

Texas Commission on Environmental Quality

2015 Annual Monitoring Network Plan

P.O. Box 13087, Austin, Texas 78711-3087

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2015 Annual Monitoring Network Plan

Introduction

Under 40 Code of Federal Regulations (CFR) Part 58.10, states are required to submit an annual monitoring network plan to the United States (U.S.) Environmental Protection Agency (EPA) by July 1st 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 annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to the EPA. The plan and any comments received during the 30-day inspection period are forwarded to the EPA for final review and approval.

This document provides information on the Texas Commission on Environmental Quality (TCEQ) ambient air monitoring network established to meet the National Ambient Air Quality Standards (NAAQS) regulatory requirements and other monitors that support this effort. As described in 40 CFR 58 Appendix D, monitors are deployed to meet minimum design requirements for a variety of networks, including State or Local Air Monitoring Stations (SLAMS), Photochemical Assessment Monitoring Stations (PAMS), Speciation Trends Network (STN), National Core Multipollutant Monitoring Stations (NCore), in addition to meeting grant deliverables for National Air Toxics Trends Stations (NATTS). A list of these monitors and their respective networks is located in Appendix A. Based on annual internal audits performed to date, sites are meeting the siting criteria required in 40 CFR Part 58 Appendix E.

Because SLAMS requirements are at least partially based on core based statistical areas (CBSAs) or metropolitan statistical areas (MSAs), a summary of MSAs, 2014 U.S. Census Bureau population estimates, and a summary count of required monitors is located in Appendix B. In Texas, the U.S. Census Bureau defines the CBSA and MSA as the same area and the terms are used interchangeably in this plan. This document presents the current Texas network, as well as recommended changes to the network from July 1, 2014, through December 31, 2016.

Regulatory Network Changes

Nitrogen Dioxide (NO₂)

The TCEQ NO₂ network is designed to meet area-wide, Regional Administrator 40 (RA-40), and near-road monitoring requirements. Each requirement is discussed in more detail below. Appendix C includes a summary of all currently required NO₂ monitors.

Area-Wide 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 equal to or greater than 1,000,000 people. The requirements stipulate that the site must be located in the area with the highest expected NO₂ concentrations that are also representative of a neighborhood or larger (urban) spatial scale. Neighborhood scale monitoring is representative of air quality conditions in an area with dimensions between 0.5 and 4.0 kilometers, and urban scale monitoring is representative of air quality conditions in an

area with dimensions between 4 and 50 kilometers according to 40 CFR Part 58, Appendix D, Section 4.3.5(a).

Based on 2014 U.S. Census Bureau population estimates for Texas, area-wide neighborhood or urban scale NO₂ monitoring is required in the Dallas-Fort Worth-Arlington, Houston-The Woodlands-Sugar Land, San Antonio-New Braunfels, and Austin-Round Rock CBSAs. The following NO₂ monitors meet these area-wide requirements, as approved by the EPA in the TCEQ 2013 *Annual Monitoring Network Plan* response letter from EPA Region 6 dated May 28, 2014.

- Houston-The Woodlands-Sugar Land: Clinton (Air Quality System [AQS] 482011035)
- Dallas-Fort Worth-Arlington: Dallas Hinton (AQS 481130069)
- San Antonio-New Braunfels: San Antonio Northwest (AQS 480290032)
- Austin-Round Rock: Austin Northwest (AQS 484530014)

Regional Administrator Required Monitoring (RA-40)

Title 40 CFR Part 58, Appendix D, Section 4.3.4 states that the EPA Regional Administrators will collaborate with the states to designate a minimum of 40 NO₂ monitoring stations nationwide that are sited in locations to protect susceptible and vulnerable populations. The following four NO₂ monitors meet this requirement, as approved in the TCEQ 2013 *Annual Monitoring Network Plan* response letter from EPA Region 6 dated May 28, 2014.

- El Paso: Ascarate Park SE (AQS 481410055)
- Houston: Clinton (AQS 482011035)
- Arlington: Arlington Municipal Airport (AQS 484393011)
- Nederland: Nederland High School (AQS 482451035)

Near-Road Monitoring Requirements

Federal Site Selection Requirements

Title 40 CFR Part 58, Appendix D, Section 4.3.2 requires microscale near-road monitors for CBSAs with populations equal to or greater than 500,000 people. The requirements state that the monitoring location shall be selected by ranking major roadways by annual average daily traffic (AADT) counts and identifying a space that meets siting criteria (e.g., is away from obstructions or obstacles and will have an inlet probe height between two and seven meters) within 50 meters of the highest ranked road segments. The requirements also stipulate that sites must be deployed in areas of maximum expected hourly NO₂ concentrations near a major road with high AADT counts with consideration to fleet mix, roadway design, congestion patterns, terrain, and meteorology.

Deployment of required near-road monitors is scheduled to occur in three phases from 2014 to 2017, according to the final rule promulgated on March 7, 2013. The first phase of the rule required that one near-road site be deployed in CBSAs with populations equal to or greater than 1,000,000 people by January 1, 2014. The second phase required an additional near-road site by January 1, 2015, in CBSAs with equal to or greater than 2,500,000 people. The third phase requires a near-road site in any CBSA

with a population equal to or greater than 500,000 people and one or more road segments with AADT counts of 250,000 or greater by January 1, 2017.

Changes to the Regulatory NO₂ Monitoring Network

In compliance with the near-road requirements, eight near-road NO₂ monitors are required in Texas. Table 1 details the six near-road sites that have been deployed in phases one and two, with phase two sites being deployed within the time frame of this network review. Proposed locations for the phase three near-road NO₂ monitors in the El Paso and McAllen-Edinburg-Mission CBSAs will be provided in the TCEQ's 2016 *Annual Monitoring Network Plan*.

Table 1: Near-Road Site List

AQS Number	Phase	Site Name	AADT Ranking	FE-AADT Ranking	Distance to Nearest Traffic Lane* (meters)	Sampling Probe Height** (meters)
481131067	1	Dallas LBJ Freeway	15	7	24	4
482011066	1	Houston Southwest Freeway	1	1	24	4
484531068	1	Austin North Interstate 35	7	10	27	4
480291069	1	San Antonio Interstate 35	21	3	20	4
484391053	2	Fort Worth California Parkway North	36	90	15	4
482011052	2	Houston North Loop	46	46	15	4

AQS - Air Quality System

AADT - annual average daily traffic

FE-AADT - fleet equivalent AADT

*Distance is measured using mapping software and range finder equipment.

**Meteorological parameters are measured at 10 meters above the ground.

TCEQ Site Selection Process

The TCEQ focused on complying with the directly-applicable federal requirements listed in 40 CFR Part 58, Appendix D, Section 4.3.2 by primarily prioritizing potential sites based on AADT ranking. The TCEQ considered road segment fleet equivalent AADT (FE-AADT) rankings, but did not rely solely on FE-AADT in the prioritization of potential sites since FE-AADT is not a specific siting requirement under 40 CFR Part 58, Appendix D, Section 4.3.2. The TCEQ then collectively considered logistical constraints, such as space, power availability, terrain, highway grade, and long-term risk to continued viability of site use due to planned roadway construction projects. Failure to meet the criteria for any single parameter did not necessarily preclude the segment from consideration.

The TCEQ reevaluated each roadway segment and viability in phase two. Some sites that were considered viable in the TCEQ *2014 Annual Network Monitoring Plan* were subsequently considered not viable due to construction activities, unsuccessful property owner negotiation, or road segment reclassification. Appendix D of this plan details the specific considerations for each roadway segment's viability determination. The detailed site selection process is described in the TCEQ *2014 Annual Network Monitoring Plan*.

Sulfur Dioxide (SO₂)

Title 40 CFR Part 58, Appendix D, Section 4.4.2, requires states to establish an SO₂ monitoring network based on a calculated population weighted emissions index (PWEI). This index is calculated by multiplying the population of a CBSA with the emissions inventory (EI) data for counties within that CBSA. The calculated value is then divided by one million to obtain the PWEI value. The PWEI monitoring requirements are as follows: 1) one monitor in CBSAs with a PWEI value equal to or greater than 5,000, 2) two monitors in CBSAs with a PWEI value equal to or greater than 100,000, and 3) three monitors in CBSAs with a PWEI value equal to or greater than 1,000,000. As shown in Appendix E, the TCEQ used the 2014 U.S. Census Bureau population estimates and 2011 National Emissions Inventory data with 2013 TCEQ point source EI data to calculate the PWEI and determine the minimum monitoring requirements per CBSA. The PWEI analysis described in Appendix E confirms that the TCEQ is currently meeting SO₂ monitoring requirements.

Changes to the Regulatory SO₂ Monitoring Network

No additional SO₂ monitors are required and no changes to the existing SO₂ monitoring network are recommended at this time.

On April 17, 2014, the EPA proposed the Data Requirements Rule to establish emission thresholds and deployment deadlines for source-oriented monitoring and/or modeling to characterize ambient air quality impacts from larger SO₂ sources. The TCEQ will further evaluate the need for SO₂ monitors once the final Data Requirements Rule is promulgated, both in terms of monitors required under the final rule and the potential reallocation of monitors in areas where monitors are no longer required.

Lead

Title 40 CFR Part 58, Appendix D, Section 3.0 requires lead monitoring as part of the NCore network. In addition, 40 CFR Part 58, Appendix D, Section 4.5 requires a minimum of one source-oriented ambient air lead monitoring site to measure maximum concentrations near each facility that emits 0.50 tons per year (tpy) and each airport that emits 1.0 tpy or more of lead based on the most recent National Emission Inventory or other scientifically justifiable methods and data. The EPA may waive this requirement if documentation is included demonstrating that lead emissions from the source do not contribute to concentrations in excess of 50 percent (%) of the NAAQS of 0.15 micrograms per cubic meter (µg/m³).

Through existing ambient air monitors and lead waivers, the TCEQ is meeting all federal lead monitoring requirements. The lead samplers at Dallas Hinton (AQS 481130069), Houston Deer Park #2 (AQS 482011039), and Ascarate Park SE (AQS 481410055)

satisfy the requirement for monitoring at NCore sites in Texas. The TCEQ also reviewed 2013 point source EI data to evaluate sources that reported lead emissions of 0.50 tpy or more. Based on this review, three sources reported greater than 0.50 tpy of lead in 2013 as detailed in Table 2. Dal Tile, located in Dallas County, notified the TCEQ on March 23, 2015, that their 2013 lead emissions had been revised to 0.2975 tpy. Based on these revised estimate emissions, lead monitoring is not required near this facility.

Table 2: 2013 Lead Point Source Emissions Inventory Data Greater Than 0.50 Tons Per Year

Company	County	2013 Lead Emissions (tpy)	TCEQ Comments
United States Department of the Army, Fort Hood	Bell	0.74	Lead waiver approved on December 23, 2010. Lead waiver renewal will be submitted with the TCEQ five-year assessment.
Lower Colorado River Authority	Fayette	0.59	Lead waiver approved on May 28, 2014. Lead waiver renewal will be submitted with the TCEQ five-year assessment.
Conecsus LLC	Kaufman	2.42	Lead is currently monitored at the Terrell Temtex site.

tpy – tons per year

TCEQ – Texas Commission on Environmental Quality

LLC – limited liability company

Collocation Requirements

Title 40 CFR Part 58, Appendix A, Section 3.3.4.3 requires a primary quality assurance organization to select 15% of the lead monitoring sites within its network for collocated sampling with at least one collocated lead site measuring the highest lead concentrations in the network. Based on the current network of 13 primary and 3 collocated lead samplers, the TCEQ is required to have 2 collocated lead samplers. The TCEQ has three collocated lead samplers; two are in Collin County at the Frisco Eubanks site (AQS 480850009) and the Frisco 7 site (AQS 480850007), and the third is in El Paso at the Ojo De Agua site (AQS 481411021). According to 2014 design values, the Frisco Eubanks site has the highest design value concentration (0.31 µg/m³) in the network and continues to satisfy the requirement for collocation at the highest concentration site. The TCEQ exceeds minimum lead collocation requirements through the operation of these three collocated lead samplers, and no changes in the number or location of these collocated samplers are recommended at this time.

Changes to the Regulatory Lead Monitoring Network

The lead samplers at Skyline Park (AQS 481410058) and Houston East (AQS 482011034) were approved for decommission in the TCEQ 2013 Annual Monitoring Network Plan response letter from EPA Region 6 dated May 28, 2014. These samplers were not located near lead sources emitting greater than 0.50 tpy, and design values have remained well below 50% of the lead NAAQS of 0.15 µg/m³. These two lead samplers were decommissioned on December 31, 2014.

In addition, the TCEQ will request renewal of lead waivers for the Lower Colorado River Authority Fayette Power Plant in Fayette County and U.S. Department of the Army, Fort

Hood in Bell County in the 2015 TCEQ *Texas Five-Year Ambient Monitoring Network Assessment* as required by 40 CFR Part 58, Appendix D, Section 4.5(a)(ii). No additional changes to the existing lead monitoring network are recommended.

Ozone (O₃)

Title 40 CFR Part 58, Appendix D, Section 4.1 requires O₃ monitoring in MSAs with populations above 350,000 people. Monitors are also required in MSAs with lower populations if measured O₃ values within that MSA are within 85% of the NAAQS of 0.075 parts per million. In addition, 40 CFR Part 58, Appendix D, Section 3.0 requires O₃ monitoring at NCore sites. Additional monitoring in O₃ nonattainment areas is also required as a part of the PAMS program under 40 CFR Part 58, Appendix D, Section 5.0.

Based on 2014 population estimates and design values, O₃ monitoring is required in 15 CBSAs across the state, as detailed in Appendix F. In addition, O₃ is being monitored at all three NCore sites and additional PAMS sites in the Dallas-Fort Worth and Houston-Galveston-Brazoria nonattainment areas, as detailed in Appendix A.

Changes to the Regulatory O₃ Monitoring Network

The TCEQ determined that no additional O₃ monitors are required. The TCEQ will reevaluate the network once the EPA finalizes its proposed ozone rule, as PAMS requirements and ozone nonattainment areas are likely to change.

Carbon Monoxide (CO)

Title 40 CFR Part 58, Appendix D, Section 3.0 and Section 5.0 require high sensitivity CO monitors at NCore sites and at one Type 2 PAMS site per O₃ nonattainment area. Title 40 CFR Part 58, Appendix D, Section 4.2 also requires the deployment of CO monitors at near-road sites in CBSAs of greater than 1,000,000 people.

The TCEQ meets minimum requirements through the operation of seven CO monitors and five high sensitivity CO monitors throughout the state. The total number of required and current CO monitors in each CBSA is included in Appendix G.

Changes to the Regulatory CO Monitoring Network

In compliance with near-road requirements in the Dallas-Fort Worth-Arlington and Houston-The Woodlands-Sugar Land CBSAs, the TCEQ deployed CO monitors at the Fort Worth California Parkway North (AQS 484391053) and Houston North Loop (AQS 482011052) sites in early 2015. Near-road CO monitors required for deployment in 2017 will be included in the TCEQ *2016 Annual Monitoring Network Plan*.

Particulate Matter of 10 Micrometers or Less (PM₁₀)

Title 40 CFR Part 58, Appendix D, Section 4.6 specifies PM₁₀ monitoring requirements in MSAs based on population and monitored design values, if available. In addition, 40 CFR Part 58, Appendix D, Section 3.0 requires PM₁₀ monitoring at NCore sites. After evaluating PM₁₀ monitoring requirements using the 2014 U.S. Census Bureau population estimates and measured PM₁₀ concentrations, the TCEQ determined that

minimum monitoring requirements are met or exceeded for all areas with the exception of the McAllen-Edinburg-Mission MSA.

Changes to the Regulatory PM₁₀ Monitoring Network

The TCEQ recommends locating the required McAllen-Edinburg-Mission PM₁₀ sampler at the new Edinburg East Freddy Gonzalez Drive (AQS 482151046) site scheduled to be completed in Summer 2015. The number of required and current PM₁₀ samplers in each MSA is included in Appendix H, Table 1.

Equipment Replacement

During 2014, the TCEQ replaced aging PM₁₀ equipment at several sites to continue to meet data completeness requirements. The aging equipment models are no longer manufactured and are difficult to maintain due to the unavailability of replacement parts and technical support. The PM₁₀ equipment at the sites listed below was replaced with federal reference method (FRM) equipment with either method code 62 or method code 141.

- Austin Webberville Rd (AQS 484530021)
- Austin Audubon Society (AQS 484530020)
- Dona Park primary and collocated quality assurance (QA) samplers (AQS 483550034)
- Karnack (AQS 482030002)
- Socorro Hueco primary and collocated QA samplers (AQS 481410057)
- Laredo Vidaurri primary and collocated QA samplers (AQS 484790016)

All method code changes have been documented in AQS. A full list of method codes for all current samplers is included in Appendix H, Table 2.

Collocation Requirements

Title 40 CFR Part 58, Appendix A, Section 3.3.1, requires a primary quality assurance organization to select 15% of the PM₁₀ monitoring sites within the network for collocated sampling. The selected sites should have an annual mean particulate matter concentration among the highest 25%, if practical. Based on the current network of 27 PM₁₀ samplers (including the pending Edinburg East Freddy Gonzalez Drive location), the TCEQ is required to have four collocated PM₁₀ samplers. The TCEQ has eight PM₁₀ collocated samplers at the sites listed below.

- Laredo Vidaurri (AQS 484790016)
- Ojo De Agua (AQS 481411021)
- Socorro Hueco (AQS 481410057)
- Texas City Fire Station (AQS 481670004)
- Clinton (AQS 482011035)
- Convention Center (AQS 481130050)
- Dona Park (AQS 483550034)
- Houston Deer Park #2 (AQS 482011039)

According to 2013 monitoring data, the Clinton (AQS 482011035), Socorro Hueco (AQS 481410057), Convention Center (AQS 481130050), and Laredo Vidaurri (484790016)

sites had annual mean concentrations among the highest 25% in the network and satisfied this collocation requirement. According to 2014 monitoring data, the Clinton (AQS 482011035), Socorro Hueco (AQS 481410057), and Convention Center (AQS 481130050) sites continue to have annual mean concentrations among the highest 25% in the network. The TCEQ will continue to evaluate the data to determine network efficacy for the collocated PM₁₀ samplers.

Additionally, the PM₁₀ collocated monitoring at Houston Deer Park #2 (AQS 482011039) supports collocation requirements for the NATTS program. Appendix H, Table 2 summarizes PM₁₀ collocation monitoring requirements. The TCEQ exceeds minimum PM₁₀ collocation requirements through the operation of these eight sites, and no changes in the number or location of these collocated samplers are recommended at this time.

The TCEQ recommended decommissioning the collocated PM₁₀ sampler at the Stage Coach (AQS 484393010) site in the TCEQ *2013 Annual Monitoring Network Plan*. The EPA approved this decommission in the response letter dated May 28, 2014. This sampler was decommissioned on September 30, 2014, with the end date updated in AQS.

Particulate Matter of 2.5 Micrometers or Less (PM_{2.5})

Title 40 CFR Part 58, Appendix D, Section 4.7 requires PM_{2.5} monitoring in MSAs with populations greater than 500,000 people and in MSAs with lower populations if measured PM_{2.5} design values for an MSA are within 85% of the NAAQS of 12 µg/m³. Title 40 CFR Part 58.10 (8)(i) requires a minimum of one PM_{2.5} sampler in each CBSA with a population equal to or greater than 2,500,000 people to be located at a near-road NO₂ monitoring station by January 1, 2015. In addition, 40 CFR Part 58, Appendix D, Section 3.0 requires PM_{2.5} monitoring at NCore sites.

After evaluating PM_{2.5} monitoring requirements using the 2014 U.S. Census Bureau population estimates and measured PM_{2.5} concentrations, the TCEQ determined that minimum monitoring requirements are met or exceeded for all areas with the exception of the McAllen-Edinburg-Mission MSA and the Brownsville-Harlingen MSA. To meet these PM_{2.5} monitoring requirements, the TCEQ plans to add a PM_{2.5} FRM gravimetric sampler, with method code 145, at the Brownsville (AQS 480610006) site in the Brownsville-Harlingen MSA and at the new Edinburg East Freddy Gonzalez Drive (AQS 482151046) site in the McAllen-Edinburg-Mission MSA by Summer 2015. The TCEQ's assessment of PM_{2.5} monitoring requirements and current samplers is included in Appendix I, Table 1.

Sampling Frequency

At the EPA's request in the TCEQ *2014 Annual Monitoring Network Plan* response letter from EPA Region 6 dated January 14, 2015, the TCEQ will continue to operate the following PM_{2.5} FRM gravimetric samplers on a one in three day schedule.

- Brownsville (AQS 480610006)
- Edinburg East Freddy Gonzalez Drive (AQS 482151046)
- Mission (AQS 482150043)

- Haws Athletic Center (AQS 484391006)
- Fort Worth California Parkway North (AQS 484391053)
- Houston North Loop (AQS 482011052)

Changes to the Regulatory PM_{2.5} Monitoring Network

Since July 1, 2014, the TCEQ has deployed two PM_{2.5} FRM samplers and will deploy two more PM_{2.5} FRM samplers to comply with federal monitoring requirements. The TCEQ deployed PM_{2.5} FRM gravimetric samplers, operated on a one in three day schedule, at the Fort Worth California Parkway North (AQS 484391053) and the Houston North Loop (AQS 482011052) sites to meet the near-road requirement for Dallas-Fort Worth-Arlington and Houston-The Woodlands-Sugar Land MSAs.

Based on 2011-2013 design values, the TCEQ plans to add two PM_{2.5} FRM gravimetric samplers to the existing network with method code 145 at the Brownsville (AQS 480610006) site in the Brownsville-Harlingen MSA and at the new Edinburg East Freddy Gonzalez Drive (AQS 482151046) site in the McAllen-Edinburg-Mission MSA by Summer 2015.

In January 2014, the PM_{2.5} FRM gravimetric sampler at the Texarkana (AQS 480370004) site began sampling on a one in three day schedule to meet sampling frequency requirements. As discussed in the TCEQ *2014 Annual Monitoring Network Plan*, the TCEQ will continue PM_{2.5} FRM gravimetric sampling on a one in three day schedule due to logistical limitations at the Texarkana (AQS 480370004) site that prevented the collocation of a continuous PM_{2.5} monitor as required by 40 CFR Part 58, Appendix D, Section 4.7.2. Because the current PM_{2.5} FRM gravimetric sampler is located on a roof, there is no space for the addition of the continuous monitor. The TCEQ is evaluating relocation sites within one mile of the current Texarkana (AQS 480370004) site that would accommodate both an FRM sampler and continuous monitor.

The TCEQ redesignated the PM_{2.5} monitor associated with the Met One BAM-1020 PM Coarse system (method code 170) at the Houston Deer Park #2 site (AQS 482011039) as the secondary monitor and updated AQS in 2014.

Collocation Requirements

As described above, the TCEQ will deploy four new PM_{2.5} FRM gravimetric samplers, with method code 145, in 2015 at the Fort Worth California Parkway North (AQS 484391053), Houston North Loop (AQS 482011052), Edinburg East Freddy Gonzalez Drive (AQS 482151046), and Brownsville (AQS 480610006) sites. With the addition of these samplers, the TCEQ PM_{2.5} FRM gravimetric network will increase to a total of 25 sites; therefore, a minimum of four collocated sites are needed to meet 40 CFR Part 58, Appendix A, Section 3.2.5 requirements. Appendix I, Table 2 shows the location and collection method codes for the PM_{2.5} monitors in the TCEQ network. Notation is added to the sites with collocated pairs. The TCEQ recommends the addition of a collocated PM_{2.5} FRM gravimetric sampler to the El Paso Chamizal (AQS 481410044) site. This site was chosen due to the lack of a collocated PM_{2.5} sampler in the El Paso area. The El Paso

Chamizal (AQS 481410044) site also has an annual design value of 11.2 µg/m³, which is greater than 90% of the NAAQS.

Volatile Organic Compounds (VOCs)

Title 40 CFR Part 58, Appendix D, Table D-6 requires speciated VOC monitoring at two sites per O₃ nonattainment area. Texas monitors ambient air VOC concentrations in two ways: discrete canister sampling and near-real-time automated gas chromatograph (autoGC) monitoring. The TCEQ has eight autoGCs and six canister samplers in the PAMS network that fulfill this requirement and an additional four canister samplers above minimum requirements to support the NATTS and special purpose monitoring. The canister samplers and autoGC monitors are listed in Table 3. No changes are recommended for the autoGC and canister networks.

Table 3: Canister and AutoGC Site List

AQS Number	TCEQ Region	Site Name	Sampler Type	AQS Network & Monitor Type
481130069	04-Dallas/Fort Worth	Dallas Hinton	Canister	PAMS
481130069	04-Dallas/Fort Worth	Dallas Hinton	AutoGC	PAMS
481210034	04-Dallas/Fort Worth	Denton Airport South	Canister	PAMS
481391044	04-Dallas/Fort Worth	Italy	Canister	PAMS
482511008	04-Dallas/Fort Worth	Johnson County Luisa	Canister	SPM
484391002	04-Dallas/Fort Worth	Fort Worth Northwest	Canister	PAMS
484391002	04-Dallas/Fort Worth	Fort Worth Northwest	AutoGC	PAMS
484393009	04-Dallas/Fort Worth	Grapevine Fairway	Canister	PAMS
482030002	05-Tyler	Karnack	Canister	SPM
481410044	06-El Paso	El Paso Chamizal	AutoGC	PAMS
482450009	10-Beaumont	Beaumont Downtown	AutoGC	PAMS
482451035	10-Beaumont	Nederland High School	AutoGC	PAMS
482010026	12-Houston	Channelview	AutoGC	PAMS
482011035	12-Houston	Clinton	AutoGC	PAMS
482011039	12-Houston	Houston Deer Park #2	Canister	NATTS/PAMS
482011039	12-Houston	Houston Deer Park #2	Canister	NATTS, QA Collocated
482011039	12-Houston	Houston Deer Park #2	AutoGC	PAMS
484790017	16-Laredo	Laredo Bridge	Canister	SPM

AQS – Air Quality System

AutoGC – automated gas chromatograph

PAMS – Photochemical Assessment Monitoring Stations

NATTS – National Air Toxics Trends Stations

SPM – special purpose monitor

QA – quality assurance

Carbonyls

The TCEQ collects carbonyl samples in accordance with 40 CFR Part 58, Appendix D, Table D-6 in each O₃ nonattainment area. The TCEQ meets this requirement at the Dallas Hinton (AQS 481130069), Fort Worth Northwest (AQS 484391002), Ascarate Park SE (AQS 481410055), Clinton (AQS 482011035), and Houston Deer Park #2 (AQS 482011039) sites. In addition, the TCEQ has a carbonyl sampler at the Karnack (AQS 482030002) site in support of the NATTS program. No changes are recommended for the carbonyl network.

Meteorology

Title 40 CFR Part 58, Appendix D, Table D-6 requires surface meteorology at all PAMS sites and upper air meteorology at one site per PAMS area. The TCEQ collects surface meteorology data at all PAMS sites and most network sites. Surface meteorology includes wind speed, wind direction, and outdoor temperature. The TCEQ operates radar profilers to fulfill the PAMS upper air meteorology requirements. Surface meteorology and upper air meteorology are included in the Appendix A site list. No changes are recommended for the meteorology network.

Status of Previously Recommended Changes

- Reactive Oxides of Nitrogen (NO_y) Decommission – The TCEQ recommended decommissioning the SETRPC 40 Sabine Pass (AQS 482450101) NO_y monitor in the TCEQ *2014 Annual Monitoring Network Plan*. The Beaumont-Port Arthur area was redesignated as a maintenance area for the 1997 eight-hour ozone standard on October 20, 2010. As a result, this monitor is beyond minimum PAMS requirements and is no longer needed. The EPA approved this decommission in a letter dated January 29, 2015. This NO_y monitor was decommissioned on December 31, 2014. This date has been updated in AQS.
- Lead Sampler Decommissions – The TCEQ recommended decommissioning the Skyline Park (AQS 481410058) and Houston East (AQS 482011034) lead samplers in the TCEQ *2013 Annual Monitoring Network Plan*. This was approved in the response letter from EPA Region 6 dated May 28, 2014. These lead samplers were decommissioned on December 31, 2014. This date has been updated in AQS.
- CO Monitor Decommissions – The TCEQ recommended decommissioning CO monitors operated beyond minimum requirements at the nine sites listed below in the TCEQ *2013 Annual Monitoring Network Plan*. Each monitor had maintained design values well below the 1-hour and 8-hour CO NAAQS. This proposal was approved in the response letter from EPA Region 6 dated May 28, 2014. Once deactivated, the end date for each monitor was added to AQS as detailed below.
 - El Paso UTEP (AQS 481410037) deactivated December 31, 2014
 - Skyline Park (AQS 481410058) deactivated December 31, 2014
 - Houston Aldine (AQS 482010024) deactivated June 30, 2014
 - Lang (AQS 482010047) deactivated December 31, 2014
 - Houston Texas Avenue (AQS 482010075) deactivated December 31, 2014
 - Park Place (AQS 482010416) deactivated December 31, 2014

- Fort Worth Northwest (AQS 484391002) deactivated October 31, 2014
 - Arlington Municipal Airport (AQS 484393011) deactivated June 30, 2014
 - Austin Northwest (AQS 484530014) deactivated June 30, 2014
- Speciated PM_{2.5} Sampler Decommission – The TCEQ recommended decommissioning the PM_{2.5} speciation monitoring at the Convention Center (AQS 481130050) site in the TCEQ *2014 Annual Monitoring Network Plan* because the Dallas Hinton NCore site is located within five miles of this site and provides similar speciation data. The EPA approved this network change in the TCEQ *2014 Annual Monitoring Network Plan* response letter from EPA Region 6 dated January 14, 2015. The PM_{2.5} speciation monitoring at the Convention Center (AQS 481130050) site was decommissioned and updated in AQS on December 31, 2014. The TCEQ will continue PM_{2.5} FRM gravimetric sampling at this site on a one in three day schedule.
 - Carbonyl Sampler Redesignation – Title 40 CFR Part 58, Appendix D, Table D-6 requires one carbonyl sampler at a PAMS Type 2 site per O₃ nonattainment area. The TCEQ meets this requirement for the Dallas-Fort Worth nonattainment area through the operation of the carbonyl sampler at the Dallas Hinton (AQS 481130069) site. As a result, the TCEQ recommended redesignating the Fort Worth Northwest (AQS 484391002) carbonyl sampler from PAMS to special purpose monitor (SPM) in the TCEQ *2014 Annual Monitoring Network Plan* because it was beyond minimum requirements. The EPA approved this redesignation in a letter dated January 29, 2015. The TCEQ updated the network designation to SPM in AQS with a start date of January 1, 2015.
 - Carbonyl Sampler Redesignation – Title 40 CFR Part 58, Appendix D, Table D-6 requires one carbonyl sampler at a PAMS Type 2 site per O₃ nonattainment area. Since the El Paso area was redesignated as a maintenance area for the 1997 eight-hour O₃ standard on March 16, 2009, the TCEQ recommended redesignating the Ascarate Park SE (AQS 481410055) carbonyl sampler from PAMS to SPM in the TCEQ *2014 Annual Monitoring Network Plan*. The EPA concurred with this redesignation in an approval letter dated January 29, 2015. The TCEQ updated the network designation to SPM for the carbonyl sampler and updated AQS with a start date of January 1, 2015.
 - Radar Profiler Redesignation – Title 40 CFR Part 58, Appendix D, Table D-6 requires one upper air meteorology monitor at one representative location within each PAMS area. Since the El Paso area was redesignated as a maintenance area for the 1997 eight-hour O₃ standard on March 16, 2009, the TCEQ recommended redesignating the El Paso UTEP (AQS 481410037) radar profiler monitor from PAMS to SPM in the TCEQ *2014 Annual Monitoring Network Plan*. The EPA concurred with this redesignation in an approval letter dated January 29, 2015. The TCEQ updated the network designation to SPM for the radar profiler and updated AQS with a start date of January 1, 2015.
 - Dew Point Monitor Redesignation – The TCEQ recommended redesignating all dew point monitors in the TCEQ network as SPM in the TCEQ *2013 Annual Monitoring*

Network Plan. These monitors were previously used to meet humidity reporting requirements for the PAMS network, but are now beyond minimum requirements. The TCEQ reports data measured by relative humidity sensors to meet this PAMS requirement. This redesignation was approved by the EPA in the TCEQ *2013 Annual Monitoring Network Plan* response letter dated May 28, 2014. The TCEQ updated the network designation to SPM for the dew point monitors and updated AQS with a start date of July 1, 2014.

Conclusion

After consideration of the federal regulations, 2014 U.S. Census Bureau population data, and 2014 design values, the TCEQ will meet or exceed all monitoring requirements with the above mentioned recommendations for the next calendar year. This network plan focuses on the current network and changes within this network from July 1, 2014, through December 31, 2016. A more in-depth review of the Texas monitoring network can be found in the *Texas Five-Year Ambient Monitoring Network Assessment*.

Instructions for Comments

Send comments pertaining to this document to the following contact:

Texas Commission on Environmental Quality
P.O. Box 13087
Attention: Deanna Sivek, MC-165
Austin, Texas 78711-3087

Or email to: monops@tceq.texas.gov

Appendix A

TCEQ State or Local Air Monitoring Stations (SLAMS),
Photochemical Assessment Monitoring Stations (PAMS),
National Air Toxics Trends Stations (NATTS),
National Core Multipollutant Monitoring Stations (NCore), and
Federally Funded Special Purpose Monitors (SPM) Site List

Texas Commission on Environmental Quality
2015 Annual Monitoring Network Plan

Appendix A: TCEQ SLAMS, PAMS, NATTS, NCore, and SPM Site List

AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
480271045	Temple Georgia	8406 Georgia Avenue, Temple	Killeen-Temple-Fort Hood, TX	31.122419	-97.431052	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Urban Scale
480271045	Temple Georgia	8406 Georgia Avenue, Temple	Killeen-Temple-Fort Hood, TX	31.122419	-97.431052	Suburban	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	General/Background	Neighborhood
480271045	Temple Georgia	8406 Georgia Avenue, Temple	Killeen-Temple-Fort Hood, TX	31.122419	-97.431052	Suburban	Wind	Spm	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
480271047	Killeen Skylark Field	1605 Stone Tree Drive, Killeen	Killeen-Temple-Fort Hood, TX	31.088002	-97.679734	Urban and Center City	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Urban Scale
480271047	Killeen Skylark Field	1605 Stone Tree Drive, Killeen	Killeen-Temple-Fort Hood, TX	31.088002	-97.679734	Urban and Center City	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Population Exposure	Urban Scale
480271047	Killeen Skylark Field	1605 Stone Tree Drive, Killeen	Killeen-Temple-Fort Hood, TX	31.088002	-97.679734	Urban and Center City	Wind	Spm	Potentiometer Cup Anemometer	Continuous	Population Exposure	Urban Scale
480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	San Antonio, TX	29.51509	-98.620166	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure	Neighborhood
480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	San Antonio, TX	29.51509	-98.620166	Suburban	O3	SLAMS	UV Photometric	Continuous	Max Ozone Concentration; Population Exposure	Urban Scale
480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	San Antonio, TX	29.51509	-98.620166	Suburban	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Urban Scale
480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	San Antonio, TX	29.51509	-98.620166	Suburban	PM2.5 (TEOM)	Spm	TEOM Gravimetric	Continuous	Population Exposure	Urban Scale
480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	San Antonio, TX	29.51509	-98.620166	Suburban	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Highest Concentration	Urban Scale
480290032	San Antonio Northwest	6655 Bluebird Lane, San Antonio	San Antonio, TX	29.51509	-98.620166	Suburban	Wind	Spm	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Urban Scale
480290052	Camp Bullis	F Range (1000Yd marker off Wilderness Trail), Near Wilderness Rd, San Antonio	San Antonio, TX	29.632058	-98.564936	Rural	O3	SLAMS	UV Photometric	Continuous	Max Ozone Concentration; Population Exposure	Urban Scale
480290052	Camp Bullis	F Range (1000Yd marker off Wilderness Trail), Near Wilderness Rd, San Antonio	San Antonio, TX	29.632058	-98.564936	Rural	Solar Radiation	Spm	Photovoltaic	Continuous	Highest Concentration	Urban Scale
480290052	Camp Bullis	F Range (1000Yd marker off Wilderness Trail), Near Wilderness Rd, San Antonio	San Antonio, TX	29.632058	-98.564936	Rural	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Highest Concentration	Urban Scale
480290052	Camp Bullis	F Range (1000Yd marker off Wilderness Trail), Near Wilderness Rd, San Antonio	San Antonio, TX	29.632058	-98.564936	Rural	Wind	Spm	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Urban Scale
480290053	Selma	16289 North Evans Rd #2, Selma	San Antonio, TX	29.587741	-98.312512	Suburban	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
480290053	Selma	16289 North Evans Rd #2, Selma	San Antonio, TX	29.587741	-98.312512	Suburban	PM2.5 (TEOM)	Spm	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
480290055	CPS Pecan Valley	802 Pecan Valley Drive, San Antonio	San Antonio, TX	29.407295	-98.431251	Suburban	PM2.5 (TEOM)	Spm	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	San Antonio, TX	29.275381	-98.311692	Rural	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Source Oriented; Upwind Background	Urban Scale
480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	San Antonio, TX	29.275381	-98.311692	Rural	O3	SLAMS	UV Photometric	Continuous	Source Oriented; Upwind Background	Urban Scale
480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	San Antonio, TX	29.275381	-98.311692	Rural	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure; Upwind Background	Urban Scale
480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	San Antonio, TX	29.275381	-98.311692	Rural	PM2.5 (TEOM)	Spm	TEOM Gravimetric	Continuous	Regional Transport	Regional Scale
480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	San Antonio, TX	29.275381	-98.311692	Rural	SO2	SLAMS	Pulsed Fluorescence	Continuous	Population Exposure; Source Oriented	Neighborhood

Appendix A: TCEQ SLAMS, PAMS, NATTS, NCore, and SPM Site List

AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	San Antonio, TX	29.275381	-98.311692	Rural	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Source Oriented	Urban Scale
480290059	Calaveras Lake	14620 Laguna Rd, San Antonio	San Antonio, TX	29.275381	-98.311692	Rural	Wind	Spm	Potentiometer Cup Anemometer	Continuous	Source Oriented	Urban Scale
480290060	Frank Wing Municipal Court	401 South Frio St, San Antonio	San Antonio, TX	29.422183	-98.505381	Urban and Center City	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
480290676	Palo Alto	9011 Poteet Jourdanon Hwy, San Antonio	San Antonio, TX	29.33279	-98.551383	Urban and Center City	PM2.5 (TEOM)	Spm	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
480290676	Palo Alto	9011 Poteet Jourdanon Hwy, San Antonio	San Antonio, TX	29.33279	-98.551383	Urban and Center City	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	General/Background	Neighborhood
480290676	Palo Alto	9011 Poteet Jourdanon Hwy, San Antonio	San Antonio, TX	29.33279	-98.551383	Urban and Center City	Wind	Spm	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
480290677	Old Hwy 90	911 Old Hwy 90 West, San Antonio	San Antonio, TX	29.423944	-98.580499	Urban and Center City	PM2.5 (TEOM)	Spm	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
480290677	Old Hwy 90	911 Old Hwy 90 West, San Antonio	San Antonio, TX	29.423944	-98.580499	Urban and Center City	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	General/Background	Neighborhood
480290677	Old Hwy 90	911 Old Hwy 90 West, San Antonio	San Antonio, TX	29.423944	-98.580499	Urban and Center City	Wind	Spm	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
480291069	San Antonio Interstate 35	9904 IH 35 N, San Antonio	San Antonio, TX	29.5294	-98.39139	Urban and Center City	NO/NO2/NOx	Near Road/SLAMS	Chemiluminescence	Continuous	Max Precursor Emissions Impact	Microscale
480291069	San Antonio Interstate 35	9904 IH 35 N, San Antonio	San Antonio, TX	29.5294	-98.39139	Urban and Center City	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Microscale
480291069	San Antonio Interstate 35	9904 IH 35 N, San Antonio	San Antonio, TX	29.5294	-98.39139	Urban and Center City	Wind	Spm	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Microscale
480370004	Texarkana	2315 W 10th Street, Texarkana	Texarkana, TX-Texarkana, AR	33.425758	-94.070802	Urban and Center City	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Population Exposure	Urban Scale
480391004	Manvel Croix Park	4503 Croix Pkwy, Manvel	Houston-Sugar Land-Baytown, TX	29.520443	-95.392509	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure	Urban Scale
480391004	Manvel Croix Park	4503 Croix Pkwy, Manvel	Houston-Sugar Land-Baytown, TX	29.520443	-95.392509	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Urban Scale
480391004	Manvel Croix Park	4503 Croix Pkwy, Manvel	Houston-Sugar Land-Baytown, TX	29.520443	-95.392509	Suburban	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
480391004	Manvel Croix Park	4503 Croix Pkwy, Manvel	Houston-Sugar Land-Baytown, TX	29.520443	-95.392509	Suburban	Wind	Spm	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
480391016	Lake Jackson	109B Brazoria Hwy 332 West, Lake Jackson	Houston-Sugar Land-Baytown, TX	29.043759	-95.472946	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure; Source Oriented	Neighborhood
480391016	Lake Jackson	109B Brazoria Hwy 332 West, Lake Jackson	Houston-Sugar Land-Baytown, TX	29.043759	-95.472946	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure; Source Oriented	Neighborhood
480391016	Lake Jackson	109B Brazoria Hwy 332 West, Lake Jackson	Houston-Sugar Land-Baytown, TX	29.043759	-95.472946	Suburban	Solar Radiation	Spm	Photovoltaic	Continuous	Highest Concentration	Middle Scale
480391016	Lake Jackson	109B Brazoria Hwy 332 West, Lake Jackson	Houston-Sugar Land-Baytown, TX	29.043759	-95.472946	Suburban	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Highest Concentration	Middle Scale
480391016	Lake Jackson	109B Brazoria Hwy 332 West, Lake Jackson	Houston-Sugar Land-Baytown, TX	29.043759	-95.472946	Suburban	Wind	Spm	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Middle Scale
480430101	Bravo Big Bend	Big Bend National Park, Big Bend Nat Park	<none>	29.302552	-103.17791	Rural	PM2.5 (TEOM)	Spm	TEOM Gravimetric	Continuous	Regional Transport	Regional Scale
480430101	Bravo Big Bend	Big Bend National Park, Big Bend Nat Park	<none>	29.302552	-103.17791	Rural	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	General/Background	Regional Scale
480430101	Bravo Big Bend	Big Bend National Park, Big Bend Nat Park	<none>	29.302552	-103.17791	Rural	Wind	Spm	Potentiometer Cup Anemometer	Continuous	General/Background	Regional Scale
480610006	Brownsville	344 Porter Drive, Brownsville	Brownsville-Harlingen, TX	25.892518	-97.49383	Urban and Center City	Barometric Pressure	Spm	Derived from KBRO	24 Hours; 1/6 Days	General/Background	Urban Scale

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
480610006	Brownsville	344 Porter Drive, Brownsville	Brownsville-Harlingen, TX	25.892518	-97.49383	Urban and Center City	CO	Spm	Gas Filter Correlation	Continuous	Highest Concentration	Neighborhood
480610006	Brownsville	344 Porter Drive, Brownsville	Brownsville-Harlingen, TX	25.892518	-97.49383	Urban and Center City	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
480610006	Brownsville	344 Porter Drive, Brownsville	Brownsville-Harlingen, TX	25.892518	-97.49383	Urban and Center City	PM2.5 (TEOM)	Spm	TEOM Gravimetric	Continuous	Population Exposure	Urban Scale
480610006	Brownsville	344 Porter Drive, Brownsville	Brownsville-Harlingen, TX	25.892518	-97.49383	Urban and Center City	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Regional Scale
480610006	Brownsville	344 Porter Drive, Brownsville	Brownsville-Harlingen, TX	25.892518	-97.49383	Urban and Center City	Solar Radiation	Spm	Photovoltaic	Continuous	Highest Concentration	Neighborhood
480610006	Brownsville	344 Porter Drive, Brownsville	Brownsville-Harlingen, TX	25.892518	-97.49383	Urban and Center City	SVOC	Spm	HiVol PUF XAD GC-MS	24 Hours; 1/6 Days	Population Exposure; Upwind Background	Middle Scale
480610006	Brownsville	344 Porter Drive, Brownsville	Brownsville-Harlingen, TX	25.892518	-97.49383	Urban and Center City	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Population Exposure	Urban Scale
480610006	Brownsville	344 Porter Drive, Brownsville	Brownsville-Harlingen, TX	25.892518	-97.49383	Urban and Center City	TSP (Pb)	SLAMS	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure	Urban Scale
480610006	Brownsville	344 Porter Drive, Brownsville	Brownsville-Harlingen, TX	25.892518	-97.49383	Urban and Center City	Wind	Spm	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Neighborhood
480611023	Harlingen Teege	1602 W Teege Avenue, Harlingen	Brownsville-Harlingen, TX	26.200335	-97.712684	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
480611023	Harlingen Teege	1602 W Teege Avenue, Harlingen	Brownsville-Harlingen, TX	26.200335	-97.712684	Suburban	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
480611023	Harlingen Teege	1602 W Teege Avenue, Harlingen	Brownsville-Harlingen, TX	26.200335	-97.712684	Suburban	Wind	Spm	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
480612004	Isla Blanca Park	Lot B 69 1/2, South Padre Island	Brownsville-Harlingen, TX	26.069615	-97.1622	Rural	PM2.5 (TEOM)	Spm	TEOM Gravimetric	Continuous	Regional Transport	Urban Scale
480612004	Isla Blanca Park	Lot B 69 1/2, South Padre Island	Brownsville-Harlingen, TX	26.069615	-97.1622	Rural	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Regional Transport	Regional Scale
480612004	Isla Blanca Park	Lot B 69 1/2, South Padre Island	Brownsville-Harlingen, TX	26.069615	-97.1622	Rural	Wind (3m)	Spm	Potentiometer Cup Anemometer	Continuous	Regional Transport	Regional Scale
480710013	Smith Point Hawkins Camp	1850 Hawkins Camp Rd, Anahuac	Houston-Sugar Land-Baytown, TX	29.546244	-94.786969	Suburban	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Source Oriented	Neighborhood
480710013	Smith Point Hawkins Camp	1850 Hawkins Camp Rd, Anahuac	Houston-Sugar Land-Baytown, TX	29.546244	-94.786969	Suburban	Wind	Spm	Potentiometer Cup Anemometer	Continuous	Source Oriented	Neighborhood
480850003	Frisco 5th St	7471 South 5th Street, Frisco	Dallas-Fort Worth-Arlington, TX	33.142336	-96.824683	Suburban	Ambient Temperature	Spm	Derived from 484393009	24 Hours; 1/6 Days	General/Background	Middle Scale
480850003	Frisco 5th St	7471 South 5th Street, Frisco	Dallas-Fort Worth-Arlington, TX	33.142336	-96.824683	Suburban	Barometric Pressure	Spm	Derived from 484393009	24 Hours; 1/6 Days	General/Background	Middle Scale
480850003	Frisco 5th St	7471 South 5th Street, Frisco	Dallas-Fort Worth-Arlington, TX	33.142336	-96.824683	Suburban	TSP (Pb)	SLAMS	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure; Source Oriented	Middle Scale
480850005	Frisco	6590 Hillcrest Road, Frisco	Dallas-Fort Worth-Arlington, TX	33.1324	-96.786419	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Urban Scale
480850005	Frisco	6590 Hillcrest Road, Frisco	Dallas-Fort Worth-Arlington, TX	33.1324	-96.786419	Suburban	Solar Radiation	Spm	Photovoltaic	Continuous	General/Background	Urban Scale
480850005	Frisco	6590 Hillcrest Road, Frisco	Dallas-Fort Worth-Arlington, TX	33.1324	-96.786419	Suburban	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	General/Background	Urban Scale
480850005	Frisco	6590 Hillcrest Road, Frisco	Dallas-Fort Worth-Arlington, TX	33.1324	-96.786419	Suburban	Wind	Spm	Potentiometer Cup Anemometer	Continuous	General/Background	Urban Scale
480850007	Frisco 7	6931 Ash Street, Frisco	Dallas-Fort Worth-Arlington, TX	33.147414	-96.825769	Suburban	Ambient Temperature	Spm	Derived from 484393009	24 Hours; 1/6 Days	General/Background	Neighborhood
480850007	Frisco 7	6931 Ash Street, Frisco	Dallas-Fort Worth-Arlington, TX	33.147414	-96.825769	Suburban	Barometric Pressure	Spm	Derived from 484393009	24 Hours; 1/6 Days	General/Background	Neighborhood
480850007	Frisco 7	6931 Ash Street, Frisco	Dallas-Fort Worth-Arlington, TX	33.147414	-96.825769	Suburban	TSP (Pb)	SLAMS	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure; Source Oriented	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
480850007	Frisco 7	6931 Ash Street, Frisco	Dallas-Fort Worth-Arlington, TX	33.147414	-96.825769	Suburban	TSP (Pb)	QA Collocated/SLA MS	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure; Source Oriented	Neighborhood
480850009	Frisco Eubanks	6601 Eubanks, Frisco	Dallas-Fort Worth-Arlington, TX	33.144662	-96.828809	Suburban	Ambient Temperature	Spm	Derived from 484393009	24 Hours; 1/6 Days	General/Background	Neighborhood
480850009	Frisco Eubanks	6601 Eubanks, Frisco	Dallas-Fort Worth-Arlington, TX	33.144662	-96.828809	Suburban	Barometric Pressure	Spm	Derived from 484393009	24 Hours; 1/6 Days	General/Background	Neighborhood
480850009	Frisco Eubanks	6601 Eubanks, Frisco	Dallas-Fort Worth-Arlington, TX	33.144662	-96.828809	Suburban	TSP (Pb)	SLAMS	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure; Source Oriented	Neighborhood
480850009	Frisco Eubanks	6601 Eubanks, Frisco	Dallas-Fort Worth-Arlington, TX	33.144662	-96.828809	Suburban	TSP (Pb)	QA Collocated/SLA MS	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure; Source Oriented	Neighborhood
480850009	Frisco Eubanks	6601 Eubanks, Frisco	Dallas-Fort Worth-Arlington, TX	33.144662	-96.828809	Suburban	Wind (3m)	Spm	Potentiometer Cup Anemometer	Continuous	Population Exposure	
480850029	Frisco Stonebrook	7202 Stonebrook Parkway, Frisco	Dallas-Fort Worth-Arlington, TX	33.136025	-96.824473	Urban and Center City	Ambient Temperature	Spm	Derived from 484393009	24 Hours; 1/6 Days	General/Background	Neighborhood
480850029	Frisco Stonebrook	7202 Stonebrook Parkway, Frisco	Dallas-Fort Worth-Arlington, TX	33.136025	-96.824473	Urban and Center City	Barometric Pressure	Spm	Derived from 484393009	24 Hours; 1/6 Days	General/Background	Neighborhood
480850029	Frisco Stonebrook	7202 Stonebrook Parkway, Frisco	Dallas-Fort Worth-Arlington, TX	33.136025	-96.824473	Urban and Center City	TSP (Pb)	Spm	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481130018	Morrell	3049 Morrell, Dallas	Dallas-Fort Worth-Arlington, TX	32.744981	-96.781883	Urban and Center City	PM10 (Speciation)	Spm	ICP-AES	24 Hours; 1/6 Days	Source Oriented	Neighborhood
481130050	Convention Center	717 South Akard, Dallas	Dallas-Fort Worth-Arlington, TX	32.774262	-96.797686	Urban and Center City	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481130050	Convention Center	717 South Akard, Dallas	Dallas-Fort Worth-Arlington, TX	32.774262	-96.797686	Urban and Center City	PM10 (FRM)	Collocated/SLA MS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481130050	Convention Center	717 South Akard, Dallas	Dallas-Fort Worth-Arlington, TX	32.774262	-96.797686	Urban and Center City	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Highest Concentration; Population Exposure	Neighborhood
481130050	Convention Center	717 South Akard, Dallas	Dallas-Fort Worth-Arlington, TX	32.774262	-96.797686	Urban and Center City	Temperature (Outdoor)	Spm	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
481130050	Convention Center	717 South Akard, Dallas	Dallas-Fort Worth-Arlington, TX	32.774262	-96.797686	Urban and Center City	Wind	Spm	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
481130061	Earhart	3434 Bickers (Earhart Elem School), Dallas	Dallas-Fort Worth-Arlington, TX	32.785359	-96.876571	Urban and Center City	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	Barometric Pressure	Spm	Derived from KDAL	24 Hours; 1/6 Days	General/Background	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	Carbonyl	PAMS	DNPH Silica HPLC	24 Hours; 1/6 Days; 8 3-Hours; 1/3 Days (Jun. - Aug.)	Max Precursor Emissions Impact	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	CO (High Sensitivity)	NCORE/PAMS	Gas Filter Correlation	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	Dew Point	SPM	Derived at site	Continuous	Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	NO/NO2/NOx	PAMS/SLAMS	Chemiluminescence [699]CHEMILUMINESCENCE TELEDYNE API 200 EU/501	Continuous	Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	NOy (High Sensitivity)	NCORE		Continuous	Highest Concentration	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	O3	NCORE/PAMS	UV Photometric	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood

Appendix A: TCEQ SLAMS, PAMS, NATTS, NCore, and SPM Site List

AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	PM10-2.5	NCORE	Beta Attenuation	Continuous	Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	PM2.5 (FEM)	NCORE/SLAMS	Beta Attenuation	Continuous	Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	PM2.5 (FRM)	NCORE/SLAMS	Sequential FRM Gravimetric	24 Hours; 1/1 Days	Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	PM2.5 (FRM)	SLAMS; QA Collocated	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	PM2.5 (Speciation)	NCORE	Carbons Elements Ions Sequential Non FRM Gravimetric	24 Hours; 1/3 Days	Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Highest Concentration	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	Relative Humidity	SPM	Humidity Sensor	Continuous	Max Precursor Emissions Impact	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	SO2 (High Sensitivity)	NCORE/SLAMS	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	Solar Radiation	PAMS/SLAMS	Photovoltaic	Continuous	Max Precursor Emissions Impact	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	Speciated VOC (AutoGC)	PAMS	GC	Continuous	Highest Concentration; Max Precursor Emissions Impact	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	Speciated VOC (Canister)	PAMS	Canister GC-MS	24 Hours; 1/6 Days	Max Precursor Emissions Impact	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	TSP (Pb)	NCORE/SLAMS	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	Visibility	SPM	Visibility Sensor	Continuous	Population Exposure	Neighborhood
481130069	Dallas Hinton	1415 Hinton Street, Dallas	Dallas-Fort Worth-Arlington, TX	32.820061	-96.860117	Urban and Center City	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Neighborhood
481130075	Dallas North #2	12532 1/2 Nuestra Drive, Dallas	Dallas-Fort Worth-Arlington, TX	32.919206	-96.808498	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure	Neighborhood
481130075	Dallas North #2	12532 1/2 Nuestra Drive, Dallas	Dallas-Fort Worth-Arlington, TX	32.919206	-96.808498	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Urban Scale
481130075	Dallas North #2	12532 1/2 Nuestra Drive, Dallas	Dallas-Fort Worth-Arlington, TX	32.919206	-96.808498	Suburban	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Urban Scale
481130075	Dallas North #2	12532 1/2 Nuestra Drive, Dallas	Dallas-Fort Worth-Arlington, TX	32.919206	-96.808498	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	General/Background	Neighborhood
481130075	Dallas North #2	12532 1/2 Nuestra Drive, Dallas	Dallas-Fort Worth-Arlington, TX	32.919206	-96.808498	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
481130075	Dallas North #2	12532 1/2 Nuestra Drive, Dallas	Dallas-Fort Worth-Arlington, TX	32.919206	-96.808498	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
481130087	Dallas Redbird Airport Executive	3277 W Redbird Lane, Dallas	Dallas-Fort Worth-Arlington, TX	32.676451	-96.87206	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure	Neighborhood
481130087	Dallas Redbird Airport Executive	3277 W Redbird Lane, Dallas	Dallas-Fort Worth-Arlington, TX	32.676451	-96.87206	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Urban Scale
481130087	Dallas Redbird Airport Executive	3277 W Redbird Lane, Dallas	Dallas-Fort Worth-Arlington, TX	32.676451	-96.87206	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
481130087	Dallas Redbird Airport Executive	3277 W Redbird Lane, Dallas	Dallas-Fort Worth-Arlington, TX	32.676451	-96.87206	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood

Appendix A: TCEQ SLAMS, PAMS, NATTS, NCore, and SPM Site List

AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
481131067	Dallas LBJ Freeway	8652 LBJ Freeway, Dallas	Dallas-Fort Worth-Arlington, TX	32.92118	-96.75355	Urban and Center City	NO/NO2/NOx	Near Road/SLAMS	Chemiluminescence	Continuous	Max Precursor Emissions Impact	Microscale
481131067	Dallas LBJ Freeway	8652 LBJ Freeway, Dallas	Dallas-Fort Worth-Arlington, TX	32.92118	-96.75355	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Microscale
481131067	Dallas LBJ Freeway	8652 LBJ Freeway, Dallas	Dallas-Fort Worth-Arlington, TX	32.92118	-96.75355	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Microscale
481210034	Denton Airport South	Denton Airport South, Denton	Dallas-Fort Worth-Arlington, TX	33.219069	-97.196284	Rural	Dew Point	SPM	Derived at site	Continuous	Population Exposure	Urban Scale
481210034	Denton Airport South	Denton Airport South, Denton	Dallas-Fort Worth-Arlington, TX	33.219069	-97.196284	Rural	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Max Ozone Concentration; Population Exposure	Urban Scale
481210034	Denton Airport South	Denton Airport South, Denton	Dallas-Fort Worth-Arlington, TX	33.219069	-97.196284	Rural	NOy (High Sensitivity)	PAMS	[699]CHEMILUMINESCENCE TELEDYNE API 200 EU/501	Continuous	Max Ozone Concentration; Population Exposure	Urban Scale
481210034	Denton Airport South	Denton Airport South, Denton	Dallas-Fort Worth-Arlington, TX	33.219069	-97.196284	Rural	O3	PAMS	UV Photometric	Continuous	Max Ozone Concentration; Population Exposure	Urban Scale
481210034	Denton Airport South	Denton Airport South, Denton	Dallas-Fort Worth-Arlington, TX	33.219069	-97.196284	Rural	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Urban Scale
481210034	Denton Airport South	Denton Airport South, Denton	Dallas-Fort Worth-Arlington, TX	33.219069	-97.196284	Rural	Precipitation	PAMS	Rain Gauge	Continuous	Max Ozone Concentration	Urban Scale
481210034	Denton Airport South	Denton Airport South, Denton	Dallas-Fort Worth-Arlington, TX	33.219069	-97.196284	Rural	Relative Humidity	PAMS	Humidity Sensor	Continuous	Max Ozone Concentration	Urban Scale
481210034	Denton Airport South	Denton Airport South, Denton	Dallas-Fort Worth-Arlington, TX	33.219069	-97.196284	Rural	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Ozone Concentration	Urban Scale
481210034	Denton Airport South	Denton Airport South, Denton	Dallas-Fort Worth-Arlington, TX	33.219069	-97.196284	Rural	Speciated VOC (Canister)	PAMS	Canister GC-MS	24 Hours; 1/6 Days	Max Ozone Concentration; Population Exposure	Urban Scale
481210034	Denton Airport South	Denton Airport South, Denton	Dallas-Fort Worth-Arlington, TX	33.219069	-97.196284	Rural	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Ozone Concentration	Urban Scale
481210034	Denton Airport South	Denton Airport South, Denton	Dallas-Fort Worth-Arlington, TX	33.219069	-97.196284	Rural	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Ozone Concentration	Urban Scale
481211032	Pilot Point	792 E Northside Dr, Pilot Point	Dallas-Fort Worth-Arlington, TX	33.410648	-96.94459	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Regional Scale
481211032	Pilot Point	792 E Northside Dr, Pilot Point	Dallas-Fort Worth-Arlington, TX	33.410648	-96.94459	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	Upwind Background	Regional Scale
481211032	Pilot Point	792 E Northside Dr, Pilot Point	Dallas-Fort Worth-Arlington, TX	33.410648	-96.94459	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Upwind Background	Regional Scale
481211032	Pilot Point	792 E Northside Dr, Pilot Point	Dallas-Fort Worth-Arlington, TX	33.410648	-96.94459	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Upwind Background	Regional Scale
481350003	Odessa-Hays Elementary School	Barrett & Monahans Streets, Odessa	Odessa, TX	31.836575	-102.34204	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Urban Scale
481350003	Odessa-Hays Elementary School	Barrett & Monahans Streets, Odessa	Odessa, TX	31.836575	-102.34204	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Highest Concentration	Neighborhood
481350003	Odessa-Hays Elementary School	Barrett & Monahans Streets, Odessa	Odessa, TX	31.836575	-102.34204	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Neighborhood
481351014	Odessa Gonzales	2700 Disney, Odessa	Odessa, TX	31.870253	-102.33476	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Highest Concentration	Neighborhood
481351014	Odessa Gonzales	2700 Disney, Odessa	Odessa, TX	31.870253	-102.33476	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
481351014	Odessa Gonzales	2700 Disney, Odessa	Odessa, TX	31.870253	-102.33476	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Dallas-Fort Worth-Arlington, TX	32.482083	-97.026899	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Source Oriented	Neighborhood
481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Dallas-Fort Worth-Arlington, TX	32.482083	-97.026899	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Urban Scale

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Dallas-Fort Worth-Arlington, TX	32.482083	-97.026899	Suburban	PM2.5 (FRM) (Speciation)	SPM	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure; Source Oriented	Microscale
481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Dallas-Fort Worth-Arlington, TX	32.482083	-97.026899	Suburban	PM2.5 (Speciation)	SPM	Carbons Elements Ions Sequential FRM Gravimetric Sequential Non-FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure; Source Oriented	Neighborhood
481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Dallas-Fort Worth-Arlington, TX	32.482083	-97.026899	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Regional Transport	Regional Scale
481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Dallas-Fort Worth-Arlington, TX	32.482083	-97.026899	Suburban	SO2	SLAMS	Pulsed Fluorescence	Continuous	Source Oriented	Neighborhood
481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Dallas-Fort Worth-Arlington, TX	32.482083	-97.026899	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	General/Background	Neighborhood
481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Dallas-Fort Worth-Arlington, TX	32.482083	-97.026899	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background	Neighborhood
481390016	Midlothian OFW	2725 Old Fort Worth Road, Midlothian	Dallas-Fort Worth-Arlington, TX	32.482083	-97.026899	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
481391044	Italy	900 FM 667 Ellis County, Italy	Dallas-Fort Worth-Arlington, TX	32.175417	-96.870189	Rural	Dew Point	SPM	Derived at site	Continuous	Upwind Background	Urban Scale
481391044	Italy	900 FM 667 Ellis County, Italy	Dallas-Fort Worth-Arlington, TX	32.175417	-96.870189	Rural	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Upwind Background	Urban Scale
481391044	Italy	900 FM 667 Ellis County, Italy	Dallas-Fort Worth-Arlington, TX	32.175417	-96.870189	Rural	O3	PAMS	UV Photometric	Continuous	Upwind Background	Urban Scale
481391044	Italy	900 FM 667 Ellis County, Italy	Dallas-Fort Worth-Arlington, TX	32.175417	-96.870189	Rural	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Upwind Background	Regional Scale
481391044	Italy	900 FM 667 Ellis County, Italy	Dallas-Fort Worth-Arlington, TX	32.175417	-96.870189	Rural	Relative Humidity	PAMS	Humidity Sensor	Continuous	Upwind Background	Urban Scale
481391044	Italy	900 FM 667 Ellis County, Italy	Dallas-Fort Worth-Arlington, TX	32.175417	-96.870189	Rural	SO2	SPM	Pulsed Fluorescence	Continuous	Upwind Background	Urban Scale
481391044	Italy	900 FM 667 Ellis County, Italy	Dallas-Fort Worth-Arlington, TX	32.175417	-96.870189	Rural	Solar Radiation	PAMS	Photovoltaic	Continuous	Upwind Background	Urban Scale
481391044	Italy	900 FM 667 Ellis County, Italy	Dallas-Fort Worth-Arlington, TX	32.175417	-96.870189	Rural	Speciated VOC (Canister)	PAMS	Canister GC-MS	24 Hours; 1/6 Days	Upwind Background	Urban Scale
481391044	Italy	900 FM 667 Ellis County, Italy	Dallas-Fort Worth-Arlington, TX	32.175417	-96.870189	Rural	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Upwind Background	Urban Scale
481391044	Italy	900 FM 667 Ellis County, Italy	Dallas-Fort Worth-Arlington, TX	32.175417	-96.870189	Rural	UV Radiation	PAMS	Photovoltaic	Continuous	Upwind Background	Urban Scale
481391044	Italy	900 FM 667 Ellis County, Italy	Dallas-Fort Worth-Arlington, TX	32.175417	-96.870189	Rural	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Upwind Background	Urban Scale
481410029	Ivanhoe	10834 Ivanhoe (Ivanhoe Fire Station), El Paso	El Paso, TX	31.785769	-106.32358	Suburban	O3	SPM	UV Photometric	Continuous	Population Exposure	Neighborhood
481410029	Ivanhoe	10834 Ivanhoe (Ivanhoe Fire Station), El Paso	El Paso, TX	31.785769	-106.32358	Suburban	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481410029	Ivanhoe	10834 Ivanhoe (Ivanhoe Fire Station), El Paso	El Paso, TX	31.785769	-106.32358	Suburban	Relative Humidity	SPM	Humidity Sensor	Continuous	Population Exposure	Neighborhood
481410029	Ivanhoe	10834 Ivanhoe (Ivanhoe Fire Station), El Paso	El Paso, TX	31.785769	-106.32358	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
481410029	Ivanhoe	10834 Ivanhoe (Ivanhoe Fire Station), El Paso	El Paso, TX	31.785769	-106.32358	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	Barometric Pressure	SPM	Sequential FRM Gravimetric	<None>	General/Background	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	Dew Point	SPM	Derived at site	Continuous	Max Ozone Concentration; Population Exposure	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Max Ozone Concentration; Population Exposure	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	O3	PAMS	UV Photometric	Continuous	Max Ozone Concentration; Population Exposure	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	Precipitation	PAMS	Rain Gauge	Continuous	Max Ozone Concentration	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	Relative Humidity	PAMS	Humidity Sensor	Continuous	Max Ozone Concentration	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	SO2	SLAMS	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Ozone Concentration	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Ozone Concentration	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	TSP (Pb)	SLAMS	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	UV Radiation	SPM	Photovoltaic	Continuous	Max Ozone Concentration	Neighborhood
481410037	El Paso UTEP	250 Rim Rd, El Paso	El Paso, TX	31.768291	-106.50126	Urban and Center City	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Ozone Concentration	Neighborhood
481410038	Riverside	301 Midway Dr (Riverside High School), El Paso	El Paso, TX	31.7338	-106.3721	Suburban	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	CO (High Sensitivity)	NCORE	Gas Filter Correlation	Continuous	Highest Concentration	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	Dew Point	SPM	Derived at site	Continuous	Highest Concentration; Max Precursor Emissions Impact	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Highest Concentration; Max Precursor Emissions Impact	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	NOy (High Sensitivity)	NCORE	[699]CHEMILUMINESCENCE TELEDYNE API 200 EU/501	Continuous	Highest Concentration	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	O3	NCORE/PAMS	UV Photometric	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	PM10-2.5	NCORE	Beta Attenuation	Continuous	Highest Concentration; Population Exposure	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	PM2.5 (FEM)	NCORE/SPM	Beta Attenuation	Continuous	Highest Concentration; Population Exposure	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	PM2.5 (FRM)	NCORE/SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Highest Concentration; Population Exposure	Neighborhood

Appendix A: TCEQ SLAMS, PAMS, NATTS, NCore, and SPM Site List

AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	PM2.5 (Speciation)	NCORE	Carbons Elements Ions Sequential Non-FRM Gravimetric	24 Hours; 1/3 Days	Highest Concentration	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	Relative Humidity	PAMS	Humidity Sensor	Continuous	Max Precursor Emissions Impact	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	SO2 (High Sensitivity)	NCORE	Pulsed Fluorescence	Continuous	Highest Concentration	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	Solar Radiation	SPM	Photovoltaic	Continuous	Max Precursor Emissions Impact	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	Speciated VOC (AutoGC)	PAMS	GC	Continuous	Highest Concentration; Max Precursor Emissions Impact	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Neighborhood
481410044	El Paso Chamizal	800 S San Marcial Street, El Paso	El Paso, TX	31.765685	-106.45523	Urban and Center City	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Neighborhood
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	Barometric Pressure	PAMS	Barometer	Continuous	Max Ozone Concentration; Upwind Background	Neighborhood
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	Carbonyl	SPM	DNPH Silica HPLC	24 Hours; 1/6 Days	Max Ozone Concentration; Upwind Background	Neighborhood
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	CO	SLAMS	Gas Filter Correlation	Continuous	Highest Concentration	Urban Scale
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	Dew Point	SPM	Derived at site	Continuous	Highest Concentration; Upwind Background	Urban Scale
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Highest Concentration; Upwind Background	Neighborhood
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	O3	PAMS	UV Photometric	Continuous	Max Ozone Concentration; Upwind Background	Neighborhood
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	Relative Humidity	PAMS	Humidity Sensor	Continuous	Max Ozone Concentration; Upwind Background	Neighborhood
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Ozone Concentration; Upwind Background	Neighborhood
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Ozone Concentration; Upwind Background	Neighborhood
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	TSP (Pb)	NCORE	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	Visibility	SPM	Visibility Sensor	Continuous	Highest Concentration; Population Exposure	Urban Scale
481410055	Ascarate Park SE	650 R E Thomason Loop, El Paso	El Paso, TX	31.746775	-106.40281	Suburban	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Ozone Concentration; Upwind Background	Neighborhood
481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	El Paso, TX	31.6675	-106.288	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	El Paso, TX	31.6675	-106.288	Suburban	PM10 (FRM)	Border Grant/SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	General/Background; Population Exposure	Neighborhood
481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	El Paso, TX	31.6675	-106.288	Suburban	PM10 (FRM)	Border Grant/QA Collocated/SLA MS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	El Paso, TX	31.6675	-106.288	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	El Paso, TX	31.6675	-106.288	Suburban	SVOC	SPM	HiVol PUF XAD GC-MS	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	El Paso, TX	31.6675	-106.288	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
481410057	Socorro Hueco	320 Old Hueco Tanks Road, El Paso	El Paso, TX	31.6675	-106.288	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
481410058	Skyline Park	5050A Yvette Drive, El Paso	El Paso, TX	31.893913	-106.42583	Suburban	O3	Border Grant/SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
481410058	Skyline Park	5050A Yvette Drive, El Paso	El Paso, TX	31.893913	-106.42583	Suburban	SO2	Border Grant/SLAMS	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
481410058	Skyline Park	5050A Yvette Drive, El Paso	El Paso, TX	31.893913	-106.42583	Suburban	Temperature (Outdoor)	Border Grant/Spm	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
481410058	Skyline Park	5050A Yvette Drive, El Paso	El Paso, TX	31.893913	-106.42583	Suburban	Wind	Border Grant/Spm	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
481410693	Van Buren	2700 Harrison Avenue, El Paso	El Paso, TX	31.81337	-106.46452	Urban and Center City	PM10 (FRM)	SPM	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481410693	Van Buren	2700 Harrison Avenue, El Paso	El Paso, TX	31.81337	-106.46452	Urban and Center City	Relative Humidity	SPM	Humidity Sensor	Continuous	Population Exposure	
481410693	Van Buren	2700 Harrison Avenue, El Paso	El Paso, TX	31.81337	-106.46452	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	
481410693	Van Buren	2700 Harrison Avenue, El Paso	El Paso, TX	31.81337	-106.46452	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	
481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	El Paso, TX	31.86247	-106.5473	Suburban	Ambient Temperature	SPM	Derived from KELP	24 Hours; 1/6 Days	General/Background	Neighborhood
481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	El Paso, TX	31.86247	-106.5473	Suburban	Barometric Pressure	SPM	Derived from KELP	24 Hours; 1/6 Days	General/Background	Neighborhood
481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	El Paso, TX	31.86247	-106.5473	Suburban	CO	SLAMS	Gas Filter Correlation	Continuous	Population Exposure	Neighborhood
481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	El Paso, TX	31.86247	-106.5473	Suburban	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	El Paso, TX	31.86247	-106.5473	Suburban	PM10 (FRM)	QA Collocated	HiVol Gravimetric	24 Hours; 1/12 Days	Population Exposure	Neighborhood
481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	El Paso, TX	31.86247	-106.5473	Suburban	TSP (Pb)	SLAMS	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure	Neighborhood
481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	El Paso, TX	31.86247	-106.5473	Suburban	TSP (Pb)	QA Collocated/SLA MS	HiVol ICP-MS	24 Hours; 1/12 Days	Population Exposure	Neighborhood
481411021	Ojo De Agua	6767 Ojo De Agua, El Paso	El Paso, TX	31.86247	-106.5473	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
481490001	Fayette County Texas City Fire Station	636 Roznov Rd, Round Top	AUSTIN-SAN MARCOS, TX	29.962475	-96.745875	Rural	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Regional Transport; Source Oriented	Regional Scale
481670004	Texas City Fire Station	2516 Texas Avenue, Texas City	Houston-Sugar Land-Baytown, TX	29.384444	-94.930833	Urban and Center City	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Highest Concentration	Neighborhood
481670004	Texas City Fire Station	2516 Texas Avenue, Texas City	Houston-Sugar Land-Baytown, TX	29.384444	-94.930833	Urban and Center City	PM10 (FRM)	QA Collocated/SLA MS	HiVol Gravimetric	24 Hours; 1/6 Days	Highest Concentration	Neighborhood
481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Houston-Sugar Land-Baytown, TX	29.254474	-94.861289	Suburban	Dew Point	SPM	Derived at site	Continuous	General/Background; Upwind Background	Middle Scale

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Houston-Sugar Land-Baytown, TX	29.254474	-94.861289	Suburban	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	General/Background; Upwind Background	Urban Scale
481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Houston-Sugar Land-Baytown, TX	29.254474	-94.861289	Suburban	O3	PAMS	UV Photometric	Continuous	Max Ozone Concentration; Upwind Background	Urban Scale
481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Houston-Sugar Land-Baytown, TX	29.254474	-94.861289	Suburban	PM2.5 (FRM)	SPM	Sequential FRM Gravimetric	24 Hours; 1/6 Days; 24 Hours; Daily (Apr. - Aug FRM Only)	Regional Transport	Regional Scale
481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Houston-Sugar Land-Baytown, TX	29.254474	-94.861289	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Regional Transport	Regional Scale
481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Houston-Sugar Land-Baytown, TX	29.254474	-94.861289	Suburban	Relative Humidity	PAMS	Humidity Sensor	Continuous	Max Ozone Concentration; Upwind Background	Urban Scale
481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Houston-Sugar Land-Baytown, TX	29.254474	-94.861289	Suburban	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Ozone Concentration; Upwind Background	Urban Scale
481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Houston-Sugar Land-Baytown, TX	29.254474	-94.861289	Suburban	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Ozone Concentration; Upwind Background	Urban Scale
481671034	Galveston 99th Street	9511 Avenue V 1/2, Galveston	Houston-Sugar Land-Baytown, TX	29.254474	-94.861289	Suburban	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Ozone Concentration; Upwind Background	Urban Scale
481830001	Longview	Gregg Co Airport near Longview, Longview	Longview, TX	32.378682	-94.711811	Rural	NO/NO2/NOx	SPM	Chemiluminescence	Continuous	Population Exposure	Neighborhood
481830001	Longview	Gregg Co Airport near Longview, Longview	Longview, TX	32.378682	-94.711811	Rural	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
481830001	Longview	Gregg Co Airport near Longview, Longview	Longview, TX	32.378682	-94.711811	Rural	Precipitation	SPM	Rain Gauge	Continuous	General/Background	Neighborhood
481830001	Longview	Gregg Co Airport near Longview, Longview	Longview, TX	32.378682	-94.711811	Rural	SO2	SLAMS	Pulsed Fluorescence	Continuous	General/Background; Population Exposure	Neighborhood
481830001	Longview	Gregg Co Airport near Longview, Longview	Longview, TX	32.378682	-94.711811	Rural	Solar Radiation	SPM	Photovoltaic	Continuous	General/Background	Neighborhood
481830001	Longview	Gregg Co Airport near Longview, Longview	Longview, TX	32.378682	-94.711811	Rural	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background	Neighborhood
481830001	Longview	Gregg Co Airport near Longview, Longview	Longview, TX	32.378682	-94.711811	Rural	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	Barometric Pressure	PAMS	Barometer	Continuous	Max Ozone Concentration	Neighborhood
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	Dew Point	SPM	Derived at site	Continuous	Population Exposure	Urban Scale
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Max Ozone Concentration; Population Exposure	Neighborhood
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	NOy (High Sensitivity)	PAMS	[699]CHEMILUMINESCENCE TELEDYNE API 200 EU/501	Continuous	Max Ozone Concentration; Population Exposure	Neighborhood
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	O3	PAMS	UV Photometric	Continuous	Max Ozone Concentration; Population Exposure	Neighborhood
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Middle Scale
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	PM2.5 (Speciation)	SPM	Carbons Elements Ions Sequential FRM Gravimetric Sequential Non-FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	Relative Humidity	SPM	Humidity Sensor	Continuous	Max Ozone Concentration	Neighborhood
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Ozone Concentration	Neighborhood
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Ozone Concentration	Neighborhood
482010024	Houston Aldine	4510 1/2 Aldine Mail Rd, Houston	Houston-Sugar Land-Baytown, TX	29.901036	-95.326137	Suburban	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Ozone Concentration	Neighborhood
482010026	Channelview	1405 Sheldon Road, Channelview	Houston-Sugar Land-Baytown, TX	29.802707	-95.125495	Suburban	Dew Point	SPM	Derived at site	Continuous	Highest Concentration	Neighborhood
482010026	Channelview	1405 Sheldon Road, Channelview	Houston-Sugar Land-Baytown, TX	29.802707	-95.125495	Suburban	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Population Exposure	Neighborhood
482010026	Channelview	1405 Sheldon Road, Channelview	Houston-Sugar Land-Baytown, TX	29.802707	-95.125495	Suburban	O3	PAMS	UV Photometric	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482010026	Channelview	1405 Sheldon Road, Channelview	Houston-Sugar Land-Baytown, TX	29.802707	-95.125495	Suburban	Relative Humidity	PAMS	Humidity Sensor	Continuous	Max Precursor Emissions Impact	Neighborhood
482010026	Channelview	1405 Sheldon Road, Channelview	Houston-Sugar Land-Baytown, TX	29.802707	-95.125495	Suburban	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Precursor Emissions Impact	Neighborhood
482010026	Channelview	1405 Sheldon Road, Channelview	Houston-Sugar Land-Baytown, TX	29.802707	-95.125495	Suburban	Speciated VOC (AutoGC)	PAMS	GC	Continuous	Population Exposure	Neighborhood
482010026	Channelview	1405 Sheldon Road, Channelview	Houston-Sugar Land-Baytown, TX	29.802707	-95.125495	Suburban	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Neighborhood
482010026	Channelview	1405 Sheldon Road, Channelview	Houston-Sugar Land-Baytown, TX	29.802707	-95.125495	Suburban	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Neighborhood
482010029	Northwest Harris County	16822 Kitzman, Tomball	Houston-Sugar Land-Baytown, TX	30.039524	-95.673951	Rural	Dew Point	SPM	Derived at site	Continuous	Source Oriented	Microscale
482010029	Northwest Harris County	16822 Kitzman, Tomball	Houston-Sugar Land-Baytown, TX	30.039524	-95.673951	Rural	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Extreme Downwind; Population Exposure; Upwind Background	Urban Scale
482010029	Northwest Harris County	16822 Kitzman, Tomball	Houston-Sugar Land-Baytown, TX	30.039524	-95.673951	Rural	O3	PAMS	UV Photometric	Continuous	Extreme Downwind; Population Exposure; Upwind Background	Urban Scale
482010029	Northwest Harris County	16822 Kitzman, Tomball	Houston-Sugar Land-Baytown, TX	30.039524	-95.673951	Rural	Relative Humidity	PAMS	Humidity Sensor	Continuous	Extreme Downwind; Upwind Background	Urban Scale
482010029	Northwest Harris County	16822 Kitzman, Tomball	Houston-Sugar Land-Baytown, TX	30.039524	-95.673951	Rural	Solar Radiation	PAMS	Photovoltaic	Continuous	Extreme Downwind; Upwind Background	Urban Scale
482010029	Northwest Harris County	16822 Kitzman, Tomball	Houston-Sugar Land-Baytown, TX	30.039524	-95.673951	Rural	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Extreme Downwind; Upwind Background	Urban Scale
482010029	Northwest Harris County	16822 Kitzman, Tomball	Houston-Sugar Land-Baytown, TX	30.039524	-95.673951	Rural	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Extreme Downwind; Upwind Background	Urban Scale
482010046	Houston North Wayside	7330 1/2 North Wayside, Houston	Houston-Sugar Land-Baytown, TX	29.828086	-95.284096	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
482010046	Houston North Wayside	7330 1/2 North Wayside, Houston	Houston-Sugar Land-Baytown, TX	29.828086	-95.284096	Suburban	SO2	SPM	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
482010047	Lang	4401 1/2 Lang Rd, Houston	Houston-Sugar Land-Baytown, TX	29.834167	-95.489167	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure	Middle Scale / Urban Scale
482010047	Lang	4401 1/2 Lang Rd, Houston	Houston-Sugar Land-Baytown, TX	29.834167	-95.489167	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Urban Scale

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
482010047	Lang	4401 1/2 Lang Rd, Houston	Houston-Sugar Land-Baytown, TX	29.834167	-95.489167	Suburban	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
482010051	Houston Croquet	13826 1/2 Croquet, Houston	Houston-Sugar Land-Baytown, TX	29.623889	-95.474167	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
482010051	Houston Croquet	13826 1/2 Croquet, Houston	Houston-Sugar Land-Baytown, TX	29.623889	-95.474167	Suburban	SO2	SPM	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
482010051	Houston Croquet	13826 1/2 Croquet, Houston	Houston-Sugar Land-Baytown, TX	29.623889	-95.474167	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
482010051	Houston Croquet	13826 1/2 Croquet, Houston	Houston-Sugar Land-Baytown, TX	29.623889	-95.474167	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
482010055	Houston Bayland Park	6400 Bissonnet Street, Houston	Houston-Sugar Land-Baytown, TX	29.695729	-95.499219	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure	Middle Scale / Neighborhood
482010055	Houston Bayland Park	6400 Bissonnet Street, Houston	Houston-Sugar Land-Baytown, TX	29.695729	-95.499219	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Middle Scale
482010055	Houston Bayland Park	6400 Bissonnet Street, Houston	Houston-Sugar Land-Baytown, TX	29.695729	-95.499219	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	General/Background; Max Precursor Emissions Impact	Middle Scale
482010055	Houston Bayland Park	6400 Bissonnet Street, Houston	Houston-Sugar Land-Baytown, TX	29.695729	-95.499219	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background; Max Precursor Emissions Impact	Middle Scale
482010055	Houston Bayland Park	6400 Bissonnet Street, Houston	Houston-Sugar Land-Baytown, TX	29.695729	-95.499219	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background; Max Precursor Emissions Impact	Middle Scale
482010058	Baytown	7210 1/2 Bayway Drive, Baytown	Houston-Sugar Land-Baytown, TX	29.770698	-95.031232	Suburban	PM2.5 (FRM)	SLAMS/Spm	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Middle Scale / Neighborhood
482010058	Baytown	7210 1/2 Bayway Drive, Baytown	Houston-Sugar Land-Baytown, TX	29.770698	-95.031232	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Regional Transport	Neighborhood
482010058	Baytown	7210 1/2 Bayway Drive, Baytown	Houston-Sugar Land-Baytown, TX	29.770698	-95.031232	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Highest Concentration	Neighborhood
482010058	Baytown	7210 1/2 Bayway Drive, Baytown	Houston-Sugar Land-Baytown, TX	29.770698	-95.031232	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Neighborhood
482010060	Houston Kirkpatrick	5565 Kirkpatrick, Houston	Houston-Sugar Land-Baytown, TX	29.807415	-95.293622	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
482010060	Houston Kirkpatrick	5565 Kirkpatrick, Houston	Houston-Sugar Land-Baytown, TX	29.807415	-95.293622	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
482010062	Houston Monroe	9726 1/2 Monroe, Houston	Houston-Sugar Land-Baytown, TX	29.625556	-95.267222	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
482010062	Houston Monroe	9726 1/2 Monroe, Houston	Houston-Sugar Land-Baytown, TX	29.625556	-95.267222	Suburban	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
482010062	Houston Monroe	9726 1/2 Monroe, Houston	Houston-Sugar Land-Baytown, TX	29.625556	-95.267222	Suburban	Precipitation	SPM	Rain Gauge	Continuous	General/Background	Neighborhood
482010062	Houston Monroe	9726 1/2 Monroe, Houston	Houston-Sugar Land-Baytown, TX	29.625556	-95.267222	Suburban	SO2	SPM	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
482010066	Houston Westhollow	3333 1/2 Hwy 6 South, Houston	Houston-Sugar Land-Baytown, TX	29.723333	-95.635833	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
482010066	Houston Westhollow	3333 1/2 Hwy 6 South, Houston	Houston-Sugar Land-Baytown, TX	29.723333	-95.635833	Suburban	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
482010066	Houston Westhollow	3333 1/2 Hwy 6 South, Houston	Houston-Sugar Land-Baytown, TX	29.723333	-95.635833	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
482010066	Houston Westhollow	3333 1/2 Hwy 6 South, Houston	Houston-Sugar Land-Baytown, TX	29.723333	-95.635833	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
482010071	Pasadena HL&P	1001 1/2 Red Bluff, Pasadena	Houston-Sugar Land-Baytown, TX	29.716483	-95.20133	Urban and Center City	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
482010416	Park Place	7421 Park Place Blvd, Houston	Houston-Sugar Land-Baytown, TX	29.686389	-95.294722	Urban and Center City	Barometric Pressure	SPM	Barometer	Continuous	General/Background	Neighborhood
482010416	Park Place	7421 Park Place Blvd, Houston	Houston-Sugar Land-Baytown, TX	29.686389	-95.294722	Urban and Center City	Dew Point	SPM	Derived at site	Continuous	General/Background	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
482010416	Park Place	7421 Park Place Blvd, Houston	Houston-Sugar Land-Baytown, TX	29.686389	-95.294722	Urban and Center City	NO/NO2/NOx	SPM	Chemiluminescence	Continuous	Population Exposure	Neighborhood
482010416	Park Place	7421 Park Place Blvd, Houston	Houston-Sugar Land-Baytown, TX	29.686389	-95.294722	Urban and Center City	O3	SPM	UV Photometric	Continuous	Population Exposure	Neighborhood
482010416	Park Place	7421 Park Place Blvd, Houston	Houston-Sugar Land-Baytown, TX	29.686389	-95.294722	Urban and Center City	Precipitation	SPM	Rain Gauge	Continuous	General/Background	Neighborhood
482010416	Park Place	7421 Park Place Blvd, Houston	Houston-Sugar Land-Baytown, TX	29.686389	-95.294722	Urban and Center City	Relative Humidity	SPM	Humidity Sensor	Continuous	General/Background	Neighborhood
482010416	Park Place	7421 Park Place Blvd, Houston	Houston-Sugar Land-Baytown, TX	29.686389	-95.294722	Urban and Center City	SO2	SPM	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
482010416	Park Place	7421 Park Place Blvd, Houston	Houston-Sugar Land-Baytown, TX	29.686389	-95.294722	Urban and Center City	Solar Radiation	SPM	Photovoltaic	Continuous	General/Background	Neighborhood
482010416	Park Place	7421 Park Place Blvd, Houston	Houston-Sugar Land-Baytown, TX	29.686389	-95.294722	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background	Neighborhood
482010416	Park Place	7421 Park Place Blvd, Houston	Houston-Sugar Land-Baytown, TX	29.686389	-95.294722	Urban and Center City	UV Radiation	SPM	Photovoltaic	Continuous	General/Background	Neighborhood
482010416	Park Place	7421 Park Place Blvd, Houston	Houston-Sugar Land-Baytown, TX	29.686389	-95.294722	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
482011015	Lynchburg Ferry	4407 Independence Parkway South, Baytown	Houston-Sugar Land-Baytown, TX	29.761653	-95.081386	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Source Oriented	Middle Scale / Neighborhood
482011015	Lynchburg Ferry	4407 Independence Parkway South, Baytown	Houston-Sugar Land-Baytown, TX	29.761653	-95.081386	Suburban	O3	SLAMS	UV Photometric	Continuous	Source Oriented	Middle Scale
482011015	Lynchburg Ferry	4407 Independence Parkway South, Baytown	Houston-Sugar Land-Baytown, TX	29.761653	-95.081386	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	Highest Concentration	Neighborhood
482011015	Lynchburg Ferry	4407 Independence Parkway South, Baytown	Houston-Sugar Land-Baytown, TX	29.761653	-95.081386	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Highest Concentration	Neighborhood
482011015	Lynchburg Ferry	4407 Independence Parkway South, Baytown	Houston-Sugar Land-Baytown, TX	29.761653	-95.081386	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Neighborhood
482011017	Baytown Garth	8622 Garth Road Unit A, Baytown	Houston-Sugar Land-Baytown, TX	29.823319	-94.983786	Suburban	O3	SLAMS	UV Photometric	Continuous	Max Ozone Concentration	Neighborhood
482011017	Baytown Garth	8622 Garth Road Unit A, Baytown	Houston-Sugar Land-Baytown, TX	29.823319	-94.983786	Suburban	SO2	SLAMS	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
482011017	Baytown Garth	8622 Garth Road Unit A, Baytown	Houston-Sugar Land-Baytown, TX	29.823319	-94.983786	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	Population Exposure	Neighborhood
482011017	Baytown Garth	8622 Garth Road Unit A, Baytown	Houston-Sugar Land-Baytown, TX	29.823319	-94.983786	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
482011017	Baytown Garth	8622 Garth Road Unit A, Baytown	Houston-Sugar Land-Baytown, TX	29.823319	-94.983786	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
482011034	Houston East	1262 1/2 Mae Drive, Houston	Houston-Sugar Land-Baytown, TX	29.767997	-95.220582	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Highest Concentration; Population Exposure	Middle Scale / Neighborhood
482011034	Houston East	1262 1/2 Mae Drive, Houston	Houston-Sugar Land-Baytown, TX	29.767997	-95.220582	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
482011034	Houston East	1262 1/2 Mae Drive, Houston	Houston-Sugar Land-Baytown, TX	29.767997	-95.220582	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
482011034	Houston East	1262 1/2 Mae Drive, Houston	Houston-Sugar Land-Baytown, TX	29.767997	-95.220582	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Urban Scale
482011034	Houston East	1262 1/2 Mae Drive, Houston	Houston-Sugar Land-Baytown, TX	29.767997	-95.220582	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	Barometric Pressure	PAMS	Barometer	Continuous	Max Precursor Emissions Impact	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	Carbonyl	PAMS	DNPH Silica HPLC	24 Hours, Seasonal, 3 Hours; Seasonal, 24 Hours; 1/6 Days, 3 Hours; 8/3 Days	Max Precursor Emissions Impact	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	CO (High Sensitivity)	PAMS	Gas Filter Correlation	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	Dew Point	SPM	Derived at site	Continuous	Population Exposure	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	O3	PAMS	UV Photometric	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	PM10 (FRM)	QA Collocated/SLA MS	HiVol Gravimetric	24 Hours; 1/6 Days	Highest Concentration; Population Exposure	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	PM10 (Speciation)	SPM	ICP-MS	24 Hours; 1/3 Days	Population Exposure; Source Oriented	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/3 Days	Highest Concentration; Source Oriented	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/1 Days	Highest Concentration; Population Exposure; Source Oriented	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	PM2.5 (FRM)	QA Collocated/SLA MS	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Highest Concentration; Population Exposure	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	Precipitation	SPM	Rain Gauge	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	Relative Humidity	PAMS	Humidity Sensor	Continuous	Max Precursor Emissions Impact	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	SO2	SLAMS	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Precursor Emissions Impact	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	Speciated VOC (AutoGC)	PAMS	GC	Continuous	Highest Concentration; Population Exposure; Source Oriented	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	UV Radiation	PAMS	Photovoltaic	Continuous	Max Precursor Emissions Impact	Neighborhood
482011035	Clinton	9525 1/2 Clinton Dr, Houston	Houston-Sugar Land-Baytown, TX	29.733726	-95.257593	Urban and Center City	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	Barometric Pressure	SPM	Derived from KHOU	24 Hours; 1/6 Days	General/Background	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	Carbonyl	PAMS	DNPH Silica HPLC	24 Hours; 1/6 Days	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	CO (High Sensitivity)	NCORE	Gas Filter Correlation	Continuous	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	Dew Point	SPM	Derived at site	Continuous	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	NO/NO2/NOx	PAMS/NCORE	Chemiluminescence	Continuous	Population Exposure; Source Oriented	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	NOy (High Sensitivity)	NCORE/Spm	[699]CHEMILUMINESCENCE TELEDYNE API 200 EU/501	Continuous	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	O3	NCORE/PAMS/SLAMS	UV Photometric	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	PM10 (Speciation)	NATTS	ICP-MS	24 Hours; 1/6 Days	Max Precursor Emissions Impact; Population Exposure; Source Oriented	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	PM10 (Speciation)	QA Collocated/SLA MS	ICP-MS	24 Hours; 1/6 Days	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Max Precursor Emissions Impact; Population Exposure; Source Oriented	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	PM10 (FRM)	QA Collocated/SLA MS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	PM10-2.5	NCORE/Spm	Beta Attenuation	Continuous	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	PM2.5 (carbon) Black	SPM	Beta Attenuation	Continuous	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	PM2.5 (Carbon) Sunset	SPM	Aethalometer	Continuous	General/Background	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	PM2.5 (FRM)	NCORE	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	PM2.5 (Speciation)	NCORE/STN	Carbons Elements Ions Sequential Non-FRM Gravimetric	24 Hours; 1/3 Days	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	PM2.5 (Speciation)	NCORE/STN/QA Collocated	Carbons Elements Ions Sequential Non-FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	Relative Humidity	PAMS/NCORE	Humidity Sensor	Continuous	Max Precursor Emissions Impact	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	SO2 (High Sensitivity)	NCORE	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Precursor Emissions Impact	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	Speciated VOC (AutoGC)	PAMS	GC	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	Speciated VOC (Canister)	NATTS/PAMS	Canister GC-MS	24 Hours; 1/6 Days	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	Speciated VOC (Canister)	NATTS/OA Collocated/SLA MS	Canister GC-MS	24 Hours; 1/6 Days	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	SVOC	NATTS	HiVol PUF XAD GC-MS	24 Hours; 1/6 Days	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	SVOC	QA Collocated	HiVol PUF XAD GC-MS	24 Hours; 1/6 Days	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	TSP (Pb)	NCORE	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure	Neighborhood
482011039	Houston Deer Park #2	4514 1/2 Durant St, Deer Park	Houston-Sugar Land-Baytown, TX	29.670025	-95.128508	Urban and Center City	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Neighborhood
482011042	Kingwood	3603 1/2 West Lake Houston Pkwy, Houston	Houston-Sugar Land-Baytown, TX	30.05846	-95.189751	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
482011042	Kingwood	3603 1/2 West Lake Houston Pkwy, Houston	Houston-Sugar Land-Baytown, TX	30.05846	-95.189751	Suburban	Precipitation	SPM	Rain Gauge	Continuous	General/Background	Neighborhood
482011043	La Porte Airport C243	La Porte Airport, 2434 Buchanan Street, La Porte	Houston-Sugar Land-Baytown, TX	29.672	-95.0647	Suburban	Precipitation	PAMS	Rain Gauge	Continuous	General/Background	Neighborhood
482011043	La Porte Airport C243	La Porte Airport, 2434 Buchanan Street, La Porte	Houston-Sugar Land-Baytown, TX	29.672	-95.0647	Suburban	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	General/Background	Neighborhood
482011043	La Porte Airport C243	La Porte Airport, 2434 Buchanan Street, La Porte	Houston-Sugar Land-Baytown, TX	29.672	-95.0647	Suburban	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	Houston-Sugar Land-Baytown, TX	29.583047	-95.015544	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure	Middle Scale / Neighborhood
482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	Houston-Sugar Land-Baytown, TX	29.583047	-95.015544	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	Houston-Sugar Land-Baytown, TX	29.583047	-95.015544	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Highest Concentration	Middle Scale
482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	Houston-Sugar Land-Baytown, TX	29.583047	-95.015544	Suburban	SO2	SPM	Pulsed Fluorescence	Continuous	Population Exposure; Source Oriented	Neighborhood
482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	Houston-Sugar Land-Baytown, TX	29.583047	-95.015544	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	Highest Concentration	Middle Scale
482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	Houston-Sugar Land-Baytown, TX	29.583047	-95.015544	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Highest Concentration	Middle Scale
482011050	Seabrook Friendship Park	4522 Park Rd, Seabrook	Houston-Sugar Land-Baytown, TX	29.583047	-95.015544	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Middle Scale
482011052	Houston North Loop	822 North Loop, Houston	Houston-Sugar Land-Baytown, TX	29.81453	-95.38769	Urban and Center City	CO	Near Road/SLAMS	Gas Filter Correlation	Continuous	Max Precursor Emissions Impact	Microscale
482011052	Houston North Loop	822 North Loop, Houston	Houston-Sugar Land-Baytown, TX	29.81453	-95.38769	Urban and Center City	NO/NO2/NOx	Near Road/SLAMS	Chemiluminescence	Continuous	Max Precursor Emissions Impact	Microscale
482011052	Houston North Loop	822 North Loop, Houston	Houston-Sugar Land-Baytown, TX	29.81453	-95.38769	Urban and Center City	PM2.5 (FRM)	Near Road/SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Max Precursor Emissions Impact	Microscale

Appendix A: TCEQ SLAMS, PAMS, NATTS, NCore, and SPM Site List

AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
482011052	Houston North Loop	822 North Loop, Houston	Houston-Sugar Land-Baytown, TX	29.81453	-95.38769	Urban and Center City	Temperature (Outdoor)	SPM	[020]SPOT READING	Continuous	Max Precursor Emissions Impact	Microscale
482011052	Houston North Loop	822 North Loop, Houston	Houston-Sugar Land-Baytown, TX	29.81453	-95.38769	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Microscale
482011066	Houston Southwest Freeway	5617 Westward Avenue, Houston	Houston-Sugar Land-Baytown, TX	29.7216	-95.49265	Urban and Center City	NO/NO2/NOx	Near Road/SLAMS	Chemiluminescence	Continuous	Max Precursor Emissions Impact	Microscale
482011066	Houston Southwest Freeway	5617 Westward Avenue, Houston	Houston-Sugar Land-Baytown, TX	29.7216	-95.49265	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Microscale
482011066	Houston Southwest Freeway	5617 Westward Avenue, Houston	Houston-Sugar Land-Baytown, TX	29.7216	-95.49265	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Microscale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	Carbonyl	SPM	DNPH Silica HPLC	24 Hours; 1/6 Days	General/Background	Regional Scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	General/Background	Regional Scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	O3	SLAMS	UV Photometric	Continuous	General/Background	Regional scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	PM10 (Speciation)	NATTS	ICP-MS	24 Hours; 1/6 Days	General/Background	Regional Scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	PM10 (FRM)	SPM	HiVol Gravimetric	24 Hours; 1/6 Days	General/Background	Neighborhood
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	PM2.5 (FRM)	SPM	Sequential FRM Gravimetric	24 Hours; 1/6 Days	General/Background	Regional Scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	PM2.5 (Speciation)	Csn Supplemental	Carbons Elements Ions Sequential Non FRM Gravimetric	24 Hours; 1/3 Days	General/Background; Regional Transport	Regional Scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	General/Background	Regional Scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	Solar Radiation	SPM	Photovoltaic	Continuous	General/Background	Urban Scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	Speciated VOC (Canister)	SPM	Canister GC-MS	24 Hours; 1/6 Days	General/Background	Regional Scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	SVOC	SPM	HiVol PUF XAD GC-MS	24 Hours; 1/6 Days	General/Background	Regional Scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background	Urban Scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	Visibility	SPM	Visibility Sensor	Continuous	General/Background	Urban Scale
482030002	Karnack	Hwy 134 & Spur 449, Not In A City	Marshall, TX	32.668987	-94.167457	Rural	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Urban Scale
482150043	Mission	2300 North Glasscock, Mission	McAllen-Edinburg-Mission, TX	26.22621	-98.291069	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
482150043	Mission	2300 North Glasscock, Mission	McAllen-Edinburg-Mission, TX	26.22621	-98.291069	Suburban	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Urban Scale
482150043	Mission	2300 North Glasscock, Mission	McAllen-Edinburg-Mission, TX	26.22621	-98.291069	Suburban	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Population Exposure	Urban Scale
482150043	Mission	2300 North Glasscock, Mission	McAllen-Edinburg-Mission, TX	26.22621	-98.291069	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Urban Scale
482150043	Mission	2300 North Glasscock, Mission	McAllen-Edinburg-Mission, TX	26.22621	-98.291069	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	Population Exposure	Microscale
482150043	Mission	2300 North Glasscock, Mission	McAllen-Edinburg-Mission, TX	26.22621	-98.291069	Suburban	SVOC	SPM	HiVol PUF XAD GC-MS	24 Hours; 1/6 Days	Population Exposure	Microscale
482150043	Mission	2300 North Glasscock, Mission	McAllen-Edinburg-Mission, TX	26.22621	-98.291069	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Microscale
482150043	Mission	2300 North Glasscock, Mission	McAllen-Edinburg-Mission, TX	26.22621	-98.291069	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Microscale

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
482151046	Edinburg East Freddy Gonzalez Drive	1491 E Freddy Gonzalez Drive, Edinburg	McAllen-Edinburg-Mission, TX	TBD	TBD	Urban And Center City	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
482151046	Edinburg East Freddy Gonzalez Drive	1491 E Freddy Gonzalez Drive, Edinburg	McAllen-Edinburg-Mission, TX	TBD	TBD	Urban And Center City	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Regional Scale
482151046	Edinburg East Freddy Gonzalez Drive	1491 E Freddy Gonzalez Drive, Edinburg	McAllen-Edinburg-Mission, TX	TBD	TBD	Urban And Center City	Temperature (Outdoor)	SLAMS	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
482151046	Edinburg East Freddy Gonzalez Drive	1491 E Freddy Gonzalez Drive, Edinburg	McAllen-Edinburg-Mission, TX	TBD	TBD	Urban And Center City	Wind	SLAMS	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
482210001	Granbury	200 N Gordon Street, Granbury	Granbury, TX	32.442304	-97.803529	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
482210001	Granbury	200 N Gordon Street, Granbury	Granbury, TX	32.442304	-97.803529	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	General/Background	Middle Scale
482210001	Granbury	200 N Gordon Street, Granbury	Granbury, TX	32.442304	-97.803529	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background	Middle Scale
482210001	Granbury	200 N Gordon Street, Granbury	Granbury, TX	32.442304	-97.803529	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Middle Scale
482311006	Greenville	824 Sayle Street, Greenville	Dallas-Fort Worth-Arlington, TX	33.153088	-96.115572	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure; Upwind Background	Neighborhood
482311006	Greenville	824 Sayle Street, Greenville	Dallas-Fort Worth-Arlington, TX	33.153088	-96.115572	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure; Upwind Background	Neighborhood
482311006	Greenville	824 Sayle Street, Greenville	Dallas-Fort Worth-Arlington, TX	33.153088	-96.115572	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	General/Background	Neighborhood
482311006	Greenville	824 Sayle Street, Greenville	Dallas-Fort Worth-Arlington, TX	33.153088	-96.115572	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background	Neighborhood
482311006	Greenville	824 Sayle Street, Greenville	Dallas-Fort Worth-Arlington, TX	33.153088	-96.115572	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	Beaumont-Port Arthur, TX	30.036422	-94.071061	Suburban	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Population Exposure	Neighborhood
482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	Beaumont-Port Arthur, TX	30.036422	-94.071061	Suburban	O3	PAMS/SLAMS	UV Photometric	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	Beaumont-Port Arthur, TX	30.036422	-94.071061	Suburban	SO2	SLAMS	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	Beaumont-Port Arthur, TX	30.036422	-94.071061	Suburban	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Precursor Emissions Impact	Neighborhood
482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	Beaumont-Port Arthur, TX	30.036422	-94.071061	Suburban	Speciated VOC (AutoGC)	PAMS	GC	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	Beaumont-Port Arthur, TX	30.036422	-94.071061	Suburban	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Neighborhood
482450009	Beaumont Downtown	1086 Vermont Avenue, Beaumont	Beaumont-Port Arthur, TX	30.036422	-94.071061	Suburban	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Neighborhood
482450011	Port Arthur West	623 Elias Street, Port Arthur	Beaumont-Port Arthur, TX	29.897516	-93.991084	Urban and Center City	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
482450011	Port Arthur West	623 Elias Street, Port Arthur	Beaumont-Port Arthur, TX	29.897516	-93.991084	Urban and Center City	SO2	SLAMS	Pulsed Fluorescence	Continuous	Source Oriented	Neighborhood
482450011	Port Arthur West	623 Elias Street, Port Arthur	Beaumont-Port Arthur, TX	29.897516	-93.991084	Urban and Center City	Solar Radiation	SPM	Photovoltaic	Continuous	Population Exposure; Source Oriented	Neighborhood
482450011	Port Arthur West	623 Elias Street, Port Arthur	Beaumont-Port Arthur, TX	29.897516	-93.991084	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Source Oriented	Neighborhood
482450011	Port Arthur West	623 Elias Street, Port Arthur	Beaumont-Port Arthur, TX	29.897516	-93.991084	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure; Source Oriented	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
482450018	Jefferson County Airport	End of 90th Street @ Jefferson County Airport, Port Arthur	Beaumont-Port Arthur, TX	29.942798	-94.00077	Suburban	Precipitation	PAMS	Rain Gauge	Continuous	General/Background	Neighborhood
482450018	Jefferson County Airport	End of 90th Street @ Jefferson County Airport, Port Arthur	Beaumont-Port Arthur, TX	29.942798	-94.00077	Suburban	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	General/Background	Neighborhood
482450018	Jefferson County Airport	End of 90th Street @ Jefferson County Airport, Port Arthur	Beaumont-Port Arthur, TX	29.942798	-94.00077	Suburban	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
482450021	Port Arthur Memorial School	2200 Jefferson Drive, Port Arthur	Beaumont-Port Arthur, TX	29.922894	-93.909018	Urban and Center City	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
482450022	Hamshire	12552 Second St, Not In A City	Beaumont-Port Arthur, TX	29.863957	-94.317802	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	General/Background; Regional Transport	Urban Scale
482450022	Hamshire	12552 Second St, Not In A City	Beaumont-Port Arthur, TX	29.863957	-94.317802	Suburban	O3	SLAMS	UV Photometric	Continuous	General/Background; Regional Transport	Urban Scale
482450022	Hamshire	12552 Second St, Not In A City	Beaumont-Port Arthur, TX	29.863957	-94.317802	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
482450022	Hamshire	12552 Second St, Not In A City	Beaumont-Port Arthur, TX	29.863957	-94.317802	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	General/Background	Neighborhood
482450022	Hamshire	12552 Second St, Not In A City	Beaumont-Port Arthur, TX	29.863957	-94.317802	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background	Neighborhood
482450022	Hamshire	12552 Second St, Not In A City	Beaumont-Port Arthur, TX	29.863957	-94.317802	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
482450101	SETRPC 40 Sabine Pass	5200 Mechanic, Not In A City	Beaumont-Port Arthur, TX	29.727931	-93.894081	Rural	O3	PAMS	UV Photometric	Continuous	Max Ozone Concentration	Neighborhood
482450102	SETRPC 43 Jefferson Co Airport	Jefferson County Airport, Port Arthur	Beaumont-Port Arthur, TX	29.942751	-94.000684	Suburban	O3	SPM	UV Photometric	Continuous	Max Precursor Emissions Impact	Middle Scale
482451035	Nederland High School	1800 N. 18th Street, Nederland	Beaumont-Port Arthur, TX	29.978926	-94.010872	Suburban	Barometric Pressure	PAMS	Barometer	Continuous	Max Precursor Emissions Impact	Neighborhood
482451035	Nederland High School	1800 N. 18th Street, Nederland	Beaumont-Port Arthur, TX	29.978926	-94.010872	Suburban	CO (High Sensitivity)	PAMS	Gas Filter Correlation	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482451035	Nederland High School	1800 N. 18th Street, Nederland	Beaumont-Port Arthur, TX	29.978926	-94.010872	Suburban	Dew Point	SPM	Derived at site	Continuous	Population Exposure	Neighborhood
482451035	Nederland High School	1800 N. 18th Street, Nederland	Beaumont-Port Arthur, TX	29.978926	-94.010872	Suburban	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482451035	Nederland High School	1800 N. 18th Street, Nederland	Beaumont-Port Arthur, TX	29.978926	-94.010872	Suburban	O3	PAMS	UV Photometric	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482451035	Nederland High School	1800 N. 18th Street, Nederland	Beaumont-Port Arthur, TX	29.978926	-94.010872	Suburban	Relative Humidity	PAMS	Humidity Sensor	Continuous	Max Precursor Emissions Impact	Neighborhood
482451035	Nederland High School	1800 N. 18th Street, Nederland	Beaumont-Port Arthur, TX	29.978926	-94.010872	Suburban	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Precursor Emissions Impact	Neighborhood
482451035	Nederland High School	1800 N. 18th Street, Nederland	Beaumont-Port Arthur, TX	29.978926	-94.010872	Suburban	Speciated VOC (AutoGC)	PAMS	GC	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
482451035	Nederland High School	1800 N. 18th Street, Nederland	Beaumont-Port Arthur, TX	29.978926	-94.010872	Suburban	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Neighborhood
482451035	Nederland High School	1800 N. 18th Street, Nederland	Beaumont-Port Arthur, TX	29.978926	-94.010872	Suburban	UV Radiation	PAMS	Photovoltaic	Continuous	Max Precursor Emissions Impact	Neighborhood
482451035	Nederland High School	1800 N. 18th Street, Nederland	Beaumont-Port Arthur, TX	29.978926	-94.010872	Suburban	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Neighborhood
482510003	Cleburne Airport	1650 Airport Drive, Cleburne	Dallas-Fort Worth-Arlington, TX	32.353595	-97.436742	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Urban Scale
482510003	Cleburne Airport	1650 Airport Drive, Cleburne	Dallas-Fort Worth-Arlington, TX	32.353595	-97.436742	Suburban	Solar Radiation	PAMS	Photovoltaic	Continuous	Highest Concentration	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
482510003	Cleburne Airport	1650 Airport Drive, Cleburne	Dallas-Fort Worth-Arlington, TX	32.353595	-97.436742	Suburban	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Highest Concentration	Neighborhood
482510003	Cleburne Airport	1650 Airport Drive, Cleburne	Dallas-Fort Worth-Arlington, TX	32.353595	-97.436742	Suburban	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Neighborhood
482511008	Johnson County Luisa	2420 Luisa Ln, Alvarado	Dallas-Fort Worth-Arlington, TX	32.469701	-97.169271	Suburban	Speciated VOC (Canister)	SPM	Canister GC-MS	24 Hours; 1/6 Days	Population Exposure	Neighborhood
482511008	Johnson County Luisa	2420 Luisa Ln, Alvarado	Dallas-Fort Worth-Arlington, TX	32.469701	-97.169271	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
482511008	Johnson County Luisa	2420 Luisa Ln, Alvarado	Dallas-Fort Worth-Arlington, TX	32.469701	-97.169271	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
482570005	Kaufman	3790 S Houston St, Kaufman	Dallas-Fort Worth-Arlington, TX	32.564968	-96.317687	Suburban	Dew Point	SPM	Derived at site	Continuous	Highest Concentration	Neighborhood
482570005	Kaufman	3790 S Houston St, Kaufman	Dallas-Fort Worth-Arlington, TX	32.564968	-96.317687	Suburban	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Population Exposure; Upwind Background	Urban Scale
482570005	Kaufman	3790 S Houston St, Kaufman	Dallas-Fort Worth-Arlington, TX	32.564968	-96.317687	Suburban	O3	PAMS	UV Photometric	Continuous	Population Exposure; Upwind Background	Urban Scale
482570005	Kaufman	3790 S Houston St, Kaufman	Dallas-Fort Worth-Arlington, TX	32.564968	-96.317687	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Upwind Background	Regional Scale
482570005	Kaufman	3790 S Houston St, Kaufman	Dallas-Fort Worth-Arlington, TX	32.564968	-96.317687	Suburban	Relative Humidity	PAMS	Humidity Sensor	Continuous	Upwind Background	Urban Scale
482570005	Kaufman	3790 S Houston St, Kaufman	Dallas-Fort Worth-Arlington, TX	32.564968	-96.317687	Suburban	SO2	SLAMS	Pulsed Fluorescence	Continuous	Population Exposure; Upwind Background	Urban Scale
482570005	Kaufman	3790 S Houston St, Kaufman	Dallas-Fort Worth-Arlington, TX	32.564968	-96.317687	Suburban	Solar Radiation	PAMS	Photovoltaic	Continuous	Upwind Background	Urban Scale
482570005	Kaufman	3790 S Houston St, Kaufman	Dallas-Fort Worth-Arlington, TX	32.564968	-96.317687	Suburban	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Upwind Background	Urban Scale
482570005	Kaufman	3790 S Houston St, Kaufman	Dallas-Fort Worth-Arlington, TX	32.564968	-96.317687	Suburban	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Upwind Background	Urban Scale
482570020	Terrell Temtex	2988 Temtex Blvd, Terrell	Dallas-Fort Worth-Arlington, TX	32.731919	-96.317911	Rural	Ambient Temperature	SPM	Derived from KTRL	24 Hours; 1/6 Days	General/Background	Neighborhood
482570020	Terrell Temtex	2988 Temtex Blvd, Terrell	Dallas-Fort Worth-Arlington, TX	32.731919	-96.317911	Rural	Barometric Pressure	SPM	Derived from KTRL	24 Hours; 1/6 Days	General/Background	Neighborhood
482570020	Terrell Temtex	2988 Temtex Blvd, Terrell	Dallas-Fort Worth-Arlington, TX	32.731919	-96.317911	Rural	TSP (Pb)	SLAMS	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure; Source Oriented	Neighborhood
482730314	National Seashore	20420 Park Road, Corpus Christi	Kingsville, TX	27.426981	-97.298692	Rural	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Regional Transport	Regional Scale
482730314	National Seashore	20420 Park Road, Corpus Christi	Kingsville, TX	27.426981	-97.298692	Rural	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Regional Transport	Regional Scale
482730314	National Seashore	20420 Park Road, Corpus Christi	Kingsville, TX	27.426981	-97.298692	Rural	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Regional Transport	Regional Scale
483091037	Waco Mazanec	4472 Mazanec Rd, Waco	Waco, TX	31.653074	-97.070698	Rural	CO	SLAMS	Gas Filter Correlation	Continuous	Upwind Background	Urban Scale
483091037	Waco Mazanec	4472 Mazanec Rd, Waco	Waco, TX	31.653074	-97.070698	Rural	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Upwind Background	Urban Scale
483091037	Waco Mazanec	4472 Mazanec Rd, Waco	Waco, TX	31.653074	-97.070698	Rural	O3	SLAMS	UV Photometric	Continuous	Upwind Background	Regional Scale
483091037	Waco Mazanec	4472 Mazanec Rd, Waco	Waco, TX	31.653074	-97.070698	Rural	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Regional Transport	Regional Scale
483091037	Waco Mazanec	4472 Mazanec Rd, Waco	Waco, TX	31.653074	-97.070698	Rural	SO2	SLAMS	Pulsed Fluorescence	Continuous	Upwind Background	Urban Scale
483091037	Waco Mazanec	4472 Mazanec Rd, Waco	Waco, TX	31.653074	-97.070698	Rural	Solar Radiation	SPM	Photovoltaic	Continuous	Regional Transport	Urban Scale
483091037	Waco Mazanec	4472 Mazanec Rd, Waco	Waco, TX	31.653074	-97.070698	Rural	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Regional Transport	Urban Scale
483091037	Waco Mazanec	4472 Mazanec Rd, Waco	Waco, TX	31.653074	-97.070698	Rural	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Regional Transport	Urban Scale

Appendix A: TCEQ SLAMS, PAMS, NATTS, NCore, and SPM Site List

AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
483230004	Eagle Pass	265 Foster Maldonado, Eagle Pass	Eagle Pass, TX	28.704607	-100.45116	Urban and Center City	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Regional Transport	Regional Scale
483230004	Eagle Pass	265 Foster Maldonado, Eagle Pass	Eagle Pass, TX	28.704607	-100.45116	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Regional Transport	Regional Scale
483230004	Eagle Pass	265 Foster Maldonado, Eagle Pass	Eagle Pass, TX	28.704607	-100.45116	Urban and Center City	Visibility	SPM	Visibility Sensor	Continuous	Regional Transport	Regional Scale
483230004	Eagle Pass	265 Foster Maldonado, Eagle Pass	Eagle Pass, TX	28.704607	-100.45116	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Regional Transport	Regional Scale
483390078	Conroe Relocated	9472A Hwy 1484, Conroe	Houston-Sugar Land-Baytown, TX	30.350302	-95.425128	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	General/Background; Population Exposure	Urban Scale
483390078	Conroe Relocated	9472A Hwy 1484, Conroe	Houston-Sugar Land-Baytown, TX	30.350302	-95.425128	Suburban	O3	PAMS/SLAMS	UV Photometric	Continuous	General/Background; Population Exposure	Urban Scale
483390078	Conroe Relocated	9472A Hwy 1484, Conroe	Houston-Sugar Land-Baytown, TX	30.350302	-95.425128	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	General/Background	Neighborhood
483390078	Conroe Relocated	9472A Hwy 1484, Conroe	Houston-Sugar Land-Baytown, TX	30.350302	-95.425128	Suburban	Solar Radiation	PAMS/SLAMS	Photovoltaic	Continuous	Highest Concentration	Neighborhood
483390078	Conroe Relocated	9472A Hwy 1484, Conroe	Houston-Sugar Land-Baytown, TX	30.350302	-95.425128	Suburban	Temperature (Outdoor)	PAMS/SLAMS	Aspirated Thermister	Continuous	Highest Concentration	Neighborhood
483390078	Conroe Relocated	9472A Hwy 1484, Conroe	Houston-Sugar Land-Baytown, TX	30.350302	-95.425128	Suburban	Wind	PAMS/SLAMS	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Neighborhood
483491051	Corsicana Airport	Corsicana Airport, Corsicana	Corsicana, TX	32.031934	-96.399141	Rural	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Source Oriented	Neighborhood
483550025	Corpus Christi West	Corpus Christi State School (Airport Rd), 902 AIRPORT BLVD, Corpus Christi	Corpus Christi, TX	27.76534	-97.434262	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
483550025	Corpus Christi West	Corpus Christi State School (Airport Rd), 902 AIRPORT BLVD, Corpus Christi	Corpus Christi, TX	27.76534	-97.434262	Suburban	SO2	SLAMS	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
483550025	Corpus Christi West	Corpus Christi State School (Airport Rd), 902 AIRPORT BLVD, Corpus Christi	Corpus Christi, TX	27.76534	-97.434262	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	Population Exposure	Neighborhood
483550025	Corpus Christi West	Corpus Christi State School (Airport Rd), 902 AIRPORT BLVD, Corpus Christi	Corpus Christi, TX	27.76534	-97.434262	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
483550025	Corpus Christi West	Corpus Christi State School (Airport Rd), 902 AIRPORT BLVD, Corpus Christi	Corpus Christi, TX	27.76534	-97.434262	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
483550026	Corpus Christi Tuloso	9860 La Branch, Corpus Christi	Corpus Christi, TX	27.832409	-97.55538	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
483550026	Corpus Christi Tuloso	9860 La Branch, Corpus Christi	Corpus Christi, TX	27.832409	-97.55538	Suburban	SO2	SLAMS	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood
483550026	Corpus Christi Tuloso	9860 La Branch, Corpus Christi	Corpus Christi, TX	27.832409	-97.55538	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Highest Concentration	Neighborhood
483550026	Corpus Christi Tuloso	9860 La Branch, Corpus Christi	Corpus Christi, TX	27.832409	-97.55538	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Neighborhood
483550032	Corpus Christi Huisache	3810 Huisache Street, Corpus Christi	Corpus Christi, TX	27.804505	-97.431582	Urban and Center City	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Population Exposure	Neighborhood
483550032	Corpus Christi Huisache	3810 Huisache Street, Corpus Christi	Corpus Christi, TX	27.804505	-97.431582	Urban and Center City	PM2.5 (FRM)	SLAMS OA Collocated/SLA MS/SPM	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
483550032	Corpus Christi Huisache	3810 Huisache Street, Corpus Christi	Corpus Christi, TX	27.804505	-97.431582	Urban and Center City	SO2	SLAMS	Pulsed Fluorescence	Continuous	Highest Concentration; Population Exposure	Neighborhood
483550032	Corpus Christi Huisache	3810 Huisache Street, Corpus Christi	Corpus Christi, TX	27.804505	-97.431582	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Middle Scale
483550032	Corpus Christi Huisache	3810 Huisache Street, Corpus Christi	Corpus Christi, TX	27.804505	-97.431582	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Middle Scale
483550034	Dona Park	5707 Up River Rd, Corpus Christi	Corpus Christi, TX	27.811817	-97.465703	Urban and Center City	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
483550034	Dona Park	5707 Up River Rd, Corpus Christi	Corpus Christi, TX	27.811817	-97.465703	Urban and Center City	PM10 (FRM)	QA Collocated/SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
483550034	Dona Park	5707 Up River Rd, Corpus Christi	Corpus Christi, TX	27.811817	-97.465703	Urban and Center City	PM2.5 (Speciation)	CSN Supplemental	Carbons Elements Ions Sequential FRM Gravimetric Sequential Non-FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	
483550034	Dona Park	5707 Up River Rd, Corpus Christi	Corpus Christi, TX	27.811817	-97.465703	Urban and Center City	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Regional Transport	Urban Scale
483550034	Dona Park	5707 Up River Rd, Corpus Christi	Corpus Christi, TX	27.811817	-97.465703	Urban and Center City	PM2.5 (FRM) (Speciation)	SLAMS/CSN Supplemental	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
483550034	Dona Park	5707 Up River Rd, Corpus Christi	Corpus Christi, TX	27.811817	-97.465703	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Highest Concentration	Regional Scale
483550034	Dona Park	5707 Up River Rd, Corpus Christi	Corpus Christi, TX	27.811817	-97.465703	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Regional Scale
483611001	West Orange	2700 Austin Ave, West Orange	Beaumont-Port Arthur, TX	30.085263	-93.761341	Urban and Center City	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure	Neighborhood
483611001	West Orange	2700 Austin Ave, West Orange	Beaumont-Port Arthur, TX	30.085263	-93.761341	Urban and Center City	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
483611001	West Orange	2700 Austin Ave, West Orange	Beaumont-Port Arthur, TX	30.085263	-93.761341	Urban and Center City	Solar Radiation	SPM	Photovoltaic	Continuous	Source Oriented	Neighborhood
483611001	West Orange	2700 Austin Ave, West Orange	Beaumont-Port Arthur, TX	30.085263	-93.761341	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Source Oriented	Neighborhood
483611001	West Orange	2700 Austin Ave, West Orange	Beaumont-Port Arthur, TX	30.085263	-93.761341	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Source Oriented	Neighborhood
483611100	SETRPC 42 Mauriceville	Intersection of TX Hwys 62 & 12, Port Arthur	Beaumont-Port Arthur, TX	30.194558	-93.867237	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Upwind Background	Regional Scale
483670081	Parker County	3033 New Authon Rd, Weatherford	Dallas-Fort Worth-Arlington, TX	32.868773	-97.905931	Rural	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Urban Scale
483670081	Parker County	3033 New Authon Rd, Weatherford	Dallas-Fort Worth-Arlington, TX	32.868773	-97.905931	Rural	Solar Radiation	SPM	Photovoltaic	Continuous	Source Oriented	Neighborhood
483670081	Parker County	3033 New Authon Rd, Weatherford	Dallas-Fort Worth-Arlington, TX	32.868773	-97.905931	Rural	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Source Oriented	Neighborhood
483670081	Parker County	3033 New Authon Rd, Weatherford	Dallas-Fort Worth-Arlington, TX	32.868773	-97.905931	Rural	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Source Oriented	Neighborhood
483750024	Amarillo SH 136	7100 State Highway 136, Amarillo	Amarillo, TX	35.280273	-101.71564	Rural	Ambient Temperature	SPM	Derived from KAMA	24 Hours; 1/6 Days	General/Background	Middle Scale
483750024	Amarillo SH 136	7100 State Highway 136, Amarillo	Amarillo, TX	35.280273	-101.71564	Rural	Barometric Pressure	SPM	Derived from KAMA	24 Hours; 1/6 Days	General/Background	Middle Scale
483750024	Amarillo SH 136	7100 State Highway 136, Amarillo	Amarillo, TX	35.280273	-101.71564	Rural	TSP (Pb)	SLAMS	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure; Source Oriented	Middle Scale
483750320	Amarillo A&M	6500 Amarillo Blvd West, Amarillo	Amarillo, TX	35.201592	-101.90927	Urban and Center City	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Urban Scale
483751025	Amarillo 24th Avenue	4205 NE 24th Avenue, Amarillo	Amarillo, TX	35.236736	-101.78741	Suburban	SO2	SLAMS/Spm	Pulsed Fluorescence	Continuous	Population Exposure	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
483751025	Amarillo 24th Avenue	4205 NE 24th Avenue, Amarillo	Amarillo, TX	35.236736	-101.78741	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background	Neighborhood
483751025	Amarillo 24th Avenue	4205 NE 24th Avenue, Amarillo	Amarillo, TX	35.236736	-101.78741	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
483970001	Rockwall Heath	100 E Heath St, Rockwall	Dallas-Fort Worth-Arlington, TX	32.936523	-96.459211	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
483970001	Rockwall Heath	100 E Heath St, Rockwall	Dallas-Fort Worth-Arlington, TX	32.936523	-96.459211	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	Population Exposure	Neighborhood
483970001	Rockwall Heath	100 E Heath St, Rockwall	Dallas-Fort Worth-Arlington, TX	32.936523	-96.459211	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
483970001	Rockwall Heath	100 E Heath St, Rockwall	Dallas-Fort Worth-Arlington, TX	32.936523	-96.459211	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	Tyler, TX	32.344008	-95.415752	Rural	NO/NO2/NOx	SPM	Chemiluminescence	Continuous	General/Background	Urban Scale
484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	Tyler, TX	32.344008	-95.415752	Rural	O3	SLAMS	UV Photometric	Continuous	General/Background	Urban Scale
484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	Tyler, TX	32.344008	-95.415752	Rural	Precipitation	SPM	Rain Gauge	Continuous	General/Background	Neighborhood
484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	Tyler, TX	32.344008	-95.415752	Rural	Solar Radiation	SPM	Photovoltaic	Continuous	General/Background	Neighborhood
484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	Tyler, TX	32.344008	-95.415752	Rural	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background	Neighborhood
484230007	Tyler Airport Relocated	14790 County Road 1145, Tyler	Tyler, TX	32.344008	-95.415752	Rural	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
484390075	Eagle Mountain Lake	14290 Morris Dido Newark Rd, Eagle Mountain	Dallas-Fort Worth-Arlington, TX	32.987891	-97.477175	Rural	O3	SLAMS	UV Photometric	Continuous	Max Ozone Concentration	Neighborhood
484390075	Eagle Mountain Lake	14290 Morris Dido Newark Rd, Eagle Mountain	Dallas-Fort Worth-Arlington, TX	32.987891	-97.477175	Rural	Solar Radiation	SPM	Photovoltaic	Continuous	Highest Concentration	Middle Scale
484390075	Eagle Mountain Lake	14290 Morris Dido Newark Rd, Eagle Mountain	Dallas-Fort Worth-Arlington, TX	32.987891	-97.477175	Rural	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Highest Concentration	Middle Scale
484390075	Eagle Mountain Lake	14290 Morris Dido Newark Rd, Eagle Mountain	Dallas-Fort Worth-Arlington, TX	32.987891	-97.477175	Rural	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Middle Scale
484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.805818	-97.356568	Urban and Center City	Carbonyl	SPM	DNPH Silica HPLC	24 Hours; 1/6 Days	Max Precursor Emissions Impact	Neighborhood
484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.805818	-97.356568	Urban and Center City	Dew Point	SPM	Derived at site	Continuous	Population Exposure	Middle Scale
484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.805818	-97.356568	Urban and Center City	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.805818	-97.356568	Urban and Center City	O3	PAMS/SLAMS	UV Photometric	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood
484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.805818	-97.356568	Urban and Center City	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Population Exposure	Neighborhood
484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.805818	-97.356568	Urban and Center City	Relative Humidity	PAMS	Humidity Sensor	Continuous	Max Precursor Emissions Impact	Neighborhood
484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.805818	-97.356568	Urban and Center City	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Precursor Emissions Impact	Neighborhood
484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.805818	-97.356568	Urban and Center City	Speciated VOC (AutoGC)	PAMS	GC	Continuous	Max Precursor Emissions Impact; Population Exposure	Neighborhood

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AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.805818	-97.356568	Urban and Center City	Speciated VOC (Canister)	PAMS	Canister GC-MS	24 Hours; 1/6 Days	Max Precursor Emissions Impact; Population Exposure	Neighborhood
484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.805818	-97.356568	Urban and Center City	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Neighborhood
484391002	Fort Worth Northwest	3317 Ross Ave, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.805818	-97.356568	Urban and Center City	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Neighborhood
484391006	Haws Athletic Center	600 1/2 Congress St, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.759143	-97.342334	Urban and Center City	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Highest Concentration; Population Exposure	Neighborhood
484391006	Haws Athletic Center	600 1/2 Congress St, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.759143	-97.342334	Urban and Center City	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Highest Concentration	Neighborhood
484391053	Fort Worth California Parkway North	1198 California Parkway North, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.664722	-97.338056	Urban and Center City	CO	Near Road/SLAMS	Gas Filter Correlation	Continuous	Max Precursor Emissions Impact	Microscale
484391053	Fort Worth California Parkway North	1198 California Parkway North, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.664722	-97.338056	Urban and Center City	NO/NO2/NOx	Near Road/SLAMS	Chemiluminescence	Continuous	Max Precursor Emissions Impact	Microscale
484391053	Fort Worth California Parkway North	1198 California Parkway North, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.664722	-97.338056	Urban and Center City	PM2.5 (FRM)	Near Road/SLAMS	Sequential FRM Gravimetric	24 Hours; 1/3 Days	Max Precursor Emissions Impact	Microscale
484391053	Fort Worth California Parkway North	1198 California Parkway North, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.664722	-97.338056	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Microscale
484391053	Fort Worth California Parkway North	1198 California Parkway North, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.664722	-97.338056	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Microscale
484392003	Keller	FAA Site off Alta Vista Road, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.922474	-97.282088	Suburban	O3	SLAMS	UV Photometric	Continuous	Max Ozone Concentration; Population Exposure	Neighborhood
484392003	Keller	FAA Site off Alta Vista Road, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.922474	-97.282088	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	General/Background	Urban Scale
484392003	Keller	FAA Site off Alta Vista Road, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.922474	-97.282088	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background	Urban Scale
484392003	Keller	FAA Site off Alta Vista Road, Fort Worth	Dallas-Fort Worth-Arlington, TX	32.922474	-97.282088	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Urban Scale
484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Dallas-Fort Worth-Arlington, TX	32.98426	-97.063721	Suburban	Barometric Pressure	PAMS	Barometer	Continuous	Max Ozone Concentration	Neighborhood
484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Dallas-Fort Worth-Arlington, TX	32.98426	-97.063721	Suburban	Dew Point	SPM	Derived at site	Continuous	Highest Concentration; Max Ozone Concentration	Neighborhood
484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Dallas-Fort Worth-Arlington, TX	32.98426	-97.063721	Suburban	NO/NO2/NOx	PAMS	Chemiluminescence	Continuous	Max Ozone Concentration; Population Exposure	Neighborhood
484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Dallas-Fort Worth-Arlington, TX	32.98426	-97.063721	Suburban	O3	PAMS	UV Photometric	Continuous	Max Ozone Concentration; Population Exposure	Neighborhood
484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Dallas-Fort Worth-Arlington, TX	32.98426	-97.063721	Suburban	Relative Humidity	PAMS	Humidity Sensor	Continuous	Max Ozone Concentration	Neighborhood
484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Dallas-Fort Worth-Arlington, TX	32.98426	-97.063721	Suburban	Solar Radiation	PAMS	Photovoltaic	Continuous	Max Ozone Concentration	Neighborhood
484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Dallas-Fort Worth-Arlington, TX	32.98426	-97.063721	Suburban	Speciated VOC (Canister)	PAMS	Canister GC-MS	24 Hours; 1/6 Days	Max Ozone Concentration; Population Exposure	Neighborhood
484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Dallas-Fort Worth-Arlington, TX	32.98426	-97.063721	Suburban	Temperature (Outdoor)	PAMS	Aspirated Thermister	Continuous	Max Ozone Concentration	Neighborhood

Appendix A: TCEQ SLAMS, PAMS, NATTS, NCore, and SPM Site List

AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
484393009	Grapevine Fairway	4100 Fairway Dr, Grapevine	Dallas-Fort Worth-Arlington, TX	32.98426	-97.063721	Suburban	Wind	PAMS	Potentiometer Cup Anemometer	Continuous	Max Ozone Concentration	Neighborhood
484393010	Stage Coach	8900 West Freeway, White Settlement	Dallas-Fort Worth-Arlington, TX	32.7392	-97.47033	Suburban	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
484393011	Arlington Municipal Airport	5504 South Collins Street, Arlington	Dallas-Fort Worth-Arlington, TX	32.656357	-97.088585	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure	Neighborhood
484393011	Arlington Municipal Airport	5504 South Collins Street, Arlington	Dallas-Fort Worth-Arlington, TX	32.656357	-97.088585	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
484393011	Arlington Municipal Airport	5504 South Collins Street, Arlington	Dallas-Fort Worth-Arlington, TX	32.656357	-97.088585	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Highest Concentration	Neighborhood
484393011	Arlington Municipal Airport	5504 South Collins Street, Arlington	Dallas-Fort Worth-Arlington, TX	32.656357	-97.088585	Suburban	Solar Radiation	SPM	Photovoltaic	Continuous	Highest Concentration	Neighborhood
484393011	Arlington Municipal Airport	5504 South Collins Street, Arlington	Dallas-Fort Worth-Arlington, TX	32.656357	-97.088585	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Highest Concentration	Neighborhood
484393011	Arlington Municipal Airport	5504 South Collins Street, Arlington	Dallas-Fort Worth-Arlington, TX	32.656357	-97.088585	Suburban	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Neighborhood
484530014	Austin Northwest	3724 North Hills Dr, Austin	Austin-Round Rock, TX	30.354436	-97.760255	Suburban	NO/NO2/NOx	SLAMS	Chemiluminescence	Continuous	Population Exposure	Urban Scale
484530014	Austin Northwest	3724 North Hills Dr, Austin	Austin-Round Rock, TX	30.354436	-97.760255	Suburban	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
484530014	Austin Northwest	3724 North Hills Dr, Austin	Austin-Round Rock, TX	30.354436	-97.760255	Suburban	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
484530014	Austin Northwest	3724 North Hills Dr, Austin	Austin-Round Rock, TX	30.354436	-97.760255	Suburban	SO2	SLAMS	Pulsed Fluorescence	Continuous	Population Exposure	Urban Scale
484530014	Austin Northwest	3724 North Hills Dr, Austin	Austin-Round Rock, TX	30.354436	-97.760255	Suburban	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	General/Background	Neighborhood
484530014	Austin Northwest	3724 North Hills Dr, Austin	Austin-Round Rock, TX	30.354436	-97.760255	Suburban	Wind (3m)	SPM	Potentiometer Cup Anemometer	Continuous	General/Background	Neighborhood
484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	Austin-Round Rock, TX	30.483168	-97.872301	Rural	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	Austin-Round Rock, TX	30.483168	-97.872301	Rural	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	Austin-Round Rock, TX	30.483168	-97.872301	Rural	PM2.5 (FRM)	SLAMS/SPM	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	Austin-Round Rock, TX	30.483168	-97.872301	Rural	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	Austin-Round Rock, TX	30.483168	-97.872301	Rural	Solar Radiation	SPM	Photovoltaic	Continuous	Population Exposure	Urban Scale
484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	Austin-Round Rock, TX	30.483168	-97.872301	Rural	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Urban Scale
484530020	Austin Audubon Society	12200 Lime Creek Rd, Leander	Austin-Round Rock, TX	30.483168	-97.872301	Rural	Wind (3m)	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Urban Scale
484530021	Austin Webberville Rd	2600B Webberville Rd, Austin	Austin-Round Rock, TX	30.263208	-97.712883	Urban and Center City	PM10 (FRM)	SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
484530021	Austin Webberville Rd	2600B Webberville Rd, Austin	Austin-Round Rock, TX	30.263208	-97.712883	Urban and Center City	PM2.5 (FRM)	SLAMS	Sequential FRM Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
484530021	Austin Webberville Rd	2600B Webberville Rd, Austin	Austin-Round Rock, TX	30.263208	-97.712883	Urban and Center City	PM2.5 (TEOM)	SPM	TEOM Gravimetric	Continuous	Population Exposure	Neighborhood
484530021	Austin Webberville Rd	2600B Webberville Rd, Austin	Austin-Round Rock, TX	30.263208	-97.712883	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
484530021	Austin Webberville Rd	2600B Webberville Rd, Austin	Austin-Round Rock, TX	30.263208	-97.712883	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
484531068	Austin North Interstate 35	8912 N IH 35 SVRD SB, Austin	Austin-Round Rock, TX	30.35386	-97.69166	Urban and Center City	NO/NO2/NOx	Near Road/SLAMS	Chemiluminescence	Continuous	Max Precursor Emissions Impact	Microscale
484531068	Austin North Interstate 35	8912 N IH 35 SVRD SB, Austin	Austin-Round Rock, TX	30.35386	-97.69166	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Max Precursor Emissions Impact	Microscale

Appendix A: TCEQ SLAMS, PAMS, NATTS, NCore, and SPM Site List

AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale
484531068	Austin North Interstate 35	8912 N IH 35 SVRD SB, Austin	Austin-Round Rock, TX	30.35386	-97.69166	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Max Precursor Emissions Impact	Microscale
484690003	Victoria	106 Mockingbird Lane, Victoria	Victoria, TX	28.83617	-97.00553	Urban and Center City	O3	SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
484690003	Victoria	106 Mockingbird Lane, Victoria	Victoria, TX	28.83617	-97.00553	Urban and Center City	Solar Radiation	SPM	Photovoltaic	Continuous	Highest Concentration	Neighborhood
484690003	Victoria	106 Mockingbird Lane, Victoria	Victoria, TX	28.83617	-97.00553	Urban and Center City	Temperature (Outdoor)	SPM	Aspirated Thermister	Continuous	Highest Concentration	Neighborhood
484690003	Victoria	106 Mockingbird Lane, Victoria	Victoria, TX	28.83617	-97.00553	Urban and Center City	Wind	SPM	Potentiometer Cup Anemometer	Continuous	Highest Concentration	Neighborhood
484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	Laredo, TX	27.517449	-99.515219	Suburban	Barometric Pressure	SPM	Derived from KLRD	24 Hours; 1/6 Days	General/Background	Neighborhood
484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	Laredo, TX	27.517449	-99.515219	Suburban	CO	Border Grant/Spm	Gas Filter Correlation	Continuous	Population Exposure	Neighborhood
484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	Laredo, TX	27.517449	-99.515219	Suburban	O3	Border Grant/SLAMS	UV Photometric	Continuous	Population Exposure	Neighborhood
484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	Laredo, TX	27.517449	-99.515219	Suburban	PM10 (FRM)	Border Grant/SLAMS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	Laredo, TX	27.517449	-99.515219	Suburban	PM10 (FRM)	Border Grant/QA Collocated/SLA MS	HiVol Gravimetric	24 Hours; 1/6 Days	Population Exposure	Neighborhood
484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	Laredo, TX	27.517449	-99.515219	Suburban	Temperature (Outdoor)	Border Grant	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	Laredo, TX	27.517449	-99.515219	Suburban	TSP (Pb)	Border Grant/Spm	HiVol ICP-MS	24 Hours; 1/6 Days	Population Exposure	Neighborhood
484790016	Laredo Vidaurri	2020 Vidaurri Ave, Laredo	Laredo, TX	27.517449	-99.515219	Suburban	Wind	Border Grant/Spm	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
484790017	Laredo Bridge	700 Zaragosa St, Laredo	Laredo, TX	27.501826	-99.502984	Urban and Center City	CO	Border Grant/Spm	Gas Filter Correlation	Continuous	Population Exposure; Source Oriented	Microscale
484790017	Laredo Bridge	700 Zaragosa St, Laredo	Laredo, TX	27.501826	-99.502984	Urban and Center City	PM10 (FRM)	Border Grant/Spm	HiVol Gravimetric	24 Hours; 1/6 Days	Highest Concentration	Microscale
484790017	Laredo Bridge	700 Zaragosa St, Laredo	Laredo, TX	27.501826	-99.502984	Urban and Center City	Speciated VOC (Canister)	Border Grant/Spm	Canister GC-MS	24 Hours; 1/6 Days	Highest Concentration	Neighborhood
484790017	Laredo Bridge	700 Zaragosa St, Laredo	Laredo, TX	27.501826	-99.502984	Urban and Center City	Temperature (Outdoor)	Border Grant/Spm	Aspirated Thermister	Continuous	Population Exposure	Neighborhood
484790017	Laredo Bridge	700 Zaragosa St, Laredo	Laredo, TX	27.501826	-99.502984	Urban and Center City	Wind	Border Grant/Spm	Potentiometer Cup Anemometer	Continuous	Population Exposure	Neighborhood
484790313	World Trade Bridge	Mines Road 11601 FM 1472, Laredo	Laredo, TX	27.599444	-99.533333	Suburban	PM2.5 (TEOM)	Border Grant/Spm	TEOM Gravimetric	Continuous	Source Oriented	Microscale

Appendix A: TCEQ SLAMS, PAMS, NATTS, NCore, and SPM Site List

AQS Site ID	Site Name	Address/Location	MSA / CBSA	Latitude	Longitude	Location Setting	Sampler Type	AQS Network & Monitor Type	Sampling/Analysis Methods	Operating Schedule	Monitoring Objective	Spatial Scale	
LEGEND													
*		PAMS monitoring beyond minimum requirements of 40 CFR Part 58, Appendix D						NWS site KHOU		National Weather Service site William P. Hobby Airport			
24 1-Hour Avg; Daily		24 1-Hour Average, Daily						NWS site KLRD		National Weather Service site Laredo International Airport			
1 24-Hours, Daily		1 24-Hour Sample, Daily						NWS site KTRL		National Weather Service site Terrell Municipal Airport TX			
1 24-Hour; 1/3 Days		1 24-Hour Sample, Once every Third Day						O3		ozone			
1 24-Hours; 1/6 Days		1 24-Hour Sample, Once every Sixth Day						PAMS		Photochemical Assessment Monitoring Stations			
1 24-Hour Avg, 1/6 Days		1 24-Hour Average, Once every Sixth Day						PM10		particulate matter of 10 microns or less			
8 3-Hours; 1/3 Days (Jun. - Aug.)		8 3-Hour Samples, Once every Third Day from June through August						PM2.5		particulate matter of 2.5 microns or less			
8 3-Hours; 1/3 Days (Jul. - Sept.)		8 3-Hour Samples, Once every Third Day from July through September						QAPP		quality assurance project plan			
AMNP		Annual Monitoring Network Plan						QC Collocated		quality control collocated monitor			
AQS		Air Quality System						RA-40		Regional Administrator required monitoring, 40 CFR Part 58, Appendix D, 4.3.4			
CBSA		core based statistical area						SETRPC		Southeast Texas Regional Planning Commission			
CO		carbon monoxide						SLAMS		State and Local Air Monitoring Stations			
CSN		Chemical Speciation Network						SO2		sulfur dioxide			
DNPH Silica/HPLC		dinitrophenylhydrazine coated silica cartridges by high performance liquid chromatography						SPM		special purpose monitor			
FRM		federal reference method						SVOC		semi-volatile organic compounds			
GC		gas chromatograph						TBD		to be determined			
GC/MS		gas chromatography/mass spectrometry						TCEQ		Texas Commission on Environmental Quality			
HiVol		high volume						TEOM		tapered element oscillating microbalance			
ICP-AES		inductively coupled plasma-atomic emission spectroscopy						TNMOC		total nonmethane organic carbon			
MSA		metropolitan statistical area						TSP		total suspended particulate			
NA		not applicable						UV		ultraviolet			
NAAQS		National Ambient Air Quality Standards						VOC		volatile organic compounds			
NATTS		National Air Toxics Trends Stations						XAD		divinylbenzene/styrene copolymer			
NCore		National Core											
NO/NO2/NOx		nitrogen oxides											
NOy		total reactive nitrogen											
NWS site KAMA		National Weather Service site Rick Husband Amarillo International Airport											
NWS site KBRO		National Weather Service site Brownsville/South Padre Island International Airport											
NWS site KELP		National Weather Service site El Paso International Airport											

Appendix B

Metropolitan Statistical Areas, 2014 United States Census Bureau Population Estimates, and Minimum Monitoring Requirements

Texas Commission on Environmental Quality
2015 Annual Monitoring Network Plan

Appendix B: Metropolitan Statistical Areas, 2014 United States Census Bureau Population Estimates, and Minimum Monitoring Requirements

Texas Metropolitan Statistical Areas	Population*	NO/NO ₂ /NO _x /NO _y		SO ₂		Pb		O ₃		CO		PM ₁₀		PM _{2.5}		VOC	
		Required	Current [†]	Required	Current [†]	Required	Current [†]	Required	Current [†]	Required	Current [†]	Required	Current [†]	Required	Current [†]	Required	Current [†]
Dallas-Fort Worth-Arlington	6,954,330	8	13	3	4	3	8	6	19	3	2	4 - 8	4	8	15	2	8
Houston-The Woodlands-Sugar Land	6,490,180	8	19	3	8	1	1	6	20	3	3	4 - 8	8	9	18	4	5
San Antonio-New Braunfels	2,328,652	2	3	1	1	0	0	2	3	0	0	2 - 4	2	3	8	0	0
Austin-Round Rock	1,943,299	2	2	1	1	0	0	2	2	0	0	2 - 4	2	3	5	0	0
El Paso	836,698	3	4	1	3	1	4	4	6	1	4	2 - 4	5	6	7	1	1
McAllen-Edinburg-Mission	831,073	0	0	0	0	0	0	1	1	0	0	2 - 4	1	3	2	0	0
Corpus Christi	448,108	0	0	0	3	0	0	2	2	0	0	0 - 1	1	3	4	0	0
Killeen-Temple	424,858	0	0	0	0	0	0	2	2	0	0	0 - 1	0	0	0	0	0
Brownsville-Harlingen	420,392	0	0	0	0	0	1	1	2	0	1	0 - 1	0	2	2	0	0
Beaumont-Port Arthur	405,427	3	4	1	3	0	0	2	7	1	1	0 - 1	0	0	4	2	2
Lubbock	305,644	0	0	0	0	0	0	0	0	0	0	0 - 1	0	0	1	0	0
Laredo	266,673	0	0	0	0	0	1	1	1	0	2	0 - 1	2	0	2	0	1
Waco	260,430	0	1	0	1	0	0	1	1	0	1	0 - 1	0	0	1	0	0
Amarillo	259,885	0	0	0	1	1	1	0	0	0	0	0 - 1	0	0	1	0	0
College Station-Bryan	242,905	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tyler	218,842	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0
Longview	217,481	0	2	1	1	0	0	1	1	0	0	0	0	0	0	0	0
Abilene	168,592	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Midland	161,290	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Odessa	153,904	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Wichita Falls	151,536	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Texarkana	149,235	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0
Sherman-Denison	123,534	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
San Angelo	118,182	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Victoria	98,630	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0

*United States Census Bureau population estimates as of July 1, 2014

NO/NO₂/NO_x/NO_y - oxides of nitrogen and total reactive nitrogen compounds

CO - carbon monoxide

SO₂ - sulfur dioxide

Pb - lead

O₃ - ozone

PM₁₀ - particulate matter of 10 micrometers or less

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

VOC - volatile organic compound

Only monitors included in Appendix A are included in this table. Required monitor counts only include monitors that are required to be deployed by January 1, 2016.

Required and current monitor counts include NO_y, high sensitivity SO₂, and high sensitivity CO.

Current monitor counts for Pb and PM₁₀ include speciation and collocated QA monitors.

Current monitor counts for PM_{2.5} include collocated QA, federal reference method, speciation, and continuous monitors.

Current monitor counts for VOC include automated gas chromatograph, canister, and collocated QA monitors.

[†]Monitors may fulfill multiple monitoring requirements, but are only counted once.

PM_{10-2.5} NCore requirements are not included in particulate matter counts

Planned deployment of required monitors is discussed in the applicable section of the AMNP document.

Appendix C

Network Evaluation Summary Table

Texas Commission on Environmental Quality
Texas Five-Year Ambient Monitoring Network Assessment

Appendix C: Summary of Required NO₂ and NO_y Monitor Requirements

Core Based Statistical Areas	2014 Population Estimates ¹	Required NO ₂ Area-Wide Monitors	Required NO ₂ RA-40 Monitors	Required NO ₂ Near-Road Monitors	Required NO ₂ PAMS Monitors	Required High Sensitivity NO ₂ NCore Monitors	Required High Sensitivity NO _y PAMS Monitors	Total Required Monitors ³	Total Current Monitors
Dallas-Fort Worth-Arlington	6,954,330	Dallas Hinton ²	Arlington Municipal Airport	Dallas LBJ Freeway and Fort Worth California Parkway	Dallas Hinton ² and Fort Worth Northwest	Dallas Hinton	Denton Airport South	8	13
Houston-The Woodlands-Sugar Land	6,490,180	Clinton ²	Clinton ²	Houston Southwest Freeway and Houston North Loop	Houston Deer Park #2 and Clinton ²	Houston Deer Park #2	Houston Aldine	8	19
San Antonio-New Braunfels	2,328,652	San Antonio Northwest	None	San Antonio Interstate 35	None	None	None	2	3
Austin-Round Rock	1,943,299	Austin Northwest	None	Austin North Interstate 35	None	None	None	2	2
El Paso	836,698	None	Ascarate Park SE	None	El Paso Chamizal	El Paso Chamizal	None	3	4
McAllen-Edinburg-Mission	831,073	None	None	None	None	None	None	0	0
Corpus Christi	448,108	None	None	None	None	None	None	0	0
Killeen-Temple	424,858	None	None	None	None	None	None	0	0
Brownsville-Harlingen	420,392	None	None	None	None	None	None	0	0
Beaumont-Port Arthur	405,427	None	Nederland High School ²	None	Nederland High School ² and Beaumont Downtown	None	None	3	4
Lubbock	305,644	None	None	None	None	None	None	0	0
Laredo	266,673	None	None	None	None	None	None	0	0
Waco	260,430	None	None	None	None	None	None	0	1
Amarillo	259,885	None	None	None	None	None	None	0	0
College Station-Bryan	242,905	None	None	None	None	None	None	0	0
Tyler	218,842	None	None	None	None	None	None	0	1
Longview	217,481	None	None	None	None	None	None	0	2
Abilene	168,592	None	None	None	None	None	None	0	0
Midland	161,290	None	None	None	None	None	None	0	0
Odessa	153,904	None	None	None	None	None	None	0	0
Wichita Falls	151,536	None	None	None	None	None	None	0	0
Texarkana	149,235	None	None	None	None	None	None	0	0
Sherman-Denison	123,534	None	None	None	None	None	None	0	0
San Angelo	118,182	None	None	None	None	None	None	0	0
Victoria	98,630	None	None	None	None	None	None	0	0

¹United States Census Bureau population estimates as of July 1, 2014

²monitors fulfill multiple monitoring requirements

³Total required monitors is a count of individual requirements for area-wide, RA-40, near-road, PAMS, and high sensitivity monitors. Deployed monitors can fulfill multiple monitoring requirements.

PAMS - Photochemical Assessment Monitoring Stations

NCore - National Core Multipollutant Monitoring Stations

RA-40 - Regional Administrator 40

NO₂ - nitrogen dioxide

NO_y - total reactive nitrogen compounds

Appendix D

Dallas and Houston Near-Road Site Assessment

Texas Commission on Environmental Quality
2015 Annual Monitoring Network Plan

Appendix D: Dallas and Houston Near-Road Site Assessment

Table 1: Dallas Near-Road Site Assessment

AADT	FE-AADT	Target Roadway	Latitude ²	Longitude ²	Road Segment	Space ¹	Power Available	Level Terrain	Highway at Grade	Viable	Comments
1	4	US 75	32.86026	-96.77012	Between Caruth Haven and Southwestern Boulevard	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures and the highway is below grade.
2	7	US 75	32.86877	-96.77009	Between West Northwest Highway and Park Lane	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures and the highway is below grade.
3	6	US 75	32.80338	-96.79313	Between North Hall Street and Lemmon Avenue	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures and the highway is below grade.
4	1	I-635	32.92524	-96.80181	Between Preston Road and Hillcrest Road	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures and the highway is below grade.
5	2	Dallas North Tollway	32.92293	-96.81929	Between I-635 and Harvest Hill Road	No	Yes	No	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial and residential structures and the highway is below grade.
6	3	I-635	32.92592	-96.81140	Between Dallas North Tollway and Montford Drive	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures and the highway is below grade.
7	12	US 75	32.92921	-96.75930	Between West Spring Valley Road and I-635	No	Yes	No	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, the terrain is unlevel, and the highway is below grade.
8	14	US 75	32.91961	-96.76591	Between I-635 and Churchill Way	Yes	Yes	Yes	No	No	This area is not viable because the highway is below grade and the TCEQ was unable to come to an agreement with the property owner.
9	10	I-35E	32.78993	-96.81334	Between Hi Line Drive and Continental Avenue	No	No	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, power is unavailable, and the highway is above grade.
10	11	US 75	32.94295	-96.74202	Between Main Street and West Spring Valley Road	No	Yes	Yes	Yes	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures.
11	15	US 75	32.96652	-96.72175	Between East Arapaho Road and North Collins Boulevard	No	Yes	Yes	Yes	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures.
12	19	US 75	32.99207	-96.70991	Between Gatalyn Parkway and West Renner Road	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ was unable to contact the property owner.
13	5	I-635	32.92166	-96.84737	Between Rosser Road and Midway Road	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to residential structures, the highway is below grade, and there is current construction.
14	9	I-635	32.90908	-96.89041	Between Denton Drive and Josey Lane	Yes	Yes	Yes	No	No	This area is not viable because the highway is above grade and there is current construction.

Appendix D: Dallas and Houston Near-Road Site Assessment

Table 1: Dallas Near-Road Site Assessment (continued)

AADT	FE-AADT	Target Roadway	Latitude ²	Longitude ²	Road Segment	Space ¹	Power Available	Level Terrain	Highway at Grade	Viable	Comments
15	8	I-635	32.92370	-96.75750	Between North Central Expressway and T I Boulevard	Yes	Yes	Yes	Yes	Yes	Location of the Phase I near-road site.
16	16	I-35E	32.80434	-96.83568	Between Wycliff Avenue and Medical District Drive	No	No	Yes	Yes	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures and power is unavailable.
17	17	SH 356	32.80796	-96.86879	Between West Mockingbird Lane and Irving Boulevard	No	Yes	Yes	Yes	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures.
18	18	SH 356	32.81103	-96.86303	Between Iron Ridge Street and Stemmons Freeway	Yes	Yes	Yes	Yes	No	This area is not viable because there are long-term construction plans.
19	21	I-35E	32.78005	-96.81186	Between Commerce Street and Woodall Rodgers Freeway	No	No	Yes	Yes	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, power is unavailable, and there is current construction.
20	13	I-635	32.91037	-96.73393	Between Forest Lane and Abrams Road	Yes	Yes	Yes	No	No	This area is not viable because the highway is significantly below grade.
21	23	I-35E	32.77637	-96.81154	Between West Commerce Street and Reunion Boulevard	Yes	Yes	Yes	No	No	This area is not viable because the highway is above grade and there are long-term construction plans.
22	25	I-35E	32.87791	-96.89804	Between Walnut Hill Lane and Manana Drive	Yes	Yes	Yes	Yes	No	This area is not viable because there is current construction.
23	24	I-35E	32.89969	-96.89801	Between Crown Road and Royal Lane	No	No	No	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, power is unavailable, the terrain is unlevel, and the highway is above grade.
24	31	US 75	33.02416	-96.70999	Between 16th Street and East Park Boulevard	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures and the highway is below grade.
25	30	I-30	32.78066	-96.77272	Between South 2nd Avenue and South Malcolm X Boulevard	No	No	No	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, power is unavailable, the terrain is unlevel, and the highway is above grade.
26	27	I-20	32.67594	-97.02460	I-20 at Lake Ridge Parkway	No	No	No	No	No	This area is not viable because there is not enough space to accommodate a site due to heavy vegetation, power is unavailable, the terrain is unlevel, and the highway is above grade.
27	56	SH 183	32.83790	-97.05036	Between SH 360 and Amon Carter Boulevard	No	No	No	No	No	This area is not viable because there is not enough space to accommodate a site due to heavy vegetation, power is unavailable, the terrain is unlevel, and the highway is above grade.

Appendix D: Dallas and Houston Near-Road Site Assessment

Table 1: Dallas Near-Road Site Assessment (continued)

AADT	FE-AADT	Target Roadway	Latitude ²	Longitude ²	Road Segment	Space ¹	Power Available	Level Terrain	Highway at Grade	Viable	Comments
28	22	I-635	32.83036	-96.63129	Between North Galloway Avenue and I-30	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial and residential structures and the highway is below grade.
29	32	I-35E	32.92202	-96.89973	Between Harry Hines Boulevard and Valley View Lane	Yes	Yes	Yes	No	No	This area is not viable because the highway is above grade and there are long-term construction plans.
30	38	I-35E	32.71473	-96.82918	Between West Illinois Avenue and West Saner Avenue	Yes	Yes	No	Yes	No	This area is not viable because the terrain is unlevel and there are long-term construction plans.
31	33	US 77	32.75160	-96.80937	East Colorado Boulevard and SH 180	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures and the highway is below grade.
32	29	I-20	32.66840	-97.21886	Between Bowman Springs Road and Little Road	No	Yes	No	Yes	No	This area is not viable because there is not enough space to accommodate a site due to heavy vegetation, commercial structures, and residential structures; and the terrain is unlevel.
33	20	I-635	32.87409	-96.68230	Between South Jupiter Road and Lyndon B Johnson Freeway	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures and the highway is above grade.
34	35	US 75	33.04602	-96.69989	Between East Spring Creek Parkway and West Parker Road	No	Yes	No	Yes	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures and the terrain is unlevel.
35	39	I-35E	32.93116	-96.90158	Between Valwood Parkway and Valley View Lane	Yes	Yes	Yes	No	No	This area is not viable because the highway is above grade and there are long-term construction plans.
36	90	I-20	32.66571	-97.32595	Between Edgecliff Street and I-35W	No	Yes	No	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, the terrain is unlevel, and the highway is below grade.

AADT - Annual Average Daily Traffic

FE-AADT - Fleet Equivalent AADT

¹Space is defined by the ability to place a 40-foot by 40-foot site pad within 50 meters of the target road segment as required in 40 Code of Federal Regulation Part 58.

²Latitude and longitude denote the location of the traffic counting camera. TCEQ considered all areas along the road segment on which the traffic counting camera was located.

TCEQ - Texas Commission on Environmental Quality

I-20 - Interstate 20

I-30 - Interstate 30

I-35E - Interstate 35E

I-35W - Interstate 35W

I-635 - Interstate 635

SH 183 - Texas State Highway 183

SH 356 - Texas State Highway 356

US 75 - United States Highway 75

US 77 - United States Highway 77

Appendix D: Dallas and Houston Near-Road Site Assessment

Table 2: Houston Near-Road Site Assessment

AADT	FE-AADT	Target Roadway	Latitude ²	Longitude ²	Road Segment	Space ¹	Power Available	Level Terrain	Highway at Grade	Viable	Comments
1	1	US 59	29.72271	-95.49241	Between Westward and Westpark Drive	Yes	Yes	Yes	Yes	Yes	Location of the Phase I near-road site.
2	2	US 59	29.72619	-95.46904	Between South Rice Avenue and Chimney Rock Road	No	No	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to heavy vegetation, power is unavailable, and the highway is above grade.
3	3	I-45	29.92599	-95.41211	Between Aldine Bender Road and West Road	No	Yes	Yes	Yes	No	This area is not viable because there is not enough space to accommodate a site due to heavy vegetation and commercial structures.
4	4	I-45	29.94060	-95.41690	Between I-45 and Ella Road	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
5	6	I-45	29.82429	-95.37997	Between Crosstimber Street and I-610	No	Yes	Yes	Yes	No	This area is not viable because there is not enough space to accommodate a site due to heavy vegetation and commercial structures.
6	5	I-45	29.94472	-95.41540	Between Greens Road and Beltway 8	Yes	Yes	Yes	No	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
7	14	I-45	29.87107	-95.40843	Between Little York Road and W Gulf Bank Road	Yes	Yes	Yes	No	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
8	13	I-45	29.85462	-95.39928	Between Parker Road and E Tidwell Road	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
9	12	US 59	29.72989	-95.44782	Between Newcastle Drive and Wesleyan Street	Yes	No	Yes	No	No	This area is not viable because the TCEQ could not come to an agreement with the property owner, the highway is above grade, and power is unavailable.
10	15	I-45	29.88090	-95.41198	Between Little York Road and W Gulf Bank Road	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
11	7	I-10	29.78444	-95.53811	Between Witte Road and Bunker Hill Road	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures and the highway is below grade.
12	16	I-10	29.76038	-95.45565	Between Woodway Drive and Post Oak Boulevard	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to heavy vegetation and the highway is above grade.
13	8	I-10	29.78080	-95.56299	Between I-10 and Memorial Drive	Yes	Yes	Yes	No	No	This area is not viable because the highway is above grade.
14	9	I-10	29.78129	-95.56301	Between I-10 and Memorial Drive	Yes	Yes	Yes	No	No	This area is not viable because the highway is above grade.
15	10	I-10	29.78952	-95.56315	Between Westview Drive and I-10	Yes	Yes	Yes	No	No	This area is not viable because the highway is above grade and the TCEQ could not come to an agreement with the property owner.
16	11	I-10	29.78985	-95.56317	Between Westview Drive and I-11	Yes	Yes	Yes	No	No	This area is not viable because the highway is above grade and the TCEQ could not come to an agreement with the property owner.

Appendix D: Dallas and Houston Near-Road Site Assessment

Table 2: Houston Near-Road Site Assessment (continued)

AADT	FE-AADT	Target Roadway	Latitude ²	Longitude ²	Road Segment	Space ¹	Power Available	Level Terrain	Highway at Grade	Viable	Comments
17	23	I-610	29.79210	-95.45149	Between Hempstead Road and Old Katy Road	Yes	Yes	Yes	No	No	This area is not viable because there is current construction and the highway is above grade.
18	17	I-10	29.78412	-95.46688	Between Silber Road and Post Oak Road	No	No	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to heavy vegetation and commercial structures, power is unavailable, and the highway is above grade.
19	20	I-45	29.80862	-95.37349	Between I-610 and Cavalcade Street	Yes	No	Yes	No	No	This area is not viable because power is unavailable and the highway is above grade.
20	22	I-45	29.68924	-95.28144	Between I-610 and Park PI Boulevard	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
21	25	I-45	29.76286	-95.36965	Between I-45 and Bagby Street	No	No	No	No	No	This area is not viable because there is not enough space to accommodate a site due to heavy vegetation and commercial structures, power is unavailable, the terrain is unlevel, and the highway is above grade.
22	18	US 59	29.64913	-95.57067	Between Airport Boulevard and Bellfort Ave	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, and the highway is above grade.
23	19	US 59	29.68092	-95.53645	Between Bissonnet Street and Gessner Road	No	No	No	No	No	This area is not viable because there is not enough space to accommodate a site due to residential and commercial structures, power is unavailable, the terrain is unlevel, and the highway is above grade.
24	24	I-45	30.01481	-95.42830	Between Bammel Road and Richey Road	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
25	26	I-45	30.02548	-95.42909	Between Cypress Creek Pkwy and Cypresswood Drive	No	Yes	Yes	Yes	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures.
26	27	I-45	29.74250	-95.35820	Between Dowling Street and Jefferson	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
27	21	I-10	29.78493	-95.62484	Between N Eldridge Pkwy and State Highway 6	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
28	30	I-45	29.71188	-95.31028	Between South Wayside Street and Griggs Road	No	Yes	No	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, the terrain is unlevel, and the highway is above grade.
29	35	I-45	29.73390	-95.34486	Between Cullen Boulevard and Scott Street	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
30	36	I-45	29.73887	-95.35249	Between Dowling Street and Scott Street	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
31	28	I-10	29.78498	-95.65156	Between I-6 and Baker Cypress Road	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.

Appendix D: Dallas and Houston Near-Road Site Assessment

Table 2: Houston Near-Road Site Assessment (continued)

AADT	FE-AADT	Target Roadway	Latitude ²	Longitude ²	Road Segment	Space ¹	Power Available	Level Terrain	Highway at Grade	Viable	Comments
32	29	I-10	29.78470	-95.58384	Between N Kirkwood Road and N Wilcrest Drive	Yes	Yes	Yes	No	No	This area is not viable because the highway is above grade.
33	40	I-45	30.11504	-95.43838	Between Rayford Road and Hardy Freeway	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
34	31	I-10	29.77884	-95.44191	Between I-610 and Silver Eagle Drive	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, and the highway is above grade.
35	38	I-610	29.67810	-95.40773	Between Kirby Drive and Fannin Street	No	No	No	Yes	No	This area is not viable because there is not enough space to accommodate a site due to residential and commercial structures, power is unavailable, and the terrain is unlevel.
36	32	US 59	29.62711	-95.59429	Between Dairy Ashford Road and S Main Street	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
37	33	US 59	29.63404	-95.58686	Between S Main Street and S Kirkwood Road	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
38	37	I-45	29.63578	-95.23773	Between Edgebrook Drive and Hartsok Street	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
39	39	US 290	29.86040	-95.52604	Between Fairbanks N Houston Road and Gessner Road	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
40	71	I-610	29.71268	-95.46014	Between Fournace Place and Bissonnet Street	No	Yes	Yes	No	No	This area is not viable because there is not enough space to accommodate a site due to residential and commercial structures, and the highway is above grade.
41	45	US 290	29.80687	-95.45514	Between Dakoma Street and W 18th Street	No	No	No	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, power is unavailable, the terrain is unlevel, and the highway is above grade.
42	42	I-45	29.61062	-95.19978	Between I-45 and Galveston Road	Yes	Yes	Yes	Yes	No	This area is not viable because the TCEQ could not come to an agreement with the property owner.
43	43	I-45	29.61800	-95.21813	Between Fuqua Street and Kingsport Road	No	Yes	No	No	No	This area is not viable because there is not enough space to accommodate a site due to heavy vegetation and commercial structures, the terrain is unlevel, and the highway is above grade.
44	74	US 59	29.76095	-95.35009	Between Runnels Street and Harrisburg Boulevard	No	Yes	No	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, the terrain is unlevel, and the highway is above grade.
45	41	I-610	29.80812	-95.44279	Between T C Jester Boulevard and I-290	No	Yes	No	No	No	This area is not viable because there is not enough space to accommodate a site due to commercial structures, the terrain is unlevel, and the highway is above grade.

Appendix D: Dallas and Houston Near-Road Site Assessment

Table 2: Houston Near-Road Site Assessment (continued)

AADT	FE-AADT	Target Roadway	Latitude ²	Longitude ²	Road Segment	Space ¹	Power Available	Level Terrain	Highway at Grade	Viable	Comments
46	46	I-610	29.81398	-95.38723	Between Airline Drive and N Main Street	Yes	Yes	Yes	Yes	Yes	Location of the Phase II near-road site.

AADT - Annual Average Daily Traffic

FE-AADT - Fleet Equivalent AADT

¹Space is defined by the ability to place a 40-foot by 40-foot site pad within 50 meters of the target road segment as required in 40 Code of Federal Regulation Part 58.

²Latitude and longitude denote the location of the traffic counting camera. TCEQ considered all areas along the road segment on which the traffic counting camera was located.

TCEQ - Texas Commission on Environmental Quality

I-10 - Interstate 10

I-45 - Interstate 45

I-610 - Interstate 610

US 59 - United States Highway 59

US 290 - United States Highway 290

Appendix E

Sulfur Dioxide Monitoring Requirements

Texas Commission on Environmental Quality
2015 Annual Monitoring Network Plan

Appendix E: SO₂ Monitoring Requirements

Core Based Statistical Areas	Metropolitan Statistical Areas	2014 Population Estimates*	2011 Point Source (tpy)	2011 NEI Data (tpy)	2013 Point Source (tpy)	2011 NEI Non-Point Source Data with 2013 Point Source Data (tpy)	PWEI	Required SLAMS Monitors	Required High Sensitivity SO ₂ NCore Monitors	Total Required SO ₂ Monitors	Existing Monitors**
Amarillo		259,885				14,634.89	3,803	0	0	0	1
	Armstrong		0.03	22.26	0.02	22.25					
	Carson		0.23	18.19	0.17	18.13					
	Potter		15,139.02	15,265.36	14,317.79	14,444.13					
	Randall		120.57	157.28	109.43	146.14					
	Oldham		0.00	4.24	0.00	4.24					
Austin-Round Rock		1,943,299				3,872.30	7,525	1	0	1	1
	Bastrop		283.53	1,138.44	295.61	1,150.52					
	Caldwell		330.80	490.37	321.07	480.64					
	Hays		1,166.09	1,276.29	1,082.36	1,192.56					
	Travis		274.49	837.06	329.18	891.75					
	Williamson		0.78	157.04	0.57	156.83					
Beaumont-Port Arthur		405,427				19,263.49	7,810	1	0	1	2
	Hardin		0.95	252.35	1.82	253.23					
	Jefferson		11,682.11	14,025.26	9,949.61	12,292.77					
	Orange		6,891.09	7,221.80	6,307.76	6,638.47					
	Newton		11.61	77.89	12.75	79.03					
Dallas-Fort Worth-Arlington		6,954,330				15,748.24	109,518	2	1	3	4
	Collin		663.08	964.23	23.84	324.99					
	Dallas		422.39	2,162.75	371.45	2,111.81					
	Denton		252.62	453.59	375.20	576.17					
	Ellis		6,806.10	6,945.07	6,868.35	7,007.32					
	Hunt		1.10	131.54	0.12	130.56					
	Kaufman		170.69	257.37	98.53	185.22					
	Rockwall		0.02	21.89	0.01	21.88					
	Johnson		61.75	154.40	65.24	157.90					
	Parker		78.25	130.08	138.33	190.17					
	Tarrant		17.34	1,581.13	18.71	1,582.51					
	Wise		11.50	55.95	16.18	60.63					
	Hood		8.21	3,394.07	10.66	3,396.52					
	Somervell		0.00	2.59	0.00	2.59					
Houston-The Woodlands-Sugar Land		6,490,180				62,881.89	408,115	2	1	3	8
	Austin		71.74	156.04	77.11	161.41					
	Brazoria		1,323.83	1,943.39	624.48	1,244.05					
	Chambers		71.84	566.00	65.48	559.64					
	Fort Bend		49,557.00	49,676.34	42,740.40	42,859.74					
	Galveston		1,079.40	1,963.27	1,279.77	2,163.64					
	Harris		12,123.67	15,906.38	11,464.03	15,246.74					
	Liberty		22.14	168.18	13.82	159.86					
	Montgomery		18.25	258.34	7.87	247.96					
	Waller		1.95	239.46	1.35	238.86					
Longview		217,481				63,416.12	13,792	1	0	1	1
	Gregg		39.87	261.15	24.16	245.45					
	Rusk		69,068.26	69,218.44	62,892.76	63,042.94					
	Upshur		60.64	160.09	28.28	127.73					
San Antonio-New Braunfels		2,328,652				25,644.91	59,718	1	0	1	1
	Atascosa		10,194.70	10,227.81	9,138.49	9,171.60					
	Bandera		0.08	23.83	0.10	23.86					
	Bexar		22,820.01	24,637.28	13,276.17	15,093.44					
	Comal		343.91	438.51	355.00	449.60					

Appendix E: SO₂ Monitoring Requirements (continued)

Core Based Statistical Areas	Metropolitan Statistical Areas	2014 Population Estimates*	2011 Point Source (tpy)	2011 NEI Data (tpy)	2013 Point Source (tpy)	2011 NEI Non-Point Source Data with 2013 Point Source Data (tpy)	PWEI	Required SLAMS Monitors	Required High Sensitivity SO ₂ NCore Monitors	Total Required SO ₂ Monitors	Existing Monitors**
	Guadalupe		120.36	265.20	104.86	249.71					
	Kendall		0.24	36.36	0.01	36.13					
	Medina		0.00	120.31	0.00	120.31					
	Wilson		79.59	111.02	468.84	500.28					
Abilene		168,592				1,738.90	293	0	0	0	0
	Callahan		0.17	1,651.81	0.00	1,651.63					
	Jones		0.00	19.16	0.00	19.16					
	Taylor		0.01	68.10	0.02	68.11					
Brownsville-Harlingen		420,392				268.82	113	0	0	0	0
	Cameron		0.48	269.04	0.26	268.82					
College Station-Bryan		242,905				12,620.99	3,066	0	0	0	0
	Brazos		10.02	119.68	13.80	123.45					
	Burleson		0.00	63.61	0.00	63.61					
	Robertson		11,050.35	11,130.55	12,353.73	12,433.93					
Corpus Christi		448,108				1,762.08	790	0	0	0	3
	Aransas		0.00	300.17	0.00	300.17					
	Nueces		975.53	1,516.30	746.47	1,287.24					
	San Patricio		23.10	167.13	30.64	174.66					
El Paso		836,698				598.47	501	0	1	1	3
	El Paso		283.18	572.15	284.83	573.80					
	Hudspeth		4.58	23.20	6.04	24.66					
Killeen-Temple		424,858				453.17	193	0	0	0	0
	Bell		70.34	230.87	47.54	208.07					
	Coryell		0.00	188.86	0.00	188.86					
	Lampasas		0.00	56.25	0.00	56.25					
Laredo		266,673				94.64	25	0	0	0	0
	Webb		1.62	61.34	34.92	94.64					
Lubbock		305,644				219.56	67	0	0	0	0
	Crosby		0.00	40.70	0.00	40.70					
	Lubbock		11.25	156.26	7.71	152.72					
	Lynn		0.00	26.15	0.00	26.15					
McAllen-Edinburg-Mission		831,073				239.97	199	0	0	0	0
	Hidalgo		52.55	254.35	38.17	239.97					
Midland		161,290				1,267.46	204	0	0	0	0
	Midland		222.07	957.86	415.65	1,151.44					
	Martin		68.13	103.25	80.89	116.01					
Odessa		153,904				2,437.80	375	0	0	0	0
	Ector		1,083.35	1,532.11	1,989.05	2,437.80					
San Angelo		118,182				90.19	11	0	0	0	0
	Irion		0.26	40.72	0.72	41.17					
	Tom Green		0.75	48.99	0.78	49.02					
Sherman-Denison		123,534				167.07	21	0	0	0	0
	Grayson		1.03	167.12	0.98	167.07					
Texarkana		149,235				267.16	40	0	0	0	0
	Bowie		161.29	299.93	128.52	267.16					

Appendix E: SO₂ Monitoring Requirements (continued)

Core Based Statistical Areas	Metropolitan Statistical Areas	2014 Population Estimates*	2011 Point Source (tpy)	2011 NEI Data (tpy)	2013 Point Source (tpy)	2011 NEI Non-Point Source Data with 2013 Point Source Data (tpy)	PWEI	Required SLAMS Monitors	Required High Sensitivity SO ₂ NCore Monitors	Total Required SO ₂ Monitors	Existing Monitors**
Tyler		218,842				649.93	142	0	0	0	0
	Smith		403.33	621.97	431.28	649.93					
Victoria		98,630				14,559.17	1,436	0	0	0	0
	Goliad		13,829.53	13,884.78	14,343.82	14,399.07					
	Victoria		14.56	103.78	70.88	160.09					
Waco		260,430				3,264.51	850	0	0	0	1
	McLennan		1,019.06	1,297.37	2,956.48	3,234.79					
	Falls		0.00	29.72	0.00	29.72					
Wichita Falls		151,536				698.89	106	0	0	0	0
	Archer		0.00	36.94	0.00	36.94					
	Clay		0.03	67.35	0.04	67.36					
	Wichita		472.40	615.12	451.87	594.59					

*United States Census Bureau population estimates as of July 1, 2014□

** Individual monitors may fulfill more than one monitoring requirement.

NCore - National Core Multipollutant Monitoring Stations

NEI - National Emissions Inventory

PWEI - population weighted emission index (Population *[2011 NEI minus 2011 point source plus 2013 point source emissions]/1,000,000)

SO₂ - sulfur dioxide

tpy - tons per year

SLAMS - State or Local Air Monitoring Stations

Appendix F

Ozone Monitoring Requirements

Texas Commission on Environmental Quality
2015 Annual Monitoring Network Plan

Appendix F: O₃ Monitoring Requirements

Metropolitan Statistical Area	2014 Population Estimates ¹	2012-2014 8-Hour Design Value (parts per billion) ²	Total Required SLAMS Monitors	Total Required PAMS Monitors	Total Required NCore Monitors	Total Required Monitors ^{3, 4}	Total Existing Monitors
Dallas-Fort Worth-Arlington	6,954,330	81	3	2	1	6	19
Houston-The Woodlands-Sugar Land	6,490,180	80	3	2	1	6	20
San Antonio-New Braunfels	2,328,652	80	2	0	0	2	3
Austin-Round Rock	1,943,299	69	2	0	0	2	2
El Paso	836,698	72	2	2	1	5	6
McAllen-Edinburg-Mission	831,073	57	1	0	0	1	1
Corpus Christi	448,108	66	2	0	0	2	2
Killeen-Temple	424,858	72	2	0	0	2	2
Brownsville-Harlingen	420,392	58	1	0	0	1	2
Beaumont-Port Arthur	405,427	70	2	0	0	2	7
Lubbock	305,644	N/A	0	0	0	0	0
Laredo	266,673	61 ⁵	1	0	0	1	1
Waco	260,430	69	1	0	0	1	1
Amarillo	259,885	N/A	0	0	0	0	0
College Station-Bryan	242,905	N/A	0	0	0	0	0
Tyler	218,842	71	1	0	0	1	1
Longview	217,481	71	1	0	0	1	1
Abilene	168,592	N/A	0	0	0	0	0
Midland	161,290	N/A	0	0	0	0	0
Odessa	153,904	N/A	0	0	0	0	0
Wichita Falls	151,536	N/A	0	0	0	0	0
Texarkana	149,235	N/A	0	0	0	0	0
Sherman-Denison	123,534	N/A	0	0	0	0	0
San Angelo	118,182	N/A	0	0	0	0	0
Victoria	98,630	63	1	0	0	1	1

¹United States Census Bureau population estimates as of July 1, 2014

²2008 8-Hour Ozone National Ambient Air Quality Standard is 75 parts per billion

³Total Required Monitors is a count of individual requirements for State or Local Air Monitoring Stations (SLAMS), Photochemical Assessment Monitoring Stations (PAMS), and National Core (NCore) monitors. The minimum number of two PAMS monitors per area was used for this calculation, though an ozone monitor is required at each PAMS site and there may be more than two required PAMS sites in an area.

⁴Individual monitors may fulfill more than one monitoring requirement.

⁵Incomplete design value

O₃ - ozone

N/A - not applicable

Appendix G

Carbon Monoxide Monitoring Requirements

Texas Commission on Environmental Quality
2015 Annual Monitoring Network Plan

Appendix G: CO Monitoring Requirements

Core Based Statistical Areas	2014 Population Estimates*	Required CO Near-Road Monitors	Required High Sensitivity CO PAMS Monitors	Required High Sensitivity CO NCore Monitors	Total Required Monitors	Total Current Monitors
Dallas-Fort Worth-Arlington	6,954,330	Fort Worth California Parkway	Dallas Hinton**	Dallas Hinton**	3	2**
Houston-The Woodlands-Sugar Land	6,490,180	Houston North Loop	Clinton	Houston Deer Park #2	3	3
San Antonio-New Braunfels	2,328,652	N/A	N/A	N/A	0	0
Austin-Round Rock	1,943,299	N/A	N/A	N/A	0	0
El Paso	836,698	N/A	N/A	El Paso Chamizal	1	4
McAllen-Edinburg-Mission	831,073	N/A	N/A	N/A	0	0
Corpus Christi	448,108	N/A	N/A	N/A	0	0
Killeen-Temple	424,858	N/A	N/A	N/A	0	0
Brownsville-Harlingen	420,392	N/A	N/A	N/A	0	1
Beaumont-Port Arthur	405,427	N/A	Nederland High School	N/A	1	1
Lubbock	305,644	N/A	N/A	N/A	0	0
Laredo	266,673	N/A	N/A	N/A	0	2
Waco	260,430	N/A	N/A	N/A	0	1
Amarillo	259,885	N/A	N/A	N/A	0	0
College Station-Bryan	242,905	N/A	N/A	N/A	0	0
Tyler	218,842	N/A	N/A	N/A	0	0
Longview	217,481	N/A	N/A	N/A	0	0
Abilene	168,592	N/A	N/A	N/A	0	0
Midland	161,290	N/A	N/A	N/A	0	0
Odessa	153,904	N/A	N/A	N/A	0	0
Wichita Falls	151,536	N/A	N/A	N/A	0	0
Texarkana	149,235	N/A	N/A	N/A	0	0
Sherman-Denison	123,534	N/A	N/A	N/A	0	0
San Angelo	118,182	N/A	N/A	N/A	0	0
Victoria	98,630	N/A	N/A	N/A	0	0

*United States Census Bureau population estimates as of July 1, 2014

CO - carbon monoxide

**Monitors fulfill multiple monitoring requirements, but are only counted once in the total monitor counts.

PAMS - Photochemical Assessment Monitoring Stations

NCore - National Core Multipollutant Monitoring Stations

CO monitors required for deployment in 2017 will be included in the TCEQ 2016 Annual Monitoring Network Plan .

N/A - not applicable

Appendix H

Particulate Matter of 10 Micrometers or Less Monitoring Requirements, Monitor Locations, and Method Codes

Texas Commission on Environmental Quality
2015 Annual Monitoring Network Plan

Appendix H: PM₁₀ Monitoring Requirements, Monitor Locations, and Method Codes

Table 1: PM₁₀ Monitoring Network Requirements

Metropolitan Statistical Area	2014 Population Estimates*	Site Name	2012-2014 Maximum Concentration (µg/m ³)	Percent of NAAQs**	Required Monitors***	Existing Monitors
Dallas-Fort Worth-Arlington	6,954,330				4-8	4
		Earhart	132	88		
		Convention Center (collocated pair)	93	62		
		Stage Coach	87	58		
		Dallas North #2	93	62		
Tyler	218,842				0	1
		Karnack	73	49		
Houston-The Woodlands-Sugar Land	6,490,179				4-8	8
		Clinton (collocated pair)	130	87		
		Houston Westhollow	95	63		
		Houston Monroe	99	66		
		Lang	94	63		
		Houston Aldine	90	60		
		Pasadena HL&P	74	49		
		Texas City Fire Station (collocated pair)	93	62		
		Houston Deer Park #2 (collocated pair)	91	61		
San Antonio-New Braunfels	2,328,652				2-4	2
		Frank Wing Municipal Court	73	49		
		Selma	78	52		
Austin-Round Rock	1,943,299				2-4	2
		Austin Webberville Rd	99	66		
		Austin Audubon Society	76	51		
El Paso	836,698				2-4	5
		Socorro Hueco (collocated pair)	145	97		
		Riverside	143	95		
		Ivanhoe	76	51		
		Van Buren	81	54		
		Ojo De Agua (collocated pair)	91	61		
McAllen-Edinburg-Mission	831,073				2-4	1
		Mission	138	92		
		Edinburg East Freddy Gonzalez Drive (pending)	N/A	N/A		
Corpus Christi	448,108				0-1	1
		Dona Park (collocated pair)	70	47		
Laredo	266,673				0-1	2
		Laredo Vidaurri (collocated pair)	80	53		
		Laredo Bridge	50	33		

*United States Census Bureau population estimates as of July 1, 2014

NAAQS - National Ambient Air Quality Standards

µg/m³ - micrograms per cubic meter

**Current PM₁₀ NAAQS is 150 µg/m³

PM₁₀ - particulate matter of 10 micrometers or less

***Required monitor count is based on population, percent of NAAQS, and maximum concentration

This list does not include Metropolitan Statistical Areas that are required to and currently have zero monitors.

N/A - not applicable

Appendix I

Particulate Matter of 2.5 Micrometers or Less Monitoring Requirements, Federal Reference Method Locations, and Method Codes

Texas Commission on Environmental Quality
2015 Annual Monitoring Network Plan

Appendix I: PM_{2.5} Monitoring Requirements, FRM Locations, and Method Codes

Table 1: Particulate Matter of 2.5 Micrometers or Less Monitoring Requirements

Metropolitan Statistical Area	2014 Population Estimates ¹	2012-2014 Design Value (µg/m ³)		Percent of NAAQS		FRM Samplers		Speciation		Continuous	
		Annual	24-Hour	Annual ²	24-Hour ³	Required Monitors ⁴	Existing Monitors ⁵	Required Monitors ⁶	Existing Monitors ⁵	Required Monitors ⁶	Existing Monitors ⁵
Dallas-Fort Worth-Arlington	6,954,330	10.7	24	89	69	4	5	1	2	3	8
Houston-The Woodlands-Sugar Land	6,490,180	11.6	24	97	69	4	5	2	4	3	9
San Antonio-New Braunfels	2,328,652	8.5	21	71	60	2	2	0	0	1	6
Austin-Round Rock	1,943,299	9.4	24	78	69	2	2	0	0	1	3
El Paso	836,698	11.2	34	93	97	3	2	1	1	2	4
McAllen-Edinburg-Mission	831,073	10.2	25	85	71	2	1	0	0	1	1
Corpus Christi	448,108	10.1	31	84	89	1	2	1	1	1	2
Killeen-Temple	424,858	N/A	N/A	N/A	N/A	0	0	0	0	0	0
Brownsville-Harlingen	420,392	N/A	N/A	N/A	N/A	1	0	0	0	1	2
Beaumont-Port Arthur	405,427	N/A	N/A	N/A	N/A	0	0	0	0	0	4
Lubbock	305,644	N/A	N/A	N/A	N/A	0	0	0	0	0	1
Laredo	266,673	N/A	N/A	N/A	N/A	0	0	0	0	0	2
Waco	260,430	N/A	N/A	N/A	N/A	0	0	0	0	0	1
Amarillo	259,885	N/A	N/A	N/A	N/A	0	0	0	0	0	1
Odessa	153,904	N/A	N/A	N/A	N/A	0	0	0	0	0	2
Wichita Falls	151,536	N/A	N/A	N/A	N/A	0	0	0	0	0	0
Texarkana	149,235	10.2	22	85	63	1	1	0	0	1	0
Marshall ⁷	67,336	9.5	22	79	63	0	1	0	1	0	1

¹United States Census Bureau population estimates as of July 1, 2014

NAAQS - National Ambient Air Quality Standards

²Current PM_{2.5} Annual NAAQS is 12 micrograms per cubic meter (µg/m³)

³Current PM_{2.5} 24-hour NAAQS is 35 µg/m³

⁴Required monitor include State or Local Air Monitoring Stations (SLAMS) and National Core (NCore) requirements.

⁵Individual monitors may fulfill one or more requirements.

⁶Required monitor include SLAMS and NCore requirements. Individual monitors may fulfill one or more requirements.

⁷Marshall is classified as a micropolitan area and not subject to SLAMS requirements.

SPM - special purpose monitor

FRM - federal reference method

N/A - not applicable

This list does not include Metropolitan Statistical Areas that are required to and currently have zero monitors.

Appendix J

Acronym and Abbreviation List

Texas Commission on Environmental Quality
2015 Annual Monitoring Network Plan

Appendix J: Acronym and Abbreviation List

– number

% – percent

µg/m³ – micrograms per cubic meter

AADT – annual average daily traffic

AQS – Air Quality System

autoGC – automated gas chromatograph

CBSA – core based statistical area

CFR – Code of Federal Regulations

CO – carbon monoxide

EI – emissions inventory

EPA – Environmental Protection Agency

FE-AADT – fleet equivalent annual average daily traffic

FRM – federal reference method

LLC - limited liability company

MSA – metropolitan statistical area

NAAQS – National Ambient Air Quality Standards

NATTS – National Air Toxics Trends Stations

NCORE – National Core Multipollutant Monitoring Stations

NO₂ – nitrogen dioxide

NO_x – highly reactive oxides of nitrogen

O₃ – ozone

PAMS – Photochemical Assessment Monitoring Stations

Pb – lead

PM₁₀ – particulate matter of 10 micrometers or less in diameter

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

PWEI – population weighted emissions index

QA – quality assurance

RA-40 – Regional Administrator 40

Rd - Road

SE - Southeast

SETRPC – South East Texas Regional Planning Committee

SLAMS – State or Local Air Monitoring Stations

SO₂ – sulfur dioxide

SPM – special purpose monitor

STN – Speciation Trends Network

TCEQ – Texas Commission on Environmental Quality

tpy – tons per year

U.S. – United States

UTEP - University of Texas at El Paso

VOC – volatile organic compound

Appendix K

TCEQ Responses to Comments Received on the 2015 Annual Monitoring Network Plan

Texas Commission on Environmental Quality

2015 Annual Monitoring Network Plan

Appendix K: TCEQ Responses to Comments Received on the 2015 Annual Monitoring Network Plan (AMNP)

As required by 40 Code of Federal Regulations (CFR) Part 58.10, the Texas Commission on Environmental Quality (TCEQ) posted the 2015 AMNP for public inspection for 30 days prior to submittal to the United States (U.S.) Environmental Protection Agency (EPA). During the public comment period from May 22, 2015, to June 22, 2015, the TCEQ received one set of comments regarding the posted document. The comments included discussions regarding the adequacy of the TCEQ sulfur dioxide (SO₂) network; rural area monitoring near large pollution sources; and recently expanded shale gas drilling area monitoring.

In response to these comments, the TCEQ prepared Appendix K of the 2015 AMNP. The TCEQ will submit this appendix and the original comments received during the comment period to the EPA along with the 2015 AMNP.

Comment: The Sierra Club (SC) commented that the TCEQ SO₂ monitoring network is insufficient to support compliance with the one-hour SO₂ National Ambient Air Quality Standard (NAAQS).

Response: The TCEQ is meeting all current regulatory SO₂ requirements in accordance with 40 CFR Part 58, Appendix D, 4.4.2. The TCEQ will reevaluate its SO₂ network once the EPA finalizes the *Data Requirements Rule for the 1-Hour Sulfur Dioxide Primary NAAQS* (DRR), both in terms of monitors required under the final rule and the potential reallocation of monitors in areas where monitors are no longer required. The EPA is scheduled to finalize this rule by fall 2015.

Comment: The SC suggests that the TCEQ should model and not expand the SO₂ monitoring network to utilize Texas' limited resources more efficiently. The SC comments that modeling is superior to monitoring for evaluating NAAQS violations. The SC also recommends utilizing a third party for modeling if needed. The SC states that the EPA anticipates that modeling will be a more reliable source of information than monitoring information, and that minimum monitoring network requirements will not be sufficient to establish compliance with the 1-hour SO₂ NAAQS.

Response: Comments related to modeling for the determination of NAAQS compliance are beyond the scope of this AMNP. The TCEQ supports the use of SO₂ ambient air quality monitoring data as the basis for making attainment or nonattainment designations. The TCEQ does not support the use of modeling data alone as the basis for designations. Nonattainment designations should only be made based on data from 40 CFR Part 58 compliant (regulatory) monitoring data demonstrating a violation of the standard. The TCEQ will reevaluate its SO₂ network once the EPA finalizes the DRR, both in terms of monitors required under the final rule and the potential reallocation of monitors in areas where monitors are no longer required.

Comment: The SC recommends that modeling be utilized for consent decree source designation information since no additional monitoring was added to the 2015 AMNP to characterize potential violations of the one-hour SO₂ NAAQS.

Appendix K: TCEQ Responses to Comments Received on the 2015 Annual Monitoring Network Plan (AMNP) (continued)

Response: Comments related to information used for designation purposes, including modeling, are beyond the scope of this AMNP. The TCEQ does not support the use of modeling data alone as the basis for designations. As demonstrated within this 2015 AMNP, the TCEQ's existing SO₂ network meets all current federal monitoring requirements. The TCEQ will reevaluate its SO₂ network once the EPA finalizes the DRR.

Comment: The SC comments that large pollution sources located in rural areas have few monitors located to ensure compliance with the NAAQS. The SC requests that the TCEQ explain how it evaluated areas with large pollution sources for potential design values greater than 85 percent (%) of the NAAQS.

Response: The requested analysis is beyond the scope of the AMNP. States are required to submit an annual monitoring network plan to the EPA by July 1st each year detailing how the monitoring network meets current federal requirements. The TCEQ evaluated the existing monitoring network in the 2015 AMNP. Currently, there are 20 air monitoring stations with 46 monitors operating in rural areas throughout Texas. A review of these monitors did not reveal any design values greater than 85% of the NAAQS.

Comment: The SC requests a date by which PM_{2.5} continuous monitoring will be operational in Texarkana.

Response: The current one-in-three day sampling frequency of the PM_{2.5} federal reference method (FRM) sampler at the Texarkana (AQS 480370004) site complies with existing federal requirements. The TCEQ is evaluating relocation sites within one mile of the current Texarkana (AQS 480370004) site that would accommodate both a PM_{2.5} FRM and continuous monitor. The current PM_{2.5} FRM sampler and the new PM_{2.5} continuous monitor will be moved to this new site once the site relocation process is complete and the EPA concurrence is received.

Comment: The SC comments that the recent hydraulic fracturing (fracking) boom produces harmful pollutants in areas not adequately covered by the existing monitoring network, and notes that the 2015 AMNP does not detail how the TCEQ will ensure that air quality in shale processing areas meets federal standards.

Response: The TCEQ reviewed and evaluated the federal monitoring requirements for all criteria and air toxic pollutants. The 2015 AMNP details Texas' current and future compliance with existing monitoring regulations in all areas of Texas. The TCEQ will continue to use the AMNP to annually assess compliance with federal monitoring requirements, including requirements for monitoring pollutants emitted during oil and gas activities, like volatile organic compounds (VOCs). Although outside the scope of the AMNP, a network of 17 automated gas chromatographs (autoGCs) and 14 canister samplers, many of which are state funded, monitor VOCs throughout the Barnett and Eagle Ford Shale areas. More information on the TCEQ's efforts related to oil and gas activities is available online at <http://www.tceq.texas.gov/assistance/industry/oil-and-gas/oilgas.html>.



Texas Commission on Environmental Quality
P.O. Box. 13087
Attention: Deanna Sivek, MC-165
Austin, TX 78711-3087

Submitted via e-mail to monops@tceq.texas.gov

Re: Sierra Club Comments on 2015 Annual Monitoring Network Plan

Dear Ms. Sivek,

On behalf of Sierra Club and its nearly 23,000 members in Texas, I write to submit comments on the 2015 Annual Monitoring Network Plan.

Pursuant to federal regulations, monitoring network plans must achieve three objectives: 1) provide the public with data on air pollution; 2) provide supporting data for air pollution research; and 3) “support compliance with ambient air quality standards and emissions strategy development.”¹ Additionally, a network must also incorporate “a variety of types of monitoring sites.”² Monitoring sites must be capable of informing managers about many things including the peak air pollution levels, typical levels in populated areas, air pollution transported into and outside of a city or region, and air pollution levels near specific sources.³

Although there are many improvements TCEQ could make to better meet these goals, and these comments are not exhaustive, Sierra Club identifies three issues below: the SO₂ monitoring network; the dearth of monitoring in rural areas despite many large stationary sources located there; and new monitoring needs resulting from the recent boom in shale gas production, known as fracking. Sierra Club plans to submit additional, more detailed comments on the 5-Year Monitoring Network Plan, which is also currently out for public comment.

¹ 40 C.F.R. § 58 App. D, § 1.1 (2011).

² *Id.* §1.1.1; The regulations specify “six general site types: (a) Sites located to determine the highest concentrations expected to occur in the area covered by the network. (b) Sites located to measure typical concentrations in areas of high population density. (c) Sites located to determine the impact of significant sources or source categories on air quality. (d) Sites located to determine general background concentration levels. (e) Sites located to determine the extent of regional pollutant transport among populated areas; and in support of secondary standards. (f) Sites located to measure air pollution impacts on visibility, vegetation damage, or other welfare-based impacts.”

³ *Id.*

1. The SO₂ Monitoring Network Is Insufficient to Support Compliance with the 1-Hour SO₂ NAAQS.

In order to “protect public health with an adequate margin of safety,” the U.S. Environmental Protection Agency (“EPA”) revised the SO₂ primary NAAQS in 2010 to replace the 24-hour and annual standards with a short-term, 1-hour standard.⁴ In revising the standard, EPA noted that its rationale focused primarily on the causal relationship between respiratory morbidity following short-term exposure to SO₂.⁵ Indeed, SO₂ exposure for as little as 5-10 minutes can lead to adverse health effects to asthmatics.⁶ EPA also noted that the existing standards were not adequate to “protect public health with an adequate margin of safety.”⁷ EPA then selected a short-term standard that was designed to limit adverse respiratory effects on at-risk populations.⁸

When EPA revised the SO₂ NAAQS in 2010, it highlighted the significance of stationary sources in terms of monitoring network design and noted that peak 1-hour concentrations would likely be greatest near stationary sources.⁹ However, EPA decided to rely heavily on modeling to identify areas exceeding the SO₂ NAAQS in light of the expense and burden of establishing a monitoring network that addresses all significant sources, the “special challenges SO₂ emissions present in terms of monitoring short-term SO₂ levels for comparison with the NAAQS in many situations,” and “the superior utility that modeling offers for assessing SO₂ concentrations.”¹⁰ EPA’s final 2010 SO₂ NAAQS rule simply built upon EPA’s historical practice of using modeling to determine attainment and nonattainment status for SO₂ NAAQS. In doing so, EPA properly recognized the “strong source-oriented nature of SO₂ ambient impacts,”¹¹ and concluded that the appropriate methodology for purposes of determining compliance, attainment, and nonattainment with the new NAAQS is modeling.¹² In particular, EPA noted that:

[W]e believe that for a short-term 1-hour standard it is more technically appropriate, efficient, and effective to use modeling as the principle means of assessing compliance for medium to larger sources, and to rely more on monitoring for groups of smaller sources and sources not as conducive to modeling.¹³

Similarly, EPA then explained in a white paper that using modeling to determine attainment for the SO₂ standard “could better address several potentially problematic issues than would the narrower monitoring-focused approach discussed in the proposal for the SO₂ NAAQS, including the unique source-specific impacts of SO₂ emissions and the special challenges SO₂ emissions have historically presented in

⁴ U.S. Environmental Protection Agency (EPA), Primary National Ambient Air Quality Standard for Sulfur Dioxide; Final Rule, 75 Fed. Reg. 35,520, 35,521 (June 22, 2010) (to be codified at 40 C.F.R. pts. 50, 53, and 58) [“SO₂ NAAQS Final Rule”].

⁵ *Id.* at 35,526.

⁶ *Id.* at 35,536.

⁷ *Id.* at 35,550.

⁸ *Id.*

⁹ *Id.* at 35,5257.

¹⁰ *Id.* at 35,550.

¹¹ *Id.* at 35,570.

¹² *See id.* at 35,551

¹³ *Id.* at 35,551.

terms of monitoring short-term SO₂ levels for comparison with the NAAQS in many situations (75 FR 35550).”¹⁴

Because EPA is now subject to a consent decree to complete area SO₂ designations for many areas throughout the country by in July 2, 2016, and the rest of the country by December 31, 2017 or December 31, 2020, the agency has emphasized the need for states to efficiently gather data for designation.¹⁵ Acknowledging that this new timeline “does not provide for establishment and use of data from new ambient monitors,” EPA anticipates that modeling will be a more reliable source of designation information.¹⁶ Sources located in Texas for which EPA will issue area designations by July 2, 2016, include Big Brown, Sandy Creek Energy Station, Sandow, Monticello, San Miguel, Coletto Creek, Martin Lake, Tolk Station, Optim Energy Twin Oaks, Harrington Station, Limestone, and WA Parish.¹⁷

EPA acknowledges that the minimum monitoring network requirements (i.e., those addressed in Texas’s Annual Network Monitoring Plan) will not be sufficient to establish compliance with the 1-Hour SO₂ NAAQS: “The total number of monitoring sites that will serve the variety of data needs will be substantially higher than these minimum requirements provide.”¹⁸ As the 2015 Annual Monitoring Plan does not provide for any additional SO₂ monitors to capture peak concentrations for these 12 sources, it is clear that Texas will not have sufficient *monitoring* data to reliably determine by this time next year whether these sources are causing violations of the 1-hour SO₂ NAAQS.

Nor would attempting to expand the SO₂ monitoring network for this purpose be a good use of Texas’s limited resources. As described above, while monitors can provide some information, modeling is superior to monitoring from a technical standpoint for evaluating NAAQS violations. It is also much less expensive. The cost of modeling compliance with the SO₂ NAAQS is modest, particularly in comparison to the costs of installing and operating a vast monitoring network, particularly because the majority of SO₂ pollution comes from a relatively small group of very large sources. If TCEQ does not have sufficient in-house modeling resources, the agency would incur some costs charged by third party modelers, but even these costs are comparatively nominal. Independent third party modelers could conduct AERMOD time series modeling for SO₂ for less than \$5,000 per source, and in most instances less than \$3,000.¹⁹ In stark contrast, simply purchasing and installing a single monitor can cost upwards of \$100,000 per site.

¹⁴ EPA, *Implementation of the 1-Hour SO₂ NAAQS Draft White Paper for Discussion* at 3-4 [“EPA White Paper”], available at <http://www.epa.gov/airquality/sulfurdioxide/pdfs/20120522whitepaper.pdf> (to be codified at 40 C.F.R. pt. 51).

¹⁵ EPA, *Updated Guidance for Area Designations for the 2010 Primary Sulfur Dioxide National Ambient Air Quality Standard* at 2 (March 20, 2015) available at <http://www.epa.gov/oaqps001/sulfurdioxide/pdfs/20150320SO2designations.pdf>.

¹⁶ *Id.* at 3.

¹⁷ EPA, *Air Designations for the 2010 SO₂ National Ambient Air Quality Standard to be Completed by July 2, 2016*, available at <http://www.epa.gov/airquality/sulfurdioxide/designations/pdfs/sourceareas.pdf>.

¹⁸ 40 C.F.R. § 58 App. D, § 1.1.2 (2011).

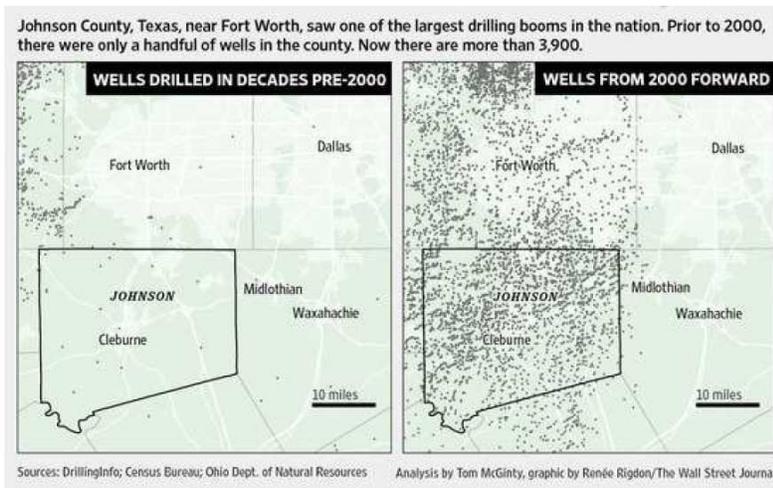
¹⁹ Sierra Club has commissioned modeling for a number of sources in Texas and has previously provided the results to TCEQ. *See, e.g.*, Letter from E. Saxonhouse and R. Ukeiley, Re: Proposed Infrastructure and Transport SIP Revision for the 2010 Sulfur Dioxide NAAQS (Project No. 2012-022-SIP-NR) (Dec. 7, 2012).

2. The Monitoring Plan Does Not Address Large Sources of Pollution in Rural Areas.

As described in the 2015 AMNP, monitoring requirements are generally based on population density, but in areas where measured design values are 85% of the NAAQS (for PM_{2.5}, for example), monitors should also be placed in less populated areas. Some of Texas's largest pollution sources are located in sparsely populated areas. Yet, very few monitors exist to ensure compliance with the NAAQS near these sources. Accordingly, the existing monitoring network may not fully capture the effects on ambient air from these rural sources and residents' health in those areas is not adequately protected. TCEQ should explain how it is evaluating whether measured design values are 85% of the NAAQS in areas where there are no monitors currently located, but where large pollution sources exist. TCEQ should also provide a date certain by which it will ensure continuous PM_{2.5} monitoring for Texarkana, as required. Sierra Club will provide more detail on the issue of pollution sources in non-urban areas in its comments on the state's Five-Year Monitoring Network Plan.

3. The Monitoring Plan Does Not Address the Recent Expansion of Shale Gas Development.

The recent fracking boom presents new and significant challenges for maintaining healthy air quality in Texas. Both the extraction and processing of shale gas produces harmful pollutants in areas not adequately covered by the existing monitoring network. The 2015 plan makes no mention of this major issue or how TCEQ proposes to ensure that air quality in shale gas processing areas meets federal standards. The following image gives a sense of the massive increase in new pollution sources in Texas since 2000 (but is not intended to represent the only areas affected). Sierra Club will provide more detailed comments on this issue in its comments on the Five-Year Monitoring Plan.



Thank you for the opportunity to comment.

Sincerely,

/s/

Elena Saxonhouse
Staff Attorney
Sierra Club
85 Second Street, 2nd Floor
San Francisco, CA 94105