. Comments related to out-of-state, micropolitan area design values are beyond the AMNP scope.

Comment 19: The Sierra Club et al. noted appreciation and supported TCEQ's recent deployment of additional monitoring sites in Ector County, including the SO_2 monitor in Goldsmith, however, due to widespread flaring throughout the Permian Basin, the existing monitoring network remained inadequate to protect air quality and ensure compliance with the SO_2 NAAQS. TCEQ must model SO_2 levels in Ector County and the remainder of the Permian Basin and install monitors at expected hot spots to serve the purposes of air pollution monitoring. Sierra Club et al. further commented that if modeling or monitoring showed violations of the NAAQS, TCEQ must take actions to fix them. The Sierra Club et al. urged the TCEQ to revise the AMNP to include air

quality monitoring around oil and gas productions where flaring and venting was well-documented. The Sierra Club et al. also commented that the most immediate need was for VOC, SO_2, and hydrogen sulfide (H_2S) monitors, and that placing an O_3 monitor and an additional PM monitor in the Odessa-Midland area was also important. The Sierra Club et al. appreciated that the TCEQ had to make hard choices about where to measure air quality in Texas and that due to the most recent oil bust, urged TCEQ to take action and protect air quality in the oil and gas producing regions of the state.

Response 19: The TCEQ appreciates the Sierra Club et al. acknowledgment regarding the new state-initiative air monitoring sites in the Permian Basin and the difficult choices with selecting air quality monitoring locations with limited resources. As stated in the introduction, state-initiative monitoring is not included in this AMNP; however, the TCEQ deployed two new state-initiative air monitoring sites in Goldsmith and west Odessa, with a third pending deployment by Summer 2021 in Midland. The new air monitoring sites monitor for VOC, SO_2, and H_2S. No additional PM or O_3 monitoring are planned at this time. Comments related to modeling and actions to fix NAAQS violations are outside the scope of this plan.

The TCEQ does not agree with the comment that SO_2 levels in Ector County must be modeled, along with the remainder of the Permian Basin, and monitors installed at expected hot spots to meet the requirements under 40 CFR Part 58 and fulfill implementation of the 2010 one-hour SO_2 NAAQS. As stated in the 2021 AMNP, 40 CFR Part 51 Subpart BB (Data Requirements supporting the Data Requirements Rule [DRR]) required air agencies to characterize air quality around specified sources that emitted 2,000 tons per year (tpy) or more of SO_2 in the latest emissions inventory year (2014, at that time, for Texas). Air agencies were then given the option to model or monitor SO_2 emissions impacts from the sources subject to the DRR. The only source in the Permian Basin meeting the DRR requirement was in Big Spring and the TCEQ deployed an air monitoring site at Big Spring Midway in fulfillment of the DRR.

The purpose of the 2021 AMNP is to demonstrate how the TCEQ air monitoring network complies with federal monitoring requirements detailed in 40 CFR Part 58. TCEQ meets or exceeds federal monitoring requirements for MSAs in the Permian Basin area as detailed in the 2021 AMNP and in Appendix C of this plan and comments unrelated to federally required monitoring are beyond the scope of this plan.

Comment 20: The Sierra Club et al. commented that TCEQ's monitoring and modeling plan was insufficient to demonstrate compliance with the 2010 one-hour SO_2 NAAQS and that monitoring alone cannot accurately evaluate compliance with the SO_2 NAAQS. The Sierra Club et al. commented that a single monitor may not be sufficient to characterize SO_2 air quality or to determine compliance for any area, and for areas with fewer than three SO_2 monitors positioned to capture peak concentrations from a large SO_2 source, monitoring will be inadequate to establish compliance. Further, the Sierra Club et al. commented that a state may not be able to locate a monitor where the modeling indicates the highest impacts are likely to occur for technical reasons, such as an inability to gain physical or legal access to the site, or lack of access to power supply and since the EPA requires three full years of monitoring data for a certified design value, states have 18 months to submit a nonattainment plan, and five years to comply with the plan, the full implementation

of the NAAQS through monitoring would take up to a decade, which presents unacceptable risk to vulnerable Texans. Thus, by focusing on modeling the sources subject to the DRR, TCEQ could ensure that the protections promised by the NAAQS are met in a cost-effective and expeditious manner.

Response 20: The TCEQ does not agree with these comments. Title 40 CFR §51.1201 states that air agencies could model or monitor to characterize maximum one-hour SO_2 concentrations from sources subject to DRR requirements. The TCEQ's SO_2 monitoring plan complies with these requirements. The TCEQ continues to support the use of ambient air monitoring data, as appropriate, for making designation decisions.

As stated in the introduction, the 2021 AMNP is intended to demonstrate the TCEQ's compliance with federal air monitoring requirements under 40 CFR Part 58. Comments related to NAAQS implementation timelines, nonattainment plan submittal timelines, and timelines to comply with attainment demonstrations are beyond the scope of this document.

Comment 21: The Sierra Club et al. commented that of the 25 Texas facilities subject to the DRR, the TCEQ operates SO_2 ambient air monitors in the vicinity of only nine of those plants and four of those plants, Big Brown, Monticello, Sandow, and J.T. Deely, have ceased operations and that the TCEQ draft 2021 AMNP failed to demonstrate that the current SO_2 monitors are placed in a location and manner that captures the peak predicted emissions concentrations, as required by EPA regulations.

Response 21: The TCEQ does not agree with these comments. As stated in the 2021 AMNP on page 11, the TCEQ identified 24 sources for air quality characterization, including 13 sources identified for evaluation by monitoring. Areas around three of the 24 sources were initially designated nonattainment in fulfillment of the DRR. To meet the DRR requirements around the sources not designated nonattainment, the TCEQ deployed 11 SO_2 source-oriented monitors, located near 13 sources before January 2017, as detailed in the TCEQ 2016 AMNP. In addition to the 11 SO_2 monitors deployed around the 13 sources, the TCEQ deployed an SO_2 monitor near Big Brown (Big Brown ceased operations in 2018 and was demolished in April 2021) to support SO_2 air quality characterization, as detailed in the TCEQ 2017 AMNP. One of the 11 DRR sites, the TCEQ Rockdale John D. Harper, was decommissioned in June 2020, due to the shutdown of the DRR facilities requiring air quality characterization in 2017. The TCEQ currently operates 10 DRR air monitoring stations located near 11 sources.

The TCEQ details relating to the site evaluation and selection process (monitor placement evaluations) for DRR source-oriented monitors were outlined in the TCEQ 2016 and 2017 AMNPs and continued to be reflected in subsequent AMNPs, with which the EPA concurred. As detailed in these AMNPs, the site evaluation and selection process considered the peak modeled impacts along with other monitor siting criteria, including power availability, site access, and 40 CFR Part 58, Appendix E siting criteria requirements. Based on the information provided in the monitor placement evaluations, the EPA approved the monitor placement for all TCEQ DRR SO_2 monitors. The TCEQ is meeting all regulatory SO_2 requirements in the DRR and in 40 CFR Part 58, Appendix D, §4.4.2.

Comment 22: The Sierra Club et al. commented that TCEQ monitoring data

demonstrated that the 2019 and 2020 design values for the air quality monitors near Martin Lake in Rusk County and Harrington Station in Potter County violated the 2010 one-hour SO_2 NAAQS even though the monitors do not actually capture the highest SO_2 concentration near either facility based on air dispersion modeling conducted according to the EPA's SO_2 modeling protocol. TCEQ must consider relocating or adding a monitor that will capture peak impacts from the Harrington Station source.

The Sierra Club et al. commented that since TCEQ monitoring data demonstrated that the areas are violating the NAAQS, the TCEQ must take appropriate action, including requiring adoption of enforceable emission limits to ensure attainment of the 2010 one-hour SO_2 NAAQS near both power plants, or recommend that EPA redesignate the areas as nonattainment. Sierra Club also urged the TCEQ to install additional air quality monitors in these areas to properly characterize ambient air quality near those plants and to inform the affected communities.

Response 22: The TCEQ does not agree with these comments. Details relating to the site evaluation and selection process (monitor placement evaluations) for DRR source-oriented monitors were outlined in the TCEQ 2016 and 2017 AMNPs and continued to be reflected in subsequent AMNPs, with which the EPA concurred. As detailed in these AMNPs, the site evaluation and selection process considered the peak modeled impacts along with other monitor siting criteria, including power availability, site access, and 40 CFR Part 58, Appendix E siting criteria requirements. Based on the information provided in the monitor placement evaluations, the EPA approved the monitor placement for Harrington Station and Martin Lake Electrical Station. The TCEQ is meeting all regulatory SO_2 requirements in the DRR and in 40 CFR Part 58, Appendix D, §4.4.2.

The TCEQ does not agree with the commenter's assertion that additional air quality monitors are needed in these areas to properly characterize ambient air quality. Further, enforceable emission limits and area designations are not components of the AMNP review required under 40 CFR Part 58.10 and are beyond the scope of this plan.

Comment SC12: The Sierra Club et al. commented that the TCEQ should conduct additional modeling based on the most recent three-years of actual hourly emissions and meteorological data to reevaluate compliance with the SO_2 NAAQS at WA Parish, San Miguel, and Coleto Creek due to increased facility SO_2 emissions according to the TCEQ *2020 Sulfur Dioxide Ongoing Data Requirements Annual Report*, since the annual emissions reported by TCEQ do not ensure compliance, or the TCEQ should impose more stringent emissions limitations under 40 CFR Part 1204 to ensure compliance.

Response 23: The TCEQ does not agree with these comments. Title 40 CFR §51.1205(b) requires agencies to submit an annual ongoing data requirements report to the EPA documenting each applicable DRR source's annual SO_2 emissions for areas designated attainment/unclassifiable for the 2010 one-hour SO_2 NAAQS where the designations were based on modeling actual SO_2 emissions; and to provide an assessment of the cause of any emissions increase from the previous year. The TCEQ has fulfilled this federal requirement with the 2020 report.

In the EPA's preamble to the data requirements rule, the EPA recommended that

agencies should conduct additional modeling for an area if the original modeling level was equal to or greater than 90% of the standard, or, if the original modeling level was between 50-90% of the standard, and emissions in the area increased by 15% or more. The preamble also stated that in other cases where air quality has been modeled to be well below the standard and annual emissions increased only slightly in the following year, the air agency would be able to exercise judgment regarding whether additional modeling would be needed. Since the original modeling results for the San Miguel Power Plant reviewed by the EPA to make an attainment determination were 57% of the standard and the annual emissions increase in 2018 was 1.7%, no additional modeling is necessary. The very small increase in emissions from the original designation modeling inputs would not be expected to change the attainment/unclassifiable designation, and the area would be expected to continue meeting the 2010 one-hour SO_2 NAAQS. Additionally, as stated in TCEQ *2020 Sulfur Dioxide Ongoing Data Requirements Annual Report*, the emissions inventory comparison for Coleto Creek and WA Parish show that the original designation modeling evaluated higher average emissions, providing reasonable assurance that these three areas continue to meet the 2010 one-hour SO_2 primary NAAQS. The TCEQ continues to express that no additional SO_2 air quality modeling is needed to determine compliance with the 2010 SO_2 NAAQS for any of the seven Texas counties listed in the TCEQ *2020 Sulfur Dioxide Ongoing Data Requirements Annual Report*, including the areas around WA Parish, San Miguel, and Coleto Creek, as the EPA concurred with the TCEQ's recommendation in a letter dated October 22, 2020 .

The imposition of more stringent emission limits are outside the scope of the AMNP.

Comment 24: The Sierra Club et al. commented that the TCEQ should require Western Refining (in the El Paso area) to implement real-time emissions fence-line monitoring so that residents and emergency personnel can be alerted of exceedances in time to take appropriate response measures and should require Western Refining to conduct a health impact study of the Sambrano neighborhood to determine if residents are suffering adverse health effects due to hydrogen cyanide (HCN) or other emissions.

Response 24: The purpose of the 2021 AMNP is to demonstrate how the TCEQ air monitoring network complies with federal monitoring requirements detailed in 40 CFR Part 58. The commenter's requests to require fence-line emission monitoring, exceedance alerts, and health impact studies are not required elements under 40 CFR Part 58 and are outside the scope of the AMNP.

Comment 25: The Sierra Club et al. commented that the TCEQ misread the near-road regulations and that a near-road monitor was required in the El Paso-Las Cruces Core Based Statistical Area (CBSA), including El Paso and Hudspeth counties, Texas and Dona Ana County, New Mexico, due to an estimated population in excess of 1,000,000, and recommended that the site be located at Zavala Elementary School adjacent to Interstate 110 Spur.

Response 25: The TCEQ does not agree with these comments. Title 40 CFR Part 58, Appendix D, §4.3.2, requires that near-road monitors be placed in applicable CBSAs. The OMB defines the El Paso CBSA as El Paso and Hudspeth Counties. The El Paso-Las Cruces area, referenced in the Sierra Club et al. comment, is defined by the OMB as a combined statistical area or CSA, which is not applicable to near-road monitoring

requirements. The EPA has concurred with the TCEQ review of Texas CBSA populations in past TCEQ AMNPs to assess and establish the required near-road monitors. The TCEQ is meeting federal requirements for near-road monitors.

Comment 26: Lone Star Legal Aid and its organizational clients, Caring for Pasadena Communities, Port Arthur Community Action Network, Gayle Young from Beaumont, Texas and Dustin Stafford, resident of Woodville, Texas (LSLA et al.), recognized there are a number of monitors in the Beaumont-Port Arthur and Houston-Galveston-Brazoria metropolitan areas, but stated that there are holes in the network resulting in the potential to miss air pollution from many of Texas' largest pollution sources. LSLA et a. noted that the TCEQ draft 2021 AMNP also had holes including the fact that not all monitoring stations monitor for all criteria pollutants, there were not enough monitors within the communities for people to know if they were impacted by emissions from facilities that are clustered in and around their respective neighborhoods, the monitor information should be more publicly accessible for real-time events, and a stronger mobile monitoring system was needed to be deployed in emergencies so that the public can be aware of public health risks during the event. LSLA et al. acknowledged that the TCEQ has more than double the monitors required by federal rule, but the sheer number of monitors does not ensure adequate monitoring of all six criteria pollutants across the state to best protect the people of Texas from NAAQS violations, and the TCEQ must ensure monitors are placed where they will best capture emissions and concentrations where people live.

Additionally LSLA et al. noted limitations on TCEQ's existing monitoring technology since it is not recorded in real-time; does not identify sources of the pollution; and only measures emissions at the fence line, and the air monitoring network should be able to measure emissions related to major events. LSLA et al. commented that the TCEQ must realize monitoring program insufficiencies given the number and size of industrial facilities and the associated potential threats to human health every day, during emission upsets, fires, or other disasters.

Response 26: As previously stated, the purpose of the 2021 AMNP is to demonstrate how the TCEQ air monitoring network complies with federal monitoring requirements detailed in 40 CFR Part 58. The Beaumont-Port Arthur (BPA) and Houston-Galveston-Brazoria areas meet or exceed all federal monitoring requirements as detailed in the 2021 AMNP and in Appendix C of this plan and comments unrelated to federally required monitoring are beyond the scope of this plan. Air monitoring objectives determine site locations and pollutant monitoring, and sites are generally placed to be representative of regional air quality, rather than monitoring emissions from specific sources.

Continuous data are available in near real-time on the TAMIS database webpage (https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome).

The TCEQ acknowledges the importance of monitoring beyond federal requirements as demonstrated by extensive state-funded monitoring, conducted throughout Texas as state initiatives, which has been in place for many years. Comments related to pollution source identification, fence line emission monitoring, and mobile monitoring systems are beyond the scope of this plan.

Comment 27: LSLA et al. commented that the TCEQ only has one air monitor in the City of Pasadena, a VOC monitor at Pasadena North that has a deficient location due

to the predominant wind direction from the southeast and that another Pasadena monitor is needed to better capture air quality impacts, including non-VOC chemicals and PM, from facilities that are a part of the EPA's Toxics Release Inventory (TRI) program. The LSLA noted that monitors in surrounding areas do not reflect the air pollutants inside the Pasadena community and do not guarantee that Pasadena air quality is being adequately monitored and noted that the TCEQ must ensure stronger air monitoring in Pasadena and add additional air monitors in Pasadena, including more VOC monitors, that recognize the environmental justice community and protect residents who bear disproportionate air pollution harms.

Response 27: The City of Pasadena has multiple federally-required and state-initiative air monitoring sites with a variety of pollutants measured within a three-to-five-mile radius of the city. These sites include Clinton, Milby Park, Cesar Chavez, Houston East, HRM #3, Houston Deer Park #2, Houston Monroe, and Park Place. As previously discussed in this appendix, federal monitors are placed to represent regional air quality throughout the greater Houston area, which includes Pasadena. The TCEQ is meeting or exceeding federal monitoring requirements in the Houston area, and no additional criteria pollutant monitoring is required to meet federal requirements and comments unrelated to federally required monitoring are beyond the scope of this plan.

While state-initiative VOC monitoring is outside the scope of this plan, the TCEQ is relocating the Pasadena North site to Pasadena Richey Elementary School to improve air quality monitoring in an area where people live and work. The relocated Pasadena Richey Elementary School site includes a significant equipment upgrade and will include an autoGC for continuous VOC monitoring.

Comment 28: LSLA et al. acknowledged that the draft 2021 AMNP includes five monitors at four locations in the City of Port Arthur; however, the monitoring network is still insufficient since Port Arthur was home to some of the state's largest emitters with large refineries producing among the highest VOC, NO_x, carbon monoxide (CO), $PM_{2.5}$ and PM_{10} emissions in the state.

Response 28: As stated in the introduction, the 2021 AMNP is intended to demonstrate the TCEQ's compliance with federal air monitoring requirements under 40 CFR Part 58 and comments unrelated to federally required monitoring are beyond the scope of this plan. Port Arthur, as a part of the BPA MSA, meets or exceeds federal monitoring requirements as detailed in the 2021 AMNP and in Appendix C of this plan. Federal air monitoring objectives determine site locations, and sites are generally placed to be representative of regional air quality, rather than monitoring emissions from specific sources. The spatial distribution of the monitoring network and the data from the monitors, illustrated in Figure 2, meet these monitoring objectives and provide air monitoring data to the public in a timely manner, support compliance with ambient air quality standards and emissions strategy development, support air pollution research studies, and provide information about air pollution transport into and around the area.

Local and industry entities also support air quality monitoring in the City of Port Arthur (sites shown in Figure 2) with eight additional non-regulatory monitors (these monitors do not meet criteria specified in 40 CFR Part 58 for data evaluation). Though the data from these non-regulatory monitors do not meet requirements for

comparing the data to the NAAQS, the TCEQ considers the data as supporting information for the area's air quality decisions. Data from these additional monitors are located on the TAMIS webpage (https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome).

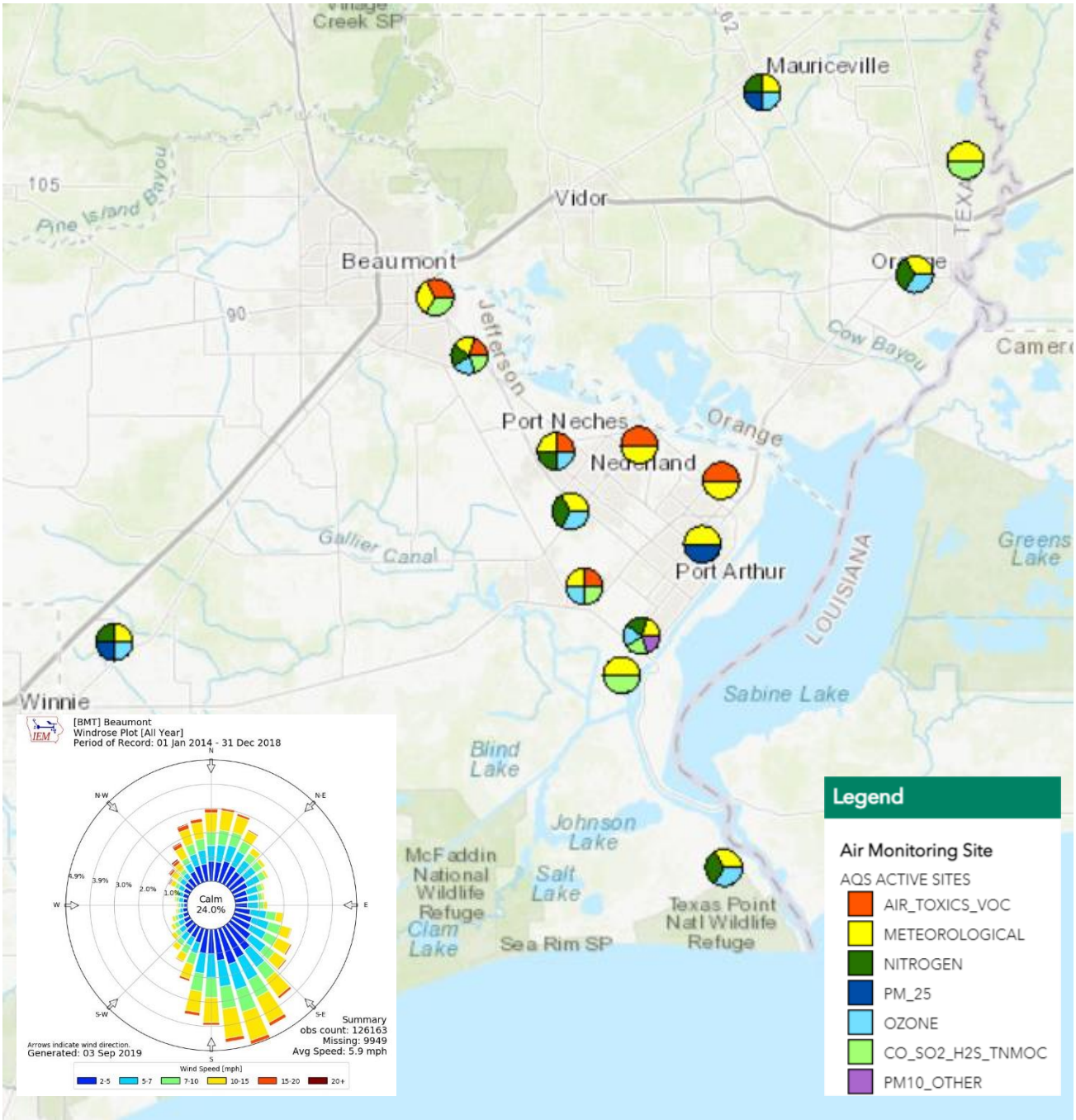

Figure 2: Beaumont-Port Arthur Area Active Sites and Monitors

Comment 29: LSLA et al. commented that despite the presence of some of Texas' largest polluters, the TCEQ draft 2021 AMNP includes only one air monitors<sic> in the Beaumont city limits and noted the "Beaumont Downtown" air monitor was not in downtown Beaumont, but located on the south side of town and was positioned to

capture some emissions blowing from south and southeast of Beaumont, but the monitor is not well placed to capture emissions from Port Arthur facilities. The Beaumont Downtown monitor was upwind of neighborhoods adjacent to the ExxonMobil facility, and the closest meaningful air monitor (Beaumont Downtown) is over two miles away and in the wrong direction. The LSLA et al. conceded there was a Beaumont Mary monitor in this area, but it was not included in the plan and that the monitor's canister sampler provided VOC measurements every few days with the most recently available data from September 2020, therefore making the Beaumont Downtown monitor largely responsible for measuring emissions, and it does not measure all criteria pollutants. The LSLA et al. urged TCEQ to add additional monitoring without<sic> the City of Beaumont, including the eastern side of Beaumont, which was most<sic> closest to the City's major industrial areas.

Response 29: As stated in the introduction, the 2021 AMNP is intended to demonstrate the TCEQ's compliance with federal air monitoring requirements under 40 CFR Part 58. Beaumont, as a part of the BPA MSA, meets or exceeds federal monitoring requirements as detailed in the 2021 AMNP and in Appendix C of this plan and comments unrelated to federally required monitoring are beyond the scope of this plan. Federal air monitoring objectives determine site locations, and sites are generally placed to be representative of regional air quality, rather than monitoring or measuring emissions from specific sources. The spatial distribution of the monitoring network and the data from the monitors (see Figure 2), meet these monitoring objectives and provide air monitoring data to the public in a timely manner, support compliance with ambient air quality standards and emissions strategy development, support air pollution research studies, and provide information about air pollution transport into and around the area. The TCEQ air monitoring network is designed to measure pollutant concentrations for assessing regional air quality representative of areas frequented by the public and to provide information about compliance with the NAAQS. Monitors can measure the impact on air quality from industrial sources present in an area, but do not measure the emissions from individual sources. Emissions measurement is outside of the scope of this plan.

The Beaumont Downtown site air monitoring began in the 1980s, and the site was relocated slightly to the current location in mid-2006 and currently monitors for VOCs by autoGC and by canister, NO_x, O_3, SO_2, and meteorology. TCEQ site naming conventions differed in the 1980s, but the TCEQ retains site names for trends purposes when relocations are less than one mile. Monitoring in east Beaumont began at Carrol Street Park in 1997, relocated slightly to Beaumont Mary at the Charlton Pollard Park in 2010, and move slightly to the current location in 2017 on Craig Street. Air monitoring site relocations typically occur when the property owners revoke the TCEQ's use of the property for ambient air monitoring purposes. The Beaumont Mary site's VOC canister and H_2S monitor support state initiatives, and as stated in the introduction, these monitors are not included and are outside of the scope of this plan.

VOCs measured by canister are sampled for a 24-hour period every six days and submitted to a laboratory for analyses, and validated data is loaded into the TAMIS within six months of the end of the sampling calendar quarter. When averaged over at least one year, 24-hour air samples are representative of long-term average

concentrations in air and provide valuable trends information. TCEQ toxicologists set air monitoring comparison values (AMCVs) to evaluate air monitoring data set to protect human health and welfare and use long term VOC data for these evaluations. More information about AMCVs is available online at the TCEQ Air Toxics webpage About Air Monitoring Comparison Values (AMCVs) - Texas Commission on Environmental Quality - www.tceq.texas.gov and information on toxicological evaluations by region area available at Toxicological Evaluations of Ambient Air Monitoring Data - Texas Commission on Environmental Quality - www.tceq.texas.gov. The TCEQ continues to support the value of state-initiative VOC data obtained by canister sampling as a cost efficient means to provide air quality information to the public (along with TCEQ toxicologists and other data users) and protect human health and welfare. Additionally, VOC canister analysis provides a more extensive list of compounds than a field autoGC.

Comment 30: LSLA et al. requested air monitors, possibly for VOC, $PM_{2.5}$ and PM_{10}, that would help to capture the actual emissions from the wood pellet manufacturing facility in Woodville, Texas, that appears to have exceeded its permits. Local $PM_{2.5}$ and PM_{10} readings from area monitors less than one mile from the facility suggest the possible need for air monitoring that would also assist the TCEQ with enforcement efforts and future permit approvals even though not required under 40 CFR Part 58.

Response 30: As stated in the introduction, the 2021 AMNP is intended to demonstrate the TCEQ's compliance with federal air monitoring requirements under 40 CFR Part 58. The TCEQ air monitoring network is designed to measure pollutant concentrations for assessing regional air quality representative of areas frequented by the public and to provide information about compliance with the NAAQS. Monitors can measure the impact on air quality from industrial sources present in an area, but do not measure the emissions from individual sources. Comments related to emissions monitoring and monitoring for permit enforcement or permit approvals are beyond the scope of this plan.

Comment 31: LSLA et al. commented that the TCEQ located an air monitor at West 7th Street, near the Valero Port Arthur Gate 2, to monitor SO_2 emissions from Oxbow and noted that Oxbow has potentially altered its operating procedures so that the monitor will not measure peak SO_2 concentrations or exceedances. LSLA et al. recommended the TCEQ complete additional air modeling of SO_2 emissions and concentrations from Oxbow and the area's other SO_2 emitters and add at least one additional SO_2 monitor nearby the Oxbow facility, possibly south, to capture potential high SO_2 emissions from Oxbow during favorable wind conditions.

Response 31: The TCEQ performed additional modeling based on the current permitted Oxbow emissions (which accounted for Oxbow's current operations, stack parameters, and more recent meteorological data) and assessed maximum SO_2 concentrations using the recommended procedures outlined in the EPA's SO_2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document to predict peak normalized one-hour SO_2 design value concentrations. The new model followed the recommended procedures outlined in the EPA's *SO_2 NAAQS Designations Source-Oriented Monitoring Technical Assistance Document* (see Figure 3) and showed peak concentrations located closer to the source than the original monitor location and that the new site location at Port Arthur West 7th Street Gate 2 was predicted to monitor concentrations 91 to 100% relative to the maximum normalized design value

(NDV) concentration. Areas south of the facility, where the model indicated locations likely to experience both high NDV and high frequencies of one-hour daily maximum concentrations during favorable wind conditions, were not viable for a monitoring site due to property access restrictions or lack of available power.

The South East Texas Regional Planning Commission (SETRPC) owns and operates the SETRPC Port Arthur site at 6956 James Gamble Boulevard, Port Arthur, Texas. This monitoring station is located in an adjacent neighborhood north-northeast of the facility and has included the operation of a private SO_2 monitor since 2007. The TCEQ coordinated with the SETRPC to make these data available to the public through the TCEQ's TAMIS database. When winds place this monitor directly downwind of the Oxbow facility, measured SO_2 concentrations at this monitor have not demonstrated exceedances of the one-hour SO_2 standard.

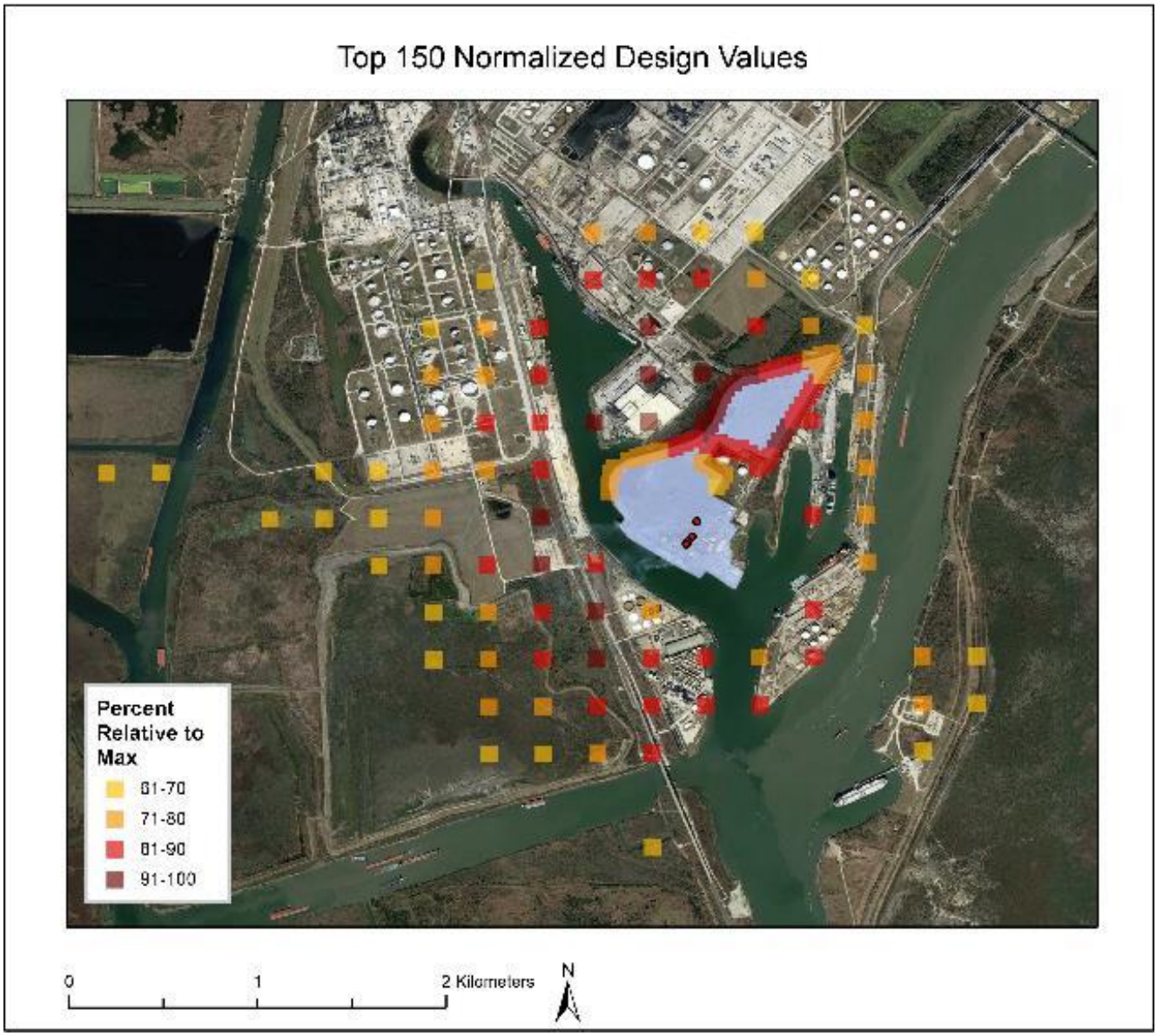

Figure 3: Top Normalized Design Values Modeled near Oxbow Calcining, LLC

Comment 32: LSLA et al. commented that Pasadena contained and was adjacent to a number of facilities that emit SO_2 and sulfur compounds in large quantities and should have at least one SO_2 monitor to ensure that citizens are protected from these emissions. LSLA clients have smelled and continue to smell the rotten-egg odor that is indicative of SO_2 pollution, but without any monitors, it is impossible to know exposure levels. The community deserves to know if the air they are breathing contains harmful levels of SO_2, and the TCEQ has a duty to collect and share that information. LSLA et al. additionally commented that a SO_2 monitor in central Pasadena would enable TCEQ to "measure typical concentrations in areas of high population density," and would further the monitoring goal of providing "air pollution data to the general public in a timely manner."

LSLA et al. also urged the TCEQ to place at least one SO_2 monitor in east-central Beaumont at the Beaumont Mary site or another available and appropriate location.

Response 32: Title 40 CFR Part 58, Appendix D, Section 4.4.2, requires states to establish an SO_2 monitoring network using the population weighted emissions index (PWEI) calculations. Based on Census Bureau population estimates and 2017 national emissions inventory (NEI) data with 2019 TCEQ point-source emissions inventory data, three SO_2 monitors are required in the Houston MSA, and the TCEQ exceeds the requirement with four. Three of these monitors are located at sites in the vicinity of Pasadena near local schools including: Houston Deer Park #2 (three miles to the east), Park Place (six miles to the west), and Clinton (six miles to the northwest). The TCEQ SO_2 monitoring network in the Houston MSA is representative of the regional area, including Pasadena, and exceeds the federal requirements and comments unrelated to federally required monitoring are beyond the scope of this plan.

Similarly, in the BPA MSA, the TCEQ is federally required to operate one PWEI SO_2 monitor and exceeds the requirement with four, including one SO_2 monitor located in Beaumont at the Beaumont Downtown location. Although beyond the scope of this document, the state-initiative Beaumont Mary site also monitors for H_2S.

Comment 33: LSLA et al. commented that Oxbow was one of the state's highest Pb emitting facilities and was located directly adjacent from the West Port Arthur neighborhood, and even though Oxbow's Pb emissions were less than half the 0.5 tons per year standard in 40 CFR Part 58, Appendix D, Section 4.5(a) requiring monitoring, Oxbow is one of a cluster of Pb emitters whose emissions total over 750 pounds of releases according to the 2017 NEI data. Considering the health and air quality challenges faced by West Port Arthur, LSLA et al. urged the TCEQ to consider placing a Pb monitor in West Port Arthur.

Response 33: The TCEQ evaluated 2019 Port Arthur facility Pb emissions; no Port Arthur facility emissions triggered the federal monitoring requirements detailed in 40 CFR Part 58, Appendix D, Section 4.5. The highest area Pb emissions were 40% below the monitoring threshold of 0.5 tpy. The TCEQ is meeting the federal requirements for Pb monitoring in this area and comments unrelated to federally required monitoring are beyond the scope of this plan.

Comment 34: LSLA et al. commented that it was critically important that O_3 levels were sufficiently monitored in environmental justice communities such as Pasadena, Port Arthur, and the east side of Beaumont, as these communities were vulnerable and have compromised health and limited access to health care due to other social

and economic factors. LSLA et al. commented that according to the TCEQ draft 2021 AMNP Appendix H, the BPA area must have at least two O_3 monitors and acknowledged that TCEQ had seven O_3 monitors within BPA but noted a gap as there was only one in Beaumont. Due to the area's O_3 precursor emitters, the LSLA et al. urged the TCEQ to add an O_3 monitor at Beaumont Mary and at other new locations on the east side of Beaumont (and O_3 modeling) to help protect the vulnerable. LSLA et al. further urged the TCEQ to require additional O_3 monitoring in the Port Arthur area along with modeling for the area as a whole.

The LSLA et a. commented that Pasadena only had the single monitor on the north end of the City and that the TCEQ should remedy this under the proposed network monitoring plan and that without an O_3 monitor, Pasadena residents cannot know their exposure levels to O_3. The nearest Pasadena ground level O_3 monitors are at Park Place, Clinton, Houston East, Houston West, HRM #3 Raden Road, and Houston Deer Park #2. The TCEQ should place an O_3 monitor in Pasadena to ensure residents can address a vital health, safety, and environmental issues that are otherwise undocumented in the area.

Response 34: The TCEQ agrees with the LSLA et al. in that seven O_3 monitors are operational in BPA MSA (two in Port Arthur and one in Beaumont), five of which exceed federal requirements. Local and industry entities also support the area with two additional non-regulatory O_3 monitors in Port Arthur (shown in Figure 2 with a light blue section, these monitors do not meet criteria specified in 40 CFR Part 58 for data evaluation). Though the data from these non-regulatory monitors do not meet requirements for determining compliance with the NAAQS, the TCEQ considers the data as supporting information for the area's air quality decisions. Data from these additional O_3 monitors are located on the TAMIS webpage (https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome).

Likewise, the TCEQ exceeds federal requirements with 21 Houston area O_3 monitors (listed in the 2021Appendix H for the Houston MSA), 18 of which exceed federal requirements. In addition to the TCEQ monitors, other entities also monitor for O_3 in the Houston Metro area with the TCEQ hosting the data in the TAMIS webpage. These additional monitors include 12 operated by Harris County Health and Human Services, five operated by the University of Houston, and five operated by industry, for a total of 42 area monitors. Specifically, ten O_3 monitors are located in the eastern portion of Houston, including the areas surrounding Pasadena, Buffalo Bayou, and the Houston Ship Channel.

Federal air monitoring sites are generally placed to be representative of regional air quality and the lack of a certain pollutant monitor does not indicate a lack of information for an area. While air monitoring data can vary slightly from one site to another, TCEQ meteorologists provide daily regional O_3 forecasts during the O_3 season. Citizens can access a map of current one-hour O_3 levels, Current Ozone One-Hour Levels (www.tceq.texas.gov), view the day's air quality forecast, Today's Texas Air Quality Forecast - Texas Commission on Environmental Quality www.tceq.texas.gov, or view the air quality index report Air Quality Index Report (www.tceq.texas.gov). The TCEQ is exceeding federal monitoring requirements for O_3 in the Houston and BPA MSAs; all of these monitors provide data that are helpful in assessing O_3 precursors and O_3 levels in the Houston and BPA areas and comments unrelated to federally required monitoring are beyond the scope of this plan.

Appendix N: TCEQ Response to Comments Received on the 2021 Annual Monitoring Network Plan

The AMNP demonstrates the TCEQ's compliance with federal ambient air monitoring requirements. Comments related to O_3 modeling do not fall within the scope of this plan.

Comment 35: LSLA et al. commented that in the draft 2021 AMNP there were no PM_{10} monitors and only three $PM_{2.5}$ monitors (Hamshire, Port Arthur Memorial School, and SETRPC 42 Mauriceville) within the BPA MSA, with only one $PM_{2.5}$ monitor in Port Arthur and none in Beaumont, even though the two areas have some of Texas' highest $PM_{2.5}$ emitters. None of the $PM_{2.5}$ air monitors in BPA are well positioned to capture emissions from any of these facilities. Due to the direct $PM_{2.5}$ emissions and likely indirect $PM_{2.5}$ formation via the area emissions of ammonia, NO_x, SO_2, and VOCs, LSLA et al. urged the TCEQ to reconsider its $PM_{2.5}$ monitoring scheme in BPA and to add PM_{10} monitoring in Beaumont and Port Arthur since they have ports, busy interstate traffic and railroads. LSLA et al. recommended that the urban center and east side of Beaumont should have $PM_{2.5}$ monitoring and a $PM_{2.5}$ monitor should be located further south from the Port Arthur Memorial School monitor, closer to Port Arthur's major industry and within the West Port Arthur neighborhood.

Response 35: Federal regulations require PM_{10} monitoring in MSAs based on population and available measured concentration and require $PM_{2.5}$ monitoring in MSAs based on population and the most recent three-year design values. The TCEQ air monitoring network is designed to measure pollutant concentrations for assessing regional air quality representative of areas frequented by the public and to provide information about compliance with the NAAQS. Monitors can measure the impact on air quality from industrial sources present in an area, but do not measure the emissions from individual sources. The TCEQ measured PM_{10} concentrations at Beaumont Downtown (1989-1996), and due to low measured PM_{10} concentrations, the monitor was deactivated. Current PM monitors provide data supporting area-wide air quality throughout the BPA MSA that includes Beaumont and Port Arthur. As shown in the 2021 AMNP, the TCEQ is meeting or exceeding federal requirements for PM_{10} and $PM_{2.5}$ monitoring in both the BPA MSAs.

Comment 36: LSLA et al. commented that TCEQ can shore up its network by increasing the amount of PM monitors in the Houston Ship Channel area since the only area monitor at Clinton had the highest measured 2016-2018 concentration, starting with Pasadena. LSLA et al. urged the TCEQ to augment the Clinton, Houston East, and Houston Deer Park #2 sites by deploying more monitors capable of tracking both PM_{10} and $PM_{2.5}$ in the cities of Pasadena, Deer Park, La Porte, and Galena Park and in the Houston community of Manchester and urged the TCEQ to install these monitors not only along the Houston ship channel with industry concentration, but also away from the ship channel and within residential areas of each of the respective municipalities.

Response 36: As referenced in response 35, federal regulations dictate minimum PM monitoring requirements. The TCEQ air monitoring network is designed to measure pollutant concentrations for assessing regional air quality representative of areas frequented by the public and to provide information about compliance with the NAAQS. The TCEQ previously monitored PM_{10} at the Pasadena HL&P (2000-2016) and at Houston Deer Park #2 (1999-2018) sites; however, due to low measured PM_{10} concentrations at both sites, the monitors were deactivated. The TCEQ has measured continuous $PM_{10-2.5}$ (also known as PM coarse) at Houston Deer Park #2 since 2011.

Current PM monitors provide data supporting area-wide air quality throughout the greater Houston area (including the Houston ship channel) that includes Pasadena, Deer Park, La Porte, Galena Park, and Manchester. As shown in the 2021 AMNP, the TCEQ is meeting or exceeding federal requirements for PM_{10} and $PM_{2.5}$ monitoring in the Houston MSA and comments unrelated to federally required monitoring are beyond the scope of this plan. The TCEQ has proposed additional $PM_{2.5}$ monitoring at Houston Bayland Park and in the Houston Fifth Ward and Pleasantville areas to improve population exposure coverage and agrees that the data from these monitors will be useful for assessing air quality in these areas.

Comment 37: LSLA et al. urged the TCEQ to model CO in and around the Charlton-Pollard neighborhood in Beaumont and to place a CO monitor in the area due to pollutants released by nearby industry.

Response 37: The intent of the AMNP is to demonstrate the TCEQ's compliance with federal air monitoring requirements under 40 CFR Part 58 and its monitoring objectives. There are no federal CO monitoring requirements in the BPA MSA, and comments related to CO modeling are outside of the scope of this document.

Comment 38: LSLA et al. urged the TCEQ to add NO_x monitoring near the east-central portion of Beaumont near the Charlton-Pollard and Pear Orchard neighborhoods to capture NO_x emissions from nearby industry. In addition, a Beaumont NO_x monitor would improve compliance with the EPA Regional Administrator (RA-4O) monitoring requirement. LSLA et al appreciated the need for RA-40 NO_x monitoring in Nederland, however, commented that Nederland was in a pocket of higher income households while the eastern side of Beaumont was noticeably and significantly poorer. Because of the area's high vulnerability and nearby large NO_x emissions, the east side of Beaumont at the Beaumont Mary site or otherwise appropriate location, per modeling, would be an ideal location for a NO_x monitor.

Response 38: The intent of the AMNP is to demonstrate the TCEQ's compliance with federal air monitoring requirements under 40 CFR Part 58 and its monitoring objectives. The current RA-40 NO_x monitor in Nederland was approved by the EPA Regional Administrator as meeting the RA-40 federal monitoring objectives. The TCEQ air monitoring network is designed to measure pollutant concentrations for assessing regional air quality representative of areas frequented by the public and to provide information about compliance with the NAAQS. Monitors can measure the impact on air quality from industrial sources present in an area, but do not generally measure the emissions from individual sources. The Beaumont Downtown NO_x monitor continues to meet its monitoring objectives and supports regional air quality needs for Beaumont and the surrounding MSA. Comments unrelated to federally required monitoring are beyond the scope of this plan.

Comment 39: LSLA et al. commented that the Beaumont Mary and Beaumont Downtown air monitors measure certain VOCs; however, the Beaumont Mary canister sampler only provided measurements every few days and the TCEQ's air monitoring database showed no data past September 2020. LSLA et al. indicated that the data delay diminished the ability for neighbors to understand the presence of VOCs in the air and commented that two of the state's 12 largest VOC emitters were a few miles away. The Beaumont Downtown air monitor included an autoGC that provided daily VOC data, and the LSLA et al urged the TCEQ to install a similar monitor type at the

Beaumont Mary site to provide helpful, meaningful, and consistent VOC data to both regulatory authorities and the community.

LSLA et al. similarly commented that West Port Arthur was surrounded by many of the state's largest VOC emitters and only the Port Arthur West site measured VOCs with canisters. LSLA et al. urged the TCEQ to utilize an autoGC at this site, in West Port Arthur and at the SETRPC site to provide daily VOC monitoring information to the public and regulatory authorities.

Response 39: As stated in a previous comment, VOCs measured by canister are sampled for a 24-hour period every six days and submitted to a laboratory for analyses, and validated data is loaded into the TAMIS within six months of the end of the sampling calendar quarter. When averaged over at least one year, 24-hour air samples are representative of long-term average concentrations in air and provide valuable trends information. TCEQ toxicologists set air monitoring comparison values (AMCVs) to evaluate air monitoring data set to protect human health and welfare and use long term VOC data for these evaluations. More information about AMCVs is available online at the TCEQ Air Toxics webpage About Air Monitoring Comparison Values (AMCVs) - Texas Commission on Environmental Quality - www.tceq.texas.gov and information on toxicological evaluations by region area available at Toxicological Evaluations of Ambient Air Monitoring Data - Texas Commission on Environmental Quality - www.tceq.texas.gov. The TCEQ continues to support the value of state-initiative VOC data obtained by canister sampling as a cost efficient means to provide air quality information to the public (along with TCEQ toxicologists and other data users) and protect human health and welfare. Additionally, VOC canister analysis provides a more extensive list of compounds than a field autoGC.

As previously stated, this plan addresses federally required monitoring and demonstrates the TCEQ's compliance with requirements under 40 CFR Part 58. Due to this defined scope, only PAMS-related VOC monitoring is included in this plan. PAMS monitoring objectives include collecting data to evaluate and support air quality model development and O_3 precursor concentration trend assessment for O_3 NAAQS attainment efforts. There are zero BPA area PAMS autoGC requirements; however, the TCEQ operates two PAMS autoGCs at Beaumont Downtown and Nederland High School, exceeding federal PAMS VOC monitoring requirements, and operates state-initiative VOC canisters not in this plan at Beaumont Mary, Port Arthur West, Port Neches Avenue L, and Jefferson County Airport. Comments unrelated to federally required monitoring are beyond the scope of this plan.

Comment 40: LSLA et al. commented that the TCEQ should conduct monitoring for HCN in Pasadena and along the Houston Ship Channel even though it is not a criteria pollutant since HCN has a variety of negative health effects and existing standards leave the public uncertain about exposure. Additionally, the TCEQ must conduct an in-depth review of the effects of HCN exposure on the surrounding population and effectively convey that information to the public.

Response 40: The intent of the AMNP is to demonstrate the TCEQ's compliance with federal air monitoring requirements 40 CFR Part 58. Monitoring for HCN and the evaluation of exposure effects are not a federal requirement under 40 CFR Part 58 and are beyond the scope of the AMNP.

Comment 41: Achieving Community Tasks Successfully, Coalition of Community

Organizations and Fenceline Watch (ACTS et al.) commented that, as a follow up to previous recommendations, the AMNPs should be subject to public proceedings through notice and comment rulemaking with five public meetings in Houston, El Paso, Central Texas, Panhandle and Brownsville for geographic representation and, since two areas have linguistic barriers, advised the TCEQ to translate the AMNP into Spanish.

Response 41: The 2021 AMNP is not a revision to the SIP subject to notice and comment rulemaking procedures. This was affirmed by the Court of Appeals for the District of Columbia Circuit in a decision issued on May 31, 2019, in the case *Sierra Club v. Environmental Protection Agency*, 925 F.3d 490 (D.C. Cir. 2019). Sierra Club petitioned for review of the EPA's Revision to Ambient Monitoring Quality Assurance and Other Requirements, 81 *Federal Register* 17,248 (March 28, 2016), which modified 40 CFR Part 58. See Response 1 for more detail.

Therefore, because SIP notice and comment procedures are not required under federal rule and the TCEQ's current public comment process for the AMNP complies with 40 CFR §58.10(a)(1), the TCEQ is not compelled to hold public hearings on the AMNP. The TCEQ is responding to the comments that were received during the provided notice period for the plan and is submitting all comments and responses to the EPA.

TCEQ appreciates the comments regarding the need for the provision of information in Spanish. One way the TCEQ does this is by providing a link to Spanish-language information on TCEQ's main website, which includes a link to the EPA's Spanish-language page. Individuals needing basic information of EPA's requirements can search the EPA's website for information concerning environmental topics or can request such information from the TCEQ. The TCEQ will work to add specific information regarding air monitoring to our Spanish language webpage.

Comment 42: ACTS et al. appreciated and supported the additional monitoring considerations for Houston Fifth Ward, Houston Pleasantville, and Gregory-Portland and further recommended the Houston Fifth Ward monitor include air toxics VOC and total non-methane organic compounds (TNMOC) continuous, $PM_{2.5}$ continuous, CO, SO_2, H_2S, and O_3 monitoring due to the EPA's TRI air pollutant health risk assessment. ACTS et al. similarly commented that the monitor for Pleasantville should monitor for the same pollutants listed for the Houston Fifth Ward and must be equipped to capture emissions of high concern for chromium by continuous monitoring due to the proximity of 37 TRI reporting facilities within one mile.

Response 42: The TCEQ appreciates the support for the proposed new sites and pollutant monitors in the Houston Fifth Ward ($PM_{2.5}$ and VOCs), Houston Pleasantville ($PM_{2.5}$), and Gregory-Portland ($PM_{2.5}$ and VOCs) areas and agrees that the data from these monitors will be useful for assessing air quality in these areas. The TCEQ does not agree that additional monitoring is required due to the EPA's TRI air pollutant health risk assessment. The Houston MSA and the Corpus Christi MSA meet and exceed all federal air monitoring requirements as described in the 2021 AMNP Appendix B and C.

The purpose of the 2021 AMNP is to demonstrate how the TCEQ air monitoring network complies with federal monitoring requirements detailed in 40 CFR Part 58 and comments unrelated to federally required monitoring are beyond the scope of

this plan. The commenter's requests to monitor chromium emissions, H_2S and TNMOC are outside the scope of the AMNP.

Comment 43: ACTS et al. recommended that the Gregory-Portland area monitor measure continuous emissions for enhanced air toxics VOCs and claimed that newly permitted limits were close to exceeding respective NAAQS.

Response 43: At this time, the TCEQ is considering options to deploy VOCs by canister in this area. The TCEQ continues to support the value of state-initiative VOC data obtained by canister sampling as a cost efficient means to provide air quality information to the public (along with TCEQ toxicologists and other data users) and protect human health and welfare. Comments regarding current permitted limits are beyond the scope of this document.

Comment 44: ACTS et al. commented that Baytown Garth should monitor for CO, SO_2, H_2S, and TNMOC since the area ranked in the 80th percentile for the National Air Toxics Assessment respiratory hazard index. ACTS et al. further commented that Houston East only monitored for nitrogen, $PM_{2.5}$, and meteorology and recommended the TCEQ add air toxics VOCs due to school proximities and neighboring industrial entities. Similarly, the commentor recommended for the TCEQ to add air toxics to the Park Place monitor due to ranking in the 95th percentile for air toxics cancer risks according to the EPA Environmental Justice Screen Report.

Response 44: The TCEQ does not agree with the commenter's assertion that additional monitoring is needed in these areas based solely on the referenced reports. As stated previously, this AMNP is limited in scope to demonstrating compliance with federal air monitoring requirements under 40 CFR Part 58. The Houston MSA meets or exceeds federal monitoring requirements, as detailed in the 2021 AMNP and in Appendix C of this plan. While noted, the commenter's requests to monitor air toxics are outside the scope of the AMNP.

Comment 45: One commentor noted that based on research on the O_3 monitoring network in Dallas-Fort Worth (DFW), there were O_3 monitoring network policy worthy considerations, even though the current network meets 40 CFR Part 58 Appendix D. The commentor noted that modeling used to evaluate the existing DFW sensor network suggested benefits for additional sensors in locations of populations vulnerable to unknown health exposures and that even when regulatory standards were met, there was evidence that the existing O_3 sensor spatial representativeness was inadequate to evaluate O_3 related public health risks. The commentor noted that the research was submitted to journals and could be shared, if requested.

Response 45: The TCEQ agrees that O_3 federal requirements are exceeded in the Dallas-Fort Worth-Arlington (DFW) MSA with 18 O_3 monitors (listed in the 2021 Appendix H for the DFW MSA), 14 of which exceed federal requirements. The TCEQ air monitoring network is designed to measure pollutant concentrations for assessing regional air quality representative of areas frequented by the public, as specified by federal monitoring requirements. Air monitoring objectives under 40 CFR Part 58 Appendix D §1.1 determine site locations and sites are generally placed to be representative of regional air quality. Air monitoring data from the federal network is used to determine compliance with the NAAQS, evaluate pollutant trends, forecast daily air quality conditions, conduct air quality and human health impact studies, and inform regulatory decisions.

Appendix N: TCEQ Response to Comments Received on the 2021 Annual Monitoring Network Plan

Federal air monitoring sites are generally placed to be representative of regional air quality, and the lack of a certain pollutant monitor does not indicate a lack of information for an area. While the air monitoring data collected can vary slightly from one site to another, communities without a monitor for a specific pollutant can obtain some information regarding the potential for exposure from other resources. For instance, TCEQ meteorologists provide daily regional O_3 forecasts during the O_3 season. Citizens can access a map of current one-hour O_3 levels, Current Ozone One-Hour Levels (www.tceq.texas.gov), view the day's air quality forecast, Today's Texas Air Quality Forecast - Texas Commission on Environmental Quality www.tceq.texas.gov, or view the air quality index report Air Quality Index Report (www.tceq.texas.gov). The TCEQ is exceeding federal monitoring requirements for O_3 in the DFW MSA and comments unrelated to federally required monitoring are beyond the scope of this plan.

Appendix O

Comments Received on the 2021 Annual Monitoring Network Plan

Texas Commission on Environmental Quality
2021 Annual Monitoring Network Plan