Ambient Air Monitoring Following Natural Disasters and Industrial Accidents, 2017-2021

January 28, 2022

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Table of Contents

Executive Summary[1]

When a natural disaster or industrial accident (also referred to as events) occurs, the possibility of an upset increases, which may lead to excess emissions from a facility. Industrial events may result in the uncontrollable release of emissions, while for natural events, facilities may shut down in advance of the storm to mitigate possible damage to the facility, to minimize the release of contaminants, and to enable workers to stay safe during the storm. When a storm has passed and facilities begin startup activities, the possibility of unauthorized emissions (referred to as excess emissions in this report) increase. As part of the agency's response to such events, it offers monitoring, oversight, and technical and regulatory assistance. As part of monitoring assistance, environmental investigators may be deployed to the affected area with handheld monitoring devices, along with vans that are equipped with air monitoring instruments (mobile monitoring). The data from these tools are often collected in addition to the stationary ambient air monitoring data (if available); mobile vans and environmental investigators are able to move around an affected area and provide more dynamic data. In addition, depending on the event, the U.S. Environmental Protection Agency (US EPA) may also deploy their Airborne Spectral Photometric Environmental Collection Technology (ASPECT) aircraft to aid in surveillance of the affected area. All these data streams are very important in the characterization of an event and the potentially affected area(s). However, with the acquisition of new mobile monitoring equipment that allows for the collection of in-motion data, the question of when and where to best deploy all these different resources and for how long is also important.

The purpose of this report is to aid in that discussion by collecting and evaluating the multitude of data collected before, during, and after a natural disaster or industrial event. These data include facility emissions event data reported to the TCEQ, stationary ambient air monitoring data from automated gas chromatographs (autoGCs), data collected using handheld instruments in the field, mobile monitoring data, and ASPECT data collected by the US EPA. Natural events reviewed for this report include Hurricane Harvey (August 2017), Hurricane Laura (August 2020), Hurricane Delta (October 2020), and Winter Storm Uri (February 2021). Industrial events that occurred during this time frame include the Intercontinental Terminals Company (ITC) Deer Park Facility Fire (March 2019) and the Texas Petrochemicals Group (TPC) Port Neches Facility Fire (November 2019). Including both natural and industrial events in this report allows the comparison of impacts on air quality from more controlled (although still unauthorized) startup and shutdown events following storms, compared to large, uncontrolled industrial events. Different regions were impacted by different events, for a list of the TCEQ regions that were affected/evaluated by event please see Table 12.

[1] This report is intended to serve as an analysis of emission and monitoring data following industrial accidents and natural disasters. It is not intended to take the place of TCEQ investigation findings. The TCEQ reserves the right to update its findings with regard to particular events as additional facts might be discovered.

Reported emissions that are attributed to the events are shown in Table 1. The greatest amount of total reportable emissions was reported for the ITC Fire (16,471,095 pounds) followed by Hurricane Harvey (total of 14,225,386 pounds for the Beaumont, Houston, and Corpus Christi regions). As expected with combustion during a fire, particulate matter (PM) was responsible for a large amount of reported emissions for the ITC and TPC fires. Aside from PM emissions during the fires, carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen oxides (NO_X) represented the highest quantities of reported emissions collectively for all events.

Table 1. Total Reportable Emissions (in Pounds) and Select Chemical-Specific Emissions Across Events.

Event	Total Reportable Emissions (lbs)	Benzene	1,3-Butadiene	Carbon Monoxide*	Sulfur Dioxide*	Nitrogen Oxides*
Hurricane Harvey	14,225,386	34,424	37,140	2,954,375	4,437,028	1,748,334
Hurricane Laura	607,396	537	1,161	345,779	37,755	29,245
Hurricane Delta	480,211	4,127	488	254,331	19,448	29,220
Winter Storm Uri [a]	4,714,693	40,078	37,471	1,592,817	1,114,528	358,142
ITC Fire	16,471,095	652,773	5,551	1,789,685	29,054	44,132
TPC Fire	1,214,586	166	257,640	207,260	13,160	16,300
Total	37,713,367	732,105	339,451	7,144,247	5,650,973	2,225,373

*Contaminants that are commonly responsible for large amounts of reportable emissions for individual events.
[a] Emissions totals for Winter Storm Uri include only those reported for Beaumont, Houston, and Corpus Christi regions, because those were the regions evaluated in this report.

Stationary volatile organic compound (VOC) ambient air monitoring data reviewed around each of the four natural events showed few exceedances of air monitoring comparison values (AMCVs). Of the 1,399,321 total samples collected spanning the identified time-frames for all four natural events, there were only nine exceedances of an AMCV (one health-based exceedance and eight odor-based exceedances), which represent approximately 0.00064% of the data collected (Table 2). For the industrial events, 1,153,330 total samples were collected, with two health-based exceedances and one odor-based exceedance measured (Table 3). Although most of the benzene concentrations measured after the ITC fire were below the 1-hr AMCV, they were still much higher than concentrations measured after the natural events (compare natural events in Figure 2, Figure 4, Figure 5, and Figure 6 to the ITC fire in Figure 10).

Table 2. Summary of Stationary VOC Ambient Air Monitoring Data for Each Evaluated Natural Event.

Event	Days Covered	# Samples (all VOCs)	# Exceed	# Health Exceed	# Odor Exceed	Notes on Exceedances
Hurricane Harvey	41	385,545	1	0	1	Isoprene odor
Hurricane Laura	23	265,243	0	0	0	
Hurricane Delta	6	11,271	0	0	0	
Winter Storm Uri	49	737,262	8	1	7	1 Benzene Health; 3 Styrene Odor; 4 Isoprene Odor
Total	119	1,399,321	9	1	8	

Table 3. Summary of Stationary VOC Ambient Air Monitoring Data for Each Evaluated Industrial Event.

Event	Days Covered	# Samples (all VOCs)	# Exceed	# Health Exceed	# Odor Exceed	Notes on Exceedances
ITC Fire	89	1,059,800	3	2	1	2 Benzene Health; 1 Styrene Odor
TPC Fire	50	93,530	0	0	0	
Total	139	1,153,330	3	2	1	

Continuous (hourly) PM with a diameter of 2.5 μm or less ($PM_{2.5}$) data were reviewed to see if PM values were exceeded during the two fire-related industrial events in Region 12 (Houston) and Region 10 (Beaumont): the ITC and TPC Fires, respectively. The hourly average concentrations were used to calculate 24-hour averages that were then compared to the level of the $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS) (35 $\mu g/m^3$). The Houston Region has a total of ten active continuous $PM_{2.5}$ monitors (six of those sites were potentially impacted by the ITC Fire and are summarized in Table 4) and the Beaumont Region had four. To ensure evaluation of $PM_{2.5}$ site impacts from the fires, data were reviewed for the first five days of each event. All calculated 24-hour average concentrations of $PM_{2.5}$ reviewed were well below the level of the 24-hour NAAQS (35 $\mu g/m^3$) (Table 4).

Table 4. Summary of $PM_{2.5}$ Results for ITC and TPC Fires.

Event	Days Covered	# Samples	# Exceed	Notes
ITC Fire	5	537	0	5 continuous $PM_{2.5}$ monitors: Date range March 17-21, 2019; 1 continuous $PM_{2.5}$ monitor: Date range March 20-21, 2019
TPC Fire	5	480	0	4 continuous $PM_{2.5}$ monitors: Date range November 27-December 1, 2019
Total	10	1,017	0	

Continuous (hourly) CO, NO_2, and SO_2 data were also reviewed for each of the six identified events. The hourly average concentrations were compared to the level of the CO, NO_2, and SO_2 1-hour NAAQS (35,000 ppb, 100 ppb, and 75 ppb, respectively). For the natural events, of the 113,247 total samples collected spanning the identified time-frames, there were only three concentrations that were greater than the respective level of the NAAQS (three SO_2 concentrations), which represent approximately 0.0027% of the data collected (Table 5). For the industrial events, of the 88,677 total samples collected spanning the identified time-frames, there was only one concentration that was greater than the respective level of the NAAQS (one NO_2 concentration), which represents approximately 0.0011% of the data collected (Table 6).

Table 5. Summary of CO, NO_2, and SO_2 Data for Each Evaluated Natural Event.

Event	Days Covered	# Samples	# Exceed	Notes on Exceedances
Hurricane Harvey	41	42,082	1	SO_2 (R12 - Houston)
Hurricane Laura	23	23,381	0	
Hurricane Delta	6	1,396	0	
Winter Storm Uri	49	46,388	2	SO_2 (R10 - Beaumont)
Total	119	113,247	3	

Table 6. Summary of CO, NO2, and SO2 Data for Each Evaluated Industrial Event.

Event	Days Covered	# Samples	# Exceed	Notes on Exceedances
ITC Fire	89	72,426	0	
TPC Fire	50	16,251	1	NO_2
Total	139	88,677	1	

Mobile monitoring in major industrial areas in the affected regions was conducted after three storms (Hurricanes Laura and Delta, and Winter Storm Uri) and after the ITC fire. These monitoring trips evaluated 16 – 19 chemicals, including BTEX (benzene, toluene, ethylbenzene, xylenes), styrene, and 1,3-butadiene, and often also hydrogen sulfide (H_2S) and SO_2. Most of the measurement durations were 1-10 seconds, which were conservatively compared to the TCEQ 1-hr AMCVs, the value of the 30-minute state standard for H_2S, or the level of the 1-hr NAAQS for SO_2. Across all three storms, more than 2.1 million chemical concentrations were measured and only 266 of those measurements exceeded a comparison value (CV) (Table 7). For the ITC fire 266,940 sample concentrations were evaluated with nine exceedances of a 1-hr AMCV (Table 8). Seven of these exceedances were of the 1-hour health-based benzene AMCV, which is consistent with the release of benzene from that event. The mobile monitoring technology used during the ITC fire collected 20- to 30-minute samples, which provide a more appropriate comparison to the AMCVs, NAAQS, and state standard.

Table 7. Summary of Mobile Air Monitoring Data for Each Evaluated Natural Event.

Event	# Days of Sampling	# Samples	# Exceed	# Health Exceed	# Odor Exceed	Notes on Exceedances [a]
Hurricane Laura	9	213,475	110	0	110	36 & 72 sec > styrene odor AMCV [b]; 12 sec (2 samples) > 1,3-butadiene odor AMCV
Hurricane Delta	3	57,037	0	0	0	
Winter Storm Uri	31	1,831,468	156	0	154	~2.5 min > styrene odor AMCV (26 to 65 ppb); 2 x 6 sec > ethane + ethylene vegetation AMCV
Total	43	2,101,980	266	0	264	

[a] Notes describe the amount of time that measured concentrations of listed chemicals were at levels higher than the comparison value.

[b] Styrene exceedances during Hurricane Laura were only marginally higher than the odor AMCV, in the presence of a high instrument-attributable baseline.

Table 8. Summary of Mobile Air Monitoring Data for Each Evaluated Industrial Event.

Event	# Days of Sampling	# Samples	# Exceed	# Health Exceed	# Odor Exceed	Notes on Exceedances [a]
ITC Fire	50	266,940	9	7	2	7 x 20-30 min > benzene health AMCV; 2 x 20-30 min > styrene odor AMCV
Total	50	266,940	9	7	2	

[a] Notes describe the amount of time that measured concentrations of listed chemicals were at levels higher than the comparison value.

Handheld monitoring in major industrial areas in the affected regions was conducted after three storms (Hurricane Laura, Hurricane Delta, and Winter Storm Uri) and after the ITC and TPC fires. While handheld data were collected after Hurricane Harvey, the data were not available in an electronic format for this analysis. Field staff monitored from four to nine chemicals, depending on the event, including VOCs, H_2S, ammonia (NH_3), CO, hydrogen cyanide (HCN), benzene, chlorine (Cl_2), 1,3-butadiene, and SO_2. Handheld instrument measurement durations were approximately 1 second, which were conservatively compared to the TCEQ 1-hr AMCVs, or to another comparison value (CV) (i.e., value of the state standard, level of the NAAQS, or background values). While 1-hr CVs can serve as conservative screening tools for instantaneous sampling results, health conclusions cannot be drawn based on an isolated instantaneous concentration exceeding a 1-hr health-based CV (i.e., a longer sampling duration would be needed). Across the three storms, there were 14,083 samples measured and 36 of those measurements exceeded a CV (Table 9). For the ITC and TPC fires, 71,948 samples were evaluated and 465 of those measurements exceeded a CV (Table 10).

Table 9. Summary of Handheld Air Monitoring Data for Each Evaluated Natural Event.

Event	# Days of Sampling	# Samples	# Exceed	# Health Exceed	# Odor Exceed	# Background Exceed	Notes on Exceedances
Hurricane Laura	20	7,129	25	14	10	1	H_2S (10 state std [a]); HCN (14 health); VOC (1 background)
Hurricane Delta	3	285	0	0	0	0	
Winter Storm Uri	36	6,669	11	5	6	0	CO (1 health); HCN (3 health); H_2S (6 state std [a]); NH_3 (1 health)
Total	59	14,083	36	19	16	1	

[a] Exceedances of the value of the state standard for H_2S could cause odorous conditions.

Table 10. Summary of Handheld Air Monitoring Data for Each Evaluated Industrial Event.

Event	# Days of Sampling	# Samples	# Exceed	# Health Exceed	# Odor Exceed	# Background Exceed	Notes on Exceedances
ITC Fire	87	56,859	358	161	0	197	VOC (197 background); Benzene (56 health); CO (2 health); SO_2 (25 health); Cl_2 (78 health)
TPC Fire	48	15,089	107	44	40	23	VOC (23 background); H_2S (1 state std [a]); SO_2 (1 health); 1,3-butadiene (10 health & 39 odor); HCN (33 health)
Total	135	71,948	465	205	40	220	

[a] Exceedances of the value of the state standard for H_2S could cause odorous conditions.

As requested by State of Texas officials, US EPA deployed their ASPECT[2] aircraft to provide aerial air monitoring support after three storms (Hurricanes Harvey and Laura, and Winter Storm Uri) and after the ITC fire. ASPECT serves as a screening tool to monitor and characterize the impact of emissions of industrial facilities during, or in the aftermath of, emergency events

[2] https://www.epa.gov/emergency-response/aspect

from altitudes of greater than or equal to 1,000 feet above ground level. ASPECT can provide a full set of infrared (IR) imagery, IR spectrometer and photographic data that may complement or enhance ground level monitoring efforts to identify sources expeditiously. The monitoring equipment aboard ASPECT provides instantaneous data that are useful for rapid identification of contaminant plumes; however, because of the high altitude and grab sample nature (generally with a duration measured in seconds) of the data, it cannot be reliably used in a human health assessment. Therefore, it is not appropriate to compare ASPECT detected concentrations to any health- or odor- based comparison values including TCEQ's short-term AMCVs. ASPECT can potentially provide Fourier-transform infrared (FTIR) spectral-based concentrations for 76 compounds.

In support of TCEQ efforts to identify emission sources and assess air quality in the aftermath of the highlighted events in this report, ASPECT data were collected during 69 flights over a total of 52 days. Of the 537 data collection runs during those 69 flights, 223 total samples were detected (Table 11).

Table 11. Summary of ASPECT Data for Each Evaluated Event.

Event	Days Covered	# Flights	# Data Collection Runs	# Detections	Chemicals Detected
Hurricane Harvey	8	15	15	NA	See US EPA Office of Inspector General's Report December 2019[3]
Hurricane Laura	3	4	52	11	Isoprene, 1-Butene, Ammonia, 1,3-Butadiene, Ethyl Formate
Winter Storm Uri	13	24	281	174	n-Butyl Alcohol, Isoprene, 1-Butene, 2-Butene, Acetone, 1,3-Butadiene, Isobutylene [a], Ethylene, SO_2, Acetic Acid
ITC Fire	26	26	189	38	Isoprene, Acetone, 1-Butene, Ammonia, 1,3-Butadiene, Isobutylene [a]
Total	52	69	537	223	

[a] Isobutylene is also called isobutene

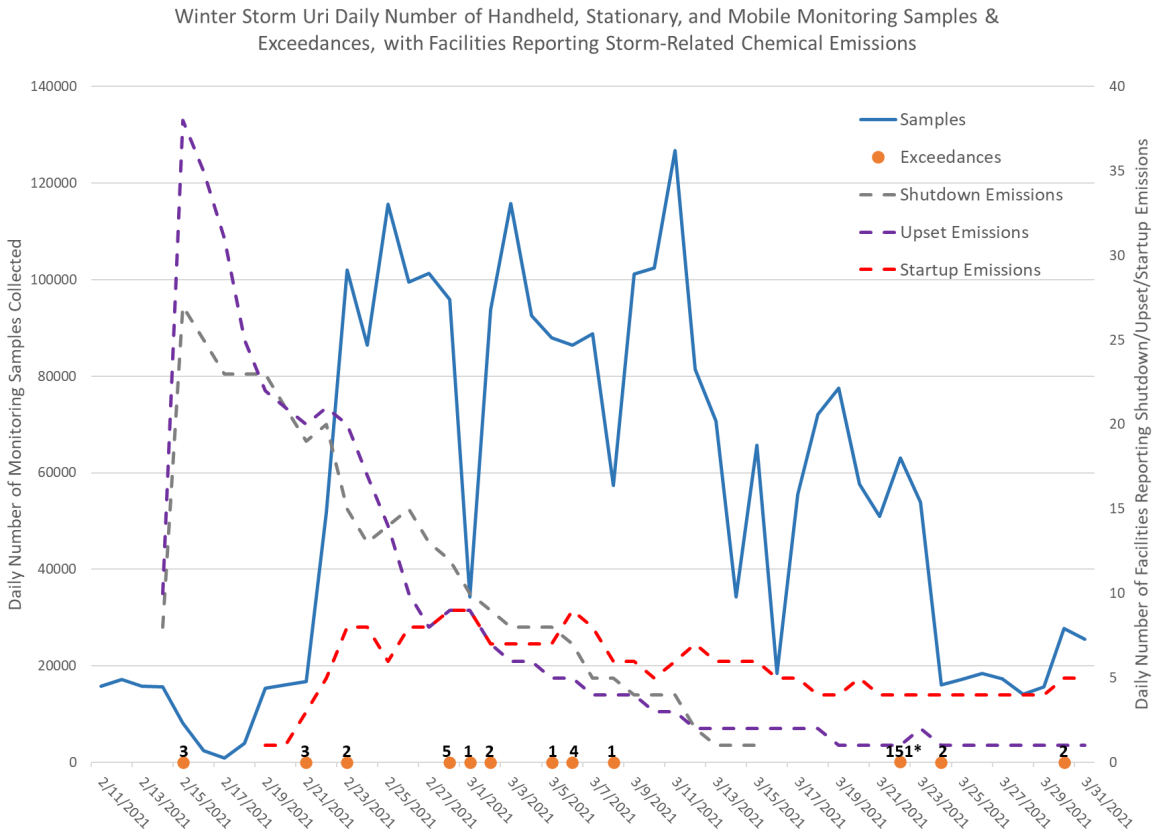
To further aid in the discussion of how long to deploy agency monitoring resources after a natural event, an analysis was conducted to determine how long after storm-related industrial startups monitored concentrations of chemicals in the air show exceedances of comparison values. The following Winter Storm Uri graph (Figure 1) provides a visual representation of the total daily number of stationary, mobile, and handheld air samples collected (solid line), as well as the number of daily exceedances (orange dots). Because the scale of daily number of

[3] https://www.epa.gov/sites/production/files/2019-12/documents/_epaoig_20191216-20-p-0062.pdf

samples on the graph is large, the number of exceedances is provided above the dot. The number of facilities reporting emissions (from shutdown, upset, or startup activities) each day have also been included in the graph (dashed lines, left-hand y-axis).

Power, and subsequently data, loss from Winter Storm Uri can be seen from February 15 through 18, 2021. The number of facilities reporting storm-related emissions shows that while shutdowns happened relatively quickly, facility startups were gradual and did not occur simultaneously. The bulk of exceedances occurred in the first 24 days of sampling for this event (approximately 81% of the exceedances). There were no storm-related emissions events reported in the vicinity of monitored exceedances for exceedances that occurred more than 25 days into sampling (March 9, 2021 and forward for Winter Storm Uri).

Figure 1. Winter Storm Uri Daily Number of Handheld, Stationary, and Mobile Monitoring Samples & Exceedances, with Facilities Reporting Storm-Related Chemical Emissions, Regions 10, 12, and 14 Combined.



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples and applies to the solid line on the graph as well as to the orange circles; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions and applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle). *151 exceedances represent 2.5 min of odorous levels of styrene.

In summary, the data evaluation in this report covered six events: four natural and two industrial. The natural events covered 119 combined days of sampling, with 23 exceedances of health-based CVs and 288 exceedances of odor-based CVs observed out of a total of 3,628,631 samples collected. It is important to reiterate that instantaneous data are 1-6 second samples and were conservatively compared to short-term CVs; health conclusions cannot be drawn based on a single instantaneous concentration exceeding a short-term CV. The four health-based exceedances of hourly measured concentrations ranged from 1.1 to 2.7 times higher than the CV and exposure would not be expected to result in adverse health effects. The two industrial events covered 139 combined days of sampling, with 215 exceedances of health-based CVs and 43 exceedances of odor-based CVs observed out of a total of 1,581,912 samples collected. There were ten 30-minute or hourly health-based exceedances of comparison values. The monitoring data collected around industrial events demonstrates an increased frequency of exceedances of CVs, particularly of health-based CVs, compared to the natural events. It is important to note that the industrial events were associated with actions to reduce exposure of the public to the released chemicals, such as shelter-in-place orders. This underlines the importance of monitoring ambient air quality after industrial events to assess potential health concerns. In contrast, the natural events tended to produce more exceedances of odorous levels of chemicals, which confirms reported accounts of odorous conditions after storms. Regardless of whether chemical concentrations in an area exceeded CVs, if a facility reports an emission of a chemical in excess of permitted amounts, the TCEQ will investigate and take enforcement action when appropriate.

The evaluation of the timing of exceedances of CVs after natural events shows that most occurred within the first few weeks after the natural events. Those that occurred later were rarely at a time and a location that had a reported storm-related emissions event. Besides a generally higher number of exceedances in the early weeks after a storm, there was no clear relationship between the number of facilities reporting storm-related emissions events and the number of CV exceedances. In addition, the data demonstrate that there is not a clear clustering of startup-related emissions at a particular time after a storm, and this temporal spread of startup emissions is expected to lead to fewer air quality concerns than if the same number of facilities went through simultaneous startup of their operations.

This analysis also shows that the largest number of facilities reporting storm-related emissions occurs in the first few days of the natural event, when stationary monitors may be offline and before the TCEQ can safely mobilize handheld or mobile monitoring. This generates a gap in our knowledge of air quality at a time when emissions may be greatest. However, during hurricanes the high winds rapidly disperse emitted pollutants, and available monitoring data at later times after the storms does not show a clear correlation between the number of facilities reporting emissions and the number of exceedances of CVs.

1 Acknowledgments

We would like to acknowledge the efforts of the hundreds of TCEQ staff that contributed to this report through data gathering and investigative work. Each data point, especially for handheld and mobile data streams, accounts for an individual employee's time and effort for collection. Additionally, data validation and quality assurance, especially for mobile and stationary data streams, account for a further level of employee effort and time, along with numerous investigative staff reviewing emissions reports.

2 Background

Prior to construction of a facility in Texas, air emissions under the agency's jurisdiction must be authorized by the TCEQ. These authorizations cover routine operations, but may also cover certain types of maintenance, startup, and shutdown (MSS) activities. When an upset occurs, and a facility shuts down, there may be excess air emissions; these are emissions that exceed a limit authorized by a TCEQ permit, rule, or order. Excess air emissions may occur as the facility clears lines and vents, idles down to a less efficient mode, or operates outside of the range where pollution controls are fully functional. Excess air emissions may be caused by emergencies; maintenance issues or operator error; upsets or malfunctions; or due to unplanned MSS activities. TCEQ investigates instances of excess emissions and takes enforcement action when appropriate.

When an event occurs, whether natural or industrial, the possibility for an upset increases, which may lead to excess air emissions from a facility. Industrial events may result in the uncontrollable release of emissions, while, for natural events such as storms, facilities may shut down in advance of the predicted storm to mitigate possible damage to the facility, to minimize the release of contaminants, and to enable workers to stay safe during the storm. When a storm has passed and facilities begin startup activities, the possibility of excess emissions increase. As part of the agency's response to events, the emergency response team offers monitoring, oversight, and technical and regulatory assistance. As part of monitoring assistance, environmental investigators may be deployed to the affected area with handheld monitoring devices, along with vans that are equipped with air monitoring instruments (mobile monitoring). The data from these tools are often collected in addition to the stationary ambient air monitoring data (if available) because mobile vans and environmental investigators are able to move around an affected area and provide more dynamic data. In addition, depending on the event, the U.S. Environmental Protection Agency (US EPA) may also deploy their Airborne Spectral Photometric Environmental Collection Technology (ASPECT) aircraft to aid in surveillance of the affected area. All these data streams are important in the characterization of an event and the affected area(s). However, with the acquisition of new mobile monitoring equipment that allows for the collection of in-motion data, the question of when and where to best deploy these resources and for how long is also important.

The purpose of this report is to aid in that discussion by evaluating the multitude of data collected before, during, and after events that have led to large excess air emissions. These data include facility emissions event data reported to the TCEQ, stationary ambient air

monitoring data from automated gas chromatographs (autoGCs), data collected using handheld instruments in the field, mobile monitoring data, and ASPECT data collected by the US EPA. Natural events reviewed for this report include Hurricane Harvey (August 2017), Hurricane Laura (August 2020), Hurricane Delta (October 2020), and Winter Storm Uri (February 2021). Industrial events that occurred during this time frame include the Intercontinental Terminals Company (ITC) Deer Park Facility Fire (March 2019) and the Texas Petrochemicals Group (TPC) Port Neches Facility Fire (November 2019). Including both natural and industrial events in this report allows the comparison of impacts on air quality from more controlled (although still unauthorized) startup and shutdown events following storms, compared to large, uncontrolled industrial disasters. Table 12 provides a chronological list of the natural and industrial events reviewed in this report, along with the date the event occurred, the date-range that was utilized across all monitoring data streams (as applicable), and the TCEQ regions that were affected/evaluated.

Table 12. Summary of Events and Date Ranges Evaluated in this Report.

Events	Event Type	Event Start Date	Date Range for Evaluation	TCEQ Region(s) Affected/ Evaluated
Hurricane Harvey	Natural	August 25, 2017	August 21, 2017 – September 30, 2017	10 [a], 12 [b], 14 [c]
ITC Fire	Industrial	March 17, 2019	March 15, 2019 – June 11, 2019	12
TPC Fire	Industrial	November 27, 2019	November 25, 2019 – January 13, 2020	10
Hurricane Laura	Natural	August 27, 2020	August 25, 2020 – September 19, 2020	10, 12
Hurricane Delta	Natural	October 9, 2020	October 7, 2020 – October 12, 2020	10
Winter Storm Uri	Natural	February 13, 2021	February 11, 2021 – March 31 [d], 2021	10, 12, 14

[a] TCEQ Region 10 is the Beaumont area.
[b] TCEQ Region 12 is the Houston area.
[c] TCEQ Region 14 is the Corpus Christi area.
[d] Emissions Event data stream date range goes through April 28, 2021.

Not all data streams were available for each event. Table 13 provides an inventory of the available data streams by event.

Table 13. Inventory of Available Data Streams by Event.

Event	Emissions Data	Stationary Data	Mobile Data	Handheld Data	ASPECT Data
Hurricane Harvey	Yes	Yes	--	-- [a]	Yes
Hurricane Laura	Yes	Yes	Yes	Yes	Yes
Hurricane Delta	Yes	Yes	Yes	Yes	--
Winter Storm Uri	Yes	Yes	Yes	Yes	Yes

Event	Emissions Data	Stationary Data	Mobile Data	Handheld Data	ASPECT Data
ITC Fire	Yes	Yes	Yes	Yes	Yes
TPC Fire	Yes	Yes	--	Yes	--

[a] Handheld data were collected for Hurricane Harvey but not included in this report because they pre-date the centralization of this type of data; they are not available in an easily accessible electronic format.

The evaluation portion of this report is organized by event type. Natural events are presented first and provide insight into the mass startup of facilities after shutdown in an affected region. The industrial events are presented next and will provide insight into the release of emissions following large-scale industrial accidents. Fourteen chemicals were identified from the mobile monitoring data and are referred to as common compounds. Some or all of the common compounds were monitored across the data streams (i.e., emissions reports, stationary autoGC data, mobile monitoring data, handheld data, and ASPECT surveillance data), and include:

- 1,3-Butadiene
- 1-Butene (also called 1-butylene)
- Acetylene
- Benzene
- Cyclohexane
- Ethylbenzene
- Isobutane
- m/p-Xylene
- n-Hexane (also called hexane)
- n-Octane (also called octane)
- o-Xylene
- Propylene
- Styrene
- Toluene

3 Data Evaluation

3.1 Natural Events

3.1.1 Hurricane Harvey

Hurricane Harvey made landfall on August 25, 2017 at 10:00 p.m., as a Category 4 storm near Rockport, Texas and subsequently stalled over southeastern Texas. Due to its slow motion and a week-long period of onshore flow, more than 19 trillion gallons of rainwater fell on parts of Texas, causing catastrophic flooding. One of the many preparations for Harvey included the TCEQ and other monitoring entities temporarily shutting down several air monitoring stations from the greater Houston, Corpus Christi, and Beaumont areas to protect valuable equipment from storm damage. After the storm passed, TCEQ staff and contractors began conducting damage assessments of monitoring stations and bringing monitors back online as soon as possible. Air monitoring stations not damaged from Harvey were back to operational status in Corpus Christi, Houston, and Beaumont by September 2, 6, and 8, 2017, respectively. By September 29, 2017 the air monitoring stations damaged by Harvey were repaired or replaced and the TCEQ's air monitoring network was restored to 100% operational status. In a coordinated effort to monitor storm-impacted areas, both TCEQ and US EPA investigators spent numerous hours, both day and night, monitoring neighborhoods and industrial fencelines with handheld instruments, such as optical gas imaging cameras (OGIC), toxic vapor analyzers, canisters, and portable multi-gas monitors. The use of these tools allows for the most effective source identification for drifting volatile organic compound (VOC) plumes, if present, so that

swift action can be taken to address the cause of these emissions. These handheld data were not included in this report because their collection pre-dated the centralization of this type of data. While these data are maintained in accordance with agency retention policies, in the original field notes or as part of individual investigation reports, they are not available in an easily accessible electronic format for use in this analysis.

TCEQ Regions affected by this event include 10 (Beaumont), 12 (Houston), and 14 (Corpus Christi).

3.1.1.1 Emissions Data: Shutdown, Startup, & Air Upsets

3.1.1.1.1 Region 10 – Beaumont

Shutdowns, upsets due to heavy rainfall and flooding, loss of steam from a third-party supplier, and power outages contributed to shutdown- and storm-related emissions in Region 10. Reported shutdowns for Hurricane Harvey began on August 29, 2017. Due to shutdowns and associated air upsets, the total amount of reportable emissions was 573,161 pounds. The greatest amount of emissions was of sulfur dioxide (SO_2), which represented approximately 42% of total reportable emissions. Next, carbon monoxide (CO), VOCs, nitrogen oxides (NO_X), 1,3-butadiene, n-tridecane, and C12s[4] accounted for 18.86%,6.45%, 3.05%, 2.90%, 2.54%, and 2.32% respectively, of the total reportable emissions. The highest reportable emissions in addition to emissions from compounds measured by mobile monitoring are shown in Table 14.

Table 14. Selected Reportable Air Emissions (89.00% of Total) due to Shutdowns from Hurricane Harvey in Region 10.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
SO_2	243,253	42.44
CO	108,114	18.86
VOCs [a]	36,958	6.45
NO_X	17,465	3.05
1,3-Butadiene	16,620	2.90
n-Tridecane	14,573	2.54
C12s [b]	13,271	2.32
Butenes	11,325	1.98
Ethylene	10,080	1.76
n-Hexane	9,408	1.64
Propylene	8,318	1.45
Propane	7,042	1.23
Butane	3,744	0.65
Butanes	3,662	0.64
Isobutane	2,074	0.36
Hydrogen Sulfide	1,300	0.23

[4] C12s are hydrocarbons that contain 12 carbon atoms.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
Cyclohexane	1,038	0.18
Propane/Propylene Mix	919	0.16
Ethylbenzene	641	0.11
Benzene	114	0.02
Xylenes	106	0.02
Toluene	54	0.01
Acetylene	33	0.01

[a] Includes non-speciated mixtures that are not already reported individually.
[b] C12s are hydrocarbons that contain 12 carbon atoms.

During shutdown activities in Region 10, a total of 144 pounds of greenhouse gases (i.e., carbon dioxide, nitrous oxide) and other non-reportable pollutants (i.e., ethane, hydrogen) were reported.

Following Hurricane Harvey, reported startup activities began September 3, 2017 through September 11, 2017. The total reportable emissions attributed to startups were 142,566 pounds. The greatest amount of emissions was of CO, which represented approximately 46% of total reportable emissions. Next, SO_2, VOCs, butanes, ethylene, and NO_X accounted for 32.74%, 8.81%, 2.86%, 2.44%, and 2.41%, respectively, of the total reportable emissions. The highest reportable emissions in addition to emissions from compounds measured by mobile monitoring are shown in Table 15. During startups, there were no reported emissions of non-reportable pollutants.

Table 15. Selected Reportable Air Emissions (99.64% of Total) due to Startups from Hurricane Harvey in Region 10.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	65,701	46.08
SO_2	46,678	32.74
VOCs [a]	12,654	8.81
Butanes	4,083	2.86
Ethylene	3,481	2.44
NO_X	3,436	2.41
Propylene	2,000	1.40
1,3-Butadiene	1,722	1.21
Butenes	1,357	0.95
PM	358	0.25
Hydrogen Sulfide	355	0.25
Isobutane	201	0.14
Butane	68	0.05
Benzene	48	0.03
Xylenes	3	0.002
Ethylbenzene	2	0.001

[a] Includes non-speciated mixtures that are not already reported individually.

3.1.1.1.2 Region 12 – Houston

Hurricane Harvey caused shutdowns, power outages, and loss of integrity of above ground storage tanks, which contributed to shutdown- and storm-related emissions in Region 12. Reported shutdowns began on August 26, 2017. Due to shutdowns and associated air upsets, the total amount of reportable emissions was 12,823,676 pounds. The greatest amount of emissions was of SO_2, which represented approximately 31% of total reportable emissions. Next, CO, NO_X, isopentane, butane, and VOCs accounted for 19.18%, 13.09%, 2.34%, 2.27%, and 2.10%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 16.

Table 16. Selected Reportable Air Emissions (85.37% of Total) due to Shutdowns from Hurricane Harvey in Region 12.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
SO_2	4,031,792	31.44
CO	2,459,022	19.18
NO_X	1,678,350	13.09
Isopentane	300,411	2.34
Butane	290,556	2.27
VOCs [a]	268,906	2.10
Xylenes	232,291	1.81
Toluene	227,703	1.78
Pentane	195,008	1.52
2,3-Dimethylbutane	180,466	1.41
n-Hexane	128,179	1.00
Isobutane	124,736	0.97
Propylene	105,855	0.83
2,2,4-Trimethylpentane	103,343	0.81
1,3,5-Trimethylbenzene	101,605	0.79
PM, PM (Unspecified)	87,105	0.68
n-Octane	80,966	0.63
Cyclohexane	74,902	0.58
Crude Oil	56,764	0.44
Ethylbenzene	52,999	0.41
1,2,4-Trimethylbenzene	52,714	0.41
Butenes	37,182	0.29
Hydrogen Sulfide	33,311	0.26
Benzene	33,002	0.26
1,3-Butadiene	10,429	0.08
Acetylene	291	0.002
Styrene	15	<0.001

[a] Includes non-speciated mixtures that are not already reported individually.

During shutdown activities in Region 12, a total of 19,300 pounds of greenhouse gases (i.e., methane) and other non-reportable pollutants (i.e., ethane, argon, hydrogen) were reported.

Following Hurricane Harvey, reported startup activities began August 29, 2017 through September 10, 2017. The total reportable emissions attributed to startup were 263,316 pounds. The greatest amount of emissions was of CO, which represented approximately 58% of total reportable emissions. Next, SO_2, ethylene, NO_X, propylene, particulate matter (PM), propane, hexanes, and pentene accounted for 10.17%, 8.70%, 6.12%, 2.97%, 2.66%, 2.41%, 2.40%, and 1.99%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 17. During startup activities in Region 12, emissions from the non-reportable pollutants ethane and methane totaled 20,824 pounds.

Table 17. Selected Reportable Air Emissions (99.73% of Total) due to Startups from Hurricane Harvey in Region 12.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	152,790	58.03
SO_2	26,777	10.17
Ethylene	22,899	8.70
NO_X	16,104	6.12
Propylene	7,811	2.97
PM	7,000	2.66
Propane	6,343	2.41
Hexanes	6,313	2.40
Pentene	5,248	1.99
Isobutane	2,584	0.98
1,3-Butadiene	1,703	0.65
Butenes	1,638	0.62
PM_{10}	1,400	0.53
VOCs [a]	1,315	0.50
Xylenes	714	0.27
Butane	569	0.22
Hydrogen Sulfide	511	0.19
Toluene	428	0.16
Hexane	87	0.03
Benzene	15	0.01
Acetylene	10	0.004

[a] Includes non-speciated mixtures that are not already reported individually.

3.1.1.1.3 Region 14 – Corpus Christi

There were emissions related to shutdowns in Region 14 from Hurricane Harvey; reported shutdowns began on August 24, 2017. Due to shutdowns, the total amount of reportable emissions was 140,008 pounds. The greatest amount of emissions was of CO, which represented approximately 49% of total reportable emissions. Next, ethylene, NO_X, SO_2, propane, propylene, and isobutane accounted for 10.25%, 10.21%, 9.50%, 7.47%, 5.23%, and 1.97% respectively, of the total reportable emissions. The highest reportable emissions in addition to emissions from compounds measured by mobile monitoring are shown in Table 18.

Table 18. Selected Reportable Air Emissions (99.91% of Total) due to Shutdowns from Hurricane Harvey in Region 14.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	68,741	49.10
Ethylene	14,351	10.25
NO_X	14,293	10.21
SO_2	13,294	9.50
Propane	10,455	7.47
Propylene	7,327	5.23
Isobutane	2,752	1.97
Butane	1,921	1.37
Butanes	1,560	1.11
Isopentane	1,508	1.08
Butenes	999	0.71
1,3-Butadiene	753	0.54
VOCs [a]	439	0.31
Pentane	393	0.28
Benzene	296	0.21
PM	263	0.19
Hexane	146	0.10
Acetylene	145	0.10
Cyclopentadiene	139	0.10
Hydrogen Sulfide	102	0.07
Toluene	6	0.004
Xylene	3	0.002
Styrene	1	0.001

[a] Includes non-speciated mixtures that are not already reported individually.

During shutdown activities in Region 14, emissions of greenhouse gases (i.e., methane) and other pollutants that are not required to be reported to the agency (i.e., ethane, hydrogen) totaled 28,053 pounds.

Following Hurricane Harvey, reported startup activities began August 29, 2017 through September 22, 2017. The total reportable emissions attributed to startup were 282,659 pounds. The greatest amount of emissions was of CO, which represented approximately 35% of total reportable emissions. Next, SO_2, ethylene, NO_X, and propylene accounted for 26.62%, 15.64%, 6.61%, and 6.35%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 19. During startup, a total of 25,315 pounds of greenhouse gases (methane, carbon dioxide) and other non-reportable pollutants (ethane, hydrogen) were reported.

Table 19. Selected Reportable Air Emissions (97.56% of Total) due to Startups from Hurricane Harvey in Region 14.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	100,007	35.38
SO_2	75,234	26.62
Ethylene	44,194	15.64
NO_X	18,686	6.61
Propylene	17,939	6.35
Butenes	6,852	2.42
1,3-Butadiene	5,913	2.09
Pentane	1,859	0.66
Benzene	949	0.34
Butane	911	0.32
Hydrogen Sulfide	824	0.29
VOCs [a]	738	0.26
Hexane	587	0.21
Isobutane	437	0.15
Acetylene	353	0.12
Toluene	153	0.05
Xylene	73	0.03
Styrene	31	0.01
Butanes	23	0.01
Octane	3	0.001
Ethylbenzene	2	0.001

[a] Includes non-speciated mixtures that are not already reported individually.

3.1.1.2 Stationary Ambient Air Monitoring Data

Before, during (if available), and after Hurricane Harvey, a total of 385,545 VOC samples were collected at 19 stationary ambient air monitor locations in the affected Regions: 10 (Beaumont), 12 (Houston), and 14 (Corpus Christi). The data cover a 41-day period from August 21, 2017, four days prior to the day landfall was made, through September 30, 2017. Of the 385,545 VOC samples that were collected, there was only one odor exceedance of an AMCV, which represents 0.00026% of the data collected (Table 20). The maximum benzene concentrations per day measured before, during (if available), and after Hurricane Harvey are provided in Figure 2.

Hourly averages of continuous CO, NO_2, and SO_2 data were compared to their respective level of the 1-hour NAAQS (35,000 ppb, 100 ppb, and 75 ppb, respectively). Of the 42,082 samples collected, there was only one SO_2 concentration that was above the level of the NAAQS, which represents 0.00238% of the data collected. That concentration of 202.79 ppb was measured at the Texas City BP 31st Street (Site 1) site on September 17, 2017 at 4 pm.

3.1.1.2.1 Odor-based Exceedances

A value of 165 ppb was measured for isoprene at the HRM #3 Haden Rd site on August 31, 2017 at 11:00 pm (Figure 3). This value is approximately 3.5 times greater than the odor AMCV of 47

ppb. It is possible that exposure to this concentration could have resulted in the perception of odor, but the level was still far below the health-based AMCV of 1,400 ppb.

Table 20. VOC Samples Collected vs Exceedances for Hurricane Harvey.

Region	# Samples Collected	# Exceed	% Exceed	# Health Exceed	# Odor Exceed	Notes on Exceedances
10	52,054	0	0.00000%	0	0	
12	300,785	1	0.00033%	0	1	Isoprene Odor Exceedance (value = 165.2 ppb)
14	32,706	0	0.00000%	0	0	
Total	385,545	1	0.00026%	0	0	

Figure 2. Max Benzene Concentrations Measured around Hurricane Harvey.

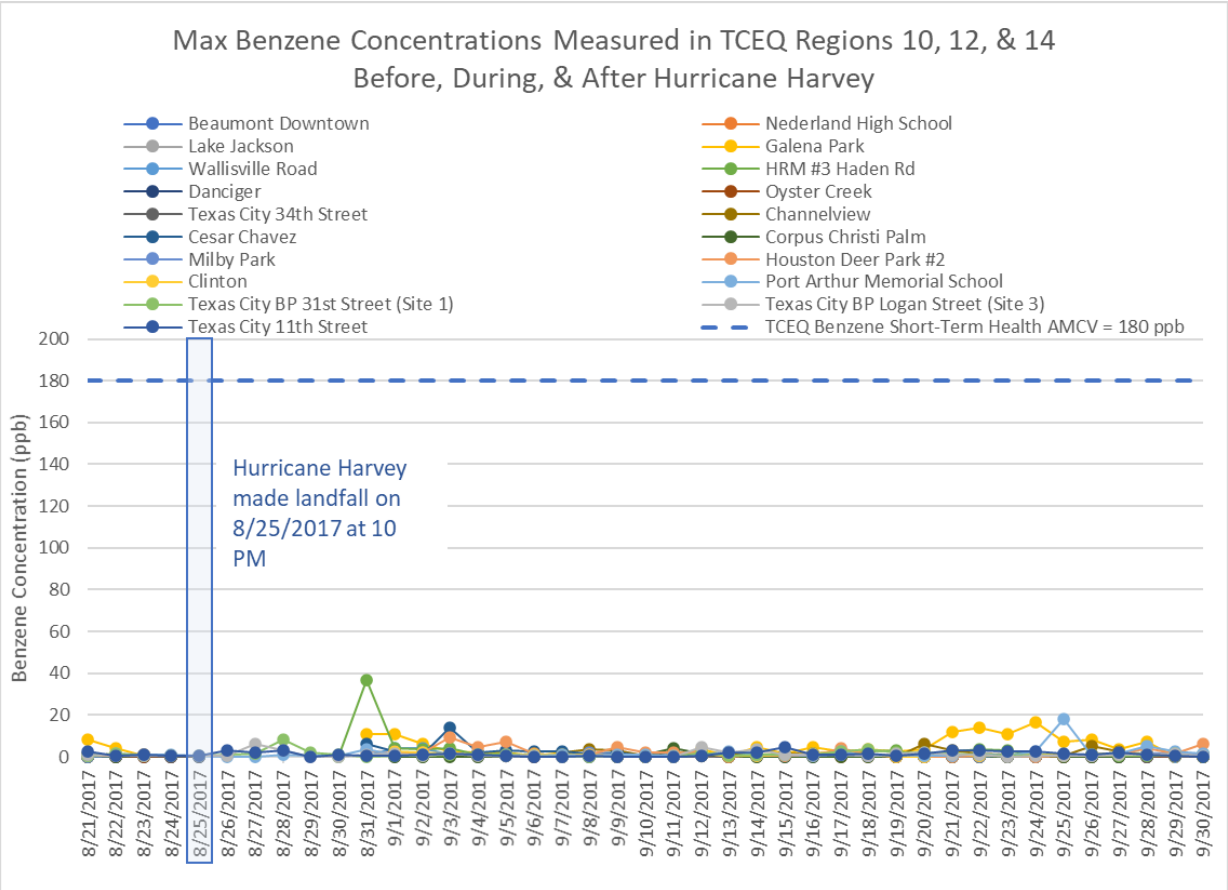
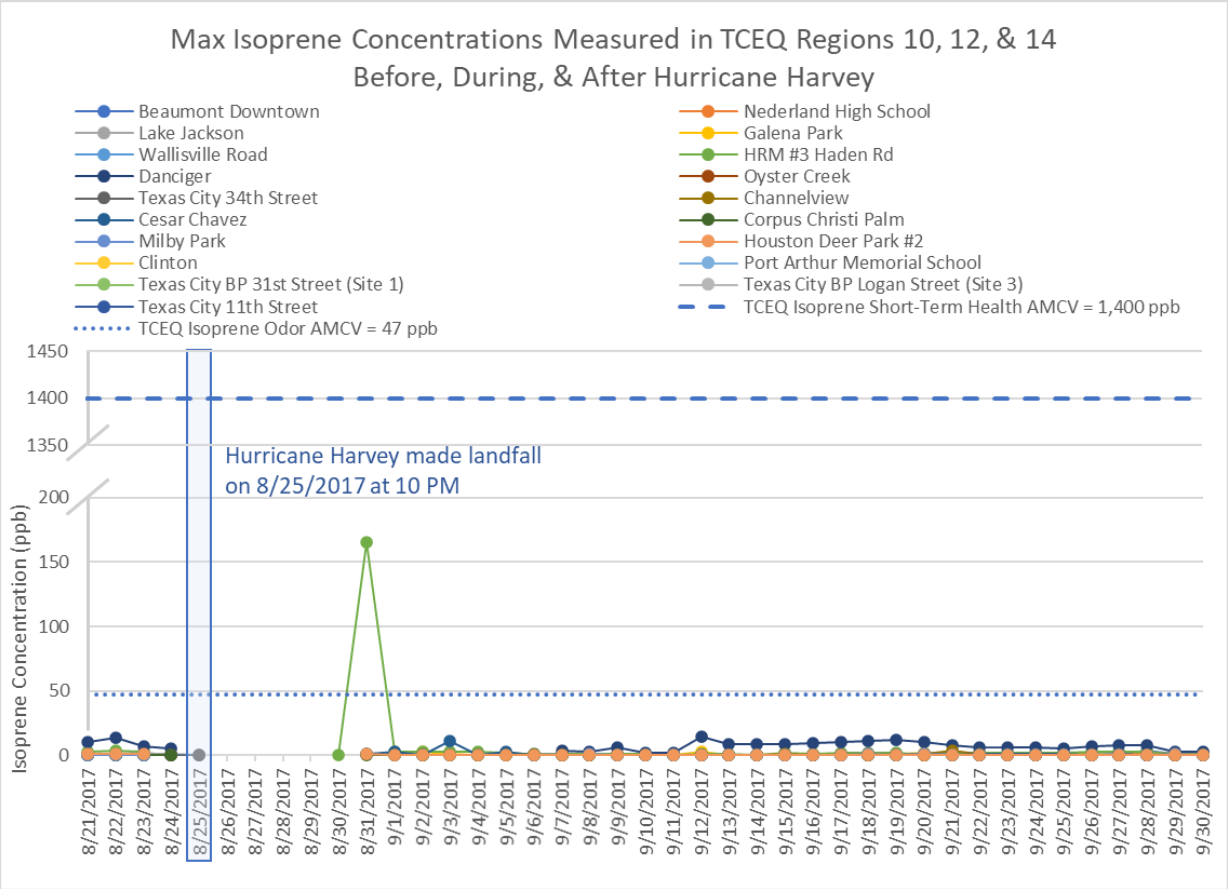


Figure 3. Max Isoprene Concentrations Measured around Hurricane Harvey.



3.1.1.3 ASPECT Aircraft Data

In response to the aftermath of Hurricane Harvey, Texas officials requested a damage assessment by US EPA Region 6. The ASPECT aircraft was mobilized for screening purposes only on August 29 – September 11, 2017. However, limited ASPECT flight data were retained in the Environmental Unit of the US EPA's Office of Emergency Management; for instance, the air toxic concentration values were stripped from the dataset. Based on the US EPA Office of the Inspector General's Report, the results across the 8 days of mobilization, 15 flights with 15 data collection runs each included a full set of IR imagery, IR spectrometer and photographic data. Although the US EPA presented, via press releases, that some preliminary analyses of data were received, the raw data were never publicly distributed by US EPA. For detailed information on the flight paths, analytes measured, and values detected, please see the US EPA Office of the Inspector General's Report dated December 2019[5] and the US EPA Region 6 On-Scene Coordinator Response to Hurricane Harvey[6].

[5] https://www.epa.gov/sites/production/files/2019-12/documents/_epaoig_20191216-20-p-0062.pdf

[6] https://www.epa.gov/hurricane-response

3.1.2 Hurricane Laura

Hurricane Laura made landfall around 1:00 a.m. on the morning of August 27, 2020, near the Texas state line in Cameron, Louisiana as a Category 4 hurricane. Like with Hurricane Harvey, in preparation for Hurricane Laura, the TCEQ and other monitoring entities temporarily shut down several air monitoring stations from the Greater Houston and Beaumont areas to protect valuable equipment from storm damage. After the storm passed, TCEQ staff and contractors began conducting damage assessments of monitoring stations and bringing monitors back online as soon as possible. Monitoring stations were back to operational status in Houston and Beaumont by August 28, 2020. In a coordinated effort to monitor storm-impacted areas, TCEQ deployed environmental investigators with handheld instruments, such as optical gas imaging cameras (OGIC), toxic vapor analyzers, canisters, and portable multi-gas monitors, to the impacted areas of East Texas on August 28, 2020. The TCEQ mobile monitoring assets were deployed in the Beaumont and Port Arthur area once it was declared safe to access the impacted areas and monitoring began on August 28, 2020. The use of these tools allows for the most effective source identification for drifting VOC plumes, if present, so that swift action can be taken to address the cause of these emissions.

TCEQ Regions affected by this event include 10 (Beaumont) and 12 (Houston).

3.1.2.1 Emissions Data: Shutdown, Startup, & Air Upsets

3.1.2.1.1 Region 10 - Beaumont

In advance of the hurricane, facilities in Region 10 reported shutdowns that began on August 24, 2020. Following the hurricane, facilities in Region 10 began to start back up August 30, 2020 through September 19, 2020. During shutdown and startup activities, some upset activities were noted, and these emissions have been included. The total reportable emissions attributed to shutdown were 160,116 pounds.

During shutdown the greatest amount of emissions were of CO, which comprised approximately 24% of the total reportable emissions. SO_2, butane, propylene, ethylene, and isobutane comprised 15.74%, 11.41%, 10.68%, 7.85%, and 5.44%, respectively, of total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 21.

Table 21. Selected Reportable Air Emissions (92.24% of Total) due to Shutdowns from Hurricane Laura in Region 10.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	37,891	23.66
SO_2	25,207	15.74
Butane	18,262	11.41
Propylene	17,094	10.68
Ethylene	12,570	7.85
Isobutane	8,712	5.44
Cyclohexane	6,759	4.22

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
VOCs [a]	6,719	4.20
NO_X	5,670	3.54
Propane	4,823	3.01
Butenes	1,533	0.95
1,3-Butadiene	846	0.53
n-Hexane	447	0.28
Benzene	420	0.26
n-Octane	380	0.24
Hydrogen Sulfide	267	0.17
Toluene	63	0.04
Acetylene	22	0.01
Xylenes	7	0.004
Ethylbenzene	2	0.001
Styrene	2	0.001

[a] Includes non-speciated mixtures that are not already reported individually.

During shutdown activities in Region 10, emissions of greenhouse gases (i.e., carbon dioxide, methane) totaled 366,081 pounds. Other pollutants that are not required to be reported to the agency (i.e., ethane, nitrogen, oxygen) totaled 13,903 pounds.

The total reportable emissions attributed to startup were 403,350 pounds. During startup, the greatest amount of emissions was of CO, which comprised approximately 72% of the total reportable emissions. Ethylene, propylene, NO_X, and SO_2 represented 9.62%, 5.91%, 4.73%, and 2.97%, respectively. The highest reportable emissions, in addition to emissions from compounds measured during mobile monitoring trips, are shown in Table 22. In addition, during startup 16,906,994 pounds of carbon dioxide emissions were reported.

Table 22. Selected Reportable Air Emissions (98.59% of Total) due to Startups from Hurricane Laura in Region 10.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	288,581	71.55
Ethylene	38,807	9.62
Propylene	23,827	5.91
NO_X	19,066	4.73
SO_2	11,987	2.97
Propane	6,795	1.68
Isobutane	5,980	1.48
Butenes	1,445	0.36
VOCs [a]	960	0.24
Benzene	117	0.03
Hydrogen Sulfide	71	0.02
1,3-Butadiene	22	0.01
Toluene	19	0.005
Ethylbenzene	1	<0.001

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
Styrene	1	<0.001
Xylenes	1	<0.001

[a] Includes non-speciated mixtures that are not already reported individually.

3.1.2.1.2 Region 12 – Houston

Facilities in Region 12 reported shutdown activities that began on August 25, 2020. Note that prior to shutdowns, on August 22 through 23, 2020, inclement weather (lightning, heavy rain) did result in some air upsets; because this inclement weather was unrelated to Hurricane Laura, emissions from this unrelated storm are not included in this summary.

The total reportable emissions attributed to shutdowns was 7,215 pounds. The greatest amount of emissions was of CO, which represented approximately 46% of total reportable emissions. Next, ethylene, NO_X, isobutane, PM, and SO_2 accounted for 23.01%, 11.19%, 10.03%, 4.16%, and 2.51%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 23.

Table 23. Selected Reportable Air Emissions (99.29% of Total) due to Shutdowns from Hurricane Laura in Region 12.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	3,296	45.68
Ethylene	1,660	23.01
NO_X	807	11.19
Isobutane	724	10.03
PM	300	4.16
SO_2	181	2.51
Pentene	80	1.11
Propylene	70	0.97
VOCs [a]	43	0.60
1,3-Butadiene	3	0.04

[a] Includes non-speciated mixtures that are not already reported individually.

During shutdown activities in Region 12, a total of 1,756 pounds of greenhouse gases (i.e., methane) and other non-reportable pollutants (i.e., ethane) were reported.

Reported startup activities in Region 12 began August 27, 2020 through August 29, 2020. Note that on August 28, 2020 and September 12, 2020 a natural gas liquefication plant reported startup activities; because the shutdown activities were attributed to the world-wide conditions caused by the COVID-19 pandemic, emissions from this startup are not included in the summary of emissions attributed to startup activities following Hurricane Laura. One air upset from a different facility occurred during the time of startup and is included in the summary of startup emissions for Hurricane Laura.

The total reportable emissions attributed to startup were 36,715 pounds. The greatest amount of emissions was of CO, which represented approximately 44% of total reportable emissions. Next, ethylene, NO_X, propylene, PM, and propane accounted for 17.72%, 10.08%, 8.64%, 7.50%, and 4.91%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 24. During startup activities in Region 12, a total of 4,161 pounds of greenhouse gases and other non-reportable pollutants (i.e., methane and ethane) were reported.

Table 24. Selected Reportable Air Emissions (99.94% of Total) due to Startups from Hurricane Laura in Region 12.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	16,011	43.61
Ethylene	6,505	17.72
NO_X	3,702	10.08
Propylene	3,174	8.64
PM	2,755	7.50
Propane	1,803	4.91
Pentene	554	1.51
Methanol	518	1.41
Butenes	397	1.08
SO_2	380	1.03
1,3-Butadiene	290	0.79
VOCs [a]	231	0.63
Butane	229	0.62
Hexane	101	0.28
Pentane	37	0.10
Isobutane	7	0.02

[a] Includes non-speciated mixtures that are not already reported individually.

3.1.2.2 Stationary Ambient Air Monitoring Data

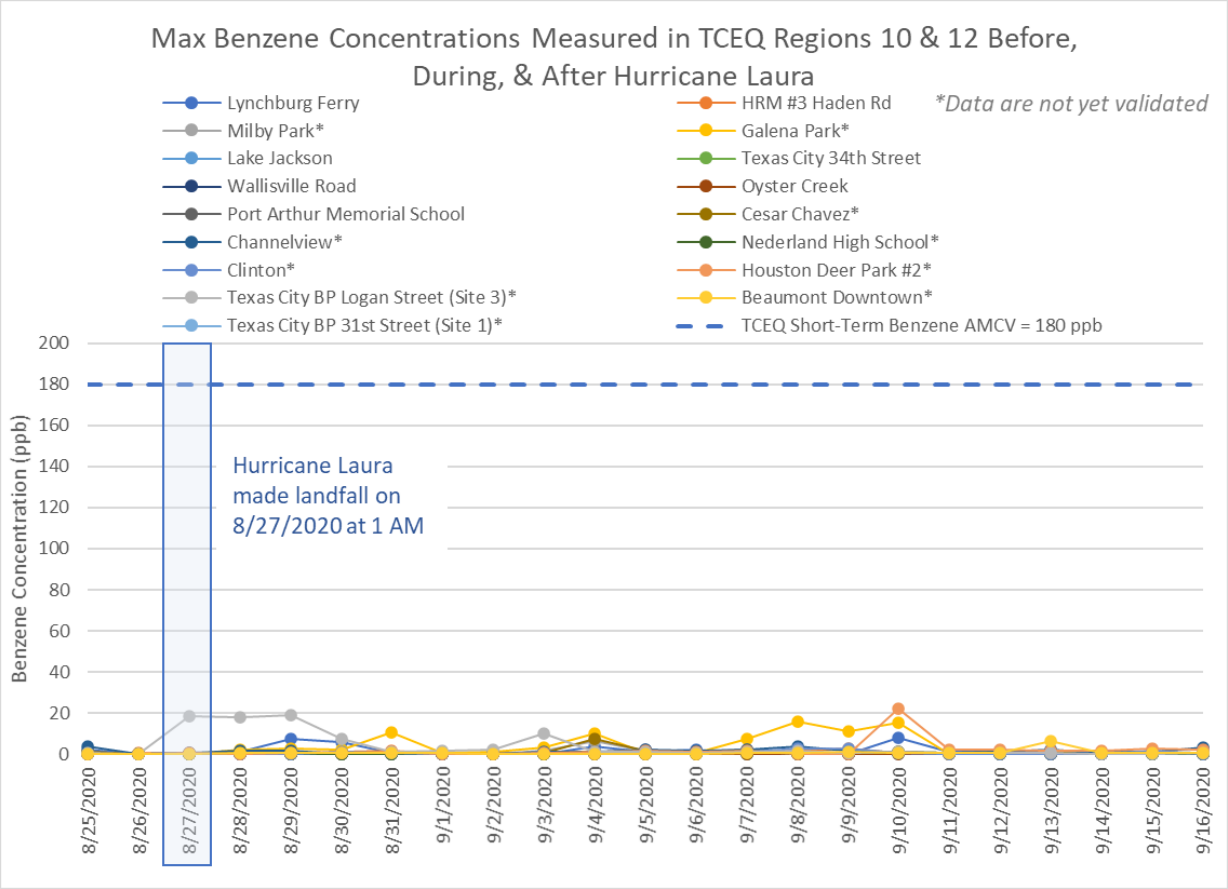
Before, during (if available), and after Hurricane Laura, a total of 265,243 VOC samples were collected at 17 stationary ambient air monitor locations in the affected Regions: 10 (Beaumont) and 12 (Houston). The data cover a 23-day period from August 25, 2020, two days prior to the day landfall was made, through September 16, 2020. Of the 265,243 VOC samples that were collected, there were no exceedances of an AMCV (Table 25). The maximum benzene concentrations per day measured before, during (if available), and after Hurricane Laura are provided in Figure 4.

Hourly averages of continuous CO, NO_2, and SO_2 data were compared to their respective level of the 1-hour NAAQS (35,000 ppb, 100 ppb, and 75 ppb, respectively). Of the 23,381 samples collected, there were no concentrations measured above the level of the NAAQS.

Table 25. VOC Samples Collected vs Exceedances for Hurricane Laura.

Region	# Samples Collected	# Exceed	% Exceed	# Health Exceed	# Odor Exceed	Notes on Exceedances
10	36,987	0	0.00000%	0	0	
12	228,256	0	0.00000%	0	0	
Total	265,243	0	0.00000%	0	0	

Figure 4. Max Benzene Concentrations Measured around Hurricane Laura.



3.1.2.3 Mobile Monitoring Data

After Hurricane Laura, the Picarro, DUVAS (Differential Ultraviolet Absorption Spectroscopy), and SIFT-MS (Selected-Ion Flow-Tube Mass Spectrometry) mobile monitoring instruments were used in Region 10 (Beaumont) to monitor 18 chemicals, including H_2S, SO_2, BTEX (benzene, toluene, ethylbenzene, xylenes), and 1,3-butadiene. This monitoring occurred from August 28 to September 3 and on September 10 and 16, 2020 (a total of nine days) and focused on the industrial areas of Beaumont and Port Arthur. Details of the chemicals and monitoring information for each instrument are provided in Table 26. The measurement durations were 1-6 seconds, which were conservatively compared to the TCEQ 1-hr AMCVs, the value of the 30-minute state standard for H_2S, or the level of the 1-hr NAAQS for SO_2. In total, 213,475 chemical concentrations were measured, and 110 samples exceeded the appropriate comparison value.

During two of the surveys on August 31, 2020 there was one 36-second period and one 72-second period when the DUVAS instrument measured styrene concentrations ranging from 26 – 33.3 ppb (up to 1.3-times higher than the 26 ppb odor-based AMCV). This could have caused odors, but levels were still far below the health-based AMCV of 5,200 ppb. An important caveat for this finding is that on all 6 of the DUVAS monitoring surveys conducted on August 31, 2020, the instrument baseline for styrene was higher than normal (approximately 6 ppb, instead of the usual 0-1 ppb). Thus, these exceedances may be at least partially attributable to that high instrument baseline. During one of the surveys on September 16, 2020 there were two 6-second periods when the SIFT-MS instrument measured 1,3-butadiene concentrations at 238 and 250 ppb (up to 1.1-times higher than the 230 ppb odor-based AMCV). This could have caused odors, but levels were still far below the health-based AMCV of 1,700 ppb.

Table 26. Mobile Monitoring Samples Collected After Hurricane Laura.

	Picarro	DUVAS	SIFT-MS
Chemicals Monitored	H_2S	SO_2; Benzene; Toluene; Styrene; 1,3-butadiene;	Isobutane; Toluene; Butane; Cyclohexane; Xylene + Ethylbenzene; Hexane; Styrene; Ethane+Ethylene; 1,3-butadiene; Benzene; Acetylene; 1-Butene; Octane; Propylene; C3-C4 Sat [a]
Sample Duration	1 second	1 second	3 - 6 seconds
Days of Sampling	8	8	2
# Mobile Surveys	42	54	2
# Stationary Surveys	6	0	6
Total # Samples	33,700	118,995	60,780
# Exceedances	0	108	2
Notes on Exceedances [b]		Styrene 36 sec & 72 sec > 26 ppb odor AMCV (26 - 33 ppb)	1,3-butadiene 2 x 6-sec > 230 ppb odor AMCV (238 & 250 ppb)

[a] C3-4 Sat is a mixture of saturated hydrocarbons that contain 3 – 4 carbon atoms.

[b] Notes describe the amount of time that measured concentrations of listed chemicals were at levels higher than the comparison value.

3.1.2.4 Handheld Data

After Hurricane Laura, TCEQ investigators from Region 10 (Beaumont) conducted handheld monitoring for total VOCs (referred to as VOCs), H_2S, CO, chlorine (Cl_2), SO_2, benzene, and HCN. This monitoring occurred from August 28 to September 16, 2020 (a total of 20 days) and focused on the industrial areas of Beaumont, Port Arthur, and Orange. The measurement durations were approximately 1 second, which were conservatively compared to the TCEQ 1-hr AMCVs, the value of the 30-minute state standard for H_2S, the level of the 1-hr NAAQS for CO

and SO_2, or background concentrations (3 ppm) for VOCs. Measured concentrations below these comparison values (CVs) would not be expected to cause adverse health, vegetation, or welfare effects, but because the sample durations were so short relative to the duration-specific CVs, the potential for health and vegetation adverse effects at concentrations higher than CVs cannot be evaluated. The potential for odorous conditions can be assessed based on these samples.

In total, 7,129 chemical concentrations were measured by handheld instruments after Hurricane Laura and 25 samples exceeded the respective CV. Chemical-specific information is provided in Table 27. Fourteen of these exceedances were for HCN, with measured instantaneous levels exceeding the 0.019 ppm 1-hr AMCV on September 2, 3, and 4, 2020. The measured concentrations that exceeded the AMCV ranged from 0.5 to 1 ppm (the detection limit of the instrument was 0.5 ppm). Ten of the exceedances were for H_2S, with measured instantaneous levels exceeding the 30-minute 0.08 ppm value of the state standard on August 28, 29, and September 1, 2020. The measured concentrations that exceeded the standard ranged from 0.6 to 1.8 ppm and could have caused odors. One VOC concentration (7.1 ppm) above the background level of 3 ppm was measured on September 4, 2020.

Table 27. Handheld Monitoring Samples Collected After Hurricane Laura.

Analyte	# Samples	# Detections	# Exceedances	Notes on Exceedances
Benzene	3	0	0	
Chlorine	193	0	0	
CO	1,350	19	0	
H_2S	1,906	10	10	Range 0.6 – 1.8 ppm (state std 0.08 ppm)
HCN	106	14	14	Range 0.5 – 1.0 ppm (AMCV 0.019 ppm); detection limit 0.5 ppm
SO_2	1,570	0	0	
VOCs	2,001	60	1	7.1 ppm (background 3 ppm)
Total	7,129	103	25	

3.1.2.5 ASPECT Aircraft Data

In response to the aftermath of Hurricane Laura, Texas officials requested a damage assessment by US EPA Region 6 and the ASPECT aircraft was mobilized from August 28 to August 30, 2020. Across the three days of surveillance, each flight included a full set of IR imagery, IR spectrometer and photographic data. US EPA conducted a total of four flights with 52 data collection runs (Table 28). Five of the 76 targeted compounds were detected (11 detections in total), including isoprene (maximum concentration of 1.55 ppm), 1-butene (maximum concentration of 1.25 ppm), ammonia (maximum concentration of 1.09 ppm), 1,3-butadiene (maximum concentration of 0.53 ppm), and ethyl formate (maximum concentration of 1.69 ppm). IR imagery did not show the presence of any chemical plumes on any of the data runs collected.

Table 28. Summary of ASPECT Flights for Hurricane Laura in Region 10.

Region	# Flights	# Collection Runs	# Detections	Chemicals Detected
10	4	52	11	Ammonia, 1-Butene, Ethyl Formate, Isoprene, 1,3-Butadiene

The ASPECT targeted compound list only includes two of the 14 chemicals monitored by mobile monitoring (1,3-butadiene and 1-butene) that are evaluated in this report. The number of detections of these two chemicals, as well as the maximum and minimum values measured, are listed in Table 29.

Table 29. Common Compounds Detected During the Hurricane Laura ASPECT Flight Surveys.

Compounds	# Samples Detected	Maximum (ppm)	Minimum (ppm)
1,3-Butadiene	1	0.53	-- [a]
1-Butene	2	1.41	1.25

[a] There was only one detection.

3.1.3 Hurricane Delta

Hurricane Delta made landfall around 6:00 pm on October 9, 2020 near the Texas state line in Creole, Louisiana as a Category 2 hurricane. The northwestern band of the storm caused power outages in both Louisiana and Texas. The TCEQ initiated handheld monitoring surveys in the impacted areas of East Texas on October 10, 2020. The TCEQ mobile monitoring assets were deployed in the impacted area and monitoring began on October 10, 2020. The use of these tools allows for the most effective source identification for drifting VOC plumes, if present, so that swift action can be taken to address the cause of these emissions.

The TCEQ Region affected by this event was 10 (Beaumont).

3.1.3.1 Emissions Data: Shutdown, Startup, & Air Upsets

3.1.3.1.1 Region 10 - Beaumont

Prior to Hurricane Delta's landfall, facilities in Region 10 did not report shutdowns. However, emissions due to power failures at a few facilities and a subsequent reported startup at one facility did result in air emissions. These are reported together.

The total reportable emissions attributed to Hurricane Delta were 480,211 pounds. The greatest amount of emissions was of CO, which represented approximately 53% of total reportable emissions. Next, ethylene, NO_X, propylene, SO_2, and VOCs accounted for 26.65%, 6.08%, 4.84%, 4.05%, and 1.92%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured during mobile monitoring trips, are shown in Table 30. A total of 134 pounds of non-reportable pollutants (i.e., nitrous oxide) were reported.

Table 30. Selected Reportable Air Emissions (98.33% of Total) due to Power Failures and Startups from Hurricane Delta in Region 10.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	254,331	52.96
Ethylene	127,970	26.65
NO_X	29,220	6.08
Propylene	23,219	4.84
SO_2	19,448	4.05
VOCs [a]	9,228	1.92
Benzene	4,127	0.86
Propane	1,831	0.38
Butenes	718	0.15
Butane	653	0.14
1,3-Butadiene	488	0.10
Acetylene	473	0.10
Isobutane	256	0.05
Hydrogen Sulfide	77	0.02
PM	68	0.01
PM_{10}	67	0.01

[a] Includes non-speciated mixtures that are not already reported individually.

3.1.3.2 Stationary Ambient Air Monitoring Data

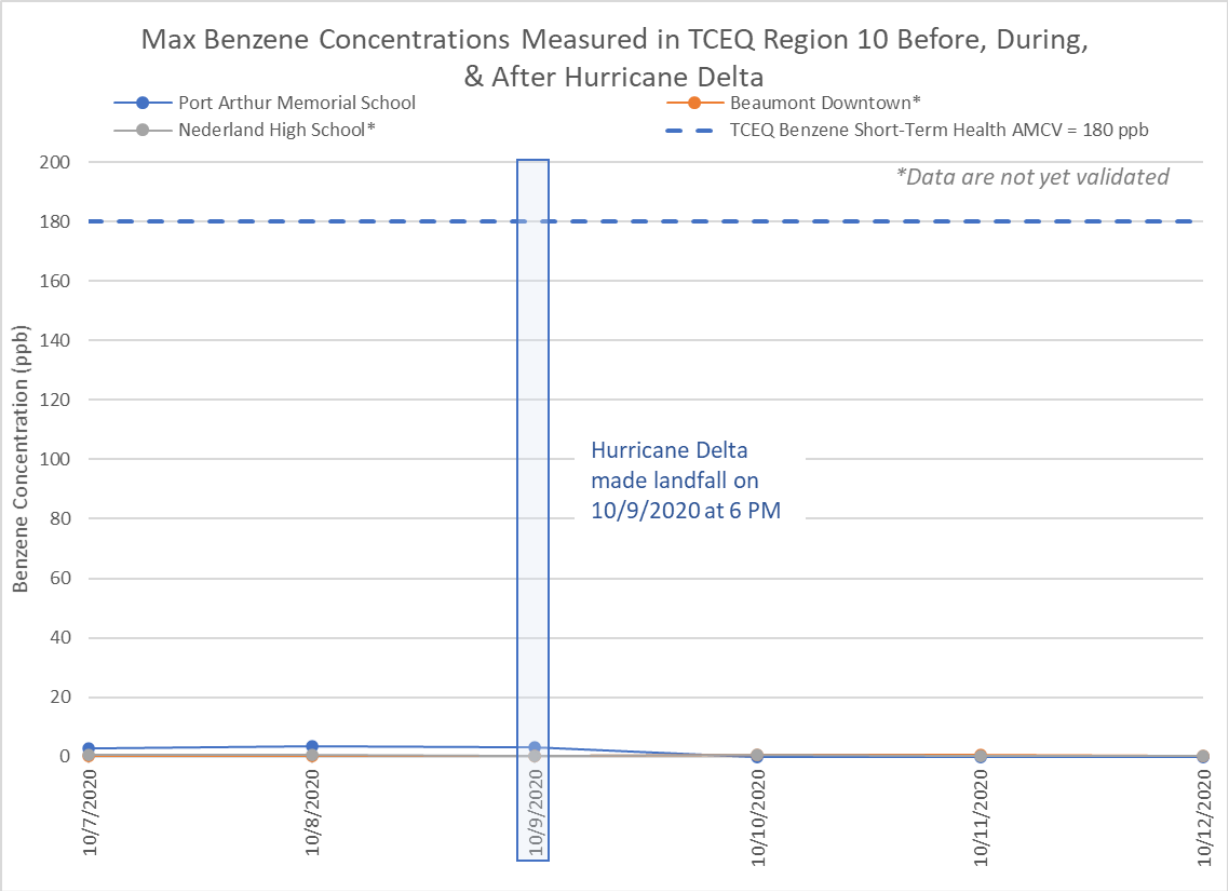
Before, during, and after Hurricane Delta, a total of 11,271 VOC samples were collected at three stationary ambient air monitor locations in the affected Region: 10 (Beaumont). The data cover a 6-day period from October 7, 2020, two days prior to the day landfall was made, through October 12, 2020. Of the 11,271 VOC samples that were collected, there were no exceedances of an AMCV (Table 31). The maximum benzene concentrations per day measured before, during, and after Hurricane Delta are provided in Figure 5.

Hourly averages of continuous CO, NO_2, and SO_2 data were compared to their respective level of the 1-hour NAAQS (35,000 ppb, 100 ppb, and 75 ppb, respectively). Of the 1,396 samples collected, there were no concentrations measured above the level of the NAAQS.

Table 31. VOC Samples Collected vs Exceedances for Hurricane Delta.

Region	# Samples Collected	# Exceed	% Exceed	# Health Exceed	# Odor Exceed	Notes on Exceedances
10	11,271	0	0.00000%	0	0	
Total	11,271	0	0.00000%	0	0	

Figure 5. Max Benzene Concentrations Measured in R10 around Hurricane Delta.



3.1.3.3 Mobile Monitoring Data

After Hurricane Delta, the Picarro and SIFT-MS mobile monitoring instruments were used in Region 10 (Beaumont) to monitor 16 chemicals, including H_2S, BTEX, and 1,3-butadiene. This monitoring occurred from October 10 to 12, 2020 (a total of three days) and focused on the industrial areas of Beaumont, Port Arthur, and Orange. Details of the chemicals and monitoring information for each instrument are provided in Table 32. The measurement durations were 1-6 seconds, which were conservatively compared to the TCEQ 1-hr AMCVs, or the value of the 30-minute state standard for H_2S. In total, 57,037 chemical concentrations were measured, and none of the chemicals exceeded the appropriate comparison value.

Table 32. Mobile Monitoring Samples Collected After Hurricane Delta.

	Picarro	SIFT-MS
Chemicals Monitored	H_2S	1,3-Butadiene; 1-Butene; Benzene; Hexane; Ethane+Ethylene; Xylene+Ethylbenzene; Propylene; Propane; Toluene; Isobutane; Cyclohexane; Butane; Styrene; C3-C4 Sat [a]; Acetylene; Octane
Sample Duration	5 seconds	3 - 6 seconds

	Picarro	SIFT-MS
Days of Sampling	3	3
# Mobile Surveys	9	9
# Stationary Surveys	1	1
Total # Samples	3,325	53,712
# Exceedances	0	0
Notes on Exceedances		

[a] C3-4 Sat is a mixture of saturated hydrocarbons that contain 3 – 4 carbon atoms.

3.1.3.4 Handheld Data

After Hurricane Delta, TCEQ investigators from Region 10 (Beaumont) conducted handheld monitoring for total VOCs (referred to as VOCs), H_2S, CO, SO_2, and HCN. This monitoring occurred from October 10 to October 12, 2020 (a total of three days) and focused on the industrial areas of Beaumont, Port Arthur, and Orange. The measurement durations were approximately 1 second, which were conservatively compared to the TCEQ 1-hr AMCVs, the value of the 30-minute state standard for H_2S, the level of the 1-hr NAAQS for CO and SO_2, or to background concentrations (3 ppm) for VOCs. Measured concentrations below these CVs would not be expected to cause adverse health, vegetation, or welfare effects, but because the sample durations were so short relative to the duration-specific CVs, the potential for health and vegetation adverse effects at concentrations higher than CVs cannot be evaluated. The potential for odorous conditions can be assessed based on these samples.

In total, 285 chemical concentrations were measured by handheld instruments after Hurricane Delta and none of the samples exceeded their respective CV. Chemical-specific information is provided in Table 33.

Table 33. Handheld Monitoring Samples Collected After Hurricane Delta.

Analyte	# Samples	# Detections	# Exceedances	Notes on Exceedances
CO	59	0	0	
H_2S	83	0	0	
HCN	18	0	0	
SO_2	42	0	0	
VOCs	83	10	0	
Total	285	10	0	

3.1.4 Winter Storm Uri

Winter Storm Uri, a severe cold weather event, occurred in Texas beginning February 13 and lasted through February 17, 2021. Multiple days of below-freezing temperatures, coupled with ice and snow storms, caused widespread power outages throughout the state. Industrial facilities, along with other consumers, were requested to minimize use of natural gas and electricity to help stabilize the electrical grid. Freezing weather damaged electrical infrastructure and affected process and utility lines, equipment, instrumentation, and availability of supplies of steam, nitrogen, natural/fuel gas, and hydrogen during the shutdown

and recovery efforts. In response, the TCEQ began conducting handheld air monitoring surveys and mobile monitoring along the industrial corridors of the Texas Gulf Coast to assess air quality. Monitoring began when many facilities were shut down and continued as facilities initiated startup activities. Additionally, US EPA deployed their ASPECT aircraft to aid in surveillance of the industrial areas around the Gulf Coast. The use of these tools allows for the most effective source identification for drifting VOC plumes, if present, so that swift action can be taken to address the cause of these emissions.

TCEQ Regions affected by this event that were evaluated in this report include 10 (Beaumont), 12 (Houston), and 14 (Corpus Christi).

3.1.4.1 Emissions Data: Shutdown, Startup, & Air Upsets

As of January 2022, some of the emissions event data for Winter Storm Uri are still undergoing investigation and may change upon further review by the agency and affected facilities.

3.1.4.1.1 Region 10 - Beaumont

In Region 10, there were shutdowns, power outages, damage to equipment and instrumentation due to freezing temperatures, loss of utilities, and loss of supply of steam and hydrogen which contributed to shutdown and weather-related emissions. Reported air upsets and shutdowns began on February 14, 2021. Due to shutdowns and air upsets, the total amount of reportable emissions was 642,025 pounds. The greatest amount of emissions was of SO_2, which represented approximately 34% of total reportable emissions. Next, CO, ethylene, NO_X, VOCs, hexane, and propane accounted for 25.17%, 6.20%, 4.51%, 4.32%, 4.19% and 4.01%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 34.

Table 34. Selected Reportable Air Emissions (97.42% of Total) due to Shutdowns from Winter Storm Uri in Region 10.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
SO_2	217,889	33.94
CO	161,616	25.17
Ethylene	39,778	6.20
NO_X	28,938	4.51
VOCs [a]	27,727	4.32
Hexane	26,888	4.19
Propane	25,743	4.01
Butane	16,078	2.50
Propylene	15,658	2.44
Isobutane	14,616	2.28
Butenes	11,384	1.77
Toluene	10,147	1.58
Chlorotrifluoroethylene	6,569	1.02

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
1,3-Butadiene	4,619	0.72
Isopentane	4,529	0.71
Styrene	2,544	0.40
Natural gas	2,287	0.36
Xylenes	2,024	0.32
Benzene	1,731	0.27
Hydrogen Sulfide	1,205	0.19
PM	1,176	0.18
Butanes	1,038	0.16
Ethylbenzene	572	0.09
Cyclohexane	412	0.06
Octane	145	0.02
Octanes	93	0.01
Acetylene	82	0.01

[a] Includes non-speciated mixtures that are not already reported individually.

During shutdown activities in Region 10, a total of 35,401 pounds of greenhouse gases (i.e., methane, carbon dioxide) and other non-reportable pollutants (i.e., ethane, hydrogen, argon) were reported.

Following the winter weather event, reported startup activities began February 22, 2021 through March 12, 2021. The total reportable emissions attributed to startup were 338,800 pounds. The greatest amount of emissions was of CO, which represented approximately 57% of total reportable emissions. Next, ethylene, SO_2, propylene, NO_X, and butanes accounted for 22.79%, 6.88%, 3.65%, 3.59%, and 1.87%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 35. During startup, emissions from the non-reportable pollutants ethane, hydrogen and methane totaled 12,978 pounds.

Table 35. Selected Reportable Air Emissions (98.19% of Total) due to Startups from Winter Storm Uri in Region 10.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	192,241	56.74
Ethylene	77,208	22.79
SO_2	23,314	6.88
Propylene	12,376	3.65
NO_X	12,151	3.59
Butanes	6,346	1.87
Propane	3,038	0.90
Butenes	1,780	0.53
Isobutane	1,493	0.44

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
Hexane	791	0.23
VOCs [a]	708	0.21
Benzene	593	0.18
Hydrogen Sulfide	243	0.07
Hexanes	138	0.04
1,3-Butadiene	129	0.04
Toluene	79	0.02
Xylenes	17	0.01
Styrene	11	0.003
Ethylbenzene	6	0.002

[a] Includes non-speciated mixtures that are not already reported individually.

3.1.4.1.2 Region 12 – Houston

In Region 12 there were shutdowns, power outages, damage to equipment and instrumentation due to freezing temperatures, loss of utilities, instability and/or loss of supplies of steam, nitrogen, hydrogen, natural/fuel gas and instrument air which contributed to shutdown- and weather-related emissions. Reported shutdowns began on February 14, 2021. Due to shutdowns and air upsets, the total amount of reportable emissions was 2,870,201 pounds. The greatest amount of emissions was of CO, which represented approximately 31% of total reportable emissions. Next, SO_2, NO_X, ethylene, propylene, butenes, butane, propane, and isobutane accounted for 25.95%, 7.73%, 4.67%, 4.64%, 4.32%, 2.92%, 2.56%, and 2.46%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 36.

Table 36. Selected Reportable Air Emissions (98.40% of Total) due to Shutdowns from Winter Storm Uri in Region 12.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	888,456	30.95
SO_2	744,878	25.95
NO_X	221,788	7.73
Ethylene	134,042	4.67
Propylene	133,133	4.64
Butenes	123,855	4.32
Butane	83,850	2.92
Propane	73,446	2.56
Isobutane	70,729	2.46
VOCs [a]	47,102	1.64
Isopentane	36,802	1.28
C5, C5s, C5+, C5+ (not including benzene), pentane plus [b]	32,893	1.15
Butyric Acid	32,877	1.15
Benzene	32,653	1.14

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
Pentane	30,541	1.06
1,3-Butadiene	28,565	1.00
C6+, C6 (not including benzene) [c]	18,351	0.64
Hexane	17,285	0.60
Isoprene	16,506	0.58
Methanol	11,968	0.42
Hydrogen Sulfide	8,361	0.29
Hexanes	6,335	0.22
Toluene	6,163	0.21
Acrylonitrile	5,076	0.18
2-Methyl-2-butene	4,725	0.16
Ammonia	3,711	0.13
2-Methyl-1-butene	3,027	0.11
Biodiesel (B99)	2,928	0.10
Styrene	1,013	0.04
Natural Gas	905	0.03
Xylenes	569	0.02
Pentanes	569	0.02
Butanes	380	0.01
Cyclohexane	312	0.01
Acetylene	217	0.01
Octane	120	0.004
Ethylbenzene	36	0.001

[a] Includes non-speciated mixtures that are not already reported individually.
[b] C5, C5s, C5+, C5+ (not including benzene), pentane plus is a mixture of hydrocarbons containing 5 or more carbon atoms, not including benzene.
[c] C6+, C6 (not including benzene) is a mixture of hydrocarbons containing 6 or more carbon atoms, not including benzene.

During shutdown activities in Region 12, a total of 88,078 pounds of greenhouse gases (i.e., methane, carbon dioxide, nitrous oxide) and other non-reportable pollutants (i.e., ethane, nitrogen, water, hydrogen) were reported.

Following the winter weather event, reported startup activities began February 21, 2021 through March 30, 2021. The total reportable emissions attributed to startup were 277,245 pounds. The greatest amount of emissions was of CO, which represented approximately 45% of total reportable emissions. Next, NO_X, ethylene, SO_2, propane, pentene, and propylene accounted for 15.18%, 12.76%, 4.87%, 4.75%, 4.69%, and 4.35%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 37. During startup, emissions from the non-reportable pollutants ethane, methane, and hydrogen totaled 59,472 pounds.

Table 37. Selected Reportable Air Emissions (99.93% of Total) due to Startups from Winter Strom Uri in Region 12.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	124,104	44.76
NO_X	42,078	15.18
Ethylene	35,365	12.76
SO_2	13,495	4.87
Propane	13,159	4.75
Pentene	13,006	4.69
Propylene	12,073	4.35
PM	6,055	2.18
VOCs [a]	4,257	1.54
1,3-Butadiene	3,922	1.41
Butenes	3,768	1.36
Phenol	1,745	0.63
Isobutane	990	0.36
Butane	915	0.33
C5+ (not including benzene), pentane plus [b]	888	0.32
Butanes	464	0.17
Styrene	447	0.16
Toluene	160	0.06
Benzene	125	0.05
Hydrogen Sulfide	22	0.01
Ethylbenzene	6	0.002
Xylenes	1	<0.001

[a] Includes non-speciated mixtures that are not already reported individually.

[b] C5 (not including benzene), pentane plus is a mixture of hydrocarbons containing 5 or more carbon atoms, not including benzene.

3.1.4.1.3 Region 14 – Corpus Christi

In Region 14, there were shutdowns and upsets which contributed to shutdown- and weather-related emissions. The extreme weather conditions directly impacted the operation of supporting utility providers, including city water supply, local power suppliers, supplies of natural gas, oxygen, hydrogen, and nitrogen, and ancillary natural gas and nitrogen processing plants. The weather conditions also affected the operation of downstream purchasers of refinery fuel products, as well as receipt and delivery capabilities of upstream suppliers and downstream purchasers. Reported air upsets and shutdowns began on February 13, 2021. Due to shutdowns and air upsets, the total amount of reportable emissions was 418,433 pounds. The greatest amount of emissions was of CO, which represented approximately 49% of total reportable emissions. Next, NO_X, ethylene, SO_2, butane, propane, and PM accounted for 11.74%, 10.24%, 9.41%, 3.51%, 2.97%, and 2.67%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 38.

Table 38. Selected Reportable Air Emissions (97.90% of Total) due to Shutdowns from Winter Storm Uri in Region 14.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
CO	205,640	49.15
NO_X	49,134	11.74
Ethylene	42,851	10.24
SO_2	39,369	9.41
Butane	14,688	3.51
Propane	12,438	2.97
PM	11,174	2.67
Propylene	6,531	1.56
Slop Oil	5,254	1.26
VOCs [a]	5,079	1.21
Pentane	2,951	0.71
Isobutane	2,785	0.67
Isopentane	2,015	0.48
Benzene	1,987	0.47
Butenes	1,655	0.40
Butanes	1,357	0.32
Ammonia	987	0.24
Hexane	916	0.22
Cyclohexane	835	0.20
Hydrogen Sulfide	784	0.19
Toluene	606	0.14
Xylenes	350	0.08
1,3-Butadiene	223	0.05
Acetylene	21	0.01
Ethylbenzene	15	0.004

[a] Includes non-speciated mixtures that are not already reported individually.

During shutdown activities in Region 14, a total of 54,924 pounds of greenhouse gases (i.e., methane, nitrous oxide) and other non-reportable pollutants (i.e., ethane, hydrogen, nitrogen) were reported.

Following the winter weather event, reported startup activities began February 19, 2021 through March 6, 2021. One facility notified TCEQ initially on February 22, 2021 that, as part of the initial commissioning of a liquefaction train, the facility will continue startup/commissioning operations of the fuel gas, feed gas, refrigeration, and flare systems; because this was unrelated to the winter weather event, these emissions are not included in the startup emissions related to the winter weather event. The total reportable emissions attributed to startup following the winter weather event were 167,989 pounds. The greatest amount of emissions was of SO_2, which represented approximately 45% of total reportable emissions. Next, CO, propane, butane, pentane, and isopentane accounted for 12.36%, 10.34%, 6.92%, 5.40%, and 5.36%, respectively, of the total reportable emissions. The highest reportable emissions, in addition to emissions from compounds measured by mobile monitoring, are shown in Table 39. During

startup, emissions of the non-reportable pollutants ethane and methane totaled 10,213 pounds.

Table 39. Selected Reportable Air Emissions (100% of Total) due to Startups from Winter Storm Uri in Region 14.

Chemical	Amount (Pounds)	Percent of Total Reportable Emissions
SO_2	75,583	44.99
CO	20,760	12.36
Propane	17,364	10.34
Butane	11,632	6.92
Pentane	9,075	5.40
Isopentane	9,010	5.36
Unspeciated Liquefied Petroleum Gas	4,333	2.58
NO_X	4,053	2.41
Isobutane	3,840	2.29
Propylene	3,348	1.99
Benzene	2,989	1.78
Hexane	1,992	1.19
Butenes	1,296	0.77
VOCs [a]	1,028	0.61
Hydrogen Sulfide	824	0.49
2,3-Dimethylbutane	267	0.16
2,2-Dimethylbutane	195	0.12
PM_{10}	160	0.10
Ethylene	151	0.09
2-Methylhexane	46	0.03
3-Methylhexane	29	0.02
1,3-Butadiene	13	0.01
Toluene	1	<0.001

[a] Includes non-speciated mixtures that are not already reported individually.

3.1.4.2 Stationary Ambient Air Monitoring Data

Before, during (if available), and after Winter Storm Uri, a total of 737,262 VOC samples were collected at 21 stationary ambient air monitor locations in the affected Regions: 10 (Beaumont), 12 (Houston), and 14 (Corpus Christi). The data cover a 49-day period from February 11, 2021, two days prior to the day the storm system arrived, through March 31, 2021. Of the 737,262 VOC samples that were collected, there were only one health-based and seven odor-based exceedances of an AMCV, which represents 0.00109% of the data collected (Table 40). The maximum benzene concentrations per day measured before, during (if available), and after Winter Storm Uri are provided in Figure 6.

Hourly averages of continuous CO, NO_2, and SO_2 data were compared to their respective level of the 1-hour NAAQS (35,000 ppb, 100 ppb, and 75 ppb, respectively). Of the 46,388 samples collected, there were only two SO_2 concentrations measured above the level of the NAAQS,

which represents 0.00431% of the data collected. Those concentrations of 78.76 and 81.50 ppb were measured at the Orange 1st Street site on March 24, 2021 at 3 and 4 pm, respectively.

3.1.4.2.1 Health-based Exceedances

A value of 303 ppb of benzene was measured at the Channelview Drive Water Tower site on February 23, 2021 at 8:00 am. This value is approximately 1.7 times greater than the benzene health-based AMCV of 180 ppb. This concentration was transient in nature (concentrations before and after were 3 ppb and 2 ppb, respectively) and exposure to this concentration would not be expected to result in adverse health effects.

3.1.4.2.2 Odor-based Exceedances

Values of 30, 28, and 29 ppb styrene were measured at the Milby Park site on February 21, 2021 at 6:00 am, 8:00 pm, and 9:00 pm, respectively (Figure 7). These values are approximately 1.15, 1.08, and 1.11 times greater than the styrene odor-based AMCV of 26 ppb, respectively. Values of 95, 110, and 165 ppb isoprene were measured consecutively at the HRM 16 Deer Park site on February 15, 2021 at 4:00 pm, 5:00 pm, and 6:00 pm, respectively. A value of 72 ppb isoprene was measured at the Channelview Drive Water Tower site on March 5, 2021 at 7:00 am. These four values are approximately 2.0, 2.3, 3.5, and 1.5 times greater than the isoprene odor-based AMCV of 47 ppb, respectively (Figure 8). It is possible that exposure to the concentrations that exceeded their odor-based AMCVs could have cause the perception of odors, but the levels were still far below their respective health-based AMCVs (5,200 and 1,400 ppb, respectively).

Table 40. VOC Samples Collected vs Exceedances for Winter Storm Uri.

Region	# Samples Collected	# Exceed	% Exceed	# Health Exceed	# Odor Exceed	Notes on Exceedances
10	81,980	0	0.00000%	0	0	
12	617,179	8	0.00130%	1	7	1 Benzene Health Exceedance (value = 303 ppb); 3 Styrene Odor Exceedances (values = 30, 28, & 29 ppb); 4 Isoprene Odor Exceedances (values = 72, 95, 110, & 165 ppb)
14	38,103	0	0.00000%	0	0	
Total	737,262	8	0.00109%	1	7	

Figure 6. Max Benzene Concentrations Measured around Winter Storm Uri.

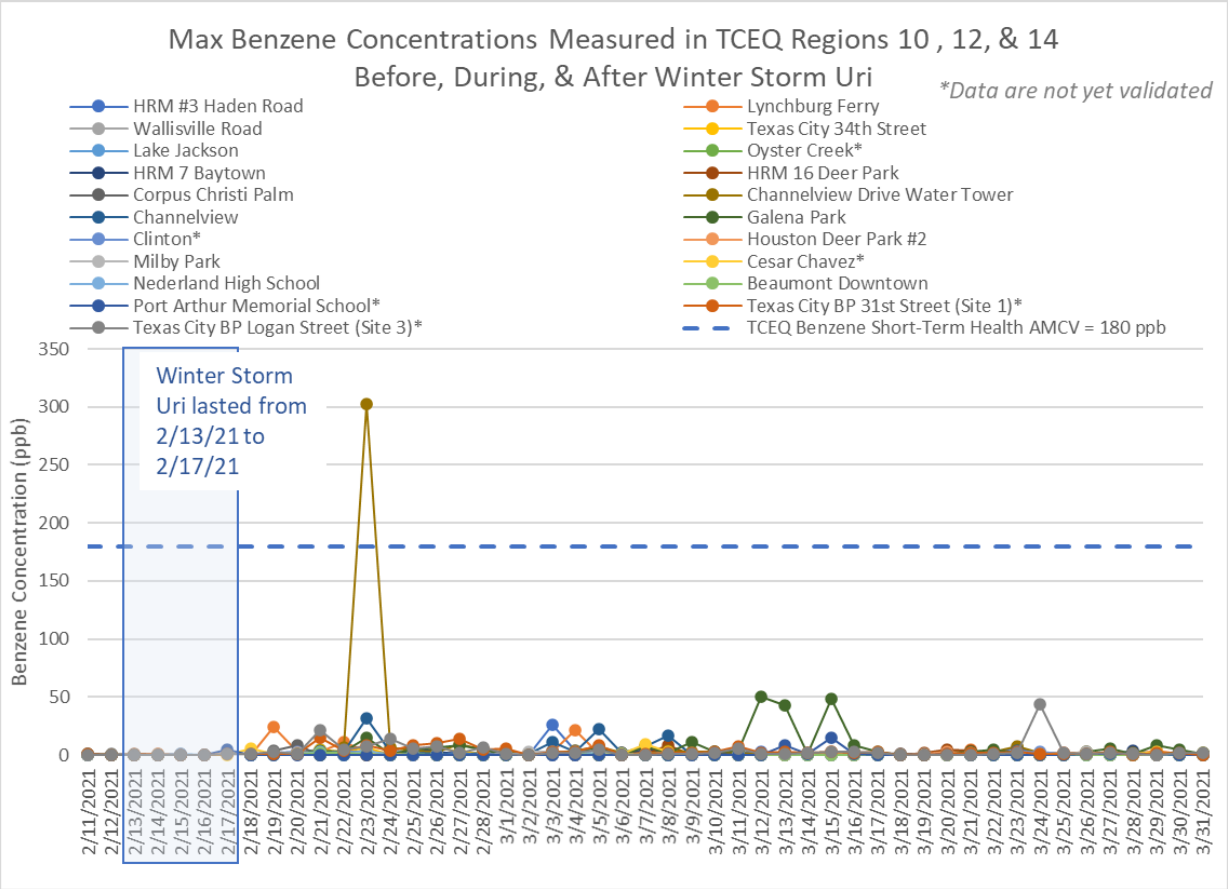


Figure 7. Max Styrene Concentrations Measured around Winter Storm Uri.

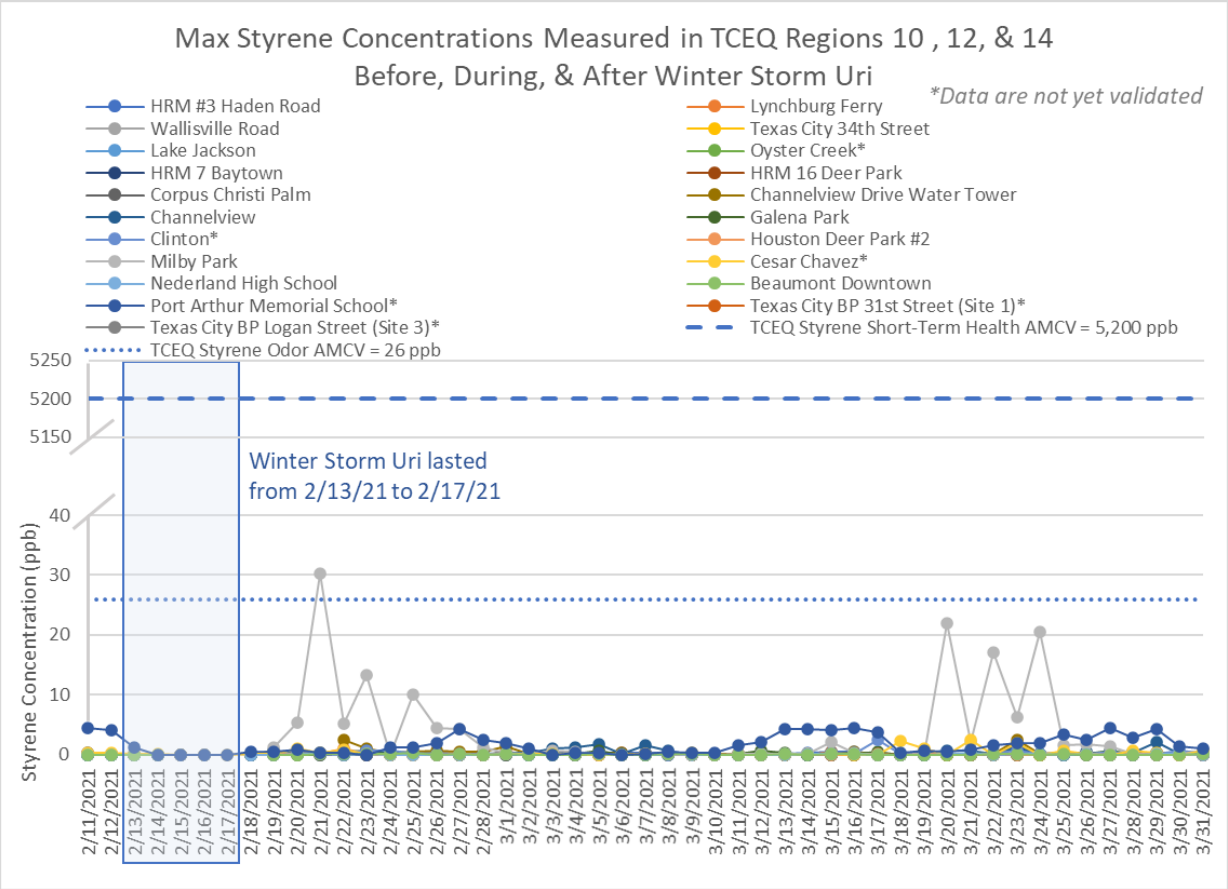
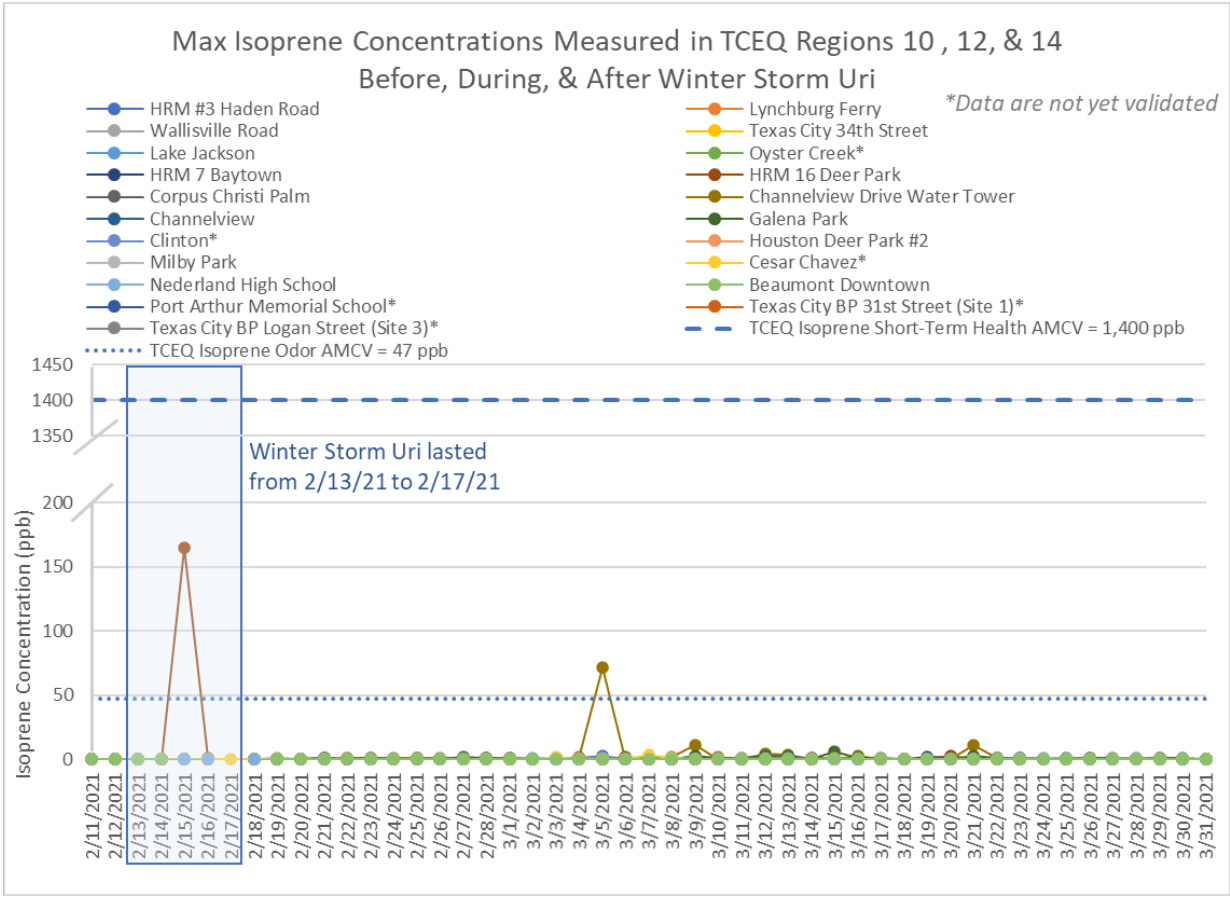


Figure 8. Max Isoprene Concentrations Measured around Winter Storm Uri.



3.1.4.3 Mobile Monitoring Data

After Winter Storm Uri, the DUVAS and SIFT-MS mobile monitoring instruments were used in Regions 10 (Beaumont), 12 (Houston), and 14 (Corpus Christi) to monitor 18 chemicals, including SO_2, BTEX, and 1,3-butadiene. This monitoring occurred from February 22 to March 31, 2021 (a total of 31 days) and focused on the industrial areas of Beaumont, Port Arthur, and Orange in Region 10; the industrial areas of Houston and Texas City in Region 12; and the industrial areas of Corpus Christi and Portland in Region 14. Details of the chemicals and monitoring information for each instrument are provided for Regions 10 and 14 in Table 41 and for Region 12 in [c] Notes describe the amount of time that measured concentrations of listed chemicals were at levels higher than the comparison value.

Table 42. The measurement durations were 1-6 seconds, which were conservatively compared to the TCEQ 1-hr AMCVs, or to the level of the 1-hr NAAQS for SO_2.

In Region 10, a total of 225,829 chemical concentrations were measured, and none exceeded the respective CV.

In Region 14, a total of 686,684 chemical concentrations were measured, and three samples exceeded the respective CV. During one of the surveys on March 1, 2021, the SIFT-MS

instrument measured a single 6-second styrene concentrations of 30.1 ppb (1.2-times higher than the 26 ppb odor-based AMCV). This could have caused odors, but levels were still far below the health-based AMCV of 5,200 ppb. During one of the surveys on March 6, 2021, there were two 6-second periods when the SIFT-MS instrument measured ethane + ethylene concentrations at 1,375.6 and 1,944.2 ppb (up to 1.6-times higher than the 1,200 ppb vegetation-based AMCV for ethylene). However, this comparison conservatively assumes that all the measured chemical is ethylene (because ethane is a simple asphyxiant and is essentially non-toxic in ambient air). It is very unlikely that the sample was entirely comprised of ethylene as ethane is typically much higher than ethylene in ambient air. In addition, the ethylene vegetation AMCV is for a 1-hour duration, whereas these concentrations were measured for two 6-second periods. Therefore, vegetation effects are not anticipated to result from exposure to the measured concentrations of ethane + ethylene. The measured concentrations were much lower than health-based AMCV for ethylene (500,000 ppb).

In Region 12, a total of 918,955 chemical concentrations were measured, and 153 samples exceeded the respective CV. During one of the surveys on March 22, 2021, the DUVAS instrument measured 151 one-second styrene concentrations ranging from 26.3 to 65.9 ppb (up to 2.5-times higher than the 26 ppb odor-based AMCV). This could have caused odors, but levels were still far below the health-based AMCV of 5,200 ppb. Similarly, during one of the surveys on March 30, 2021, there were two 3-second periods when the SIFT-MS instrument measured styrene concentrations at 33.2 and 48.5 ppb (up to 1.9-times higher than the 26 ppb odor-based AMCV). This could have caused odors, but levels were still far below the health-based AMCV of 5,200 ppb.

Table 41. Mobile Monitoring Samples Collected in Regions 10 and 14 After Winter Storm Uri.

	DUVAS R10 (Beaumont)	SIFT-MS R10 (Beaumont)	SIFT-MS R14 (Corpus Christi)
Chemicals Monitored	SO_2; Benzene; Toluene; Ethylbenzene; m-Xylene; o-Xylene; p-Xylene; Styrene; 1,3-Butadiene; NH_3; NO; NO_2; O_3; Formaldehyde	Isobutane; Acetylene; Toluene; C3-C4 Sat [a]; 1,3-Butadiene; Benzene; Propane; Styrene; Xylene + Ethylbenzene; Ethane+Ethylene; Butane; Propylene; 1-Butene	1,3-Butadiene; 1-Butene; Benzene; Hexane; Ethane+Ethylene; Xylene + Ethylbenzene; Propylene; Toluene; Isobutane; Cyclohexane; Styrene; Acetylene; Octane; Propane; Butane; Acetone; Isobutene[a]; C3-C4 Sat [b]
Sample Duration	1 second	3 - 6 seconds	3 - 6 seconds
Days of Sampling	5	7	17
# Mobile Surveys	56	33	80
# Stationary Surveys	0	4	1
Total # Samples	133,126	92,703	686,684
# Exceedances	0	0	3

Notes on Exceedances [c]		Ethane+Ethylene 2 x 6 sec > 1,200 ppb vegetation AMCV (1,375 & 1,944 ppb); Styrene 6 sec > 26 ppb odor AMCV (30.1 ppb)

[a] Isobutene is also called isobutylene.
[b] C3-4 Sat is a mixture of saturated hydrocarbons that contain 3 – 4 carbon atoms.
[c] Notes describe the amount of time that measured concentrations of listed chemicals were at levels higher than the comparison value.

Table 42. Mobile Monitoring Samples Collected in Region 12 After Winter Storm Uri.

	DUVAS	SIFT-MS
Chemicals Monitored	SO_2; Benzene; Toluene; Ethylbenzene; m-Xylene; o-Xylene; p-Xylene; Styrene; 1,3-Butadiene	Isobutane; Acetylene; Toluene; C3-C4 Sat [a]; 1,3-butadiene; Benzene; Propane; Styrene; Xylene + Ethylbenzene; Ethane+Ethylene; Butane; Propylene; 1-Butene
Sample Duration	1 second	3 - 6 seconds
Days of Sampling	23	5
# Mobile Surveys	207	22
# Stationary Surveys	0	4
Total # Samples	860,994	57,961
# Exceedances	151	2
Notes on Exceedances [b]	Styrene 2.5 min > 26 ppb odor AMCV (26.3 to 65.9 ppb)	Styrene 6.5 sec > 26 ppb odor AMCV (33.2, 48.5 ppb)

[a] C3-4 Sat is a mixture of saturated hydrocarbons that contain 3 – 4 carbon atoms.
[b] Notes describe the amount of time that measured concentrations of listed chemicals were at levels higher than the comparison value.

3.1.4.4 Handheld Data

After Winter Storm Uri, TCEQ investigators conducted handheld monitoring for VOCs, H_2S, Cl_2, CO, benzene, NH_3, SO_2, and HCN in Regions 10 (Beaumont), 12 (Houston), and 14 (Corpus Christi). The measurement durations were approximately 1 second, which were conservatively compared to the TCEQ 1-hr AMCVs, the value of the 30-minute state standard for H_2S, the level of the 1-hr NAAQS for CO and SO_2, or background concentrations (3 ppm) for VOCs. Measured concentrations below these CVs would not be expected to cause adverse health, vegetation, or welfare effects, but because the sample durations were so short compared to the duration-specific CVs, the potential for health and vegetation effects at concentrations higher than CVs cannot be evaluated. The potential for odorous conditions can be assessed based on these samples.

In Region 10, monitoring by handheld instruments occurred in the industrial areas of Beaumont, Port Arthur, and Orange from February 20 to March 12, 2021 (a total of 21 days) and included VOCs, H_2S, CO, SO_2 and HCN. A total of 1,856 chemical concentrations were

measured. Of those, 68 samples detected values greater than zero and three samples exceeded the respective CV. Chemical-specific information is provided in Table 43. All three exceedances were for HCN, with measured instantaneous concentrations of 0.5 ppm exceeding the 0.019 ppm 1-hr AMCV on March 2, 2021 (one sample) and March 6, 2021 (two samples). The detection limit of the instrument was 0.5 ppm.

Table 43. Handheld Monitoring Samples Collected in Region 10 After Winter Storm Uri.

Analyte	# Samples	# Detections	# Exceedances	Notes on Exceedances
VOCs	659	64	0	
H_2S	400	0	0	
CO	129	1	0	
SO_2	547	0	0	
HCN	121	3	3	Value 0.5 ppm (AMCV 0.019 ppm); detection limit 0.5 ppm
Total	1,856	68	3	

In Region 12, monitoring by handheld instruments occurred in the industrial areas of Houston, Texas City, and Lake Jackson from February 20 to March 29, 2021 (a total of 36 days) and included VOCs, H_2S, SO_2, and CO. A total of 1,852 chemical concentrations were measured. Of those, 91 samples detected values greater than zero and only one sample exceeded the respective CV. Chemical-specific information is provided in Table 44. The exceedance was for H_2S on March 2, 2021, with a measured instantaneous concentration of 1.2 ppm exceeding the 30-minute 0.08 ppm value of the state standard. This level of H_2S could have caused odors.

Table 44. Handheld Monitoring Samples Collected in Region 12 After Winter Storm Uri.

Analyte	# Samples	# Detections	# Exceedances	Notes on Exceedances
VOCs	607	65	0	
H_2S	604	1	1	1.2 ppm (state standard 0.08 ppm)
SO_2	35	0	0	
CO	606	25	0	
Total	1,852	91	1	

In Region 14, monitoring by handheld instruments occurred in the industrial areas of Corpus Christi and Portland from February 20 to March 19, 2021 (a total of 22 days) and included VOCs, H_2S, CO, Cl_2, benzene, SO_2, and NH_3. A total of 2,961 chemical concentrations were measured. Of those, 218 samples detected values greater than zero and seven samples exceeded the respective CV. Chemical-specific information is provided in Table 45. Five of the exceedances were for H_2S on February 28, 2021, with measured instantaneous concentrations ranging from 0.8 ppm to 1.0 ppm exceeding the 0.08 ppm 30-minute value of the state standard. The measured concentrations of H_2S could have caused odors. One of the exceedances was for CO, with a measured instantaneous concentration of 50 ppm exceeding the 35 ppm level of the NAAQS on March 8, 2021. One of the exceedances was for NH_3, with a measured instantaneous concentration of 1 ppm exceeding the 0.85 ppm 1-hr AMCV on February 23, 2021.

Table 45. Handheld Monitoring Samples Collected in Region 14 After Winter Storm Uri.

Analyte	# Samples	# Detections	# Exceedances	Notes on Exceedances
VOCs	775	41	0	
H_2S	1,001	163	5	0.8 – 1.0 ppm (state standard 0.08 ppm)
CO	775	13	1	50 ppm (NAAQS 35 ppm)
Cl_2	23	0	0	
Benzene	1	0	0	
SO_2	361	0	0	
NH_3	25	1	1	1 ppm (AMCV 0.85 ppm)
Total	2,961	218	7	

3.1.4.5 ASPECT Aircraft Data

In response to the aftermath of Winter Storm Uri, the ASPECT aircraft flew from February 27 to March 12, 2021 for a total of 13 days of surveillance, each of which included a full set of IR imagery, IR spectrometer and photographic data over TCEQ Regions 10 (Beaumont), 12 (Houston), and 14 (Corpus Christi). This event had a total of 24 flights for 263 data collection runs. Eleven of the quantifiable 76 compounds targeted by ASPECT were detected 273 times and are summarized in Table 46. Note that some flight numbers in TCEQ Regions 10 and 14 include data collection runs in Region 12 (e.g., R10/12 & R12/14). The detected chemicals included n-butyl alcohol (maximum concentration of 1.327 ppm), isoprene (maximum concentration of 4.606 ppm), 1-butene (maximum concentration of 7.23 ppm), 2-butene (maximum concentration of 7.93 ppm), acetone (maximum concentration of 1.53 ppm), 1,3-butadiene (maximum concentration of 6.788 ppm), isobutylene[7] (maximum concentration of 3.269 ppm), ethylene (maximum concentration of 2.507 ppm), SO_2 (maximum concentration of 2.218 ppm), ammonia (maximum concentration of 0.477 ppm), and acetic acid (maximum concentration of 1.518 ppm). Summaries of these ASPECT flights can be found on US EPA's Region 6 Emergency Response webpage[8].

Table 46. Summary of ASPECT Flights for Winter Storm Uri.

Region	# Flights	# Collection Runs	# Detections	Chemicals Detected
10	7	73	52	SO_2, Isobutylene [a], 1,3-Butadiene, Ethylene, Isoprene, 1-Butene, 2-Butene
12	10	106	44	Acetic Acid, Peryoxyacetal Nitrate, Ozone, SO_2, Isobutylene [a], 1,3-Butadiene, Ethylene, Isoprene, 1-Butene, 2-Butene
14	9	98	72	Acetic Acid, n-Butyl Alcohol, SO_2, Isobutylene [a], 1,3-Butadiene, Ethylene, Acetone, Ammonia, Isoprene, 1-Butene, 2-Butene

[7] Isobutylene is also called isobutene

[8] https://response.epa.gov/site/doc_list.aspx?site_id=15082

Region	# Flights	# Collection Runs	# Detections	Chemicals Detected
Total	26	277	168	

[a] Isobutylene is also called isobutene

The ASPECT targeted compound list only includes two of the 14 chemicals monitored by TCEQ mobile monitoring (1,3-butadiene and 1-butene) that were evaluated in this report. The number of detections of these two chemicals, as well as the maximum and minimum values measured, are listed in Table 47. Regional staff conducted handheld monitoring on the ground in response to the high elevation detections from the ASPECT and did not note any readings of concern.

Table 47. Common Compounds Detected During the Winter Storm Uri ASPECT Flight Surveys.

Compounds	# Samples Detected	Maximum (ppm)	Minimum (ppm)
1,3-Butadiene	1	0.53	-- [a]
1-Butene	48	7.23	1.211

[a] There was only one detection.

3.2 Industrial Events

3.2.1 Intercontinental Terminals Company (ITC) Deer Park Facility Fire

At approximately 10:22 AM on March 17, 2019, an 80,000-barrel (capacity) petrochemical storage tank caught fire at the ITC Deer Park facility, located in La Porte, Harris County, Texas. The terminal serves as a storage facility for various petrochemical liquids and gases, as well as fuel oil, bunker oil, and distillates. The affected area of the facility contained fifteen 80,000-barrel capacity aboveground storage tanks that contained petrochemicals that included naphtha, xylene, toluene, pyrolysis gas, gasoline blendstock, and base oil (two of the 15 tanks were empty). While ITC worked with first responders to contain the fire, the TCEQ and US EPA, as well as other local authorities and private air monitoring contractors, conducted ambient air monitoring within the affected area to identify any chemical levels of concern. Multiple types of air monitoring equipment were utilized, including the US EPA's ASPECT aircraft, which was able to measure the heated air plume coming from the fire. During the course of the fire, the plume rise was near vertical between 1,500 and 6,500 feet above ground level and therefore the PM plume was not detected by the monitors, which are at ground level. The fire burned in the tank farm over three days.

In the early hours of March 20, 2019, the firefighters reported that the fire was extinguished. Suppression measures were continued to help with cooling the tanks and to prevent potential re-ignition. Once the fire was extinguished, with 15 tanks damaged, the remaining product began to volatilize into the air. The TCEQ's emergency response team, Region 12 staff, and a team sent from the Region 10 office, in coordination with Unified Command, maintained extensive handheld air monitoring in the vicinity. Periodic high levels of benzene detected in the ambient air caused shelter-in-place orders due to contaminant volatilization and partial

breach of the secondary containment wall and subsequent fire. The US Coast Guard closed a portion of the Houston Ship Channel (HSC) between Tucker Bayou and the San Jacinto Monument to Crystal Bay as a precautionary response. All 15 tanks were secured as of April 18, 2019 and cleaned to the extent possible by April 30, 2019. Cleanup efforts of the water were completed as of May 5, 2019, and crews demobilized.

The TCEQ Region affected by this event was 12 (Houston).

3.2.1.1 Emissions Data: Emission Events

ITC submitted an emissions event report for this event (incident no. 304871). This incident lasted from March 17, 2019 to July 1, 2019. The total air emissions from this event were 16,471,095 pounds. The greatest amount of emissions was of PM, which represented 52% of total emissions. The high amount of PM was due to the fire. CO emissions represented approximately 11% of the total emissions; CO is a product of incomplete combustion. Emissions due to benzene, toluene, ethylbenzene, and xylene (BTEX), which are compounds typically stored at this bulk storage petrochemical facility, represented approximately 17% of the total emissions. n-Hexane and distillate (petroleum) alkylate emissions were 4.81% and 3.50%, respectively, of the total emissions. The summary of air emissions from the ITC fire is shown in Table 48. Additionally, ITC reported 100% opacity due to the fire.

Table 48. Summary of Reportable Air Emissions (100% of Total) from the ITC Fire reported to TCEQ.

Chemical	Amount (Pounds)	Percent of Total Emissions
PM	8,590,023	52.15
CO	1,789,685	10.87
Xylene	1,043,872	6.34
n-Hexane	792,266	4.81
Toluene	769,279	4.67
Benzene	652,773	3.96
Distillate (petroleum), alkylate	575,753	3.50
C4+ [a]	458,335	2.78
Ethylbenzene	400,890	2.43
Dicyclopentadiene	390,293	2.37
Naphthalene	382,196	2.32
Cumene	381,853	2.32
NO_X	44,132	0.27
Alcohols	41,049	0.25
Isopentane	36,274	0.22
n-Pentane	35,956	0.22
SO_2	29,054	0.18
Butane	19,822	0.12
Pyrolysis Gasoline	15,274	0.09
Cyclohexane	5,814	0.04
1,3-Butadiene	5,551	0.03
Styrene	2,702	0.02

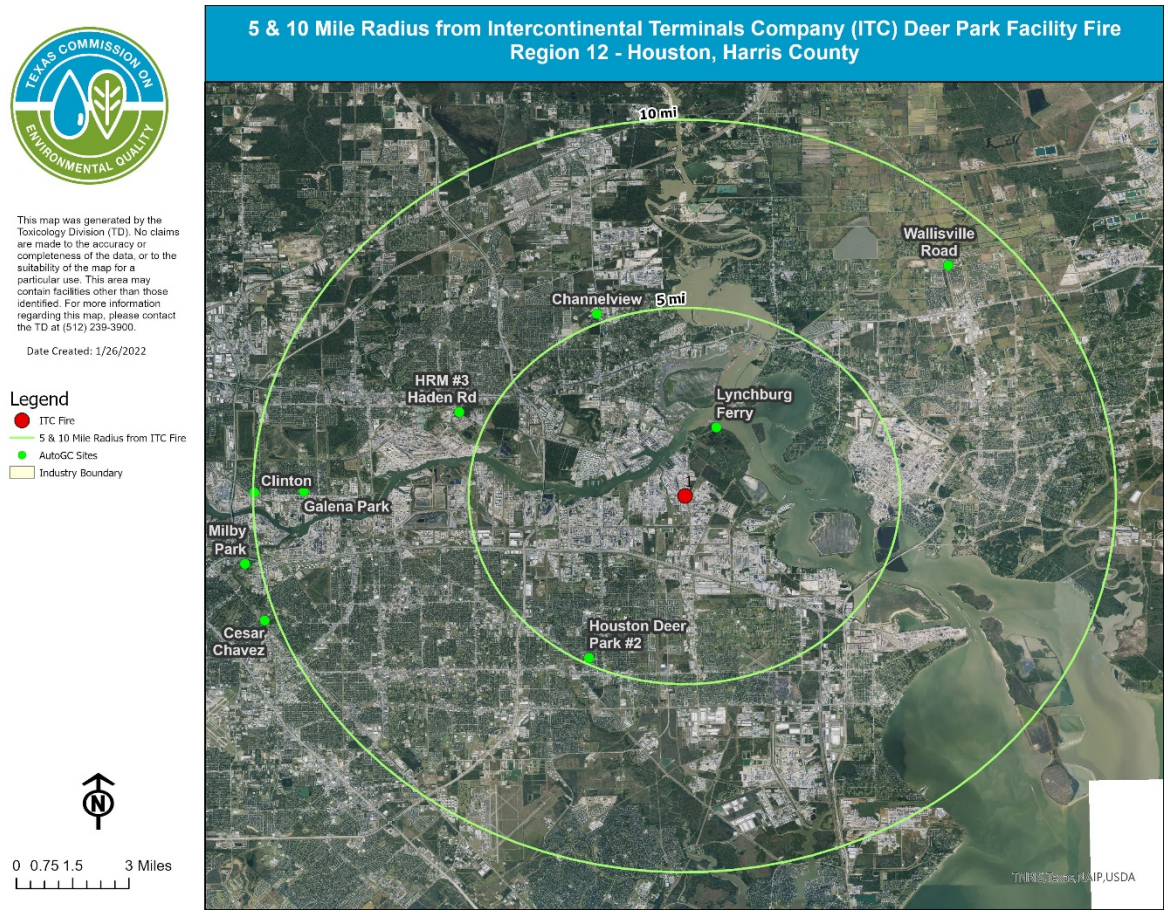
Chemical	Amount (Pounds)	Percent of Total Emissions
C14s [b]	2,100	0.01
Cyclopentadiene	1,556	0.01
Cyclopentane	1,459	0.01
Isoprene	1,020	0.01
1-Pentene	654	0.004
Hexene	528	0.003
Cyclohexene	480	0.003
Indene	455	0.003

[a] C4+ is a mixture of hydrocarbons that contain 4 or more carbon atoms.
[b] C14s are hydrocarbons that contain 14 carbon atoms.

3.2.1.2 Stationary Ambient Air Monitoring Data

Before, during, and after the ITC Fire, a total of 1,059,800 VOC samples were collected at 16 stationary ambient air monitor locations in the affected Region: 12 (Houston). Of these, seven monitors were located within a 10-mile radius of the fire center, with two of those monitors located within a 5-mile radius of the fire center (Figure 9). The data cover an 89-day period from March 15, 2019, two days prior to the day the fire began, through June 11, 2019. Of the 1,059,800 VOC samples that were collected, there were two health-based and one odor-based exceedance of an AMCV (Table 49). The maximum benzene concentrations per day measured before, during, and after the ITC Fire are provided in Figure 10. The benzene concentrations measured after the ITC fire were much higher than concentrations measured after the natural events (compare natural events in Figure 2, Figure 4, Figure 5, and Figure 6 to the ITC fire in Figure 10).

Figure 9. Map Showing the Location of Stationary Air Monitors in Relation to the ITC Fire.



For the first five days of the event, hourly averages of continuous $PM_{2.5}$ data were used to calculate 24-hour values that were then compared to the level of the $PM_{2.5}$ NAAQS (35 µg/m^3). All $PM_{2.5}$ 24-hour average concentrations reviewed (range of 9.55-19.54 µg/m^3) were below the 24-hour NAAQS (35 µg/m^3).

Hourly averages of continuous CO, NO_2, and SO_2 data were compared to their respective level of the 1-hour NAAQS (35,000 ppb, 100 ppb, and 75 ppb, respectively). No concentrations were measured above the level of the NAAQS.

3.2.1.2.1 Health-based Exceedances

Benzene concentrations of 197 ppb and 191 ppb were measured at the Houston Deer Park #2 and Lynchburg Ferry sites, respectively, on March 21, 2019 at 4:00 AM and March 30, 2019 at 9:00 am, respectively. These values are approximately 1.09 and 1.06 times greater than the benzene health-based AMCV of 180 ppb, respectively.

3.2.1.2.2 Odor-based Exceedances

A styrene concentration of 135 ppb was measured at the Lynchburg Ferry site on April 5, 2019 at 11:00 AM (Figure 11). This value is approximately 5.2 times greater than the styrene odor-

based AMCV of 26 ppb. It is possible that exposure to this concentration could have resulted in the perception of odor.

Table 49. VOC Samples Collected vs Exceedances for the ITC Fire.

Region	# Samples Collected	# Exceed	% Exceed	# Exceed Health	# Exceed Odor	Notes on Exceedances
12	1,059,800	3	0.00028%	2	1	2 Benzene Health Exceedances (values = 197 & 191 ppb); 1 Styrene Odor Exceedance (value = 134 ppb)
Total	1,059,800	3	0.00028%	2	1	

Figure 10. Max Benzene Concentrations Measured around the ITC Fire.

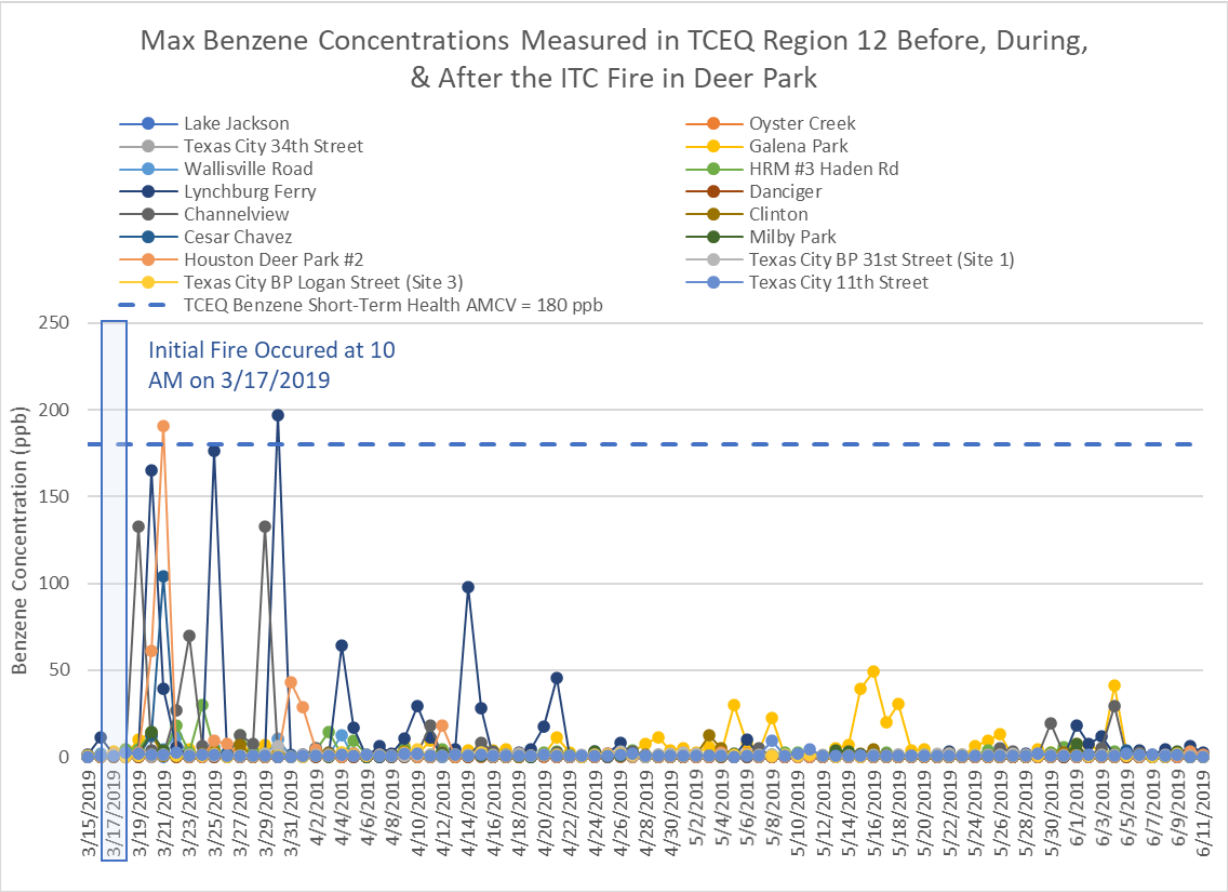
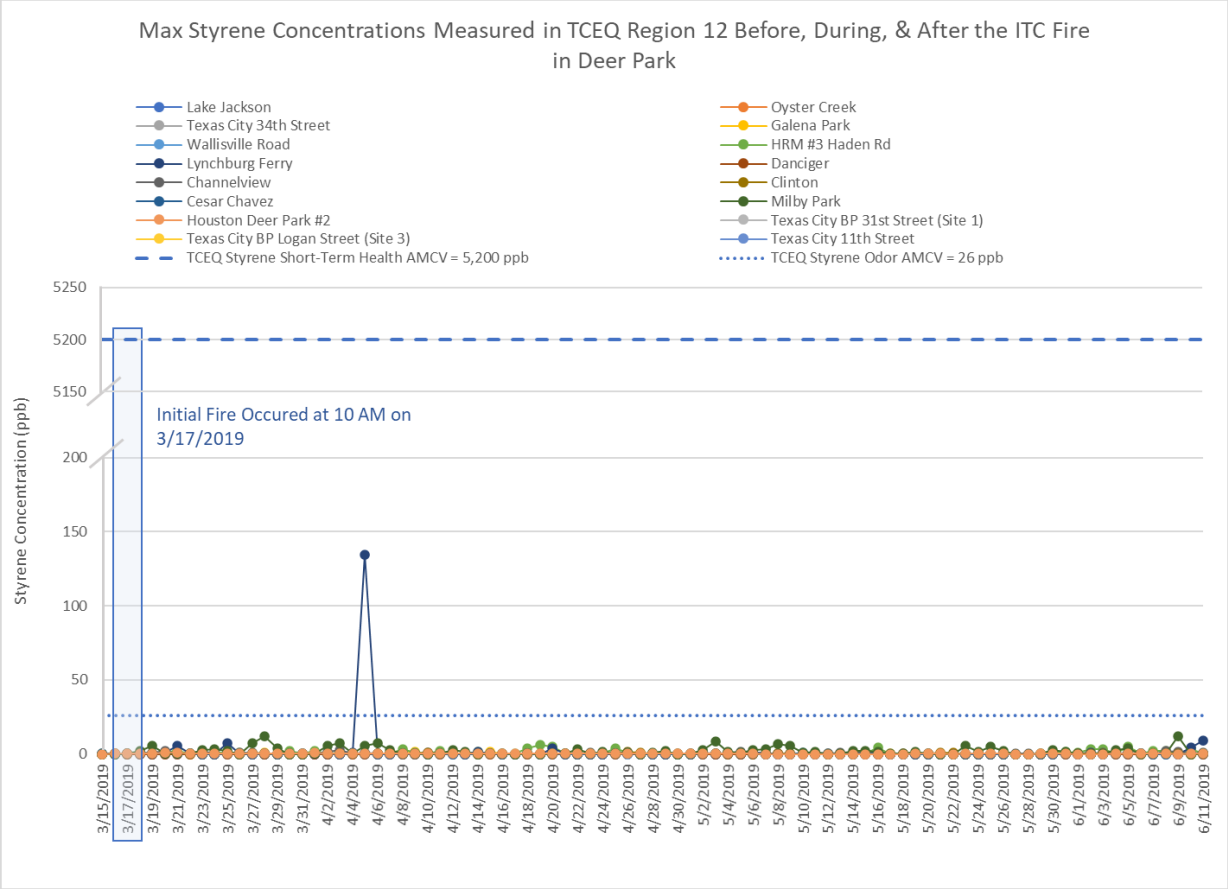


Figure 11. Max Styrene Concentrations Measured around the ITC Fire.



3.2.1.3 Mobile Monitoring Data

After the ITC fire, the Picarro and autoGC mobile monitoring instruments were used to monitor 19 chemicals, including H_2S, BTEX, and 1,3-butadiene. This monitoring occurred from March 18 to May 23, 2019 (a total of 50 days). Details of the chemicals and monitoring information for each instrument are provided in Table 50. The measurement durations for the Picarro H_2S measurements were 1-2 seconds, which were conservatively compared to the value of the 30-minute state standard, and for the autoGC were approximately 20-30 minutes, which were compared to the TCEQ 1-hr AMCVs.

A total of 266,940 chemical concentrations were measured, and nine samples exceeded the respective CV. There were two 20-30-minute styrene samples, measured on March 21 and 24, 2019, that exceeded the 26 ppb odor-based AMCV (27 and 28 ppb, respectively). This could have caused odors. Seven of the exceedances were for benzene concentrations, and they were measured by the autoGC instrument on March 29, 2019 (503 ppb), March 31, 2019 (180 ppb, 180 ppb, 196 ppb, and 269 ppb), and April 24, 2019 (270 ppb, 523 ppb). Two of the samples measured on March 31, 2019 occurred in consecutive 20-30 minute sampling periods (180 ppb

and 269 ppb) and could have represented a 1-hour period where benzene concentrations were greater than 180 ppb. The rest of the samples were isolated high benzene concentrations.

Table 50. Mobile Monitoring Samples Collected in Region 12 After the ITC Fire.

	Picarro	AutoGC
Chemicals Monitored	H_2S	Ethane; Ethylene; Acetylene; Propane; Propylene; Isobutane; Butane; 1-Butene; 1,3-Butadiene; Hexane + Cyclohexane; Benzene; Octane; Toluene; Ethylbenzene; Styrene; m- & p-Xylene; o-Xylene
Sample Duration	1-2 seconds	20-30 minutes
Days of Sampling	6	50
# Stationary Surveys	14	109
Total # Samples	235,575	31,365
# Exceedances	0	9
Notes on Exceedances [a]		7 x 20-30-min Benzene > 180 ppb health AMCV (180, 180, 196, 269, 270, 503, 523 ppb); Two 20-30-min Styrene > 26 ppb odor AMCV (27, 28 ppb)

[a] Notes describe the amount of time that measured concentrations of listed chemicals were at levels higher than the comparison value.

3.2.1.4 Handheld Data

During and after the ITC Fire, TCEQ investigators conducted handheld monitoring for VOCs, H_2S, Cl_2, CO, benzene, NH_3, and SO_2. This monitoring occurred from March 17 to June 11, 2019 (a total of 87 days). The measurement durations were approximately 1 second, which were conservatively compared to the TCEQ 1-hr AMCVs, the value of the 30-minute state standard for H_2S, the level of the 1-hr NAAQS for CO and SO_2, or background concentrations (3 ppm) for VOCs. Measured concentrations below these CVs would not be expected to cause adverse health, vegetation, or welfare effects, but because the sample durations were so short compared to the duration-specific CVs, the potential for health and vegetation effects at concentrations higher than CVs cannot be evaluated. The potential for odorous conditions can be assessed based on these samples.

A total of 56,859 chemical concentrations were measured by handheld instruments during and after the ITC Fire. Of those, 1,213 samples detected values greater than zero and 358 samples exceeded the respective CV. Chemical-specific information is provided in Table 51. Fifty-six of these exceedances were for benzene, with measured instantaneous concentrations ranging from 0.3-34.55 ppm exceeding the 0.18 ppm 1-hr AMCV. One hundred ninety-seven exceedances were for VOCs, with measured instantaneous concentrations ranging from 3.01-42.8 ppm exceeding the 3 ppm VOC background concentration. Two exceedances were for CO, with measured instantaneous concentrations of 35 ppm matching the 35 ppm level of the 1-hr

NAAQS. Twenty-five exceedances were for SO_2, with measured instantaneous concentrations ranging from 0.1-0.2 ppm exceeding the 1-hr 0.075 ppm level of the NAAQS. Seventy-eight exceedances were for Cl_2, with measured instantaneous concentrations ranging from 0.1-0.2 ppm exceeding the 0.048 ppm 1-hr AMCV.

Table 51. Handheld Monitoring Samples Collected During and After the ITC Fire.

Analyte	# Samples	# Detections	# Exceedances	Notes on Exceedances
Benzene	11,415	84	56	0.3 - 34.55 ppm (AMCV 0.18 ppm)
VOCs	12,189	1,024	197	3.01- 42.8 ppm (Background 3 ppm)
H_2S	11,646	0	0	
NH_3	3,519	0	0	
CO	11,651	2	2	35 ppm (1-hr NAAQS 35 ppm)
SO_2	3,082	25	25	0.1 – 0.2 ppm (1-hr NAAQS 0.075 ppm)
Cl_2	3,357	78	78	0.1 – 0.2 ppm (AMCV 0.048 ppm)
Total	56,859	1,213	358	

3.2.1.5 ASPECT Aircraft Data

In response to the ITC Fire, Texas officials requested a damage assessment by US EPA Region 6. The ASPECT aircraft was deployed from March 17, 2019 to April 15, 2019. Across the four weeks of surveillance, each flight included a full set of IR imagery, IR spectrometer and photographic data. This event had a total of 26 flights with 189 data collection runs. Six compounds of the 76 targeted compounds were detected 34 times and are summarized in Table 52. The detected chemicals included SO_2 (maximum concentration of 0.652), acetone (maximum concentration of 1.03), isoprene (maximum concentration of 4.09 ppm), 1-butene (maximum concentration of 1.25 ppm), ammonia (maximum concentration of 1.09 ppm), 1,3-butadiene (maximum concentration of 1.80 ppm) and isobutylene (maximum concentration of 1.70 ppm).

Table 52. Summary of ASPECT Flights for the ITC Fire.

Region	# Flights	# Collection Runs	# Detections	Chemicals Detected
12	26	189	38	Acetone, SO_2, Isobutylene [a], 1,3-Butadiene, Isoprene, 1-Butene

[a] Isobutylene is also called isobutene

The ASPECT targeted compound list only includes two of the 14 chemicals monitored by mobile monitoring (1,3-butadiene and 1-butene) evaluated in this report. The number of detections of these two chemicals, as well as the maximum and minimum values measured, are listed in Table 53.

Table 53. Common Compounds Detected During the ITC Fire ASPECT Flight Surveys.

Compounds	# Samples Detected	Maximum (ppm)	Minimum (ppm)
1,3-Butadiene	3	1.8	0.29
1-Butene	5	1.55	0.377

3.2.2 Texas Petrochemical Group (TPC) Port Neches Facility Fire

At approximately 1:00 AM on November 27, 2019 there was an explosion the TPC Port Neches Facility, located in Port Neches, Jefferson County, Texas. Prior to the explosion, a loss of containment on a line resulted in the release of 1,3-butadiene; the vapor cloud subsequently ignited, and the explosion created a pressure wave that damaged buildings and structures onsite, as well as buildings and homes offsite. The explosion rapidly caused a massive fire at the facility along with subsequent explosions. Local officials ordered a mandatory 4-mile radius evacuation zone. The TCEQ and US EPA, as well as other local authorities and private air monitoring contractors, conducted ambient air monitoring within the affected area to identify any chemical levels of concern. Additionally, US EPA deployed their ASPECT aircraft for aerial surveillance.

The TCEQ Region affected by this event was 10 (Beaumont).

3.2.2.1 Emissions Data: Emission Events

TPC submitted an emissions event report for this event (incident no. 325683). This incident lasted from November 27, 2019 at 1:00 AM to March 30, 2020 at 12:12 PM. The total air emissions from this event were 1,214,586 pounds. The greatest amounts of emissions were of PM (unspeciated) and $PM_{2.5}$, which together represented approximately 33% of total emissions. There is potential overlap between PM (unspeciated) and $PM_{2.5}$; if there is overlap, then the total for PM would be less than the two values added together. Regardless, the high amount of PM was due to the fire. The next highest percent of emissions was approximately 21% 1,3-butadiene, which was consistent with the reported loss of containment of this chemical. CO emissions represented approximately 17% of the total emissions; CO is a product of incomplete combustion. The summary of air emissions from the TPC fire is shown in Table 54.

Table 54. Summary of Reportable Air Emissions (100% of Total) from the TPC Fire Reported to TCEQ.

Chemical	Amount (Pounds)	Percent of Total Emissions
1,3-Butadiene	257,640	21.21
PM (unspeciated)	226,500	18.65
CO	207,260	17.06
$PM_{2.5}$	169,880	13.99
Butenes	163,792	13.49
n-Butane	93,400	7.69
N-Methylpyrrolidone	20,120	1.66

Chemical	Amount (Pounds)	Percent of Total Emissions
NO_X	16,300	1.34
C5s [a]	13,166	1.08
SO_2	13,160	1.08
Isobutane	6,260	0.52
Methanol	5,720	0.47
Vinyl Acetylene	4,786	0.39
MTBE	4,662	0.38
Vinyl Cyclohexene	3,336	0.27
1,2-Butadiene	2,564	0.21
Dicyclopentadiene	1,574	0.13
Ethyl Acetylene	1,346	0.11
VOCs [b]	1,336	0.11
Methyl Acetylene	802	0.07
Sulfur	322	0.03
Xylene	228	0.02
Benzene	166	0.01
Ethylbenzene	166	0.01
Acetaldehyde	40	0.003
Ethanol	40	0.003
Methyl Ethyl Ketone	20	0.002

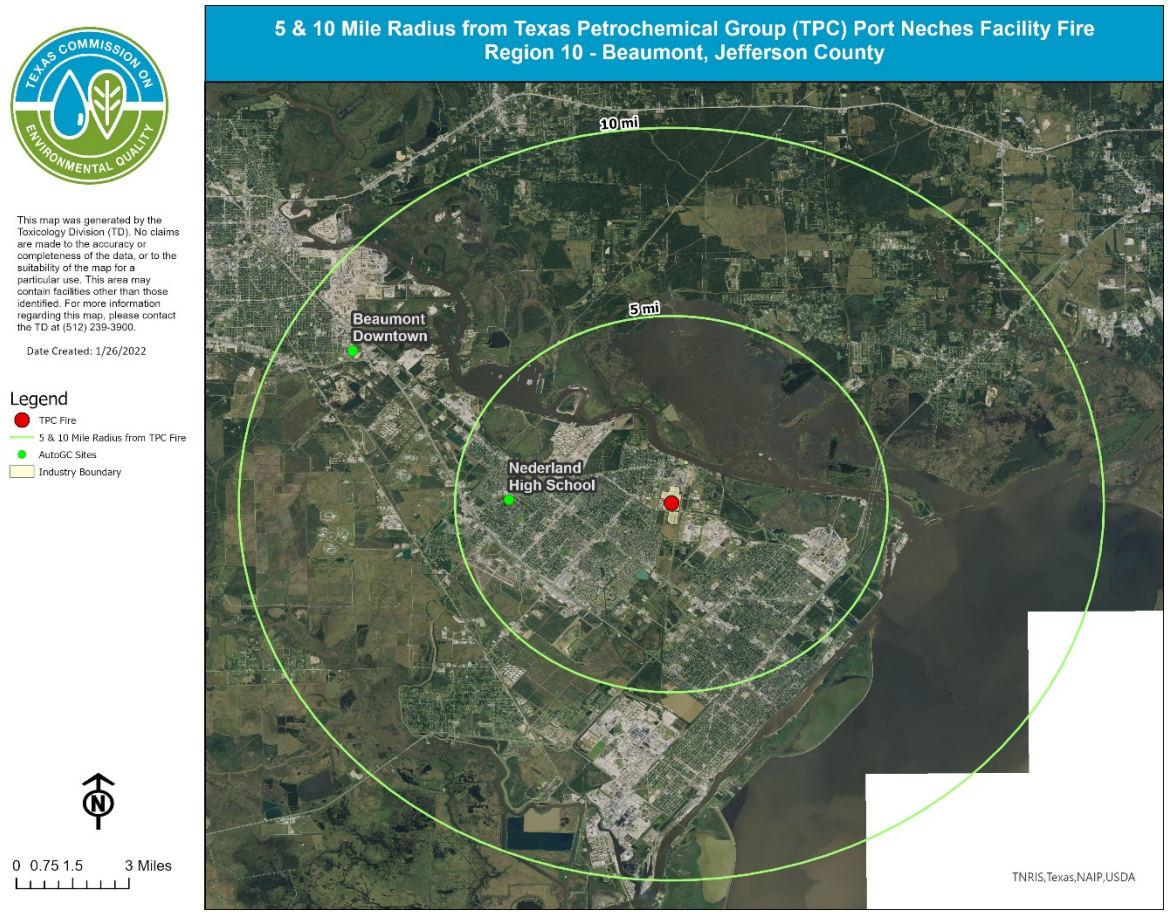
[a] C5s are hydrocarbons that contain 5 carbon atoms.

[b] Includes non-speciated mixtures that are not already reported individually.

3.2.2.2 Stationary Ambient Air Monitoring Data

Before, during, and after the TPC Fire, a total of 93,530 VOC samples were collected at three stationary ambient air monitor locations in the affected Region: 10 (Beaumont). Of these, two monitors were located within a 10-mile radius of the fire center, with one of those monitors located within a 5-mile radius of the fire center (Figure 12). The data cover a 50-day period from November 25, 2019, two days prior to the day the fire began, through January 13, 2020. There were no exceedances of an AMCV (Table 55). The maximum benzene concentrations per day measured before, during and after the TPC Fire is provide in Figure 13. Since the major constituent of this fire was 1,3-butadiene, a graph of the maximum concentrations per day measured before, during, and after the fire is also provided (Figure 14). The lack of impact of the event on 1,3-butadiene exceedances measured at the ambient air monitors may be due to the distance between the monitors and the site of the fire; however, the closer monitor did measure elevated concentrations of 1,3-butadiene (maximum value of 164 ppb compared to typical levels of less than 2 ppb) when winds were from the direction of the fire.

Figure 12. Map Showing the Location of Stationary Air Monitors in Relation to the TPC Fire.



For the first five days of the event, hourly averages of continuous $PM_{2.5}$ data were used to calculate 24-hour values that were then compared to the level of the $PM_{2.5}$ NAAQS (35 µg/m^3). The $PM_{2.5}$ 24-hour average concentrations reviewed (range of 2.88-12.5 µg/m^3) were below the 24-hour NAAQS (35 µg/m^3).

Hourly averages of continuous CO, NO_2, and SO_2 data were compared to their respective level of the 1-hour NAAQS (35,000 ppb, 100 ppb, and 75 ppb, respectively). There was one NO_2 concentration that was above the level of the NAAQS. That concentration of 166.19 ppb was measured at the SETRPC 43 Jefferson County Airport site on January 2, 2020 at 10 pm.

Table 55. VOC Samples Collected vs Exceedances for the TPC Fire.

Region	# Samples Collected	# Exceed	% Exceed	# Exceed Health	# Exceed Odor	Notes on Exceedances
10	93,530	0	0.00000%	0	0	
Total	93,530	0	0.00000%	0	0	

Figure 13. Max Benzene Concentrations Measured around the TPC Fire.

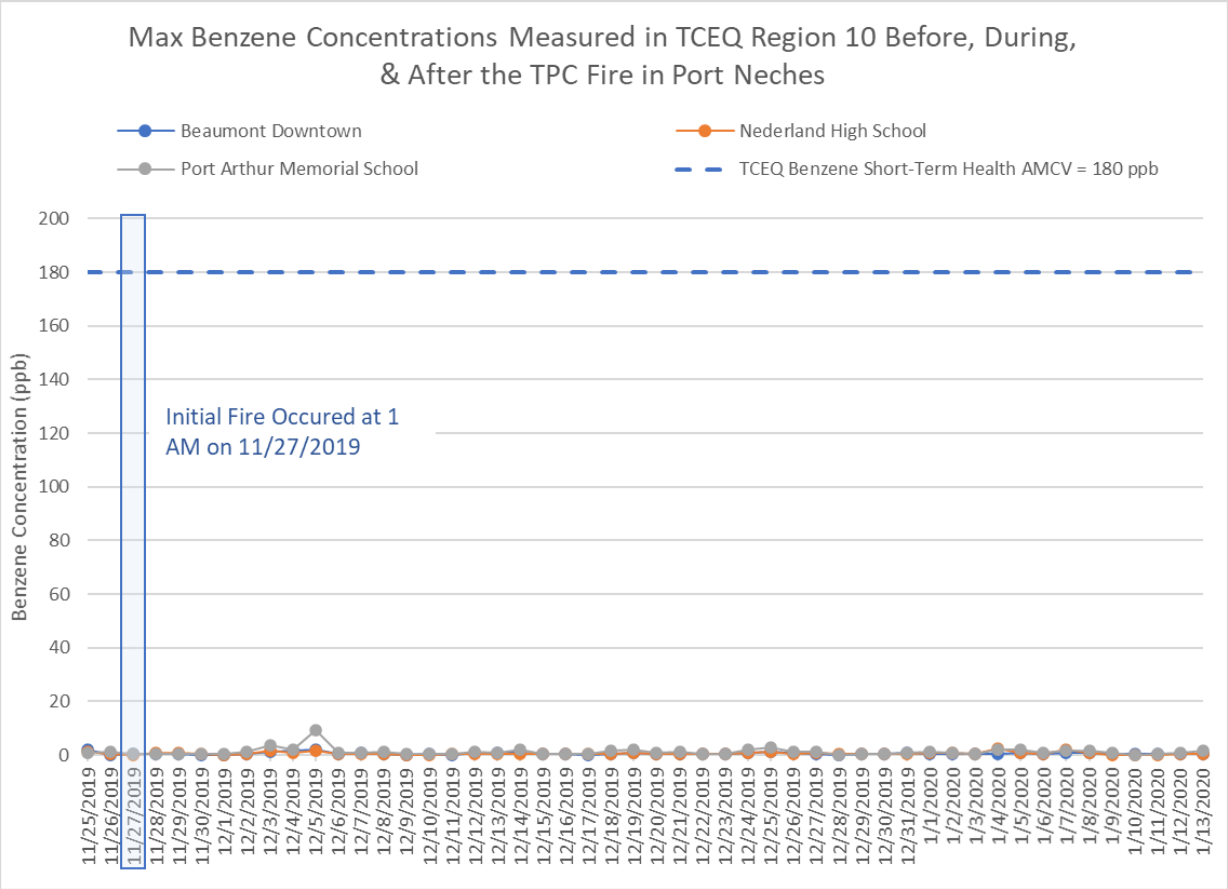
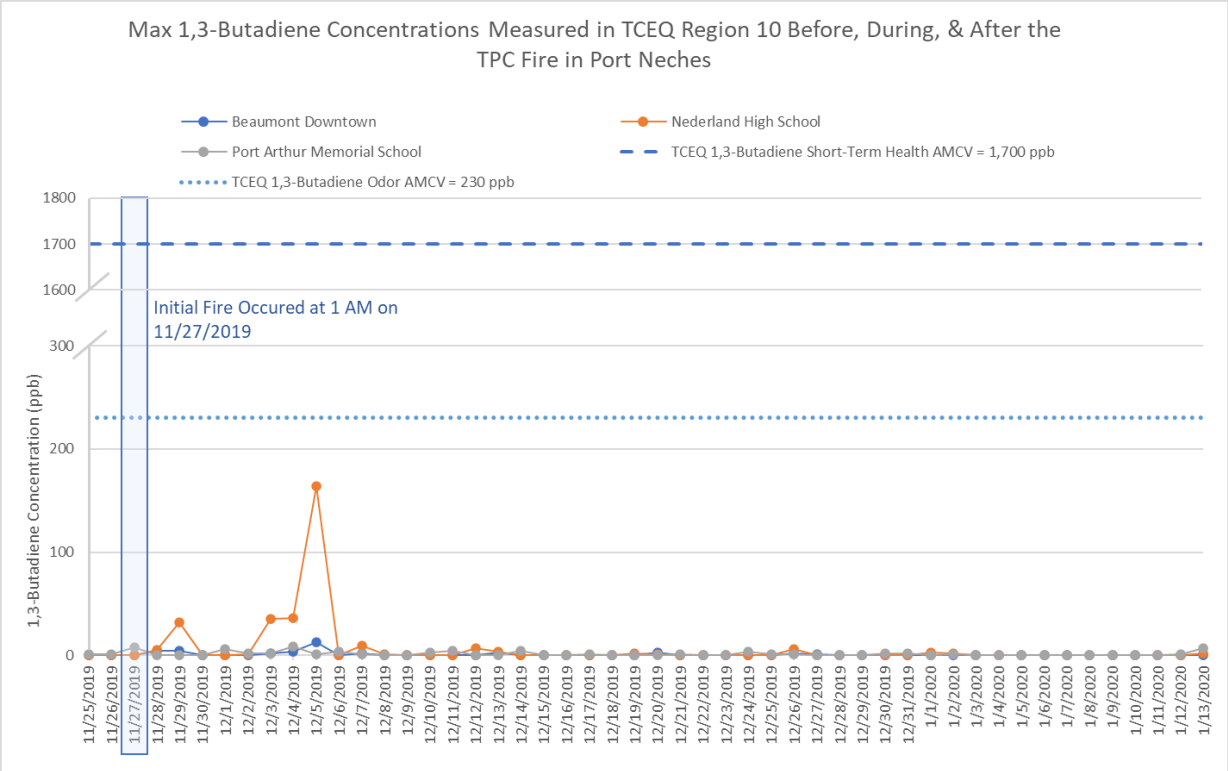


Figure 14. Max 1,3-Butadiene Concentrations Measured around the TPC Fire.



3.2.2.3 Handheld Data

During and after the TPC Fire, TCEQ investigators from Region 10 (Beaumont) conducted handheld monitoring for VOCs, H_2S, CO, benzene, 1,3-butadiene, HCN, and SO_2. This monitoring occurred from November 27, 2019 to January 13, 2020 (a total of 48 days). The measurement durations were approximately 1 second, which were conservatively compared to the TCEQ 1-hr AMCVs, the value of the 30-minute state standard for H_2S, the level of the 1-hr NAAQS for CO and SO_2, or background concentrations (3 ppm) for VOCs. Measured concentrations below these CVs would not be expected to cause adverse health, vegetation, or welfare effects, but because the sample durations were so short compared to the duration-specific CVs, the potential for health and vegetation effects at concentrations higher than comparison values cannot be evaluated. The potential for odorous conditions can be assessed based on these samples.

A total of 15,089 chemical concentrations were measured by handheld instruments during and after the ITC Fire. Of those, 683 samples detected values greater than zero and 107 samples exceeded the respective CV. Chemical-specific information is provided in Table 56. Twenty-three of these exceedances were for VOCs, with measured instantaneous concentrations ranging from 3.02-12.93 ppm exceeding the 3 ppm VOC background concentration. One exceedance was for H_2S, with a measured instantaneous concentration of 0.2 ppm exceeding the 30-minute 0.08 ppm value of the state standard. This measured concentration of H_2S could have caused odors. One exceedance was for SO_2, with a measured instantaneous concentration of 0.2 ppm exceeding the 1-hr 0.075 ppm level of the NAAQS. Ten exceedances were for 1,3-

butadiene, with measured instantaneous concentrations ranging from 1.95-8.15 ppm exceeding the 1.7 ppm 1-hr health-based AMCV. A further 39 measured concentrations of 1,3-butadiene exceeded the odor-based AMCV of 0.23 ppm and could have caused odors. Thirty-three exceedances were for HCN, with measured instantaneous concentrations ranging from 0.5-2 ppm exceeding the 0.019 ppm 1-hr AMCV.

Table 56. Handheld Monitoring Samples Collected During and After the TPC Fire.

Chemical	# Samples	# Detections	# Exceedances	Notes on Exceedances
VOCs	4,774	566	23	3.02 – 12.93 ppm (Background 3 ppm)
H_2S	4,368	3	1	0.2 ppm (state standard 0.08 ppm)
CO	3,731	6	0	
SO_2	1,267	1	1	0.2 ppm (1-hr NAAQS 0.075 ppm)
1,3-Butadiene	391	73	49	10 > health AMCV range 1.95 - 8.15 ppm (AMCV 1.7 ppm); 39 > odor AMCV (0.23 ppm)
Benzene	75	1	0	
HCN	483	33	33	0.5 – 2 ppm (AMCV 0.019 ppm)
Total	15,089	683	107	

3.3 Conclusion

The data evaluation covered six events: four natural and two industrial. The natural events covered 119 combined days of sampling, and a combined total of 3,628,631 samples collected (from stationary samplers, mobile monitoring, and handheld instruments). Out of all data collected, there was a combined total of 23 health-based exceedances and 288 odor-based exceedances, together equaling 311 exceedances. The majority of the odor-based exceedances (259 out of 288) represent three short periods of time, less than three minutes each, when the concentrations measured by mobile monitoring exceeded an odor comparison value. Most of the health-based exceedances (19 out of 23) were for instantaneous data. It is important to reiterate that instantaneous data are 1-6 second samples and were conservatively compared to short-term CVs; health conclusions cannot be drawn based on a single instantaneous concentration exceeding a short-term CV. The four hourly health-based exceedances represent 0.000110% of the data; the levels ranged from 1.1 to 2.7 times higher than the respective CVs, were transient in nature, and exposure would not be expected to result in adverse health effects. In all, the combined health and odor exceedances represent 0.0086% of the collected data (311 out of 3,628,631) for natural events.

The two industrial events covered 139 combined days of sampling, and a combined total of 1,581,912 samples collected (from stationary samplers, mobile monitoring, and handheld instruments). Out of all data collected, there was a combined total of 215 health-based exceedances and 43 odor-based exceedances, together equaling 258 exceedances. A further 220 samples exceeded the background concentration for total VOCs. The majority of the

health-based exceedances (205 out of 215) were for instantaneous data. As noted above, health conclusions cannot be drawn based on a single instantaneous concentration exceeding a short-term CV. There were ten 30-minute or hourly health-based exceedances of CVs. The monitoring data collected around industrial events demonstrates an increased frequency of exceedances of health-based CVs, compared to the natural events. This underlines the importance of monitoring ambient air quality after industrial events to assess potential health concerns. In contrast, the natural events tended to produce more exceedances of odorous levels of chemicals, which confirms reported accounts of odorous conditions after storms. It is important to note that the industrial events were associated with actions to reduce exposure of the public to the released chemicals, such as shelter-in-place orders.

It is important to be clear that an exceedance of a comparison value is not the metric by which the TCEQ judges if an emission requires investigation or enforcement. If a facility reports an emission of a chemical in excess of permitted amounts, then the TCEQ will investigate and take enforcement action when appropriate.

4 Timing of Monitored Exceedances after Natural Events

The purpose of this report is to aid in the discussion of when and where to best deploy agency monitoring resources and for how long by collecting and evaluating the multitude of data collected before, during, and after a natural disaster or industrial event. To further this discussion, and to help inform how long after storm-related industrial startups that monitored concentrations of chemicals in the air show exceedances of comparison values, an analysis was conducted to look specifically at the timing of the monitored exceedances. In this section, data from Winter Storm Uri were evaluated to provide insight into mass startup of facilities after shutdown in affected areas.

The following Winter Storm Uri graphs (Figure 15, Figure 16, Figure 17, Figure 18, Figure 19, and Figure 20) provide a visual representation of the daily number of air samples collected by various methods (stationary, mobile, handheld) for each natural event. The number of facilities reporting emissions (shutdown, upset, or startup) each day, or the pounds of emissions per day, have also been included in the graphs. Because of this, there are two y-axes on the graphs. The y-axis on the left side represents the daily number of samples and is associated with the solid lines on the graph. The y-axis on the right side is associated with the dashed lines on the graph, and it represents either the daily number of facilities reporting shutdown, upset, or startup emissions, or the daily pounds of emissions from shutdown, upset, or startup activities. The number of daily exceedances is represented with an orange dot. Because the scale of daily number of samples on the graph is large, the number of exceedances is provided above the dot. For handheld data only, to provide more insight into the data, daily number of detections were also included. This section provides graphs with data collected in all Regions combined (10, 12, and 14). For graphs that separate the data by Region (for the number of facilities reporting emissions only), see Appendix B: Timing Graphs by Region (Figure 22, Figure 23, Figure 24, Figure 25, Figure 26, Figure 27, Figure 28, Figure 29, and Figure 30).

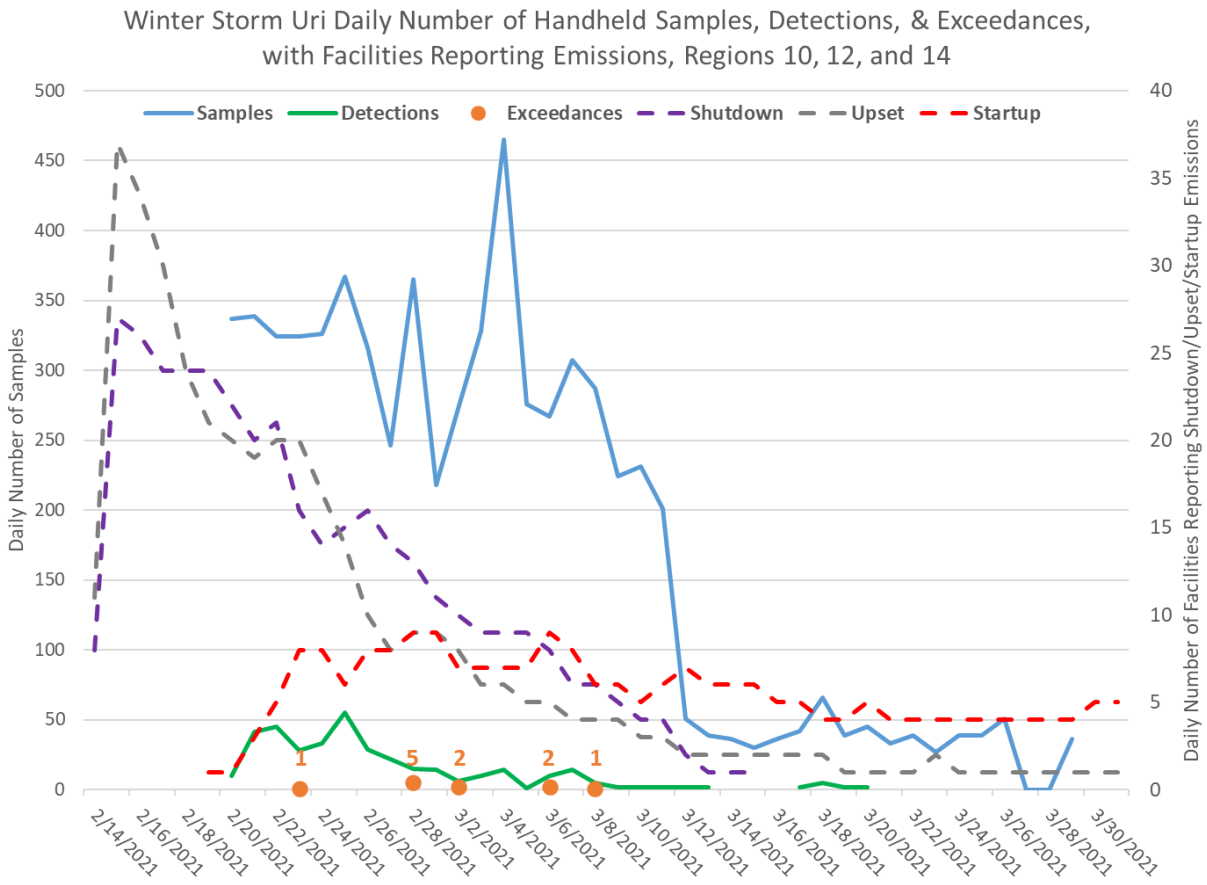
An overall summary of exceedances for each natural event is provided at the end. This graph (Figure 21) shows the timing and type of exceedances. The exceedances are presented by number of days into an event (beginning with the event start date). The color of each circle represents the type of exceedance while the size of the circle increases with the number of exceedances to provide a visual reference to the amount observed. A table below the graph also provides the exceedance type, as well as the data stream (stationary, mobile, or handheld), region, event, and number of exceedances associated with each circle.

4.1 Winter Storm Uri

Power, and subsequently data, loss from Winter Storm Uri can be seen at the beginning of the stationary graphs (Figure 19 and Figure 20). All data stream graphs show that while shutdowns happened relatively quickly, facility startups were gradual and did not all occur at one point in time. It is important to note that, due to the complexities involved in shutting down and starting up a large facility, the daily number of facilities reporting each day may include the same facility(ies) over several days. The bulk of exceedances occurred in the first 24 days of sampling for this event (approximately 81% of the exceedances). For exceedances that occurred after 25 days, the reported emissions data were evaluated to see if an emissions event corresponded to the monitored exceedance. There were no storm-related emissions events reported in the vicinity of monitored exceedances for exceedances that occurred more than 25 days into sampling (March 9, 2021 and forward for Winter Storm Uri).

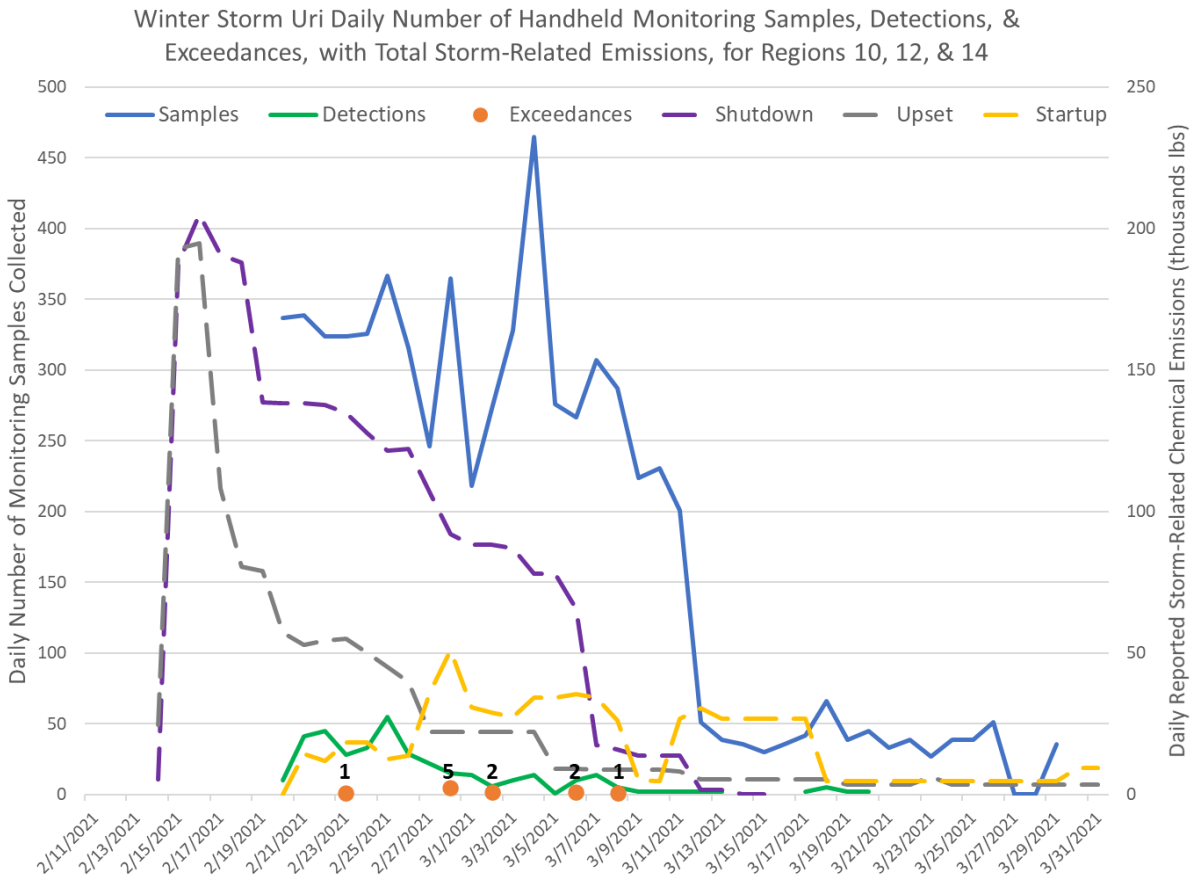
4.1.1 Handheld Data

Figure 15. Winter Storm Uri Daily Number of Handheld Samples, Detections, & Exceedances with Facilities Reporting Emissions, Regions 10, 12, and 14



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples and applies to the solid lines on the graph as well as to the orange circles; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions and applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle).

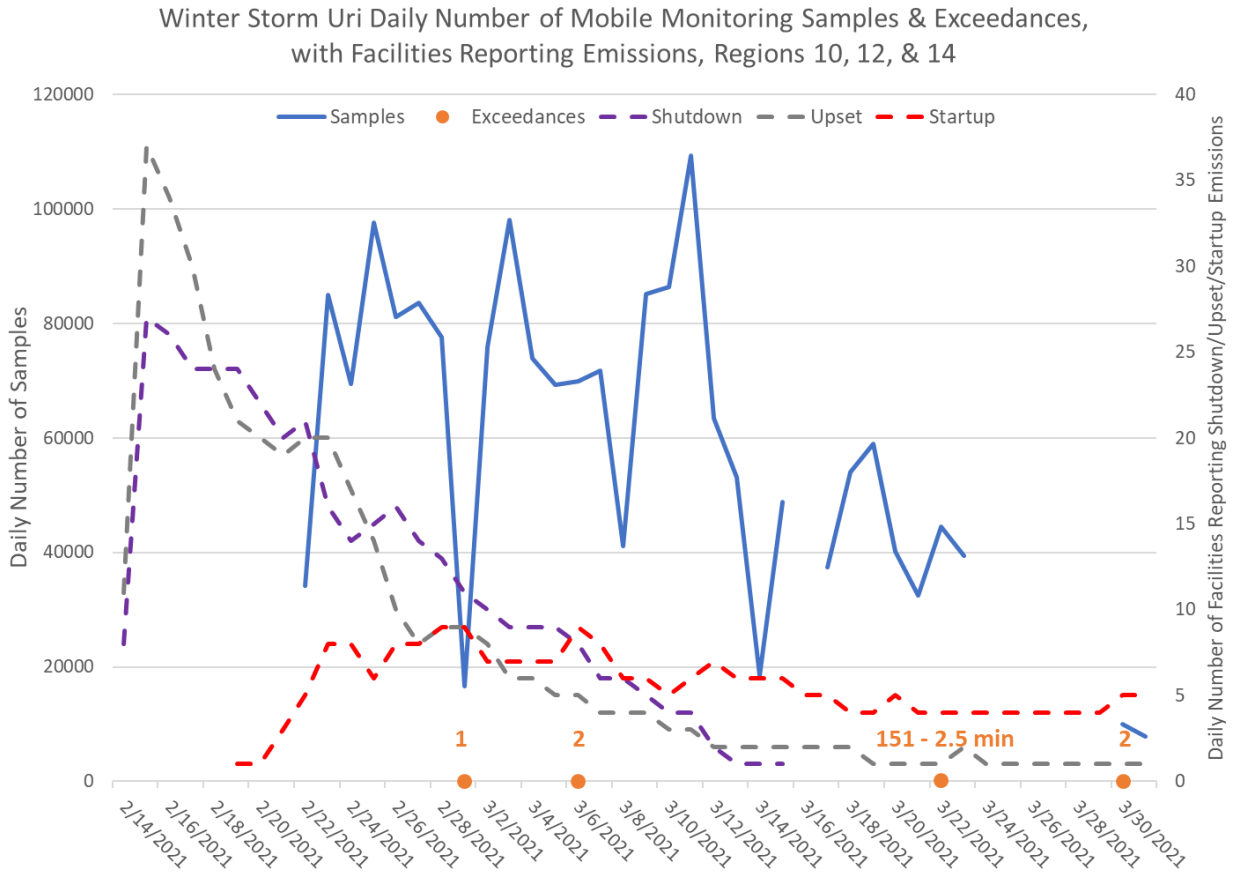
Figure 16. Winter Storm Uri Daily Number of Handheld Samples, Detections, & Exceedances, with Total Storm-Related Emissions, for Regions 10, 12, and 14



Graph notes: Two separate datasets are provided on the graph. **Left side y-axis** = daily number of samples and applies to the solid lines on the graph as well as to the orange circles; **Right side y-axis** = total daily amount of chemical emissions (thousands lbs) and applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle).

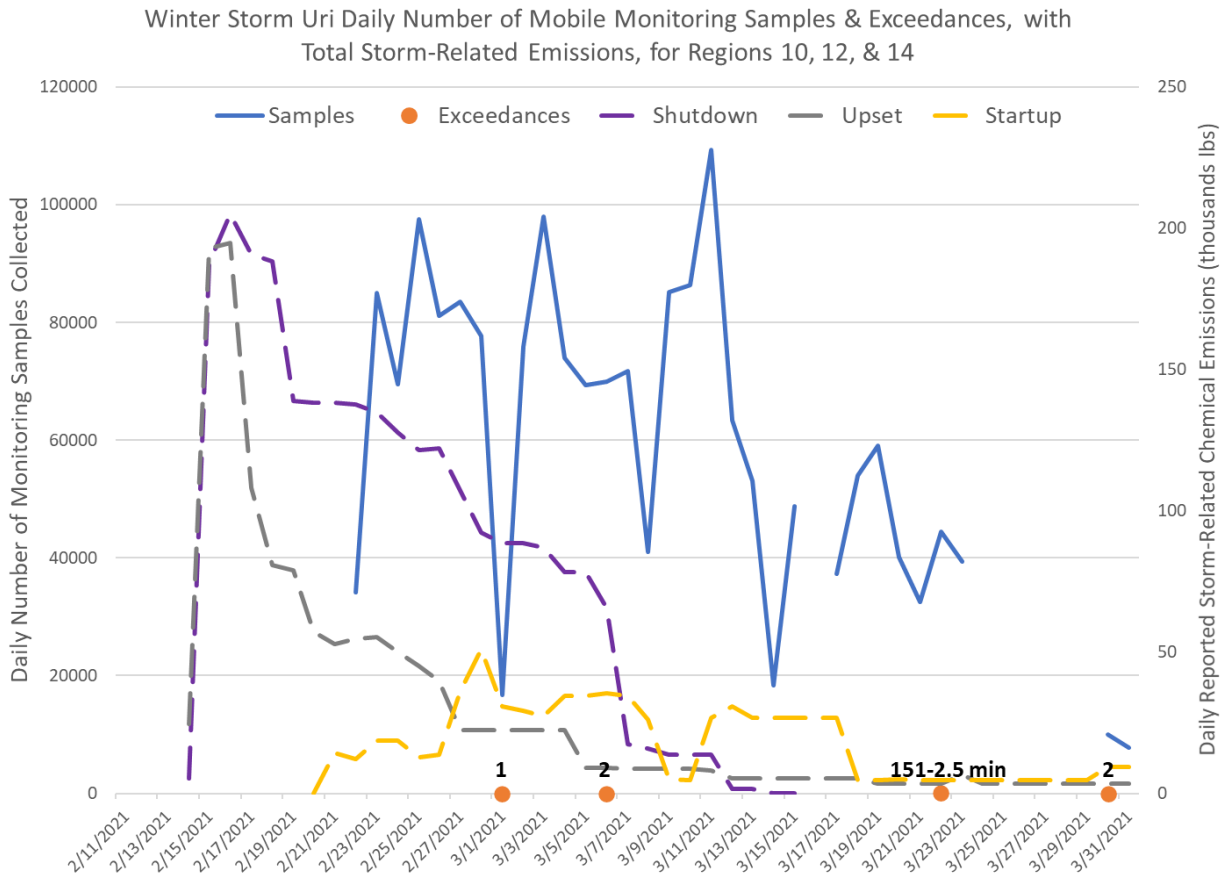
4.1.2 Mobile Monitoring Data

Figure 17. Winter Storm Uri Daily Number of Mobile Monitoring Samples & Exceedances with Facilities Reporting Emissions, Regions 10, 12, & 14



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples and applies to the solid line on the graph as well as to the orange circles; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions and applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle) – on this graph, there were 151 concurrent instantaneous exceedances measured on 3/22/2021 that lasted 2.5 minutes total.

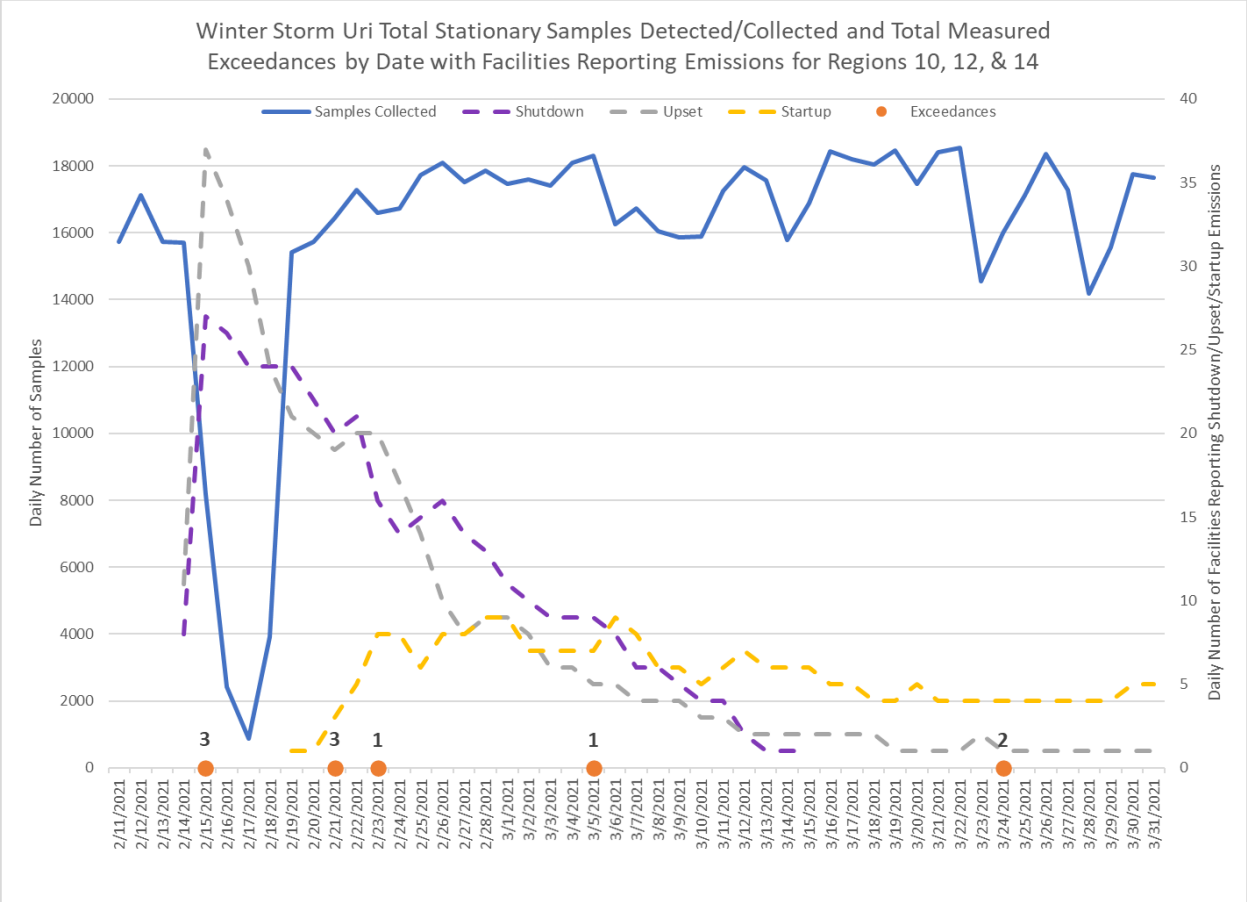
Figure 18. Winter Storm Uri Daily Number of Mobile Monitoring Samples & Exceedances, with Total Storm-Related Emissions, for Regions 10, 12, & 14



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples and applies to the solid lines on the graph as well as to the orange circles; **Right side y-axis** = total daily amount of chemical emissions (thousands lbs) and applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle) – on this graph, there were 151 concurrent instantaneous exceedances measured on 3/22/2021 that lasted 2.5 minutes total.

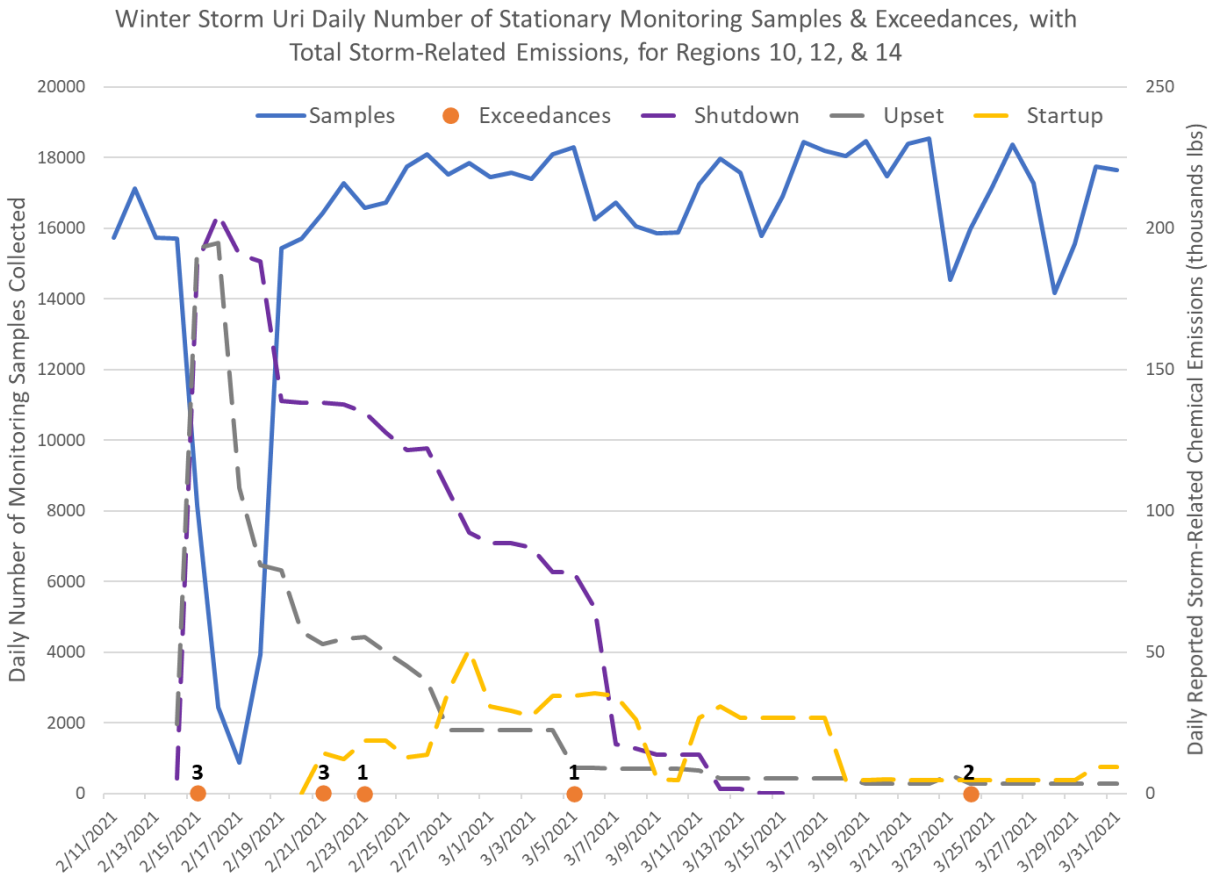
4.1.3 Stationary Data

Figure 19. Winter Storm Uri Total Stationary Samples Detected/Collected and Total Measured Exceedances by Date with Facilities Reporting Emissions for Regions 10, 12, & 14



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples and applies to the solid line on the graph as well as to the orange circles; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions and applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle).

Figure 20. Winter Storm Uri Total Stationary Samples Detected/Collected and Total Measured Exceedances by Date with Facilities Reporting Emissions for Regions 10, 12, & 14



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples and applies to the solid lines on the graph as well as to the orange circles; **Right side y-axis** = total daily amount of chemical emissions (thousands lbs) and applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle).

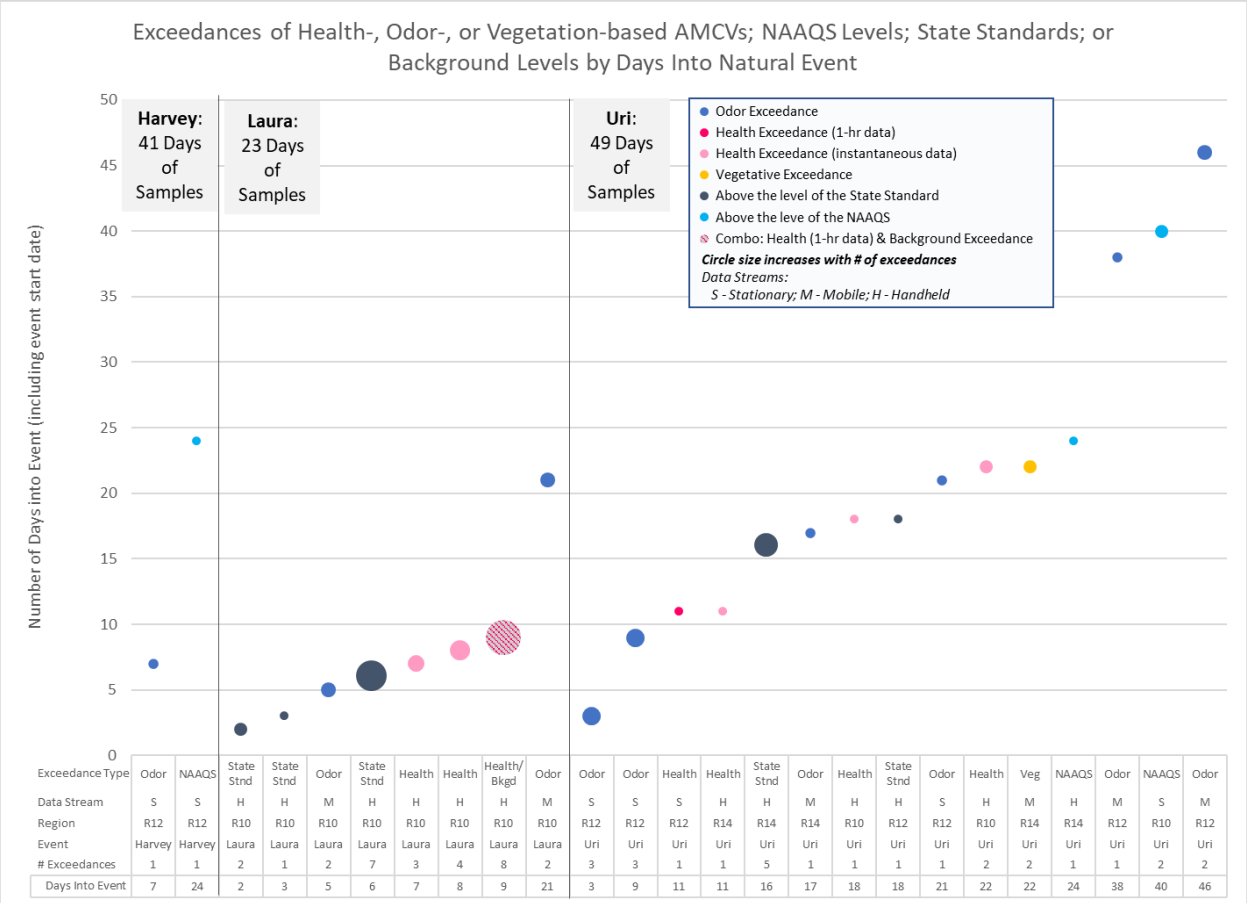
4.2 Overall Summary of Timing of Exceedances for Natural Events

The graph below (Figure 21) is provided to show the overall summary of the timing and type of exceedances by days into each natural event (beginning with the event start date). The color of each circle represents the type of exceedance while the size of the circle increases with the number of exceedances to provide a visual reference to the amount observed. A table below the graph also provides the exceedance type, as well as the data stream (stationary, mobile, or handheld), region, event, and number of exceedances associated with each circle. There were no exceedances measured for Hurricane Delta, so that event is not included in this analysis.

There were 41 days of sampling data available for Hurricane Harvey, 23 days of sampling data available for Hurricane Laura, and 49 days of sampling data available for Winter Storm Uri. For Hurricane Harvey, all exceedances occurred within the first 25 days of sampling for this event. For the last exceedance measured for Hurricane Harvey, which was measured on September

17, 2017, there was a storm-related emissions event reported in the vicinity of the monitored exceedance. For Hurricane Laura, since there were only 23 days of sampling, all exceedances fell within the first 25 days, with the last exceedance measured on day 21 for this event. There were no storm-related emissions events reported that corresponded to the last measured exceedance for Hurricane Laura. For Winter Storm Uri, as stated in the above section, the bulk of exceedances occurred in the first 24 days of sampling for this event (approximately 81% of the exceedances). For exceedances that occurred after 25 days, the reported emissions data were evaluated to see if an emissions event corresponded to the exceedance. There were no storm-related emissions events reported in the vicinity of monitored exceedances for exceedances that occurred more than 25 days into sampling (March 9, 2021 and forward for Winter Storm Uri).

Figure 21. Exceedances of Health-, Odor-, or Vegetation-based AMCVs; NAAQS Levels; State Standards; or Background Levels by Days Into Natural Events.



Exceedance Type	Odor	NAAQS	State Stnd	State Stnd	Odor	State Stnd	Health	Health	Health/ Bkgd	Odor	Odor	Odor	Health	Health	State Stnd	Odor	Health	State Stnd	Odor	Health	Veg	NAAQS	Odor	NAAQS	Odor
Data Stream	S	S	H	H	M	H	H	H	H	M	S	S	S	H	H	M	H	H	S	H	M	H	M	S	M
Region	R12	R12	R10	R10	R10	R10	R10	R10	R10	R10	R12	R12	R12	R14	R14	R14	R10	R12	R12	R10	R14	R14	R12	R10	R12
Event	Harvey	Harvey	Laura	Laura	Laura	Laura	Laura	Laura	Laura	Laura	Uri	Uri	Uri	Uri	Uri	Uri	Uri	Uri	Uri	Uri	Uri	Uri	Uri	Uri	Uri
# Exceedances	1	1	2	1	2	7	3	4	8	2	3	3	1	1	5	1	1	1	1	2	2	1	1	2	2
Days Into Event	7	24	2	3	5	6	7	8	9	21	3	9	11	11	16	17	18	18	21	22	22	24	38	40	46

Graph notes: The 2.5-min mobile monitoring odor exceedance that occurred 38 days into Winter Storm Uri was counted as a single exceedance, as were the 36-second and 72-second mobile monitoring odor exceedances that occurred 5 days into Hurricane Laura.

In summary, most of the monitored exceedances of CVs occurred within the first few weeks after the natural events. Those that occurred later were rarely at a time and a location that had

a reported storm-related excess emission event. Besides a generally higher number of exceedances and amount of emissions in the early weeks after a storm, there was no clear relationship between the number of facilities reporting storm-related emissions events/total pounds of emissions and the number of CV exceedances. For example, in Figure 15, which shows the handheld monitoring data for regions 10, 12, and 14 for winter storm Uri, the week of February 20 - 26 showed a greater number of facilities reporting startup/shutdown/upset emissions, but there was only one exceedance of a CV (out of 2,333 samples). In contrast, in the following week (February 27 – March 5) fewer facilities were reporting storm-related emissions, but there were seven CV exceedances (out of 2,171 samples). In addition, the graph shows that the number of facilities reporting startup emissions and the total emissions associated with startup remains fairly constant over time. This demonstrates that there is not a clear clustering of startup-related emissions at a particular time after a storm, and this temporal spread of startup emissions is expected to lead to fewer air quality concerns than if the same number of facilities went through simultaneous startup of their operations.

Another clear pattern in the graphs is that the largest number of facilities reporting storm-related emissions occurs in the first few days of the natural event. This occurs before the TCEQ is able to mobilize handheld or mobile monitoring, and often when stationary air monitors are offline due to the storm. This generates a gap in our knowledge of air quality at a time when emissions may be greatest. However, during hurricanes the high winds rapidly disperse emitted pollutants, and as noted above available monitoring data at later times after the storms does not show a clear correlation between the number of facilities reporting emissions and the number of exceedances of CVs.

Appendix A: Methods

Emissions Data: Shutdown, Startup, & Air Upsets and Emission Events

When an emissions event occurs, owners or operators of a regulated entity must submit an initial notification in the State of Texas Environmental Electronic Reporting System (STEERS) within 24 hours of discovery of the event if a compound will equal or exceed a reportable quantity and must submit a final report no later than two weeks after the end of the emissions event. Certain types of opacity and scheduled maintenance/startup/shutdown events must be reported as well. These events are reported through the Air Emissions Maintenance Events module of STEERS. After the event is reported in STEERS, it is included in TCEQ's Consolidated Compliance and Enforcement Data System (CCEDS), an internal database used to document and track investigations, enforcement actions, and other agency activities.

TCEQ reviews reportable events against criteria located in 30 Texas Administrative Code Chapter 101 to determine if the event was avoidable and assesses whether or not owners or operators took measures to minimize emissions. Based on the results of an investigation of a reportable incident, the TCEQ may pursue enforcement actions when appropriate against regulated entities which may include the assessment of a penalty. The investigation results are documented in CCEDS. In addition, once verified and submitted by an approved account holder at the regulated entity, the initial notifications and final reports become the official Copy of Record and the information concerning the incident is made available for public viewing at TCEQ's Emissions Event Report Database at the following link: https://www2.tceq.texas.gov/oce/eer/index.cfm?fuseaction=main.searchForm&newsearch=yes.

Emissions data were reviewed from shutdown, startup, and air upsets that occurred due to natural or industrial events. TCEQ's Office of Compliance and Enforcement (OCE) provided incident reports from STEERS for the industrial events and a compilation of the STEERS incident reports ranging from dates prior to and following each natural event reviewed for this report; the events evaluated in this report are listed in Table 57.

Table 57. Emissions Events and Regions Evaluated.

Event	Dates	Regions Affected/Evaluated
Hurricane Harvey	Aug. 21- Sept 10, 2017	10 – Beaumont 12 – Houston 14 – Corpus Christi
ITC Fire	March 17, 2019	12 – Houston
TPC Fire	November 27, 2019	10 – Beaumont
Hurricane Laura	August 17 – September 25, 2020	10 – Beaumont 12 – Houston
Hurricane Delta	October 1 – 31, 2020	10 – Beaumont
Winter Storm Uri	February 13 – April 28, 2021	10 – Beaumont 12 – Houston 14 – Corpus Christi

For the hurricanes and the winter weather event, emissions data from each affected/evaluated region were reviewed and only the emissions events that appeared to be due to storm-related shutdown, startup and air upsets were used for this report. Except for Hurricane Delta, the analyses were separated into two groups: one for shutdown and associated air upsets, and a second for startup and associated air upsets.

For all files, the total emissions and the quantities of non-reportable pollutants were each totaled. Non-reportable pollutants included greenhouse gases (carbon dioxide, methane, nitrous oxide) and chemicals excluded from unauthorized emissions (water, nitrogen, ethane, noble gases, hydrogen, and oxygen). The quantity of total reportable emissions was calculated by subtracting the total for non-reportable pollutants from the total emissions. Using the material code information from the STEERS report, the quantities of emissions for CO, SO_2, and NO_X were each totaled and tabulated. Using the material name information, the quantities of emissions of individual chemicals were reviewed and tabulated from highest quantity to lowest quantity for at least the top six contaminants.

Additionally, contaminants that were monitored during mobile monitoring trips were reviewed. Contaminants evaluated during mobile monitoring trips were as follows: 1,3-butadiene, 1-butene, acetylene, benzene, cyclohexane, ethylbenzene, isobutane, propylene, styrene, toluene, m-/p-xylenes, n-hexane, n-octane, and o-xylene. Because each regulated entity did not always estimate quantities of individual isomers, the butenes and xylenes were each combined. The butene isomers included the following: butylene, 1-butene, 2-butene (cis and trans), isobutene, isobutylene[9], and mixed isomers of butenes. The combined xylene isomers included the following: o-xylene, m-xylene, p-xylene, xylene, and mixed isomers of xylenes. For the alkanes containing 4 or more carbon atoms, when not preceded by an “n”, it was assumed that the alkane is the straight chain form. For example, hexane and n-hexane both refer to the straight chain alkane and were totaled. Additionally, 1,3-butadiene and the alternate name, butadiene, were combined for the 1,3-butadiene totals. When the quantities were relatively high, the VOCs and PM were tabulated using the material name (not the material code). Once the quantity of emissions for each chemical was tabulated, the percent of the total reportable emissions for each chemical also was tabulated, and the total percent was calculated. For both the ITC and TPC fires, all chemicals were tabulated. For the hurricanes and winter storm, the total percent of total reportable emissions represented is included in the title and the last row of each table; for the ITC and TPC fires, all contaminants are reported so the total percent shown for these events is 100%.

Emissions data can be downloaded from the STEERS website. For the ITC and TPC fires, the individual emissions event reports (incident nos. 304871 and 325683, respectively) were downloaded from the TCEQ website.

For the winter weather event, the numbers of shutdowns, upsets, and startups for each calendar date in each region evaluated were totaled (and included in the graphs in Section 4.1).

[9] Isobutylene is also called isobutene

For each incident, an incident start date and incident end date are included in the STEERS reports; therefore, each incident was counted on each calendar date beginning on the incident start date and ending on the incident end date. Because of the loss of power at several facilities, many of the emissions events were not counted as shutdowns, but rather were counted as upsets.

For each incident the reporting facility and associated regulated entity (RE) number are included. A facility may report more than one emission event for a natural event on the same calendar date; therefore, the total number of incidents does not always correspond to the number of facilities affected. For each incident, the RE numbers were reviewed and the number of facilities affected per calendar date were totaled, such that duplicate incidents for the same facility on the same calendar date were only counted once.

For each region, the total daily emissions/calendar date (pounds/day) were calculated as follows. For each applicable STEERS report the total pounds of reportable emissions were summed. The pounds of reportable emissions per calendar date for each incident was calculated by dividing the total reportable emissions for the incident by the number of calendar days reported for the incident. The pounds per calendar date were then summed for all incidents in a region to yield the total daily reportable emissions (pounds/day) for each calendar date in a region. As a cross check, the total reportable pounds were compared to the previously calculated totals, as well as to the sum of the pounds/day for the entire duration of shutdowns, upsets, and startups.

Stationary Ambient Air Monitoring Data

Stationary ambient air monitoring data were reviewed surrounding natural and industrial events from 2017 through 2021. The goal of reviewing stationary ambient air monitoring data around these events is to look at the overall contribution that emissions from these events pose to ambient air concentrations in surrounding communities. Data were reviewed beginning a few days (four for Hurricane Harvey and two for all other events) prior to the event and through the time-period that active in-field (e.g., handheld data, mobile air monitoring) air monitoring was occurring. There are two types of stationary ambient air monitors that collect VOC data: canister and autoGC. Canister samplers collect a single sample over 24-hours once every sixth or twelfth day. AutoGC samplers continuously collect ambient air samples every hour for approximately 22 hours each day (2 hours are typically used for daily instrument calibration) and are considered near-real time data as the unvalidated data results are available approximately two hours after collection. For VOCs, autoGC ambient air monitoring data were chosen for review as the 1-hour duration can reveal short-term or peak concentrations and can be compared to short-term human health- and welfare-based AMCVs. For this evaluation, the database was checked for validated data through September 1, 2021, at which time some data had not yet been validated; those data were identified by site name in the figures and are subject to change once validated. The VOC monitoring sites evaluated for each event are provided in Table 58.

AutoGCs can collect data for up to 48 chemicals, depending on the instrument and site. While all available data were reviewed, a subset of 14 compounds that were measured in the mobile monitoring data, and are considered common across all data streams, were carried further into analyses (see Section 2 for the list of 14 compounds). However, final tabulations in the data tables are for all VOCs measured during the specified time frames and all exceedances of short-term AMCVs were identified. The AMCVs used for comparison to all 48 autoGC chemicals are provided in Table 61.

In addition to VOCs, data for CO, NO_2, and SO_2 are continuously collected in a similar fashion to an autoGC, but using CO-, NO_X-, and SO_2-specific samplers. The 1-hour averages of these three compounds were chosen for review as they are the three compounds, aside from PM emissions during fires, that represent the highest quantities of emissions reported collectively for all events. For evaluation of the data, 1-hour concentrations were conservatively compared to their respective level of the 1-hour NAAQS. Some data have not yet been validated for this evaluation (Region 10 CO, NO_2, and SO_2 data for Winter Storm Uri) and are subject to change once validated. The level of the NAAQS used for comparison are provided in Table 62. The CO, NO_2, and SO_2 monitoring sites evaluated for each event are provided in Table 59.

$PM_{2.5}$ data can also be collected continuously via filter-based samplers. $PM_{2.5}$ data were reviewed because they constitute the highest quantities of reported emissions during fires. Data were reviewed for the two industrial events as they were fire-related. The 1-hour data were used to calculate 24-hour averages that could then be conservatively compared to the level of the 24-hour $PM_{2.5}$ NAAQS (Table 62). The $PM_{2.5}$ monitoring sites evaluated for each event are provided in Table 60.

Validated autoGC, CO, NO_2, SO_2, and $PM_{2.5}$ data may be downloaded from the Texas Air Monitoring Information System (TAMIS) database. The database may be accessed here: https://www17.tceq.texas.gov/tamis/index.cfm?fuseaction=home.welcome. Near real-time autoGC data may be viewed here: https://www.tceq.texas.gov/cgi-bin/compliance/monops/agc_daily_summary.pl. Near real-time CO, NO_2, SO_2, and $PM_{2.5}$ data may be viewed here: https://www.tceq.texas.gov/cgi-bin/compliance/monops/daily_average.pl.

For the overall summary of natural events, the graph shows the overall summary of the timing and type of exceedance by days into each natural event. The days into the natural event were summed, beginning with the event start date as day 1. For visual representation of the number of exceedances per day into event shown, the size of the circle increases with the number of exceedances. The circle that represents one exceedance begins with size 5 pt and is increased by 2 pt for each additional exceedance.

Table 58. VOC Monitoring Sites Evaluated for Each Event.

Monitoring Site	Region	Hurricane Harvey	Hurricane Laura	Hurricane Delta	Winter Storm Uri	ITC Fire	TPC Fire
Beaumont Downtown	10	Yes	Yes	Yes	Yes	--	Yes
Nederland High School	10	Yes	Yes	Yes	Yes	--	Yes

Monitoring Site	Region	Hurricane Harvey	Hurricane Laura	Hurricane Delta	Winter Storm Uri	ITC Fire	TPC Fire
Port Arthur Memorial School	10	Yes	Yes	Yes	Yes	--	Yes
Cesar Chavez	12	Yes	Yes	--	Yes	Yes	--
Channelview Drive Water Tower	12	--	--	--	Yes	--	--
Channelview	12	Yes	Yes	--	Yes	Yes	--
Clinton	12	Yes	Yes	--	Yes	Yes	--
Danciger	12	Yes	--	--	--	Yes	--
Galena Park	12	Yes	Yes	--	Yes	Yes	--
Houston Deer Park #2	12	Yes	Yes	--	Yes	Yes	--
HRM #3 Haden Rd	12	Yes	Yes	--	Yes	Yes	--
HRM 16 Deer Park	12	--	--	--	Yes	--	--
HRM 7 W Baytown	12	--	--	--	Yes	--	--
Lake Jackson	12	Yes	Yes	--	Yes	Yes	--
Lynchburg	12	--	Yes	--	Yes	Yes	--
Milby Park	12	Yes	Yes	--	Yes	Yes	--
Oyster Creek	12	Yes	Yes	--	Yes	Yes	--
Texas City 11th Street	12	Yes	--	--	--	Yes	--
Texas City 34th Street	12	Yes	Yes	--	Yes	Yes	--
Texas City BP 31st Street (Site 1)	12	Yes	Yes	--	Yes	Yes	--
Texas City BP Logan Street (Site 3)	12	Yes	Yes	--	Yes	Yes	--
Wallisville Road	12	Yes	Yes	--	Yes	Yes	--
Corpus Christi Palm	14	Yes	--	--	Yes	--	--
Total		19	17	3	21	16	3

Note: Monitoring sites change over time; some sites may not have been available (i.e., not yet activated, or were deactivated) for an event's time frame.

Table 59. CO, NO_2, and SO_2 Monitoring Sites Evaluated for Each Event.

Monitoring Site	Region	Hurricane Harvey	Hurricane Laura	Hurricane Delta	Winter Storm Uri	ITC Fire	TPC Fire
Beaumont Downtown	10	Yes	Yes	Yes	Yes	--	Yes
Hamshire	10	Yes	Yes	Yes	Yes	--	Yes
Nederland High School	10	Yes	Yes	Yes	Yes	--	Yes
Orange 1st Street	10	Yes	--	Yes	Yes	--	Yes
Port Arthur West	10	Yes	Yes	Yes	Yes	--	Yes
Port Arthur West 7th Street Gate 2	10	Yes	Yes	Yes	Yes	--	Yes
SETRPC 40 Sabine Pass	10	Yes	Yes	Yes	Yes	--	Yes
SETRPC 42 Mauriceville	10	Yes	Yes	Yes	Yes	--	Yes
SETRPC 43 Jefferson Co Airport	10	Yes	Yes	Yes	Yes	--	Yes
SETRPC Port Arthur	10	Yes	Yes	Yes	Yes*	--	Yes
West Orange	10	Yes	Yes	Yes	Yes	--	Yes
Baytown Garth	12	Yes	Yes	--	--	Yes	--
Channelview	12	Yes	Yes	--	Yes	Yes	--

Monitoring Site	Region	Hurricane Harvey	Hurricane Laura	Hurricane Delta	Winter Storm Uri	ITC Fire	TPC Fire
Clinton	12	Yes	Yes	--	Yes	Yes	--
Conroe Relocated	12	Yes	Yes	--	Yes	Yes	--
Danciger	12	Yes	--	--	--	Yes	--
Freeport South Avenue I	12	Yes	Yes	--	Yes	Yes	--
Galveston 99th Street	12	Yes	Yes	--	Yes	Yes	--
Houston Aldine	12	Yes	Yes	--	Yes	Yes	--
Houston Bayland Park	12	Yes	Yes	--	Yes	Yes	--
Houston Croquet	12	Yes	Yes	--	Yes	Yes	--
Houston Deer Park #2	12	Yes	Yes	--	Yes	Yes	--
Houston East	12	Yes	Yes	--	Yes	Yes	--
Houston Harvard Street	12	--	--	--	Yes	--	--
Houston Monroe	12	Yes	--	--	--	--	--
Houston North Loop	12	Yes	Yes	--	Yes	Yes	--
Houston North Wayside	12	Yes	--	--	--	--	--
Houston Southwest Freeway	12	Yes	Yes	--	Yes	Yes	--
HRM #3 Haden Rd	12	Yes	Yes	--	Yes	Yes	--
Lake Jackson	12	Yes	Yes	--	Yes	Yes	--
Lynchburg	12	--	Yes	--	Yes	Yes	--
Lang	12	Yes	Yes	--	Yes	Yes	--
Manvel Croix Park	12	Yes	Yes	--	Yes	Yes	--
Northwest Harris County	12	Yes	Yes	--	Yes	Yes	--
Oyster Creek	12	Yes	Yes	--	--	Yes	--
Park Place	12	Yes	Yes	--	Yes	Yes	--
Seabrook Friendship Park	12	Yes	Yes	--	Yes	Yes	--
Texas City 34th Street	12	Yes	Yes	--	Yes	Yes	--
Texas City Ball Park	12	Yes	Yes	--	Yes	Yes	--
Texas City BP 31st Street (Site 1)	12	Yes	--	--	--	Yes	--
Texas City BP Logan Street (Site 3)	12	Yes	--	--	--	Yes	--
Wallisville Road	12	Yes	Yes	--	Yes	Yes	--
Corpus Christi Huisache	14	Yes	--	--	Yes	--	--
Corpus Christi Tuloso	14	Yes	--	--	Yes	--	--
Corpus Christi West	14	Yes	--	--	Yes	--	--
Inez	14	Yes	--	--	--	--	--
Total		44	35	11	37	28	11

*Data were not yet validated at this site for this evaluation and are subject to change once validated.
Note: Monitoring sites change over time; some sites may not have been available (i.e., not yet activated, or were deactivated) for an event's time frame. Some sites may only measure one or two of the three compounds.

Table 60. $PM_{2.5}$ Monitoring Sites Evaluated for Each Event.

Monitoring Site	Region	ITC Fire	TPC Fire
Hamshire	10	--	Yes
Port Arthur Memorial School	10	--	Yes
SETRPC 42 Mauriceville	10	--	Yes
SETRPC Port Arthur	10	--	Yes
Baytown	12	Yes	--
Clinton	12	Yes	--
Houston Aldine	12	Yes	--
Houston Deer Park #2	12	Yes	--
Houston East	12	Yes	--
Park Place	12	Yes	--
Total		6	4

Table 61. Air Monitoring Comparison Values Used to Evaluate Stationary Monitoring Data.

Substance	Odor AMCV (ppb)	Short-Term AMCV Health (ppb)	Short-Term Vegetation (ppb)
1,2,3-Trimethylbenzene	--	3,000	--
1,2,4-Trimethylbenzene	--	3,000	--
1,3,5-Trimethylbenzene	--	3,000	--
1,3-Butadiene	230	1,700	--
1-Butene	--	27,000	--
1-Pentene	100	12,000	--
2,2,4-Trimethylpentane	--	4,100	--
2,2-Dimethylbutane	--	5,400	--
2,3,4-Trimethylpentane	--	4,100	--
2,3-Dimethylpentane	--	8,300	--
2,4-Dimethylpentane	--	8,300	--
2-Methyl-2-Butene	--	12,000	--
2-Methylheptane	--	4,100	--
2-Methylhexane	--	8,300	--
3-Methylheptane	--	4,100	--
3-Methylhexane	--	8,300	--
Acetylene	--	25,000	--
Benzene	--	180	--
Cis-2-Butene	--	15,000	--
Cis-2-Pentene	--	12,000	--
Cumene	130	510	--
Cyclohexane	--	1,000	--
Cyclopentane	--	5,900	--

Substance	Odor AMCV (ppb)	Short-Term AMCV Health (ppb)	Short-Term Vegetation (ppb)
Ethane	--	Simple Asphyxiant	--
Ethylbenzene	--	20,000	--
Ethylene	--	500,000	1,200
Isobutane	--	33,000	--
Isopentane	--	68,000	--
Isoprene	47	1,400	--
m/p-Xylene	--	1,700	--
Methylcyclohexane	--	4,000	--
Methylcyclopentane	--	750	--
n-Butane	--	92,000	--
n-Decane	--	1,000	--
n-Heptane	--	8,300	--
n-Hexane	--	5,400	--
n-Nonane	--	3,000	--
n-Octane	--	4,100	--
n-Pentane	--	68,000	--
n-Propylbenzene	--	510	--
n-Undecane	--	550	--
o-Xylene	--	1,700	--
Propane	--	Simple Asphyxiant	--
Propylene	--	Simple Asphyxiant	--
Styrene	26	5,200	--
Toluene	--	4,000	--
Trans-2-Butene	--	15,000	--
Trans-2-Pentene	--	12,000	--

Table 62. NAAQS Levels Used to Evaluate CO, NO_2, SO_2, and $PM_{2.5}$.

Substance	NAAQS	Units	Duration
CO	35,000	ppb	1-hour
NO_2	100	ppb	1-hour
SO_2	75	ppb	1-hour
$PM_{2.5}$	35	$\mu g/m^3$	24-hours

Mobile Monitoring Data

To enable dynamic measurement of chemical air concentrations after natural or industrial events, monitoring vans were equipped with mobile monitoring instruments (i.e., Picarro, DUVAS, SIFT-MS, and autoGC). These vans can collect air samples and measure the concentration of VOCs while the van is moving slowly in neighborhoods or industrial areas (in-motion monitoring), or the vans can be parked at certain locations to monitor chemical concentrations (stationary monitoring).

The Picarro instrument uses Cavity Ring-Down Spectroscopy technology that can measure a few gases simultaneously but was dedicated to monitoring only H_2S during the mobile monitoring events. The Picarro continuously collects air samples and measures the concentration, in this case H_2S, every 1-5 seconds at part-per-billion (by volume, ppb) levels.

The DUVAS (DV3000) (Differential Ultraviolet Absorption Spectroscopy) is a real-time air monitoring instrument that uses a UV lamp that is capable of simultaneously detecting and measuring concentrations of 14 target compounds: 1,3-butadiene, benzene, ethylbenzene, m-xylene, o-xylene, p-xylene, styrene, toluene, sulfur dioxide, ozone, nitric oxide, nitrogen dioxide, formaldehyde, and ammonia. The DUVAS can measure concentrations of each chemical every second at ppb levels, and the 100-second rolling average was evaluated in comparison to CVs and is presented in Appendix B.

The SIFT-MS instrument is a Selected-Ion Flow-Tube Mass Spectrometer that is capable of detecting multiple VOCs with detection limits at part-per-trillion (by volume, ppt) levels. Typically SIFT-MS is stationed at a location to collect stationary monitoring data, but it can also be used to collect in-motion data. The SIFT-MS is also a real-time gas monitoring instrument, which can simultaneously detect more than 18 different target compounds or compound groups and provide measured concentrations of each chemical every 3-6 seconds. The chemicals that were monitored in this report include 1,3-butadiene, 1-butene, butane, acetone, acetylene, benzene, cyclohexane, ethane + ethylene, isobutane, isobutene, hexane, octane, propane, propylene, styrene, toluene, xylenes + ethylbenzene, and C3-C4 saturated hydrocarbons. The list of monitored chemicals could be different depending on the specific survey needs.

During the ITC fire mobile monitoring period, an autoGC instrument installed in a mobile monitoring van was used to monitor 18 different VOCs simultaneously: 1,3-butadiene, 1-butene, acetylene, benzene, cyclohexane, ethane, ethylene, ethylbenzene, isobutane, m/p-xylene, n-butane, n-hexane, n-octane, o-xylene, propane, propylene, styrene, and toluene. The detected concentration of each chemical was reported approximately every 20-30 minutes at ppb levels. The times between injections varied a few minutes due to the cool down time for the instrument.

The CVs used for data evaluation can be found in Table 63.

Mobile monitoring data from the events can be downloaded from the event-specific agency webpage, which may be accessed from here: https://www.tceq.texas.gov/response. Data summary tables are provided in Appendix C: Mobile Monitoring Data.

Table 63. Comparison Values Used to Evaluate Mobile Monitoring Data.

Substance	Odor AMCV (ppb)	Short-Term AMCV Health (ppb)	Short-Term Vegetation (ppb)	State Standard (ppb)	NAAQS (ppb)
H_2S	--	--	--	80 [a]	--
SO_2	--	--	--	--	75

Substance	Odor AMCV (ppb)	Short-Term AMCV Health (ppb)	Short-Term Vegetation (ppb)	State Standard (ppb)	NAAQS (ppb)
1,3-Butadiene	230	1,700	--	--	--
1-Butene	--	27,000	--	--	--
Acetylene	--	25,000	--	--	--
Benzene	--	180	--	--	--
Butane	--	92,000	--	--	--
Cyclohexane	--	1,000	--	--	--
Ethane	--	Simple Asphyxiant	--	--	--
Ethane + Ethylene (as ethylene)	--	500,000	1,200	--	--
Ethylbenzene	--	20,000	--	--	--
Ethylene	--	500,000	1,200	--	--
Hexane	--	5,400	--	--	--
Hexane + Cyclohexane (as cyclohexane)	--	1,000	--	--	--
Isobutane	--	33,000	--	--	--
Isobutene	--	270,000	--	--	--
m/p-Xylene	--	1,700	--	--	--
m-Xylene	--	1,700	--	--	--
Octane	--	4,100	--	--	--
o-Xylene	--	1,700	--	--	--
Propane	--	Simple Asphyxiant	--	--	--
Propylene	--	Simple Asphyxiant	--	--	--
p-Xylene	--	1,700	--	--	--
Styrene	26	5,200	--	--	--
Toluene	--	4,000	--	--	--
Xylene	--	1,700	--	--	--
Xylene + Ethylbenzene (as xylene)	--	1,700	--	--	--
C3-C4 Sat (as C4) [b]	--	27,775	--	--	--

[a] These levels would be associated with odors but not health effects.

[b] C3-C4 Sat is a mixture of saturated hydrocarbons that contain 3 – 4 carbon atoms, C4 is a mixture of hydrocarbons that contain 4 carbon atoms.

Handheld Instrument Data

Handheld monitoring instruments such as the multiRAE, miniRAE, QRAE, AreaRAE, UltraRAE, and Jerome meter were used to collect instantaneous data from the areas in and around the events evaluated in this report. Field investigators equipped with these handheld instruments sampled for compounds such as: SO_2, VOCs, CO, HCN, benzene, NH_3, H_2S, Cl_2, and 1,3-butadiene. The detected concentrations of the chemicals were conservatively compared with the most appropriate CV: AMCVs, the value of the state standard, or the level of the NAAQS. A

background value was specifically used for total VOCs because total VOCs are a mixture and the specific composition is not known. These data were measured and reported at part-per-million levels (ppm). Exceedances of the CVs are highlighted and discussed in the summary sections, comparison values are provided in Table 64.

Handheld instrument data from the events can be downloaded from the event-specific agency webpage, which may be accessed from here: https://www.tceq.texas.gov/response. Data summary tables are provided in Appendix D: Handheld Instrument Data.

Table 64. Comparison Values Used to Evaluate Handheld Instrument Data.

Substance	Odor AMCV (ppm)	Short-Term AMCV Health (ppm)	State Standard (ppm)	NAAQS (ppm)	Background (ppm)
1,3-Butadiene	0.23	1.7	--	--	--
Benzene	--	0.18	--	--	--
Cl_2	0.79	0.048	--	--	--
HCN	--	0.019	--	--	--
NH_3	5.2	0.85	--	--	--
VOCs	--	--	--	--	3
H_2S	--	--	0.08 [a]	--	--
CO	--	--	--	35	--
SO_2	--	--	--	0.075	--

[a] These levels would be associated with odors but not health effects.

ASPECT Aircraft Data

ASPECT data collected after natural and industrial events from 2017 through 2021 were reviewed/collated from the US EPA Region 6 Emergency Response website (Regions – US EPA OSC Response[10]). ASPECT data were supportive in the collective effort to identify and mitigate the overall contribution of emissions from these events. ASPECT data may complement or help inform monitoring efforts in-field (e.g., handheld data, mobile air monitoring). ASPECT served as an initial screening tool to monitor and characterize emissions of industrial facilities during, or in the aftermath of, emergency events from altitudes of greater than 1,000 feet above ground level. ASPECT provides a full set of IR imagery, IR spectrometer and photographic data that can help expedite ground level monitoring efforts to identify emission sources. FTIR spectral data are cataloged by date, time, flight number, data collection run, and concentrations recorded in part per million (ppm). Data collection runs are based on flight lines that are created to meet the specifications of each mission's data quality objectives. A number is assigned to the collection run after a flight line has been flown. ASPECT can potentially provide FTIR spectral based concentrations for 76 compounds. While the monitoring equipment aboard ASPECT provides instantaneous data that are useful for rapid identification of contaminant plumes, both the high altitude and grab sample nature (generally with a duration

[10] https://response.epa.gov/site/region_list.aspx?region=6

measured in seconds) of the data cannot be reliably used in a human health assessment. Therefore, it is not appropriate to compare ASPECT detected concentrations to any health- or odor- based CVs including TCEQ's short-term AMCVs.

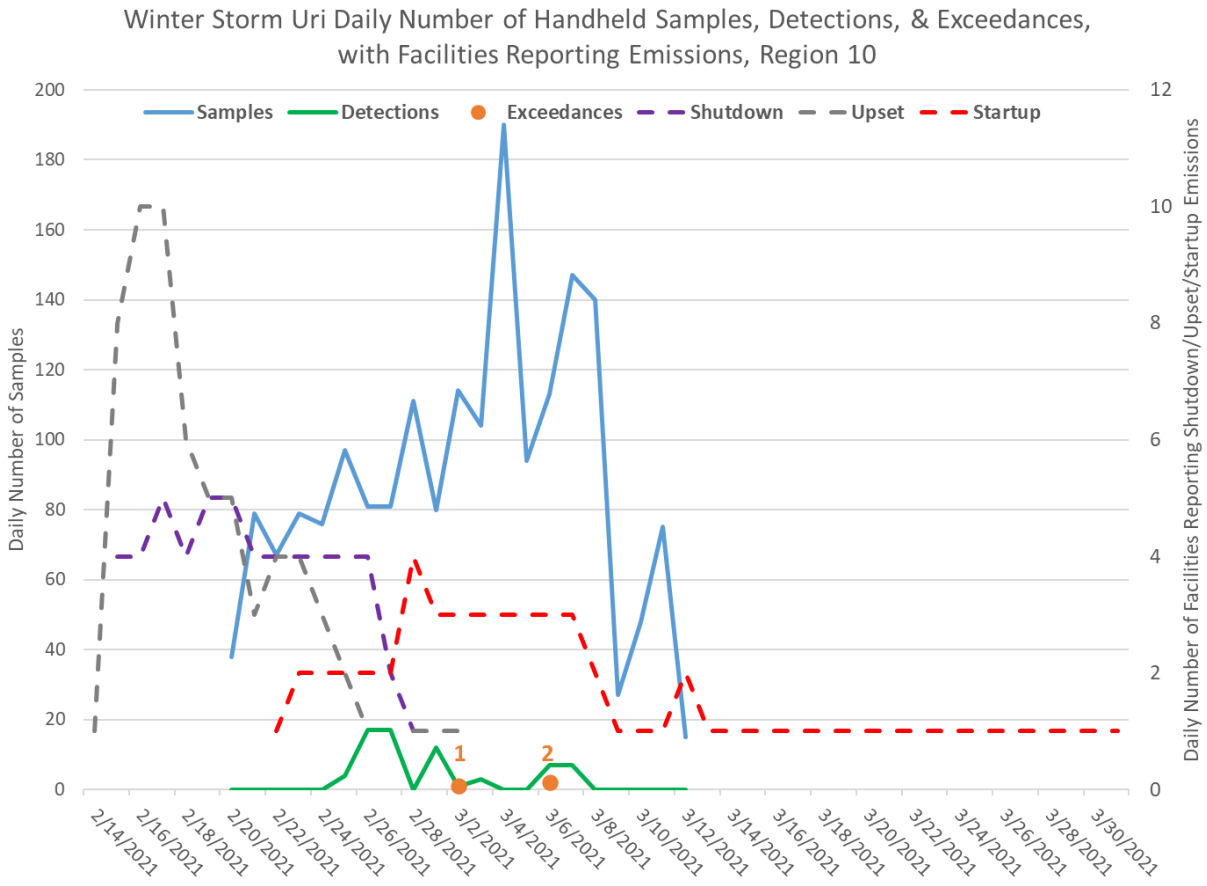
ASPECT data from the events can be downloaded from the event-specific US EPA webpage, which may be accessed from here:

- Hurricanes: https://www.epa.gov/hurricane-response.
- Winter Storm Uri: https://response.epa.gov/site/site_profile.aspx?site_id=15082.
- ITC Fire: https://response.epa.gov/site/site_profile.aspx?site_id=14150.
- TPC Fire: https://response.epa.gov/site/site_profile.aspx?site_id=14566.

Appendix B: Timing Graphs by Region

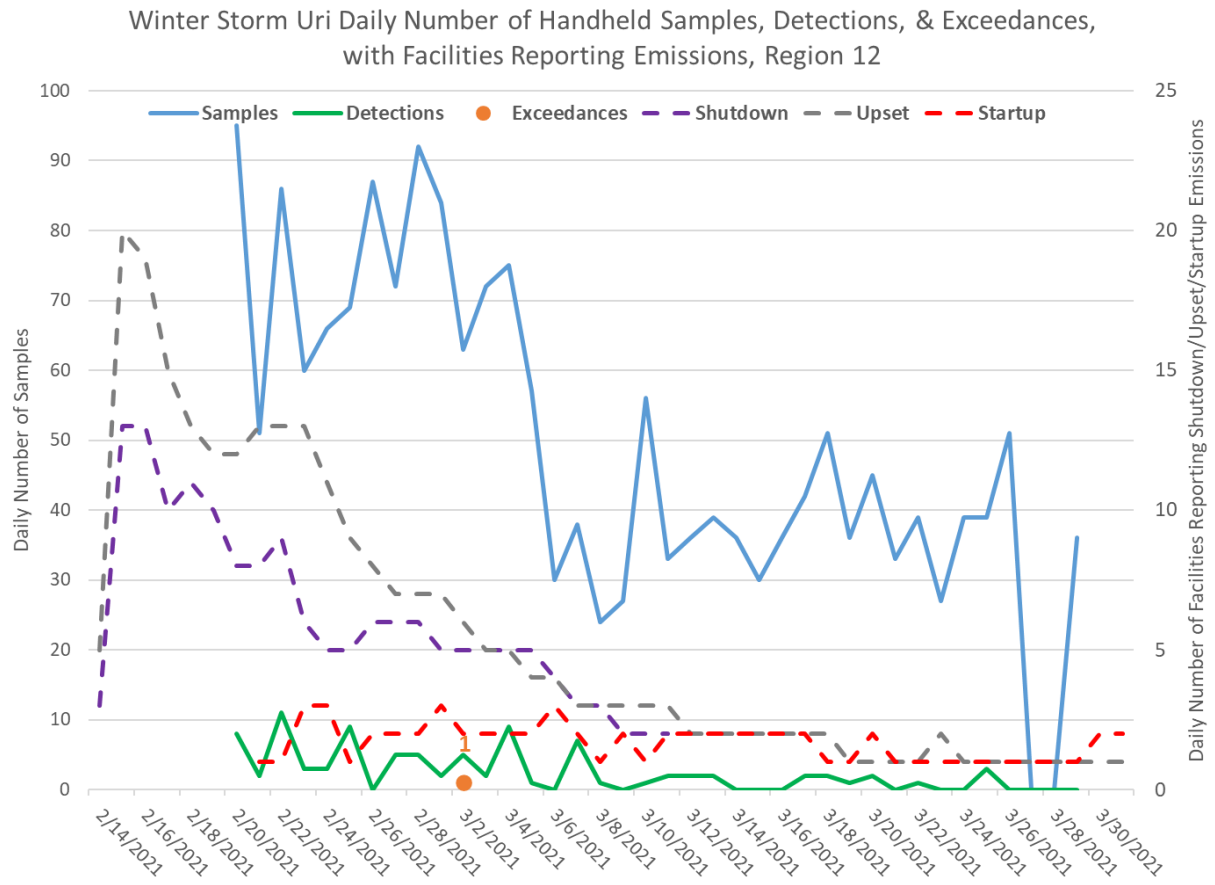
Handheld Data

Figure 22. Winter Storm Uri Daily Number of Handheld Samples, Detections, & Exceedances with Facilities Reporting Emissions, Region 10 (Beaumont)



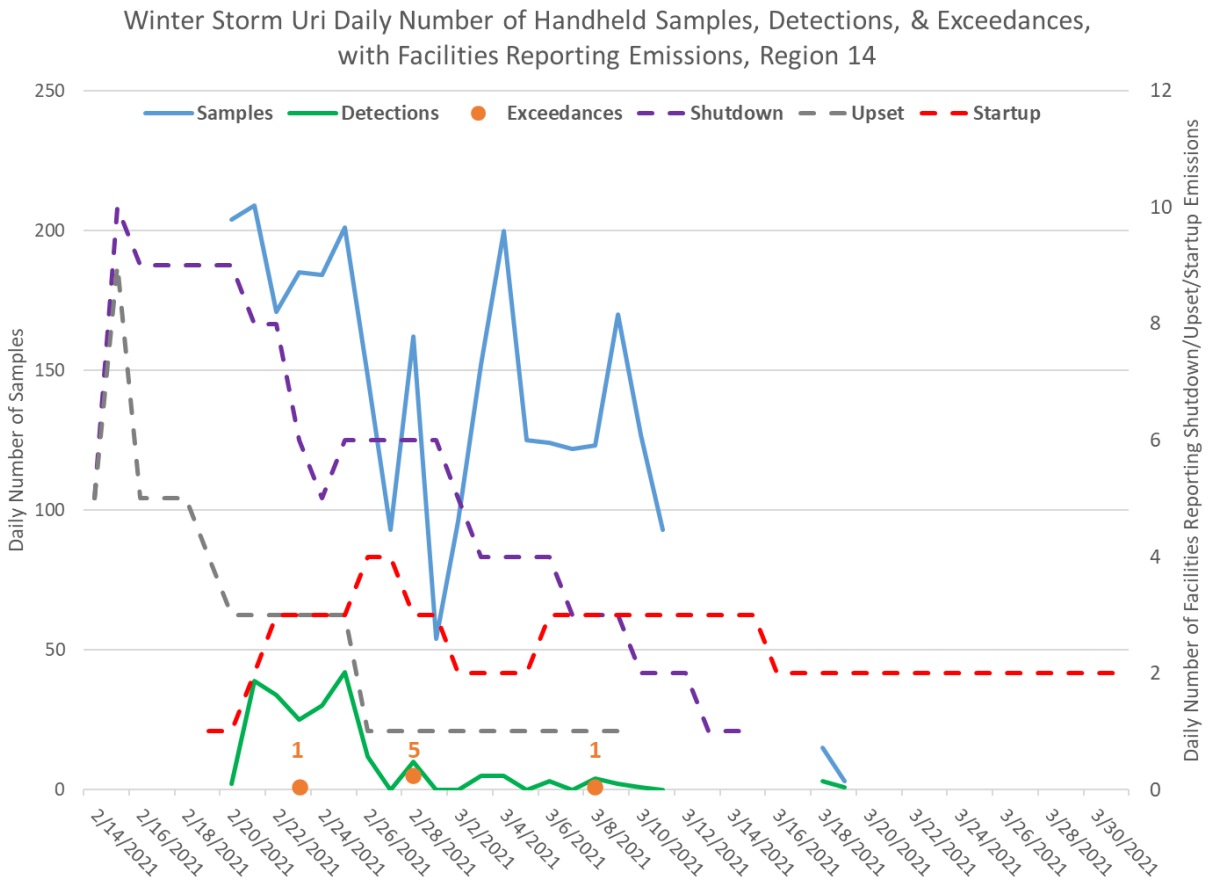
Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples & applies to the solid lines on the graph as well as the orange circles; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions & applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle).

Figure 23. Winter Storm Uri Daily Number of Handheld Samples, Detections, & Exceedances with Facilities Reporting Emissions, Region 12 (Houston)



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples & applies to the solid lines on the graph as well as the orange circles; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions & applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle).

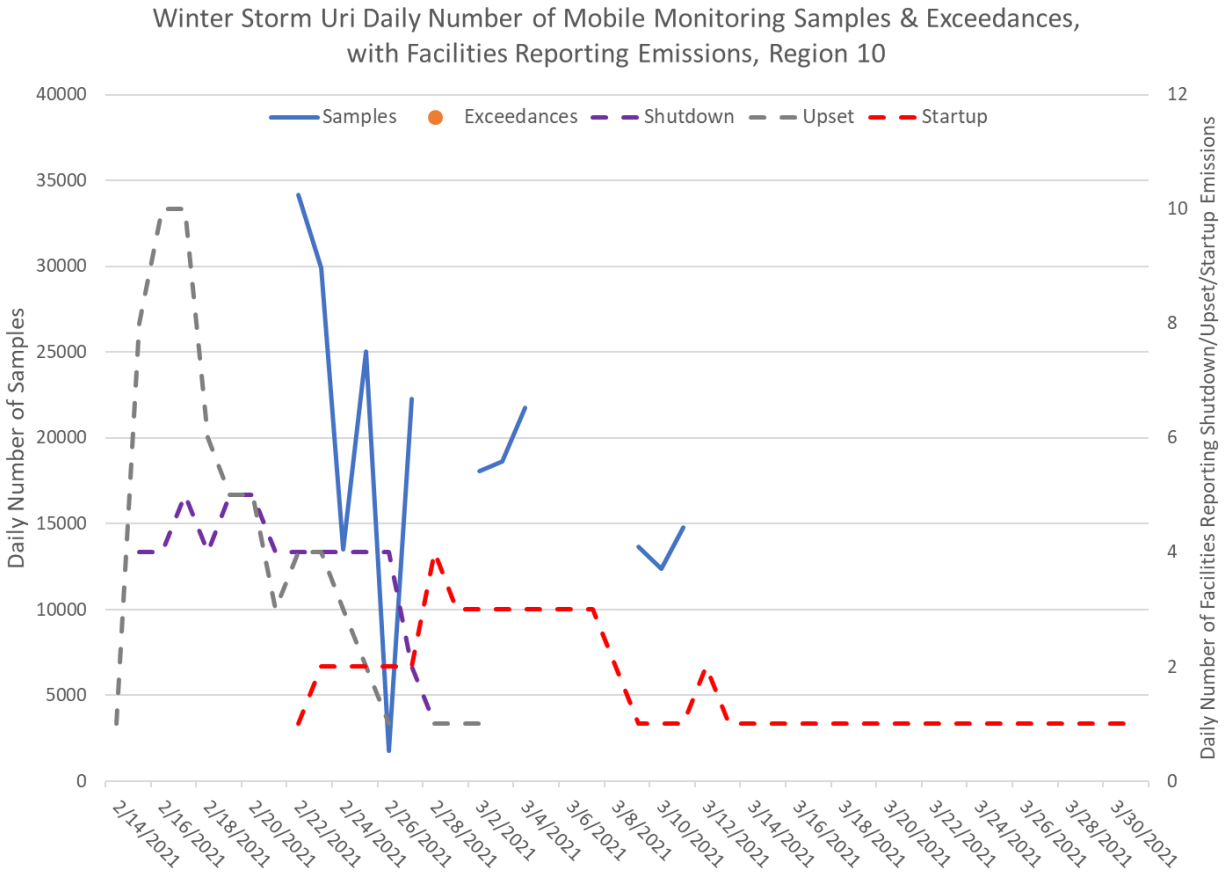
Figure 24. Winter Storm Uri Daily Number of Handheld Samples, Detections, & Exceedances with Facilities Reporting Emissions, Region 14 (Corpus Christi)



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples & applies to the solid lines on the graph as well as the orange circles; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions & applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle).

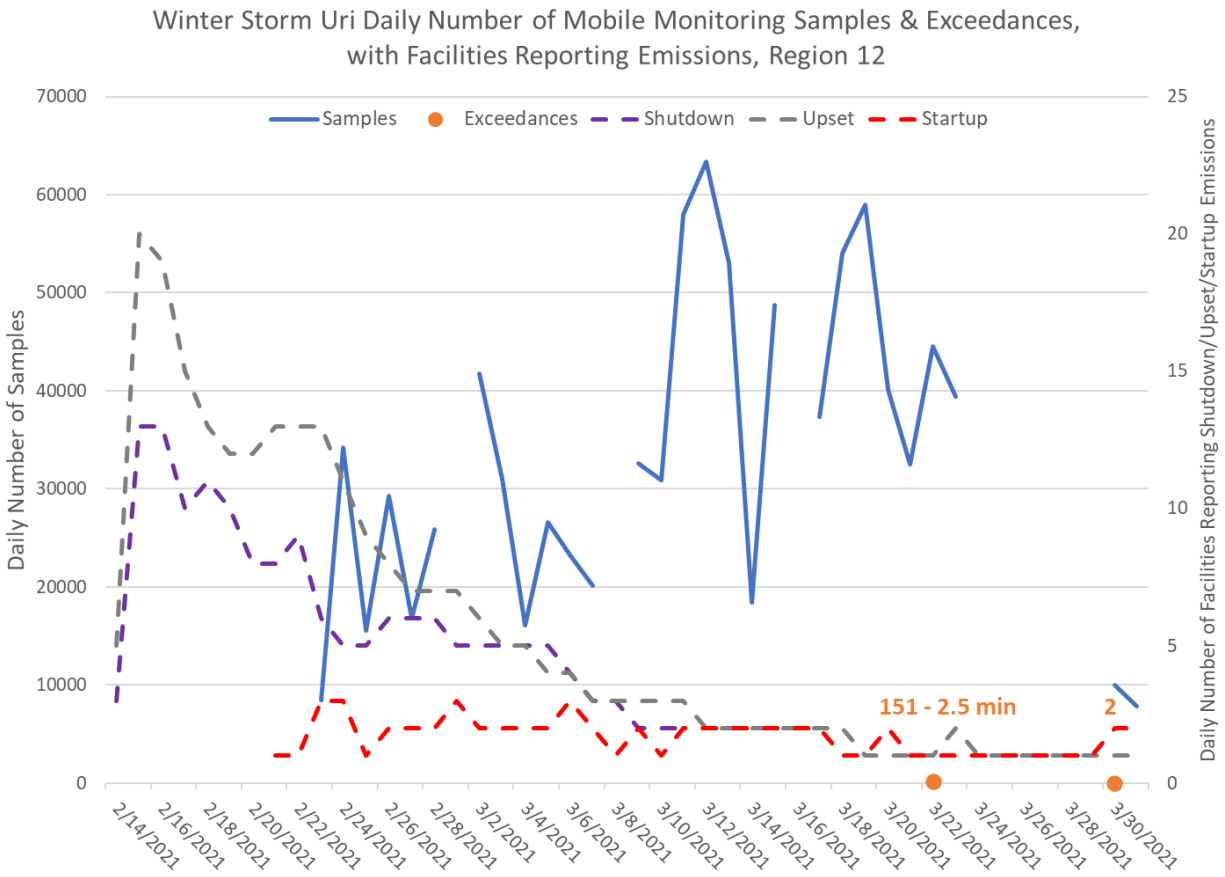
Mobile Monitoring Data

Figure 25. Winter Storm Uri Daily Number of Mobile Monitoring Samples & Exceedances with Facilities Reporting Emissions, Region 10 (Beaumont)



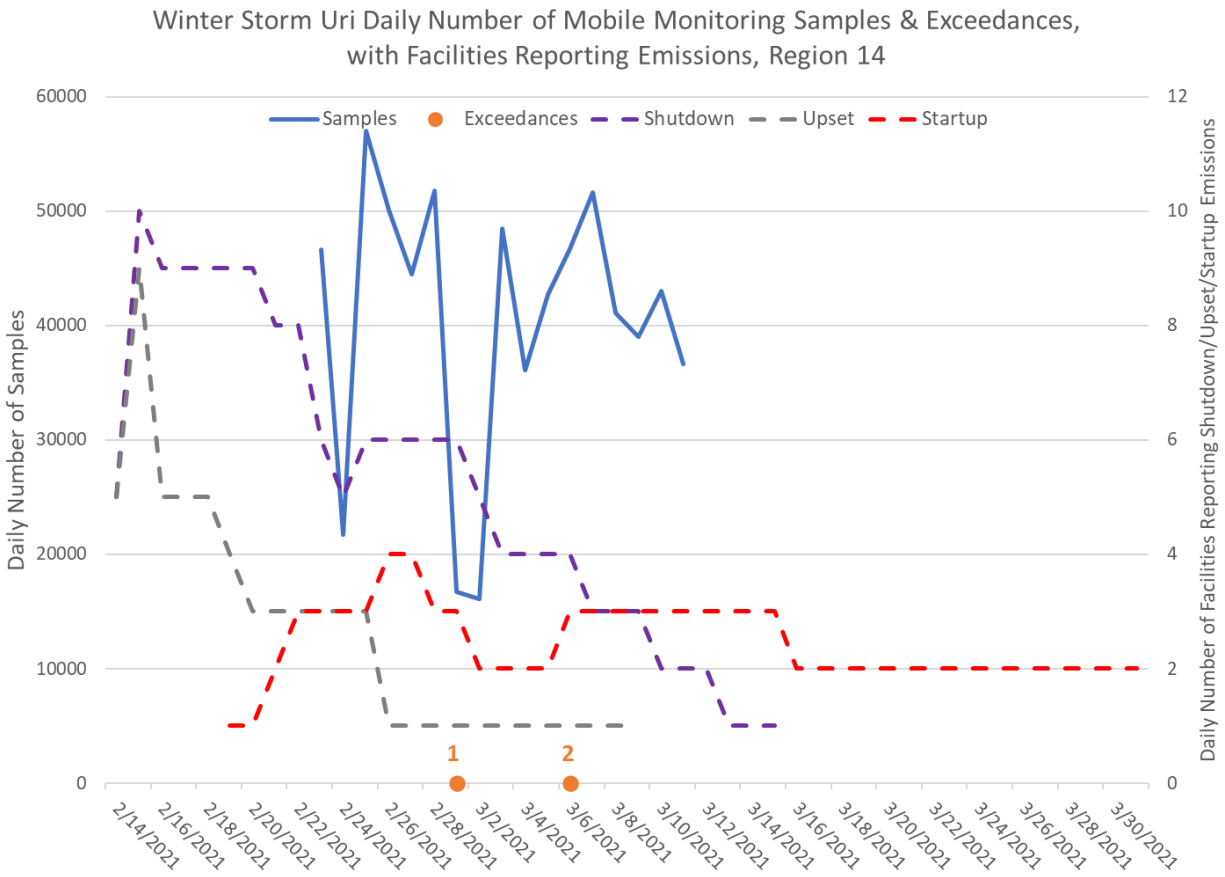
Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples & applies to the solid line on the graph; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions & applies to the dashed lines on the graph.

Figure 26. Winter Storm Uri Daily Number of Mobile Monitoring Samples & Exceedances with Facilities Reporting Emissions, Region 12 (Houston)



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples & applies to the solid line on the graph as well as the orange circles; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions & applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle) – on this graph, there were 151 concurrent instantaneous exceedances measured on 3/22/2021 that were counted as one exceedance as it lasted 2.5 minutes total.

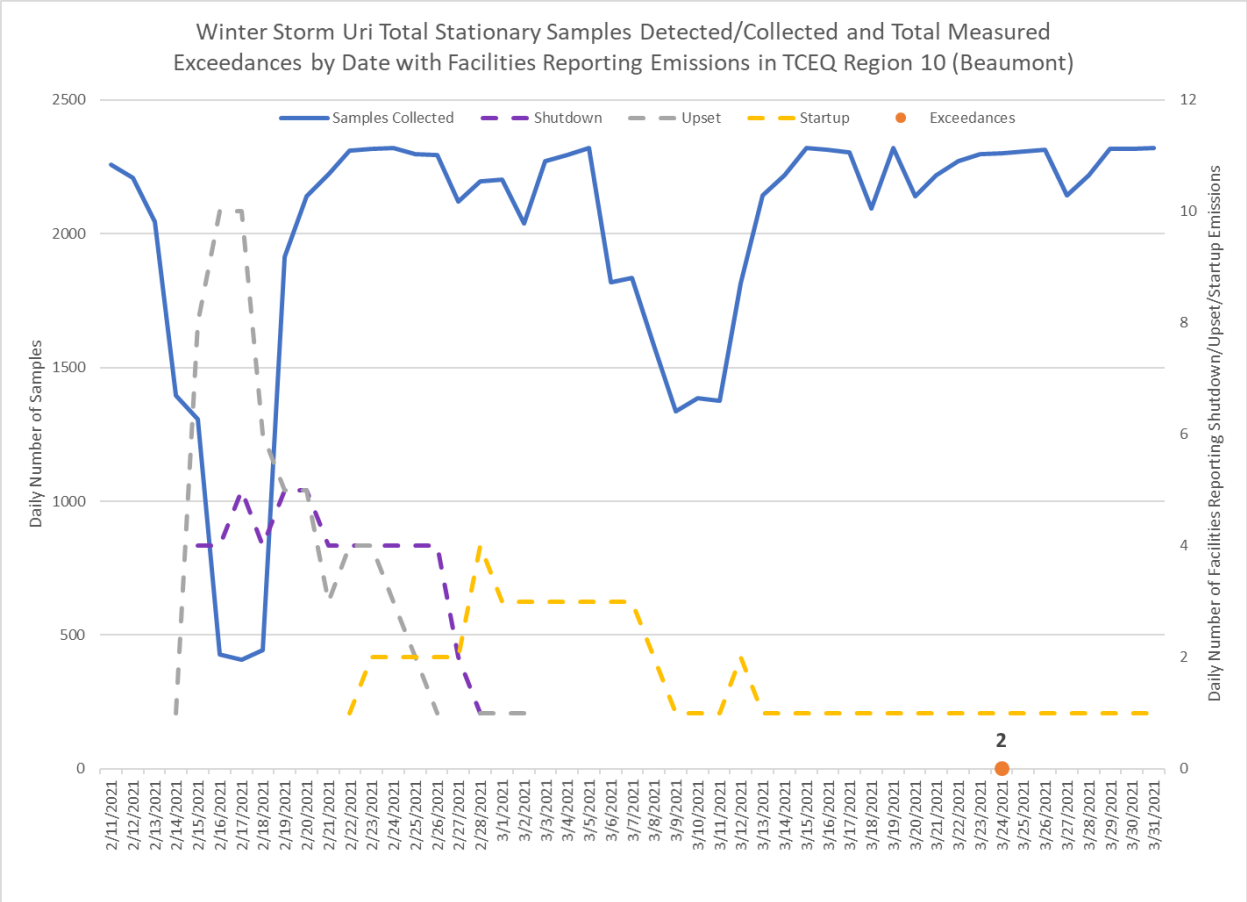
Figure 27. Winter Storm Uri Daily Number of Mobile Monitoring Samples & Exceedances with Facilities Reporting Emissions, Region 14 (Corpus Christi)



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples & applies to the solid line on the graph as well as the orange circles; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions & applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle).

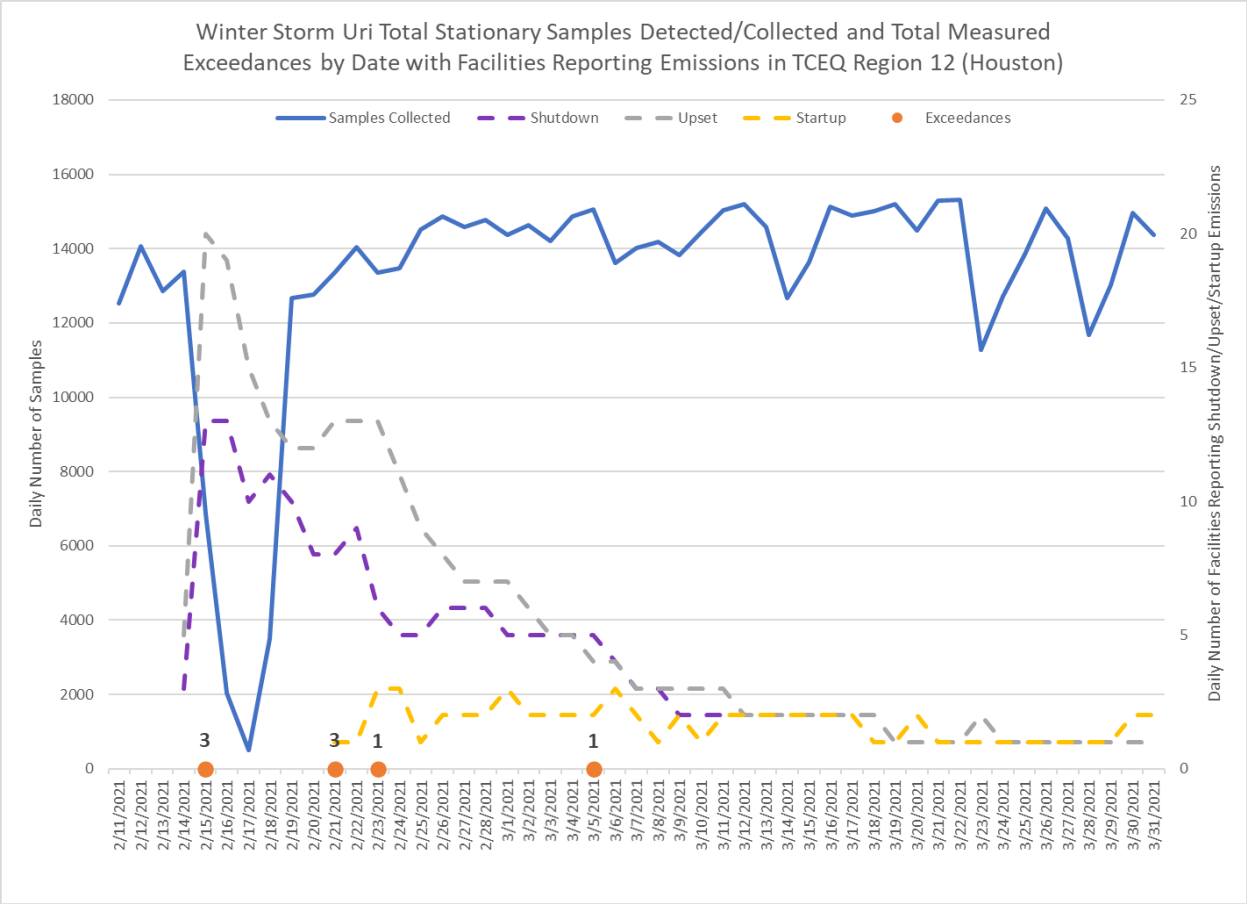
Stationary Data

Figure 28. Winter Storm Uri Total Stationary Samples Detected/Collected and Total Measured Exceedances by Date with Facilities Reporting Emissions in Region 10 (Beaumont)



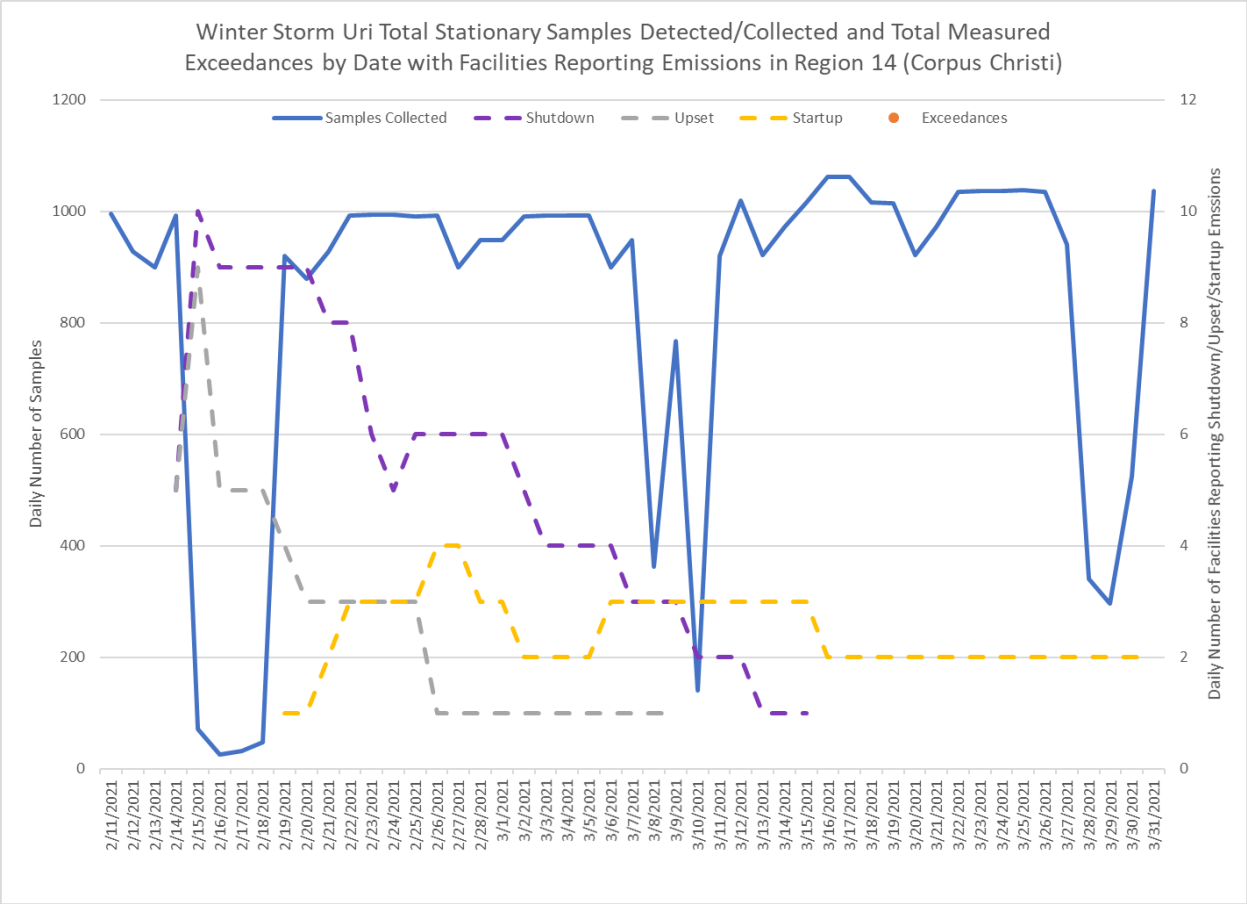
Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples & applies to the solid line on the graph as well as the orange circles; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions & applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle).

Figure 29. Winter Storm Uri Total Stationary Samples Detected/Collected and Total Measured Exceedances by Date with Facilities Reporting Emissions in Region 12 (Houston)



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples & applies to the solid line on the graph as well as the orange circles; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions & applies to the dashed lines on the graph; Orange circle = number of daily exceedances (the specific number is provided above the circle).

Figure 30. Winter Storm Uri Total Stationary Samples Detected/Collected and Total Measured Exceedances by Date with Facilities Reporting Emissions in Region 14 (Corpus Christi)



Graph notes: Two separate counts of data are provided on the graph. **Left side y-axis** = daily number of samples & applies to the solid line on the graph; **Right side y-axis** = daily number of facilities reporting shutdown/upset/startup emissions & applies to the dashed lines on the graph.

Appendix C: Mobile Monitoring Data

DUVAS DV-3000 Monitoring Summary, Hurricane Laura

Monitoring Survey Details

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
28-Aug-20							
	441	Start	14:48:12	30.067545	-94.079979	Beaumont, TX	W of Exxon along Sycamore St. fenceline
		End	14:55:32	30.060946	-94.081398		
	988	Start	14:55:33	30.060946	-94.081398	Beaumont, TX	W of Exxon by Sycamore St & Gulf States Rd
		End	15:12:01	30.060921	-94.081421		
29-Aug-20							
	598	Start	10:27:23	29.877863	-93.951263	Port Arthur, TX	E of Motiva near Avenue A fenceline
		End	10:37:24	29.880817	-93.947807		
	601	Start	15:39:01	29.901577	-93.972374	Port Arthur, TX	NW of Motiva by HO Mills Blvd fenceline
		End	15:49:04	29.898895	-93.97612		
	341	Start	16:05:20	29.917229	-93.946175	Port Arthur, TX	N of Motiva area W of Sam Houston Elementary
		End	16:11:02	29.919914	-93.946892		
	869	Start	16:12:39	29.919092	-93.947304	Port Arthur, TX	N of Motiva by Memorial Blvd
		End	16:27:11	29.914032	-93.948952		
	1333	Start	16:54:40	29.962139	-93.968346	Port Neches, TX	In neighborhood W of Indorama and RB Fuels Biodiesel.
		End	17:17:02	29.956362	-93.954659		
	285	Start	18:08:15	29.911182	-93.962387	Port Arthur, TX	N of Motiva by Savannah Ave fenceline
		End	18:13:03	29.896746	-93.957626		
30-Aug-20							
	777	Start	8:52:33	30.071976	-94.093323	Beaumont, TX	In neighborhood W of Exxon
		End	9:05:34	30.064409	-94.085777		
	609	Start	10:52:51	29.96928	-93.872734	Port Arthur, TX	NE of BASF/Total to W of BASF along Atlantic Rd
		End	11:03:04	29.958418	-93.899208		
	535	Start	11:52:27	29.902851	-93.966324	Port Arthur, TX	N top corner of Motiva fenceline
		End	12:01:24	29.902145	-93.965134		
	793	Start	12:24:35	29.913496	-93.949806	Port Arthur, TX	N of Motiva by Memorial Blvd
		End	12:37:53	29.918028	-93.946709		
	919	Start	13:08:35	29.871063	-93.941338	Port Arthur, TX	In neighborhood E of Motiva and W of Port Arthur terminal
		End	13:23:59	29.87138	-93.942238		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
31-Aug-20							
	617	Start	10:14:11	29.913828	-93.94944	Port Arthur, TX	N to W of Motiva along Hwy 73
		End	10:24:31	29.901974	-93.973206		
	512	Start	10:29:37	29.898483	-93.975143	Port Arthur, TX	Through Motiva from W to E on Savannah Ave
		End	10:38:11	29.887793	-93.945335		
	708	Start	10:40:42	29.887396	-93.944664	Port Arthur, TX	Through Motiva from E to W on Savannah Ave
		End	10:52:34	29.898079	-93.97522		
	543	Start	14:20:15	30.094645	-94.077347	Beaumont, TX	N of Jefferson Railport & Optimus Steel
		End	14:29:20	30.097982	-94.050774		
	252	Start	14:35:10	30.099911	-94.058136	Rose City, TX	Along Old Hwy 90
		End	14:39:23	30.112423	-94.03511		
	275	Start	14:50:15	30.112238	-94.045364	Beaumont, TX	Along I-10 from Rose City to Beaumont
		End	14:54:50	30.094971	-94.08519		
1-Sep-20							
	261	Start	9:20:35	29.920151	-93.956039	Port Arthur, TX	Following TX 73 from N of Motiva S along W fenceline
		End	9:24:57	29.882761	-93.989243		
	206	Start	9:27:05	29.875738	-93.976357	Port Arthur, TX	Following TX 82 on S Motiva fenceline and N Valero fenceline
		End	9:30:32	29.858828	-93.952499		
	304	Start	9:31:33	29.858013	-93.952225	Port Arthur, TX	E side of Valero fencelines
		End	9:36:38	29.841358	-93.957779		
	214	Start	10:33:15	29.869545	-93.957344	Port Arthur, TX	In neighborhood N of Valero & E of Motiva
		End	10:36:49	29.868624	-93.956993		
	704	Start	12:56:15	30.060133	-94.078575	Beaumont, TX	Through Exxon on Gulf States Rd
		End	13:08:03	30.061445	-94.041153		
	382	Start	13:53:15	30.031261	-94.060486	Beaumont, TX	Along N Twin City Hwy past multiple terminals and Dow
		End	13:59:39	29.997284	-94.016396		
	230	Start	14:08:35	30.005606	-94.042892	Beaumont, TX	Along US 69 inland from terminals & Dow
		End	14:12:25	29.969593	-94.021988		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
2-Sep-20							
	316	Start	9:03:52	29.968569	-93.873917	Port Neches, TX	N of BASF to W side fenceline along Hwy 73
		End	9:09:09	29.95397	-93.880341		
	295	Start	9:20:12	29.962469	-93.897469	Port Arthur, TX	W of Total by Fairlea Park
		End	9:25:08	29.961777	-93.906342		
	782	Start	9:28:13	29.968908	-93.927078	Port Arthur, TX	NE of RB Fuels & Huntsman to E of Lion Elastomer
		End	9:41:19	29.983482	-93.949333		
	175	Start	9:58:11	29.974007	-93.942513	Port Arthur, TX	Along Atlantic Rd N fenceline of Huntsman & RB biofuels
		End	10:01:07	29.966433	-93.924324		
	249	Start	10:47:45	29.86697	-93.963608	Port Arthur, TX	Along Levee Rd by S Motiva & N Valero fencelines
		End	10:51:55	29.862455	-93.957802		
	231	Start	10:59:17	29.871576	-93.952713	Port Arthur, TX	Neighborhood of Booker T. Washington Elementary, N of Valero & E of Motiva
		End	11:03:08	29.868362	-93.95723		
	378	Start	11:20:42	29.903217	-93.969528	Port Arthur, TX	Along Savannah Ave N Motiva fenceline
		End	11:27:02	29.887403	-93.945038		
	261	Start	13:51:47	29.873983	-93.973801	Port Arthur, TX	Along Levee Rd by S Motiva & N Valero fencelines
		End	13:56:08	29.862011	-93.956802		
	402	Start	13:58:46	29.869047	-93.957184	Port Arthur, TX	Neighborhood of Booker T. Washinton Elementary, N of Valero & E of Motiva
		End	14:05:30	29.871462	-93.955116		
	254	Start	14:11:50	29.88763	-93.944756	Port Arthur, TX	Along Savannah Ave N Motiva fenceline
		End	14:16:04	29.90781	-93.965309		
	241	Start	14:33:44	29.902012	-93.96505	Port Arthur, TX	Along Savannah Ave N Motiva fenceline
		End	14:37:46	29.891571	-93.950165		
	325	Start	14:46:40	29.865568	-93.964134	Port Arthur, TX	SH 87 through Valero to W of Oxbow
		End	14:52:07	29.82795	-93.965591		
	143	Start	15:47:28	29.968895	-93.874954	Port Neches, TX	N of Total/BASF, S of Veterans Memorial Bridge
		End	15:49:51	29.966118	-93.87442		
	156	Start	15:52:34	29.952375	-93.890816	Port Arthur, TX	Along Atlantic R on S fenceline of BASF/Total
		End	15:55:10	29.961824	-93.90451		
	664	Start	15:59:30	29.967396	-93.925507	Port Neches, TX	Along 366 N of Huntsman to TPC
		End	16:10:37	29.975895	-93.953201		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
3-Sep-20							
	333	Start	11:11:10	30.063145	-94.087936	Beaumont, TX	Neighborhood W of Exxon
		End	11:16:45	30.062717	-94.087715		
	440	Start	11:19:15	30.071178	-94.088165	Beaumont, TX	Neighborhood W of Exxon
		End	11:26:45	30.060539	-94.07975		
	395	Start	11:27:35	30.059931	-94.07959	Beaumont, TX	Gulf States Rd through Exxon
		End	11:34:10	30.061987	-94.048248		
	240	Start	14:47:50	29.873856	-93.973709	Port Arthur, TX	Along Levee Rd by S Motiva & N Valero fencelines
		End	14:51:55	29.85813	-93.952126		
	361	Start	14:54:40	29.861647	-93.956329	Port Arthur, TX	SH 87 through Valero to W of Oxbow
		End	15:00:45	29.839413	-93.97036		
10-Sep-20							
	278	Start	9:19:22	29.878405	-93.98024	Port Arthur, TX	Along 82 b/w Motiva & Valero, thru Valero on 87
		End	9:24:00	29.856415	-93.971519		
	170	Start	9:25:50	29.846106	-93.972008	Port Arthur, TX	Along 87 past Chevron Phillips and Oxbow
		End	9:28:40	29.827106	-93.965584		
	361	Start	9:48:20	29.951351	-93.889236	Port Arthur, TX	Along Atlantic R on S fenceline of BASF/Total
		End	9:54:21	29.962803	-93.903648		
	297	Start	10:01:27	29.974754	-93.946777	Port Neches, TX	S of TPC to W of Lion Elastomers
		End	10:06:24	29.989004	-93.948181		
	280	Start	10:12:28	29.975574	-93.955086	Port Neches, TX	S past Huntsman along Hwy 136
		End	10:17:07	29.948956	-93.949303		
	336	Start	10:34:10	29.902798	-93.970169	Port Arthur, TX	Along W and S fenceline of Motiva
		End	10:39:47	29.867132	-93.963989		
	781	Start	13:29:51	30.061005	-94.079742	Beaumont, TX	Neighborhood W of Exxon
		End	13:42:52	30.069571	-94.08271		
	358	Start	14:48:00	30.050207	-93.780998	Orange, TX	Along DuPont Dr on N fenceline of Dow/DuPont
		End	14:54:00	30.062588	-93.749657		

Monitoring Survey Data Summary

Date	# of Samples	Max/Min (ppb)	SO_2	Benzene	Toluene	Styrene	1,3-Butadiene
		AMCV (ppb)		180	4000	26	230
		NAAQS (ppb)	75				
28-Aug-20							
	441	MAX	2.5	0	5.6	0.4	0
		MIN	0	0	1.9	0	0
	988	MAX	0	0	6.2	1.1	0
		MIN	0	0	0	0	0
		Daily Max	**2.5**	**0**	**6.2**	**1.1**	**0**
29-Aug-20							
	598	MAX	10.9	0.4	19.6	0.9	0.5
		MIN	3.3	0.0	16.4	0.0	0.1
	601	MAX	20.7	0.0	21.7	0.0	1.0
		MIN	16.5	0.0	16.4	0.0	0.7
	341	MAX	15.3	0.2	21.6	0.0	1.8
		MIN	13.0	0.0	19.3	0.0	1.0
	869	MAX	12.0	1.1	23.9	0.0	2.3
		MIN	6.4	0.0	20.0	0.0	1.4
	1333	MAX	2.9	7.3	23.3	1.0	2.6
		MIN	0.0	1.1	17.3	0.0	1.9
	285	MAX	0.0	22.9	27.5	8.1	2.3
		MIN	0.0	5.3	15.5	0.0	1.1
		Daily Max	**20.7**	**22.9**	**27.5**	**8.1**	**2.6**
30-Aug-20							
	777	MAX	0.6	2.2	23.3	0.0	0.5
		MIN	0.0	0.5	17.4	0.0	0.0
	609	MAX	0.0	0.2	17.9	0.0	0.0
		MIN	0.0	0.0	15.4	0.0	0.0
	535	MAX	0.0	3.7	22.7	1.0	0.0
		MIN	0.0	0.4	17.2	0.0	0.0
	793	MAX	0.0	3.4	26.9	0.4	1.0
		MIN	0.0	0.0	14.3	0.0	0.0
	919	MAX	0.0	3.8	24.3	0.5	0.9
		MIN	0.0	0.8	19.7	0.0	0.0
		Daily Max	**0.6**	**3.8**	**26.9**	**1.0**	**1.0**

		AMCV (ppb)		180	4000	26	230
		NAAQS (ppb)	75				
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Styrene**	**1,3-Butadiene**
31-Aug-20							
	617	MAX	0.0	23.3	0.0	27.1	0.0
		MIN	0.0	0.0	0.0	6.0	0.0
	512	MAX	0.0	32.0	0.0	33.3	0.0
		MIN	0.0	0.0	0.0	5.6	0.0
	708	MAX	0.0	18.0	0.0	23.5	0.0
		MIN	0.0	0.0	0.0	6.1	0.0
	543	MAX	0.0	0.0	0.0	8.5	0.0
		MIN	0.0	0.0	0.0	6.9	0.0
	252	MAX	0.0	0.0	0.0	8.4	0.0
		MIN	0.0	0.0	0.0	7.6	0.0
	275	MAX	0.0	3.5	0.0	15.8	0.0
		MIN	0.0	0.0	0.0	7.4	0.0
		Daily Max	**0.0**	**32.0**	**0.0**	**33.3**	**0.0**
1-Sep-20							
	261	MAX	11.5	12.1	16.1	5.6	0.6
		MIN	6.3	0.0	1.2	0.0	0.1
	206	MAX	11.9	2.4	11.8	0.1	0.0
		MIN	7.8	0.4	5.8	0.0	0.0
	304	MAX	15.4	4.0	15.4	0.0	1.1
		MIN	13.1	0.0	11.8	0.0	0.0
	214	MAX	5.0	2.3	24.6	0.0	0.3
		MIN	3.1	1.0	17.7	0.0	0.1
	704	MAX	14.1	2.2	15.5	0.9	1.0
		MIN	12.1	0.3	11.2	0.0	0.0
	382	MAX	21.5	1.5	14.1	1.1	0.0
		MIN	17.4	0.0	10.1	0.0	0.0
	230	MAX	27.9	9.9	7.7	7.3	0.2
		MIN	15.9	0.0	4.8	0.6	0.0
		Daily Max	**27.9**	**12.1**	**24.6**	**7.3**	**1.1**

		AMCV (ppb)		180	4000	26	230
		NAAQS (ppb)	75				
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Styrene**	**1,3-Butadiene**
2-Sep-20							
	316	MAX	0.0	24.5	36.5	6.2	5.5
		MIN	0.0	21.4	31.5	4.0	5.3
	295	MAX	0.0	23.4	40.6	5.5	6.2
		MIN	0.0	20.8	35.7	3.6	5.8
	782	MAX	0.0	30.7	38.8	7.5	9.1
		MIN	0.0	25.5	33.9	5.6	6.0
	175	MAX	0.0	28.3	37.4	8.3	7.4
		MIN	0.0	27.2	31.6	7.4	7.0
	249	MAX	0.0	28.9	39.0	8.4	6.7
		MIN	0.0	25.4	34.5	5.9	6.0
	231	MAX	0.0	28.2	38.9	8.4	6.5
		MIN	0.0	26.2	34.2	6.9	5.6
	378	MAX	0.0	28.9	33.0	8.7	6.0
		MIN	0.0	26.4	28.7	7.1	5.6
	261	MAX	0.0	7.8	13.6	4.9	0.0
		MIN	0.0	0.4	1.9	0.0	0.0
	402	MAX	0.0	1.5	19.6	0.2	0.0
		MIN	0.0	0.0	14.1	0.0	0.0
	254	MAX	0.0	2.6	20.1	1.2	0.0
		MIN	0.0	0.1	13.3	0.0	0.0
	241	MAX	0.0	1.1	16.9	0.9	0.0
		MIN	0.0	0.0	13.7	0.2	0.0
	325	MAX	1.9	7.8	10.5	6.0	0.0
		MIN	0.0	1.1	7.6	1.5	0.0
	143	MAX	8.3	2.3	12.7	3.5	0.0
		MIN	3.4	0.0	7.0	0.8	0.0
	156	MAX	9.7	4.4	13.5	5.4	0.0
		MIN	6.3	0.0	2.2	0.9	0.0
	664	MAX	15.5	1.8	14.1	2.2	7.1
		MIN	9.5	0.0	7.0	0.3	0.0
		Daily Max	**15.5**	**30.7**	**40.6**	**8.7**	**9.1**

		AMCV (ppb)		180	4000	26	230
		NAAQS (ppb)	75				
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Styrene**	**1,3-Butadiene**
3-Sep-20							
	333	MAX	0.0	0.0	0.0	5.9	0.0
		MIN	0.0	0.0	0.0	5.1	0.0
	440	MAX	0.0	0.0	0.0	6.1	0.0
		MIN	0.0	0.0	0.0	5.5	0.0
	395	MAX	0.0	0.0	0.0	6.4	0.0
		MIN	0.0	0.0	0.0	5.5	0.0
	240	MAX	0.0	0.0	0.0	10.5	0.0
		MIN	0.0	0.0	0.0	7.7	0.0
	361	MAX	0.0	3.3	0.0	7.7	0.0
		MIN	0.0	0.0	0.0	6.7	0.0
		Daily Max	**0.0**	**3.3**	**0.0**	**10.5**	**0.0**
10-Sep-20							
	278	MAX	1.0	0.0	17.1	1.7	0.9
		MIN	0.0	0.0	0.0	0.0	0.0
	170	MAX	0.7	26.7	16.8	0.9	10.9
		MIN	0.0	0.0	0.0	0.0	0.0
	361	MAX	1.1	0.0	14.2	0.3	5.0
		MIN	0.0	0.0	0.0	0.0	0.0
	297	MAX	1.3	0.0	12.8	0.3	12.2
		MIN	0.0	0.0	0.0	0.0	0.0
	280	MAX	1.2	0.0	13.0	0.0	0.6
		MIN	0.0	0.0	0.0	0.0	0.0
	336	MAX	0.9	5.0	4.3	4.4	0.8
		MIN	0.0	0.0	0.0	0.0	0.0
	781	MAX	1.2	0.0	21.1	0.0	0.5
		MIN	0.0	0.0	3.3	0.0	0.0
	358	MAX	0.7	0.0	11.5	0.0	0.5
		MIN	0	0	0	0	0
		Daily Max	**1.3**	**26.7**	**21.1**	**4.4**	**12.2**

DUVAS DV-3000 Monitoring Summary, Winter Storm Uri, Region 10 (Beaumont)

Monitoring Survey Details

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
22-Feb-21							
	242	Start	10:15:00	30.066128	-94.080109	Beaumont, TX	W of Exxon along Sycamore St. fenceline
		End	10:19:00	30.066868	-94.079613		
	121	Start	10:28:00	30.06612	-94.080032	Beaumont, TX	W of Exxon along Sycamore St. fenceline
		End	10:30:00	30.064299	-94.081749		
	122	Start	10:32:00	30.063934	-94.083359	Beaumont, TX	In neighborhood W of Exxon several blocks from Sycamore St fenceline
		End	10:34:00	30.06502	-94.085335		
	236	Start	10:39:06	30.069357	-94.085632	Beaumont, TX	In neighborhood W of Exxon starting by Charlton-Pollard Elementary
		End	10:43:00	30.0637	-94.081787		
	302	Start	10:50:00	30.059961	-94.07946	Beaumont, TX	Through Exxon on Gulf States Rd W to E
		End	10:55:00	30.06119	-94.060951		
	302	Start	10:57:00	30.061157	-94.059875	Beaumont, TX	Through Exxon on Gulf States Rd E to W
		End	11:02:00	30.060305	-94.077614		
	121	Start	11:09:00	30.060038	-94.078629	Beaumont, TX	Through Exxon on Gulf States Rd W to E
		End	11:11:00	30.060913	-94.073181		
	62	Start	12:19:00	30.034042	-94.063179	Beaumont, TX	ON MLK Pkwy N E of several terminals
		End	12:20:00	30.035946	-94.064804		
	362	Start	14:51:00	29.96999	-93.928856	Port Arthur, TX	S on Atlantic Rd Starting at Huntsman ending past Total/BASF
		End	14:57:00	29.949263	-93.886681		
	122	Start	15:04:00	29.948311	-93.885727	Port Arthur, TX	Atlantic Road through Total/BASF
		End	15:06:00	29.953081	-93.891632		
	242	Start	15:10:00	29.966827	-93.924728	Port Neches, TX	Survey past Huntsman and RB Fuels from NE to SW
		End	15:14:00	29.953592	-93.937057		
	362	Start	16:19:00	29.898537	-93.975441	Port Arthur, TX	Neighborhood NW of Motiva by Hwy 73 fenceline
		End	16:25:00	29.897541	-93.985031		
	362	Start	16:22:00	29.896709	-93.976212	Port Arthur, TX	Neighborhood NW of Motiva by Hwy 73 fenceline
		End	16:28:00	29.890335	-93.988144		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
23-Feb-21							
	423	Start	9:54:00	30.063614	-94.081947	Beaumont, TX	In neighborhood W of Exxon ending by Charlton-Pollard Elementary
		End	10:01:00	30.068035	-94.085632		
	241	Start	10:01:00	30.068035	-94.085632	Beaumont, TX	In neighborhood W of Exxon ending by Carrol St fenceline
		End	10:05:00	30.066425	-94.081787		
	242	Start	10:21:00	30.072472	-94.08181	Beaumont, TX	W of Exxon along Carrol St fenceline
		End	10:25:00	30.067047	-94.081268		
	181	Start	10:34:00	30.066137	-94.079948	Beaumont, TX	W of Exxon along Carrol St fenceline
		End	10:37:00	30.062929	-94.079819		
	181	Start	10:51:00	30.059967	-94.079193	Beaumont, TX	Through Exxon on Gulf States Rd W to E
		End	10:54:00	30.061007	-94.064316		
	241	Start	13:47:00	29.992973	-93.946983	Port Neches, TX	W of Lion Elastomers along Main St fenceline
		End	13:51:00	29.982258	-93.949402		
	121	Start	13:53:00	29.982578	-93.952034	Port Neches, TX	W of Air Liquide & TPC by Central Park
		End	13:55:00	29.97681	-93.953156		
	242	Start	13:56:00	29.975605	-93.953316	Port Neches, TX	W of Air Liquide & TPC by Central Park
		End	13:51:00	29.982258	-93.949402		
	182	Start	14:04:00	29.967133	-93.925301	Port Neches, TX	Atlantic Road along N fenceline of Huntsman
		End	14:07:00	29.961395	-93.905624		
	182	Start	14:08:00	29.960669	-93.902657	Port Arthur, TX	Atlantic Road through Total/BASF
		End	14:11:00	29.948759	-93.886292		
	181	Start	14:46:00	29.903254	-93.966858	Port Arthur, TX	Savannah Ave along NE fenceline of Motiva
		End	14:49:00	29.894829	-93.954903		
	61	Start	15:01:00	29.863083	-93.958405	Port Arthur, TX	Levee Rd along NE fenceline of Valero
		End	15:02:00	29.866282	-93.962822		
	61	Start	15:03:00	29.866631	-93.963165	Port Arthur, TX	Levee Rd between Valero & Motiva from E to W
		End	15:04:00	29.870317	-93.968513		
	122	Start	15:07:00	29.87455	-93.974594	Port Arthur, TX	Levee Rd between Valero & Motiva from W to E
		End	15:09:00	29.865593	-93.964111		
	242	Start	15:31:00	29.902506	-93.970795	Port Arthur, TX	HO Mills Blvd along Motiva W fenceline
		End	15:35:00	29.898636	-93.975594		
	422	Start	15:39:00	29.898317	-93.980011	Port Arthur, TX	Neighbourhood W of Motiva
		End	15:46:00	29.891481	-93.999741		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
25-Feb-21							
	241	Start	9:54:00	30.071983	-94.085625	Beaumont, TX	Survey S of Vulcan Materials, W of Exxon
		End	9:58:00	30.071823	-94.08033		
	302	Start	9:59:00	30.071814	-94.080536	Beaumont, TX	Survey S of Vulcan Materials, W of Exxon
		End	10:04:00	30.063635	-94.080673		
	302	Start	10:07:00	30.062901	-94.079857	Beaumont, TX	Survey in neighborhood W of Exxon
		End	10:12:00	30.06883	-94.084389		
	181	Start	10:35:00	30.060804	-94.080002	Beaumont, TX	Survey in neighborhood W of Exxon
		End	10:38:00	30.062712	-94.085938		
	182	Start	11:20:00	29.989847	-93.951027	Port Neches, TX	Survey in neighborhood W of Lion Elastomers & TPC
		End	11:25:00	29.981585	-93.952339		
	182	Start	11:28:00	29.975332	-93.953003	Port Neches, TX	Survey S of TPC group, N of Huntsman
		End	11:31:00	29.973434	-93.93856		
	122	Start	11:33:00	29.973392	-93.938286	Port Neches, TX	Survey N of Huntsman & RB fuels
		End	11:35:00	29.968563	-93.927063		
	181	Start	11:47:00	29.959709	-93.927513	Groves, TX	Survey E of RB fuels
		End	11:50:00	29.966137	-93.925133		
	121	Start	11:59:00	29.961872	-93.8965	Groves, TX	Survey in neighborhood W of Total & BASF
		End	12:01:00	29.958174	-93.897339		
	182	Start	13:57:00	29.902838	-93.966301	Port Arthur, TX	Survey NE fenceline of Motiva
		End	14:00:00	29.89551	-93.955856		
	242	Start	14:07:00	29.901655	-93.972702	Port Arthur, TX	Survey in neighborhood NW of Motiva
		End	14:11:00	29.898609	-93.975548		
	242	Start	14:13:00	29.898037	-93.979134	Port Arthur, TX	Survey in neighborhood NW of Motiva
		End	14:17:00	29.89307	-93.990234		
	302	Start	14:31:00	29.82869	-93.96624	Port Arthur, TX	Survey around Chevron and Valero Port Arthur
		End	14:36:00	29.857275	-93.970779		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
27-Feb-21							
	482	Start	9:57:00	29.88492	-93.999207	Port Arthur, TX	Survey S of Motiva, N of Valero
		End	10:05:00	29.866652	-93.948669		
	203	Start	10:21:00	29.887739	-93.944817	Port Arthur, TX	Survey NE fenceline of Motiva
		End	10:24:00	29.903303	-93.966721		
	182	Start	10:25:00	29.904558	-93.968544	Port Arthur, TX	Survey W fenceline of Motiva
		End	10:28:00	29.888245	-93.984131		
	543	Start	10:29:00	29.890457	-93.981979	Port Arthur, TX	Survey W to S of Motiva
		End	10:38:00	29.866724	-93.963432		
	362	Start	11:02:00	29.961811	-93.89917	Port Arthur, TX	Survey in neighborhood W of Total & BASF
		End	11:08:00	29.960258	-93.89595		
	241	Start	11:09:00	29.959471	-93.89653	Port Arthur, TX	Survey in neighborhood W of Total & BASF
		End	11:13:00	29.963333	-93.900276		
	242	Start	11:16:00	29.960651	-93.90023	Port Arthur, TX	Survey S of BASF & Total fenceline
		End	11:20:00	29.948452	-93.886307		
	218	Start	11:32:00	29.893217	-94.000565	Port Arthur, TX	Survey in neighborhood W of Motiva
		End	11:35:37	29.894003	-93.999954		
4-Mar-21							
	302	Start	9:50:00	29.992558	-93.947609	Port Neches, TX	Survey in neighborhood W of Lion Elastomers & TPC
		End	9:55:00	29.979071	-93.952736		
	121	Start	10:39:00	29.973795	-93.941414	Port Neches, TX	Survey S of TPC group, N of Huntsman
		End	10:55:00	29.969671	-93.928436		
	242	Start	10:48:00	29.963823	-93.902664	Port Arthur, TX	Survey in neighborhood W of Total & BASF
		End	10:52:00	29.957663	-93.897766	Groves, TX	
	242	Start	11:15:00	29.901503	-93.971764	Port Arthur, TX	Survey in neighborhood W of Motiva
		End	11:19:00	29.899189	-93.976379		
	302	Start	11:25:00	29.897926	-93.978996	Port Arthur, TX	Survey in neighborhood W of Motiva
		End	11:30:00	29.891094	-93.998116		
	423	Start	11:42:00	29.869547	-93.957344	Port Arthur, TX	Survey in neighborhood E of Motiva
		End	11:49:00	29.87459	-93.952515		
	362	Start	13:54:00	30.071884	-94.087723	Beaumont, TX	Survey in neighborhood W of Exxon
		End	14:00:00	30.060726	-94.082977		
	422	Start	14:04:00	30.060738	-94.081818	Beaumont, TX	Survey in neighborhood W of Exxon
		End	14:11:00	30.063282	-94.079826		

Monitoring Survey Data Summary

Date	# of Samples		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230	850	300			41
			NAAQS	75											100	70	
		Max/Min (ppb)		SO_2	Benzene	Toluene	Ethylbenzene	m-Xylene	o-Xylene	p-Xylene	Styrene	1,3 - Butadiene	NH_3	NO	NO_2	O_3	Formaldehyde
22-Feb-21																	
	242	MAX		0.0	0.1	11.8	14.3	0.0	23.9	0.0	0.3	0.3	0.0	7.2	0.0	90.2	0.0
		MIN		0.0	0.0	8.1	6.2	0.0	13.3	0.0	0.0	0.0	0.0	4.9	0.0	66.3	0.0
	121	MAX		0.0	0.0	16.8	2.1	0.0	15.3	1.0	0.0	0.8	0.0	10.4	0.0	85.9	0.0
		MIN		0.0	0.0	15.4	0.3	0.0	13.0	0.0	0.0	0.7	0.0	9.6	0.0	75.7	0.0
	122	MAX		0.0	0.0	21.8	0.0	0.0	12.8	3.9	0.0	0.8	0.0	10.7	0.0	92.4	0.0
		MIN		0.0	0.0	18.9	0.0	0.0	8.2	2.0	0.0	0.6	0.0	9.7	0.0	89.6	0.0
	236	MAX		0.0	0.0	27.0	0.0	8.2	17.5	11.2	0.0	1.6	0.0	13.6	17.3	113.8	0.0
		MIN		0.0	0.0	23.7	0.0	4.5	13.3	8.7	0.0	1.2	0.0	10.6	1.1	108.4	0.0
	302	MAX		0.0	1.9	33.0	0.0	25.8	35.0	24.0	0.0	2.6	0.0	17.6	26.7	141.4	0.0
		MIN		0.0	0.0	27.8	0.0	16.9	21.0	18.3	0.0	1.7	0.0	12.2	19.1	128.1	0.0
	302	MAX		0.0	8.1	37.5	0.0	38.7	66.4	31.3	0.4	3.5	0.0	21.6	42.5	156.9	0.0
		MIN		0.0	0.5	29.6	0.0	20.7	21.4	24.5	0.0	2.1	0.0	17.2	25.4	140.0	0.0
	121	MAX		0.0	1.8	43.9	0.0	25.1	36.5	34.4	0.0	2.9	0.0	51.7	50.0	165.3	0.0
		MIN		0.0	0.4	38.7	0.0	19.6	32.1	33.3	0.0	2.7	0.0	16.7	36.8	159.5	0.0
	62	MAX		0.0	0.8	44.6	0.0	0.0	31.6	47.4	0.0	3.0	0.0	19.7	45.4	182.8	0.0
		MIN		0.0	0.0	42.0	0.0	0.0	25.0	46.2	0.0	2.8	0.0	18.6	42.6	178.3	0.0
	362	MAX		0.0	2.2	38.8	4.6	0.0	33.0	52.6	0.0	1.9					
		MIN		0.0	0.0	27.4	0.0	0.0	17.4	50.4	0.0	1.6					
	122	MAX		0.0	0.0	34.6	3.6	0.0	17.0	51.9	0.0	85.5					
		MIN		0.0	0.0	24.0	0.0	0.0	0.0	37.3	0.0	2.1					
	242	MAX		0.0	2.1	35.2	5.8	0.0	27.2	52.3	0.0	3.3					
		MIN		0.0	0.0	30.6	0.0	0.0	12.1	50.5	0.0	1.7					
	362	MAX		0.0	0.0	39.5	0.0	0.0	20.0	51.7	0.0	2.8					
		MIN		0.0	0.0	35.7	0.0	0.0	15.2	50.1	0.0	2.5					
	362	MAX		0.0	0.0	40.1	0.0	0.0	23.4	51.3	0.0	3.0					
		MIN		0.0	0.0	35.7	0.0	0.0	15.4	49.5	0.0	2.5					
		Daily Max		**0.0**	**8.1**	**44.6**	**14.3**	**38.7**	**66.4**	**52.6**	**0.4**	**85.5**	**0.0**	**51.7**	**50.0**	**182.8**	**0.0**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
23-Feb-21											
	423	MAX	0.0	4.6	65.1	0.0	30.2	39.7	82.2	0.0	4.1
		MIN	0.0	0.4	62.6	0.0	22.5	26.0	81.2	0.0	3.4
	241	MAX	0.0	1.8	66.1	0.0	28.2	27.4	82.7	0.0	3.7
		MIN	0.0	0.0	63.1	0.0	23.3	24.9	81.2	0.0	3.4
	242	MAX	0.0	0.8	64.0	0.0	11.9	26.6	80.6	0.0	3.4
		MIN	0.0	0.0	61.0	0.0	7.7	20.4	79.9	0.0	3.1
	181	MAX	0.0	0.9	61.2	0.0	0.0	23.9	80.1	0.0	3.0
		MIN	0.0	0.0	56.8	0.0	0.0	20.0	79.1	0.0	2.8
	181	MAX	0.0	2.7	53.7	0.0	0.0	23.1	77.8	0.0	2.7
		MIN	0.0	0.0	51.6	0.0	0.0	15.8	77.2	0.0	2.2
	241	MAX	0.0	0.0	51.1	0.0	0.0	32.3	75.2	0.0	4.9
		MIN	0.0	0.0	48.8	0.0	0.0	27.7	74.0	0.0	3.9
	121	MAX	0.0	0.0	51.7	0.0	0.0	33.5	75.6	0.0	3.7
		MIN	0.0	0.0	48.4	0.0	0.0	29.5	74.0	0.0	3.4
	242	MAX	0.0	1.1	50.8	0.0	0.0	35.8	75.4	0.0	3.8
		MIN	0.0	0.0	48.1	0.0	0.0	28.3	74.5	0.0	3.6
	182	MAX	0.0	0.0	49.8	0.0	0.0	29.3	75.2	0.0	3.6
		MIN	0.0	0.0	48.5	0.0	0.0	21.8	74.1	0.0	2.9
	182	MAX	0.0	0.0	50.7	0.0	0.0	30.4	75.4	0.0	3.6
		MIN	0.0	0.0	48.8	0.0	0.0	23.5	74.8	0.0	3.2
	181	MAX	0.0	0.0	47.4	0.0	0.0	27.6	74.0	0.0	3.1
		MIN	0.0	0.0	44.0	0.0	0.0	24.9	73.2	0.0	2.9
	61	MAX	0.0	0.0	49.6	0.0	0.0	27.4	74.6	0.0	3.3
		MIN	0.0	0.0	48.1	0.0	0.0	26.6	74.2	0.0	3.2
	61	MAX	0.0	0.0	49.2	0.0	0.0	30.3	74.9	0.0	3.4
		MIN	0.0	0.0	48.7	0.0	0.0	28.6	74.6	0.0	3.2
	122	MAX	0.0	0.0	49.1	0.0	0.0	30.1	75.4	0.0	3.6
		MIN	0.0	0.0	47.3	0.0	0.0	25.3	74.5	0.0	3.2
	242	MAX	0.0	1.4	48.4	0.0	0.0	37.7	75.5	0.0	4.7
		MIN	0.0	0.0	45.1	0.0	0.0	29.9	74.6	0.0	3.5
	422	MAX	0.0	0.0	49.3	0.0	0.0	33.2	75.0	0.0	3.8
		MIN	0.0	0.0	46.4	0.0	0.0	27.1	73.4	0.0	3.4
		Daily Max	**0.0**	**4.6**	**66.1**	**0.0**	**30.2**	**39.7**	**82.7**	**0.0**	**4.9**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
25-Feb-21											
	241	MAX	0.0	0.0	11.6	17.6	0.0	0.0	14.0	0.0	0.0
		MIN	0.0	0.0	9.7	14.5	0.0	0.0	12.2	0.0	0.0
	302	MAX	0.0	0.0	11.3	21.1	0.0	0.0	14.3	0.1	0.0
		MIN	0.0	0.0	8.0	13.7	0.0	0.0	13.3	0.0	0.0
	302	MAX	0.0	0.0	10.7	20.5	0.0	0.0	14.2	0.2	0.0
		MIN	0.0	0.0	9.5	13.8	0.0	0.0	13.0	0.0	0.0
	181	MAX	0.0	2.4	8.8	0.4	0.0	19.3	14.0	4.7	0.0
		MIN	0.0	0.0	1.4	20.8	0.0	0.0	12.5	0.9	0.0
	182	MAX	0.0	0.0	3.2	31.9	0.0	0.0	12.4	1.5	1.0
		MIN	0.0	0.0	1.4	26.8	0.0	0.0	11.0	0.1	0.0
	182	MAX	0.0	0.0	4.2	29.6	0.0	0.0	13.5	1.6	0.0
		MIN	0.0	0.0	1.9	22.7	0.0	0.0	10.9	0.0	0.0
	122	MAX	0.0	0.0	2.3	27.5	0.0	0.0	13.1	0.2	0.0
		MIN	0.0	0.0	1.1	25.7	0.0	0.0	12.3	0.0	0.0
	181	MAX	0.0	0.0	1.2	29.8	0.0	0.0	12.1	1.4	0.0
		MIN	0.0	0.0	0.0	27.3	0.0	0.0	11.5	0.6	0.0
	121	MAX	0.0	0.0	2.4	26.9	0.0	0.0	12.9	0.6	0.0
		MIN	0.0	0.0	1.3	22.8	0.0	0.0	11.4	0.2	0.0
	182	MAX	0.0	0.0	0.0	39.3	0.0	0.0	13.6	0.0	0.0
		MIN	0.0	0.0	0.0	36.4	0.0	0.0	12.1	0.0	0.0
	242	MAX	0.0	0.0	3.8	30.2	0.0	0.0	15.1	0.2	0.0
		MIN	0.0	0.0	0.7	27.0	0.0	0.0	14.3	0.0	0.0
	242	MAX	0.0	0.0	4.2	29.7	0.0	0.0	15.3	0.9	0.0
		MIN	0.0	0.0	1.3	24.9	0.0	0.0	12.9	0.1	0.0
	302	MAX	0.0	1.6	0.0	30.4	0.0	0.0	15.0	1.3	0.1
		MIN	0.0	0.0	0.0	21.7	0.0	0.0	12.5	0.0	0.0
		Daily Max	**0.0**	**2.4**	**11.6**	**39.3**	**0.0**	**19.3**	**15.3**	**4.7**	**1.0**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
27-Feb-21											
	482	MAX	0.0	9.4	12.0	34.6	0.0	32.7	9.6	5.0	3.6
		MIN	0.0	0.0	7.1	21.7	0.0	0.0	4.5	0.6	0.0
	203	MAX	0.0	1.9	19.8	18.5	0.0	4.6	3.5	1.3	0.6
		MIN	0.0	0.1	17.4	11.4	0.0	0.0	2.7	0.4	0.3
	182	MAX	0.0	1.6	19.4	17.9	0.0	4.7	3.5	1.6	0.8
		MIN	0.0	0.0	15.7	8.6	0.0	1.2	2.4	0.7	0.4
	543	MAX	0.0	3.2	20.8	22.8	0.0	17.5	4.3	3.5	1.1
		MIN	0.0	0.2	10.9	10.5	0.0	0.0	0.5	0.6	0.0
	362	MAX	0.0	13.2	16.1	36.5	0.0	28.7	3.8	5.3	1.5
		MIN	0.0	0.0	8.2	20.2	0.0	0.0	2.5	0.8	0.0
	241	MAX	0.0	3.6	15.8	24.2	0.0	4.5	4.0	2.7	0.4
		MIN	0.0	0.2	14.4	20.4	0.0	0.0	3.0	1.6	0.0
	242	MAX	0.0	1.6	15.7	23.2	0.0	0.0	3.7	2.3	0.1
		MIN	0.0	0.0	13.5	17.0	0.0	0.0	3.2	0.6	0.0
	218	MAX	0.0	1.3	9.7	29.6	0.0	2.4	4.1	3.1	0.0
		MIN	0.0	0.0	6.3	21.5	0.0	0.0	3.0	0.9	0.0
		Daily Max	**0.0**	**13.2**	**20.8**	**36.5**	**0.0**	**32.7**	**9.6**	**5.3**	**3.6**
4-Mar-21											
	302	MAX	0.0	4.1	66.4	0.0	71.0	46.6	71.9	0.0	21.6
		MIN	0.0	2.8	62.1	0.0	61.7	33.5	69.1	0.0	5.3
	121	MAX	0.0	6.2	62.5	0.0	65.8	44.6	71.3	0.0	13.4
		MIN	0.0	3.4	56.6	0.0	48.9	38.3	69.5	0.0	10.0
	242	MAX	0.0	5.4	63.4	0.0	44.9	45.4	72.9	0.0	5.5
		MIN	0.0	4.5	62.3	0.0	40.2	39.3	71.2	0.0	4.8
	242	MAX	0.0	12.6	60.4	0.0	55.9	96.6	79.4	0.0	5.5
		MIN	0.0	3.4	56.9	0.0	21.7	35.0	71.9	0.0	4.3
	302	MAX	0.0	3.9	62.1	0.0	17.7	35.2	72.4	0.0	4.5
		MIN	0.0	1.4	57.7	0.0	10.5	30.2	71.1	0.0	4.1
	423	MAX	0.0	3.7	62.2	0.0	23.6	35.7	73.1	0.0	4.4
		MIN	0.0	2.3	58.3	0.0	15.9	30.7	71.8	0.0	4.0
	362	MAX	0.0	0.9	46.6	0.0	0.0	18.1	68.3	0.0	2.4
		MIN	0.0	0.0	42.9	0.0	0.0	10.0	67.0	0.0	1.8
	422	MAX	0.0	1.9	46.0	0.0	0.0	19.1	68.7	0.0	2.3
		MIN	0.0	0.0	42.6	0.0	0.0	8.8	66.7	0.0	1.8
		Daily Max	**0.0**	**12.6**	**66.4**	**0.0**	**71.0**	**96.6**	**79.4**	**0.0**	**21.6**

DUVAS DV-3000 Monitoring Summary, Winter Storm Uri, Region 12 (Houston)

Monitoring Survey Details

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
24-Feb-21							
	241	Start	9:14:00	29.405636	-94.947189	Texas City, TX	Survey in La Marque area
		End	9:18:00	29.398767	-94.940742		
	241	Start	9:20:00	29.394636	-94.940659	Texas City, TX	Survey in La Marque area N of Marathon
		End	9:24:00	29.382717	-94.940674		
	482	Start	9:25:00	29.382275	-94.940666	Texas City, TX	Survey along Marathon N fenceline
		End	9:33:00	29.380136	-94.915894		
	242	Start	9:57:00	29.369213	-94.914246	Texas City, TX	Survey in area E of Marathan, N of Valero
		End	10:01:00	29.380236	-94.906601		
	182	Start	10:09:00	29.381403	-94.902496	Texas City, TX	Survey N of Valero and Eastman Chemical
		End	10:12:00	29.386763	-94.893379		
	422	Start	10:19:00	29.384262	-94.898018	Texas City, TX	Survey N of Valero, Eastman, & Marathon
		End	10:26:00	29.380276	-94.946442		
	242	Start	10:35:00	29.35857	-94.945984	Texas City, TX	Survey W and S of Marathon
		End	10:39:00	29.366142	-94.918121		
	242	Start	10:43:00	29.375523	-94.904572	Texas City, TX	Survey W and S of Marathon
		End	10:47:00	29.359186	-94.921898		
	242	Start	15:14:00	29.703077	-95.257347	Houston, TX	Survey N of TPC, Goodyear, Flint Hills Resources
		End	15:18:00	29.705311	-95.245956		
	122	Start	15:26:00	29.702387	-95.246414	Houston, TX	Survey E of Flint Hills Resources
		End	15:28:00	29.704252	-95.247147		
	302	Start	15:42:00	29.719826	-95.260132	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	15:47:00	29.719234	-95.260239		
	302	Start	15:48:00	29.719229	-95.260239	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	15:53:00	29.718992	-95.260132		
	241	Start	15:58:00	29.719271	-95.260002	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	16:02:00	29.717073	-95.260551		
	302	Start	16:04:00	29.715719	-95.258026	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	16:09:00	29.721628	-95.260223		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
26-Feb-21							
	121	Start	11:09:00	29.008934	-95.404373	Free Port, TX	Survey N of BASF
		End	11:11:00	29.005426	-95.395088		
	241	Start	11:20:00	28.966465	-95.37204	Free Port, TX	Survey through Freeport
		End	11:24:00	28.958113	-95.357491		
	302	Start	11:28:00	28.953197	-95.360405	Free Port, TX	Survey through Freeport
		End	11:33:00	28.950323	-95.36544		
	301	Start	11:53:00	28.960165	-95.355682	Free Port, TX	Survey through Freeport industrial area
		End	11:58:00	28.981747	-95.337502		
	422	Start	14:21:00	29.737169	-95.263489	Houston, TX	Survey along Clinton Dr. N of shipchannel
		End	14:28:00	29.732567	-95.220947		
	362	Start	14:37:00	29.733032	-95.231476	Houston, TX	Survey in Galena Park area
		End	14:43:00	29.7376	-95.245186		
	241	Start	14:46:00	29.737602	-95.245277	Houston, TX	Survey in Galena Park area
		End	14:50:00	29.737555	-95.245277		
	422	Start	14:59:00	29.733643	-95.258263	Houston, TX	Survey in neighborhood NW of Texas Lehigh & Holcim
		End	15:06:00	29.733778	-95.257408		
	302	Start	15:54:00	29.72006	-95.26017	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	15:59:00	29.719234	-95.259911		
	543	Start	16:10:00	29.703648	-95.257454	Houston, TX	Survey N of TPC, Goodyear, Flint Hills Resources
		End	16:19:00	29.702478	-95.24646		
27-Feb-21							
	61	Start	14:26:00	29.706676	-95.26474	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	14:27:00	29.705399	-95.264427		
	362	Start	14:33:00	29.705475	-95.264305	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	14:39:00	29.701326	-95.270477		
	482	Start	14:42:00	29.717503	-95.278221	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	14:50:00	29.715038	-95.258072		
	603	Start	14:59:00	29.739676	-95.264664	Houston, TX	Survey along Clinton Dr. N of shipchannel
		End	15:09:00	29.732687	-95.215324		
	362	Start	15:12:00	29.732559	-95.232635	Galena Park, TX	Survey in Galena Park area
		End	15:18:00	29.739016	-95.236404		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
28-Feb-21							
	482	Start	12:20:00	29.37915	-94.950203	Texas City, TX	Survey N of Dow, Marathon, Eastman
		End	12:28:00	29.384081	-94.893944		
	482	Start	12:36:00	29.384111	-94.895065	Texas City, TX	Survey N of Dow, Marathon, Eastman
		End	12:44:00	29.379288	-94.949883		
	543	Start	12:48:00	29.379587	-94.950317	Texas City, TX	Survey N of Dow, Marathon, Eastman
		End	12:57:00	29.384085	-94.895439		
	483	Start	13:01:00	29.384106	-94.902351	Texas City, TX	Survey in La Marque
		End	13:09:00	29.408192	-94.927597		
	463	Start	13:13:00	29.408316	-94.927689	Texas City, TX	Survey in La Marque
		End	13:20:40	29.38312	-94.930756		
	422	Start	13:22:00	29.383055	-94.930756	Texas City, TX	Survey N of Marathon
		End	13:29:00	29.386673	-94.914536		
2-Mar-21							
	242	Start	9:53:00	29.368793	-94.914719	Texas City, TX	Survey between Valero & Marathon
		End	9:57:00	29.380291	-94.902802		
	241	Start	10:22:00	29.380198	-94.902733	Texas City, TX	Survey between Valero & Marathon
		End	10:26:00	29.369055	-94.91449		
	362	Start	10:29:00	29.368536	-94.915016	Texas City, TX	Survey S of Marathon
		End	10:35:00	29.358442	-94.945641		
	964	Start	10:38:00	29.378927	-94.950951	Texas City, TX	Survey in La Marque
		End	10:54:00	29.408033	-94.940758		
	241	Start	14:26:00	29.688423	-95.250099	Houston, TX	Survey in Allendale S of TPC, Goodyear, Flint Hills Resources
		End	14:30:00	29.69743	-95.247383		
	362	Start	14:42:00	29.710966	-95.139771	Deer Park, TX	Survey S of Shell
		End	14:48:00	29.710606	-95.124725		
	843	Start	14:55:00	29.710459	-95.124184	Deer Park, TX	Survey S of Shell
		End	15:09:00	29.710798	-95.127533		
	422	Start	15:46:00	29.708435	-95.243599	Houston, TX	Survey S of LyondellBasel to Manchester
		End	15:53:00	29.71928	-95.259239		
	543	Start	15:57:00	29.719244	-95.260048	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	16:06:00	29.718613	-95.257927		
	423	Start	16:10:00	29.718544	-95.258041	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	16:17:00	29.722084	-95.260635		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
3-Mar-21							
	362	Start	9:23:00	29.619864	-95.031082	Shoreacres, TX	Survey in neighborhood N of Bayport
		End	9:29:00	29.619165	-95.01133		
	423	Start	9:55:00	29.652296	-95.060699	La Porte, TX	Survey in neighborhood N of Baker Hughes
		End	10:02:00	29.658152	-95.059998		
	302	Start	10:25:00	29.76255	-95.033241	Baytown, TX	Survey in neighborhood NW of Exxon
		End	10:30:00	29.775526	-95.032341		
	362	Start	10:35:00	29.762299	-95.032883	Baytown, TX	Survey in neighborhood W of Exxon
		End	10:41:00	29.752823	-95.036652		
	483	Start	11:45:00	29.782841	-95.102776	Channelview, TX	Survey in neighborhood N of Targa Resources
		End	11:53:00	29.773098	-95.103317		
	422	Start	11:59:00	29.77313	-95.103172	Channelview, TX	Survey in neighborhood N of Targa Resources
		End	12:06:00	29.76819	-95.105499		
	241	Start	12:09:00	29.767855	-95.105484	Channelview, TX	Survey in neighborhood N of Targa Resources
		End	12:13:00	29.768085	-95.105499		
	483	Start	14:52:00	29.717794	-95.259789	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	15:00:00	29.718702	-95.262238		
	362	Start	15:15:00	29.717312	-95.264374	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	15:21:00	29.722027	-95.260353		
5-Mar-21							
	302	Start	9:33:00	29.764612	-95.034035	Baytown, TX	Survey in neighborhood NW of Exxon
		End	9:38:00	29.762108	-95.032501		
	362	Start	9:52:00	29.764286	-95.041924	Baytown, TX	Survey in neighborhood NW of Exxon
		End	9:58:00	29.768206	-95.041077		
	302	Start	10:57:00	29.720619	-95.260986	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	11:02:00	29.719894	-95.261963		
	363	Start	11:10:00	29.71822	-95.258011	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	11:16:00	29.716721	-95.25592		
	241	Start	11:29:00	29.705244	-95.264381	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	11:33:00	29.70644	-95.261177		
	542	Start	13:24:00	29.768642	-95.103584	Channelview, TX	Survey in neighborhood N of Targa Resources
		End	13:33:00	29.770451	-95.105003		
	422	Start	14:40:00	29.71023	-95.124176	Deer Park, TX	Survey S of Shell
		End	14:47:00	29.709282	-95.120399		
	422	Start	15:10:00	29.773985	-95.177643	Houston, TX	Survey in Cloverleaf area N of industrial area & ship channel
		End	15:17:00	29.771675	-95.177383		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
6-Mar-21							
	362	Start	9:40:00	29.729757	-95.002136	Baytown, TX	Survey in neighborhood SE of Exxon
		End	9:46:00	29.731007	-95.000839		
	239	Start	9:55:00	29.72736	-95.00811	Baytown, TX	Survey in neighborhood SE of Exxon
		End	9:59:00	29.729788	-95.0056		
	302	Start	11:28:00	29.699345	-95.122978	Deer Park, TX	Survey in neighborhood S of Shell
		End	11:33:00	29.706514	-95.123055		
	362	Start	11:38:00	29.707853	-95.124298	Deer Park, TX	Survey in neighborhood S of Shell
		End	11:44:00	29.706722	-95.128998		
	543	Start	12:58:00	29.697847	-95.241051	Houston, TX	Survey in Allendale S of TPC, Goodyear, Flint Hills Resources
		End	13:07:00	29.698013	-95.24662		
	478	Start	13:18:00	29.691807	-95.260506	Houston, TX	Survey in nieghborhood SW of TPC
		End	13:26:00	29.688574	-95.259521		
	302	Start	14:14:00	29.796295	-95.111969	Channelview, TX	Survey in nieghborhood W of RUS Industrial
		End	14:19:00	29.806427	-95.108307		
7-Mar-21							
	302	Start	9:36:00	29.729727	-95.002083	Houston, TX	Survey in neighborhood SE of Exxon
		End	9:41:00	29.731964	-95.004807		
	302	Start	9:55:00	29.728893	-95.009651	Houston, TX	Survey in neighborhood SE of Exxon
		End	10:00:00	29.729416	-95.007973		
	422	Start	11:53:00	29.734703	-95.232391	Galena Park, TX	Survey in Galena Park area
		End	12:00:00	29.733936	-95.233818		
	301	Start	12:13:00	29.732689	-95.252541	Galena Park, TX	Survey in Galena Park area
		End	12:18:00	29.736935	-95.253281		
	543	Start	13:55:00	29.767315	-95.104958	Channelview, TX	Survey in neighborhood N of Targa Resources
		End	14:04:00	29.771837	-95.103424		
	361	Start	14:53:00	29.776072	-95.190392	Houston, TX	Survey in neighborhood N of industrial area by I10 & Greens Bayou
		End	14:59:00	29.773497	-95.189857		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
9-Mar-21							
	422	Start	12:05:00	29.718397	-95.263504	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	12:12:00	29.718483	-95.263435		
	298	Start	12:15:00	29.716877	-95.26001	Houston, TX	Survey from Manchester neighborhood to Milby Park
		End	12:20:00	29.705376	-95.264542		
	122	Start	12:24:00	29.706264	-95.263954	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	12:26:00	29.701481	-95.269859		
	483	Start	12:32:00	29.739656	-95.264687	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	12:40:00	29.732708	-95.213821		
	603	Start	12:42:00	29.733356	-95.212288	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	12:52:00	29.732243	-95.251442		
	121	Start	12:52:00	29.732243	-95.251442	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	12:54:00	29.73617	-95.262123		
	663	Start	13:41:00	29.789112	-95.127197	Houston, TX	Survey in Channelview neighborhoods
		End	13:52:00	29.792612	-95.19809		
	543	Start	14:15:00	29.782387	-95.032112	Baytown, TX	Survey from NW to S of Exxon
		End	14:24:00	29.729799	-95.010513		
	362	Start	14:33:00	29.750299	-95.033562	Baytown, TX	Survey in neighborhoods W and N of Exxon
		End	14:39:00	29.770535	-95.012215		
10-Mar-21							
	783	Start	12:54:00	29.705305	-95.264404	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	13:07:00	29.701109	-95.27047		
	542	Start	13:14:00	29.72024	-95.278282	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	13:23:00	29.716421	-95.258781		
	543	Start	13:36:00	29.733294	-95.257225	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	13:45:00	29.732637	-95.217644		
	483	Start	13:48:00	29.732618	-95.221252	Galena Park, TX	Survey in Galena Park area
		End	13:56:00	29.737696	-95.243156		
	663	Start	14:20:00	29.772175	-95.124382	Channelview, TX	Survey N of Patterson Tubular Services
		End	14:31:00	29.772017	-95.123779		
	423	Start	14:50:00	29.771027	-95.124313	Channelview, TX	Survey N to W of industrial area at I10 & Hwy 8
		End	14:57:00	29.755054	-95.145241		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
11-Mar-21							
	603	Start	11:20:00	29.705376	-95.264381	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	11:30:00	29.701767	-95.269165		
	783	Start	11:31:00	29.700924	-95.270874	Houston, TX	Survey from Milby Park to Manchester neighborhood
		End	11:44:00	29.716469	-95.257851		
	241	Start	11:45:00	29.716425	-95.259262	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	11:49:00	29.71846	-95.263641		
	302	Start	11:53:00	29.764917	-95.26519	Houston, TX	Survey in Jacinto City area
		End	11:58:00	29.760296	-95.247269		
	602	Start	11:58:00	29.760296	-95.247269	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	12:08:00	29.732683	-95.214722		
	483	Start	12:09:00	29.732689	-95.214348	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	12:17:00	29.739988	-95.264305		
	603	Start	12:29:00	29.771667	-95.13829	Channelview, TX	Survey along Market St through Channelview
		End	12:39:00	29.781702	-95.104271		
	478	Start	12:39:00	29.781702	-95.104271	Channelview, TX	Survey along Market St through Channelview
		End	12:47:00	29.777802	-95.111855		
	483	Start	12:47:00	29.777802	-95.111855	Channelview, TX	Survey along Market St through Channelview
		End	12:55:00	29.772007	-95.124008		
	302	Start	13:12:00	29.76862	-95.124207	Channelview, TX	Survey in Jacintoport industrial area
		End	13:17:00	29.754604	-95.112267		
	903	Start	13:33:00	29.835924	-95.127983	Houston Farms, TX	Survey along Sheldon Rd by LyondellBasell
		End	13:48:00	29.857416	-95.128761	Sheldon, TX	
	663	Start	14:00:00	29.789007	-95.125076	Channelview, TX	Survey in Channelview neighborhoods
		End	14:11:00	29.791492	-95.186737		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
12-Mar-21							
	663	Start	12:12:00	29.705303	-95.264381	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	12:23:00	29.705332	-95.264359		
	601	Start	12:24:00	29.705511	-95.264275	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	12:34:00	29.705441	-95.264359		
	361	Start	12:35:00	29.706869	-95.264496	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	12:41:00	29.705915	-95.263939		
	903	Start	12:41:00	29.705963	-95.263931	Houston, TX	Survey from Milby Park to Manchester area
		End	12:56:00	29.71821	-95.274063		
	361	Start	12:59:00	29.718229	-95.272522	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	13:05:00	29.716446	-95.258675		
	722	Start	13:05:00	29.716446	-95.258736	Houston, TX	Survey from Manchester neighborhood to Milby Park area
		End	13:17:00	29.705755	-95.274216		
	482	Start	13:17:00	29.705746	-95.274231	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	13:25:00	29.70542	-95.264244		
	541	Start	13:44:00	29.737423	-95.265259	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	13:53:00	29.732691	-95.214287		
	783	Start	13:53:00	29.732691	-95.214287	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	14:06:00	29.734917	-95.257339		
	842	Start	14:24:00	29.777075	-95.124512	Channelview, TX	Survey in neighborhood N of Targa Resources
		End	14:38:00	29.768877	-95.105507		
	602	Start	14:37:00	29.774063	-95.104942	Channelview, TX	Survey in neighborhood N of Targa Resources
		End	14:47:00	29.769268	-95.105515		
	180	Start	14:48:00	29.768202	-95.107643	Channelview, TX	Survey N of industrial area in Channelview
		End	14:51:00	29.775257	-95.124329		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
13-Mar-21							
	662	Start	11:48:00	29.705324	-95.264359	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	11:59:00	29.706743	-95.264343		
	662	Start	11:59:00	29.706755	-95.264351	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	12:10:00	29.700888	-95.277718		
	421	Start	12:15:00	29.717802	-95.278244	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	12:22:00	29.716429	-95.259254		
	601	Start	12:22:00	29.716427	-95.259308	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	12:32:00	29.717897	-95.264381		
	541	Start	12:34:00	29.739365	-95.264839	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	12:43:00	29.732714	-95.21431		
	482	Start	12:44:00	29.732708	-95.214279	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	12:52:00	29.737591	-95.264214		
	842	Start	13:20:00	29.771778	-95.124977	Channelview, TX	Survey N of Patterson Tubular Services
		End	13:34:00	29.772003	-95.121986		
	541	Start	13:34:00	29.772079	-95.122032	Channelview, TX	Survey N of Patterson Tubular Services
		End	13:43:00	29.771059	-95.120392		
	541	Start	13:45:00	29.77117	-95.124329	Channelview, TX	Survey in Jacintoport industrial area
		End	13:54:00	29.74962	-95.123871		
	601	Start	13:57:00	29.769886	-95.124191	Channelview, TX	Survey N of Patterson Tubular Services
		End	14:07:00	29.772057	-95.124123		
14-Mar-21							
	542	Start	10:19:00	29.705355	-95.264473	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	10:28:00	29.705275	-95.265137		
	542	Start	10:38:00	29.720655	-95.260544	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	10:47:00	29.720581	-95.260178		
	301	Start	11:44:00	29.732765	-95.217117	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	11:49:00	29.732512	-95.241745		
	661	Start	11:51:00	29.732565	-95.242805	Galena Park, TX	Survey in Galena Park area
		End	12:02:00	29.736147	-95.240242		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
15-Mar-21							
	602	Start	10:00:00	29.651348	-95.055733	La Porte, TX	Survey past LyondellBasel
		End	10:10:00	29.619452	-95.03582	Pasadena, TX	
	361	Start	10:12:00	29.619688	-95.032211	Shoreacres, TX	Survey in neighborhod N of Bayport
		End	10:18:00	29.622995	-95.028008		
	541	Start	10:26:00	29.619982	-95.021088	Shoreacres, TX	Survey in neighborhod N of Bayport
		End	10:35:00	29.617538	-95.009926		
	662	Start	11:22:00	29.78396	-95.101715	Channelview, TX	Survey by Market St & I-10
		End	11:33:00	29.78161	-95.104935		
	181	Start	11:50:00	29.744486	-95.11042	Channelview, TX	Survey in Jacintoport industrial area
		End	11:53:00	29.748564	-95.120331		
	241	Start	11:54:00	29.748568	-95.120323	Channelview, TX	Survey in Jacintoport industrial area
		End	11:58:00	29.751863	-95.133224		
	843	Start	12:45:00	29.771431	-95.169411	Houston, TX	Survey in Cloverleaf area
		End	12:59:00	29.771816	-95.171753		
	722	Start	13:19:00	29.720663	-95.261383	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	13:31:00	29.719532	-95.260162		
	662	Start	13:47:00	29.705341	-95.264458	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	13:58:00	29.70096	-95.271141		
	602	Start	14:16:00	29.733583	-95.232742	Galena Park, TX	Survey in Galena Park area
		End	14:26:00	29.734634	-95.233253		
17-Mar-21							
	482	Start	9:51:00	29.769129	-95.031219	Baytown, TX	Survey in neighborhood NW of Exxon
		End	9:59:00	29.767351	-95.035873		
	721	Start	10:03:00	29.76754	-95.033554	Baytown, TX	Survey in neighborhood NW of Exxon
		End	10:15:00	29.775772	-95.03672		
	361	Start	10:31:00	29.738285	-94.990776	Baytown, TX	Survey in neighborhood SE of Exxon
		End	10:37:00	29.737698	-94.987854		
	602	Start	10:47:00	29.728447	-94.978203	Baytown, TX	Survey in neighborhood SE of Exxon
		End	10:57:00	29.727772	-94.982964		
	482	Start	12:21:00	29.720976	-95.260849	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	12:29:00	29.720919	-95.260742		
	722	Start	14:09:00	29.697796	-95.122238	Deer Park, TX	Survey in neighborhood S of Shell
		End	14:21:00	29.708651	-95.121216		
	301	Start	14:24:00	29.708549	-95.123787	Deer Park, TX	Survey in neighborhood S of Shell
		End	14:29:00	29.709692	-95.129524		
	478	Start	14:31:00	29.710165	-95.128891	Deer Park, TX	Survey S of Shell
		End	14:39:00	29.710228	-95.124313		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
18-Mar-21							
	421	Start	9:55:00	29.718477	-95.2593	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	10:02:00	29.718378	-95.257988		
	482	Start	10:14:00	29.69791	-95.240364	Houston, TX	Survey in Allendale E of Flint Hills Resources
		End	10:22:00	29.699835	-95.243896		
	522	Start	10:31:00	29.70517	-95.227364	Pasadena, TX	Survey in neighborhoods S of LyondellBasel & Kinder Morgan
		End	10:40:00	29.705378	-95.201324		
	481	Start	10:51:00	29.706154	-95.200912	Pasadena, TX	Survey in neighborhoods S of Kinder Morgan
		End	10:59:00	29.708286	-95.196373		
	542	Start	11:04:00	29.705374	-95.186028	Pasadena, TX	Survey in neighborhoods S of Kinder Morgan
		End	11:13:00	29.710119	-95.185799		
	421	Start	11:22:00	29.701023	-95.173035	Pasadena, TX	Survey in neighborhoods S of Hwy 225
		End	11:29:00	29.703644	-95.157959		
	602	Start	13:05:00	29.679623	-95.087303	La Porte, TX	Survey in La Porte neighborhoods
		End	13:15:00	29.680418	-95.052086		
	602	Start	13:30:00	29.651728	-95.02742	La Porte, TX	Survey in La Porte neighborhoods
		End	13:40:00	29.668062	-95.019402		
	542	Start	13:42:00	29.667566	-95.019424	La Porte, TX	Survey in La Porte neighborhoods
		End	13:51:00	29.664221	-95.018822		
	662	Start	14:11:00	29.70882	-95.124054	Deer Park, TX	Survey in neighborhood S of Shell
		End	14:22:00	29.708525	-95.123466		
	723	Start	14:23:00	29.708509	-95.123444	Deer Park, TX	Survey in neighborhood S of Shell
		End	14:35:00	29.697966	-95.122406		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
19-Mar-21							
	843	Start	9:44:00	29.718964	-95.000610	Baytown, TX	Survey in neighborhood SE of Exxon
		End	9:48:00	29.717613	-94.998413		
	662	Start	10:16:00	29.720798	-94.980637	Baytown, TX	Survey in neighborhood SE of Exxon
		End	10:27:00	29.726152	-94.979401		
	541	Start	10:48:00	29.782969	-95.102448	Channelview, TX	Survey in neighborhood by Market St and Old River
		End	10:57:00	29.781122	-95.102806		
	602	Start	11:30:00	29.710606	-95.129036	Deer Park, TX	Survey in neighborhood S of Shell
		End	11:40:00	29.702143	-95.124657		
	538	Start	11:46:00	29.699924	-95.125908	Deer Park, TX	Survey in neighborhood S of Shell
		End	11:55:00	29.708540	-95.123634		
	482	Start	11:57:00	29.708532	-95.123451	Deer Park, TX	Survey in neighborhood S of Shell
		End	12:05:00	29.697706	-95.12236		
	601	Start	14:21:00	29.696157	-95.238922	Houston, TX	Survey in Allendale SE of Flint Hills Resources
		End	14:31:00	29.691647	-95.241158		
	662	Start	14:39:00	29.690203	-95.224472	Houston, TX	Survey from Allendale to Pasadena
		End	14:50:00	29.705324	-95.206039		
	601	Start	15:00:00	29.70560	-95.20072	Pasadena, TX	Survey in Pasadena Gardens neighborhood
		End	15:10:00	29.703522	-95.191284		
	482	Start	15:14:00	29.705360	-95.186646	Pasadena, TX	Survey in Red Bluff Terrace neighborhood
		End	15:22:00	29.701586	-95.173355		
	541	Start	15:24:00	29.701366	-95.173363	Pasadena, TX	Survey in Berkshire Village neighborhood
		End	15:33:00	29.700998	-95.169456		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
20-Mar-21							
	663	Start	11:53:00	29.66515	-95.034698	La Porte, TX	Survey by San Jacinto Bay
		End	12:04:00	29.673359	-95.028671		
	302	Start	12:09:00	29.689865	-95.043144	La Porte, TX	Survey S of industrial area along Hwy 225
		End	12:14:00	29.703585	-95.088875	Deer Park, TX	
	483	Start	12:15:00	29.706593	-95.098038	Deer Park, TX	Survey S of industrial area along Hwy 225
		End	12:23:00	29.711622	-95.151283	Pasadena, TX	
	482	Start	13:22:00	29.716125	-95.278152	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	13:30:00	29.716475	-95.257484		
	602	Start	13:31:00	29.71644	-95.258438	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	13:41:00	29.716473	-95.257858		
	242	Start	13:44:00	29.718479	-95.262779	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	13:48:00	29.715631	-95.278099		
	540	Start	13:48:00	29.715631	-95.278099	Houston, TX	Survey S of industrial area along Hwy 225
		End	13:57:00	29.709492	-95.225281	Pasadena, TX	
	241	Start	14:03:00	29.707512	-95.253479	Pasadena, TX	Survey S of industrial area along Hwy 225
		End	14:07:00	29.713314	-95.277283	Houston, TX	
	302	Start	14:10:00	29.708221	-95.276764	Houston, TX	Survey W of TPC, Goodyear, Flint Hills Resources
		End	14:15:00	29.685076	-95.25486		
	603	Start	14:23:00	29.70083	-95.269943	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	14:33:00	29.707993	-95.263031		
21-Mar-21							
	663	Start	12:40:00	29.771784	-95.124962	Channelview, TX	Survey along De Zavalla Rd N of industrial area
		End	12:51:00	29.767874	-95.106125		
	422	Start	12:53:00	29.7719	-95.121902	Channelview, TX	Survey in Jacintoport industrial area
		End	13:00:00	29.755949	-95.110672		
	482	Start	13:15:00	29.741388	-95.265282	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	13:23:00	29.732635	-95.217476		
	479	Start	13:26:00	29.732798	-95.214989	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	13:34:00	29.740103	-95.265984		
	542	Start	13:36:00	29.717588	-95.266144	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	13:45:00	29.718496	-95.260216		
	242	Start	13:45:00	29.718496	-95.260216	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	13:49:00	29.718023	-95.260071		
	121	Start	13:50:00	29.718433	-95.264877	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	13:52:00	29.718164	-95.277306		
	241	Start	13:56:00	29.709791	-95.278107	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	14:00:00	29.705326	-95.264641		
	423	Start	14:01:00	29.706841	-95.264435	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	14:08:00	29.705627	-95.264061		

Date	# of Samples	Start/End	Time	Latitude	Longitude	City/Area	Location Specifics
22-Mar-21							
	603	Start	12:35:00	29.770887	-95.006935	Baytown, TX	Survey N to S of Exxon
		End	12:45:00	29.72934	-95.009422		
	482	Start	12:46:00	29.729702	-95.006447	Houston, TX	Survey S to N of Exxon
		End	12:54:00	29.769152	-95.031815		
	422	Start	13:27:00	29.772385	-95.124405	Channelview, TX	Survey along Market St through Channelview
		End	13:34:00	29.781113	-95.10244		
	302	Start	13:34:00	29.772385	-95.124405	Channelview, TX	Survey N of Patterson Tubular Services
		End	13:39:00	29.772593	-95.122002		
	422	Start	13:39:00	29.772593	-95.122002	Channelview, TX	Survey along Market St through Channelview
		End	13:46:00	29.78146	-95.104149		
	422	Start	13:50:00	29.762882	-95.124054	Channelview, TX	Survey in Jacintoport industrial area
		End	13:57:00	29.7498	-95.125053		
	543	Start	14:10:00	29.740025	-95.266205	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	14:19:00	29.732677	-95.214706		
	422	Start	14:22:00	29.732679	-95.214699	Galena Park, TX	Survey along Clinton Dr. N of shipchannel
		End	14:29:00	29.737984	-95.264893		
	242	Start	14:32:00	29.717968	-95.266403	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	14:36:00	29.716496	-95.256416		
	362	Start	14:37:00	29.716427	-95.257866	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	14:43:00	29.718571	-95.256088		
	242	Start	14:44:00	29.718641	-95.255959	Houston, TX	Survey in Manchester neighborhood W of Valero
		End	14:48:00	29.718174	-95.276665		
	302	Start	14:52:00	29.707338	-95.27594	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	14:57:00	29.70647	-95.260567		
	181	Start	14:57:00	29.70647	-95.260567	Houston, TX	Survey in Milby Park area W of TPC & Goodyear
		End	15:00:00	29.705296	-95.265327		
23-Mar-21							
	722	Start	11:35:00	29.599403	-95.064941	Pasadena, TX	Survey around industrial area W of Hwy 146
		End	11:46:59	29.651787	-95.055092	La Porte, TX	
	241	Start	11:49:00	29.652039	-95.065102	Pasadena, TX	Survey around Baker Hughes
		End	11:52:59	29.639587	-95.065399		
	842	Start	12:19:00	29.725489	-94.998154	Baytown, TX	Survey SE of Exxon
		End	12:32:59	29.747314	-94.989136		
	542	Start	14:03:00	29.708448	-95.091431	Deer Park, TX	Survey S of industrial area along Hwy 225
		End	14:11:59	29.710373	-95.111015		
	657	Start	14:11:00	29.708923	-95.106224	Deer Park, TX	Survey S of industrial area along Hwy 225
		End	14:21:59	29.711433	-95.142982	Pasadena, TX	
	892	Start	14:26:00	29.704205	-95.093391	Deer Park, TX	Survey from Hwy 225 to San Jacinto Park
		End	14:40:59	29.754633	-95.088593	Channelview, TX	
	481	Start	15:19:00	29.704824	-95.190018	Pasadena, TX	Survey in neighborhood S of Kinder Morgan
		End	15:26:59	29.710876	-95.212997		

Monitoring Survey Data Summary

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
24-Feb-21											
	241	MAX	0.0	15.7	57.4	0.0	24.0	64.3	55.6	0.0	6.1
		MIN	0.0	6.0	52.8	0.0	16.0	42.2	54.0	0.0	4.7
	241	MAX	0.0	5.8	60.9	0.0	15.8	41.1	53.6	0.0	4.8
		MIN	0.0	4.4	58.6	0.0	7.6	37.2	52.6	0.0	4.6
	482	MAX	0.0	10.9	61.5	0.0	14.0	42.9	55.3	0.0	5.1
		MIN	0.0	4.8	57.8	0.0	6.1	35.0	52.5	0.0	4.5
	242	MAX	0.0	7.5	59.4	0.0	11.5	43.6	54.7	0.0	4.9
		MIN	0.0	5.4	57.5	0.0	4.9	35.8	54.1	0.0	4.5
	182	MAX	0.0	9.4	59.5	0.0	7.5	41.1	54.6	0.0	4.8
		MIN	0.0	6.5	57.5	0.0	5.4	38.0	54.2	0.0	4.6
	422	MAX	0.0	8.0	58.4	0.0	0.0	38.2	56.5	0.0	4.6
		MIN	0.0	5.1	56.2	0.0	0.0	32.5	54.5	0.0	4.3
	242	MAX	0.0	5.3	60.1	0.0	0.0	35.7	56.9	0.0	4.4
		MIN	0.0	3.5	56.6	0.0	0.0	31.0	55.3	0.0	4.1
	242	MAX	0.0	7.3	56.8	0.0	0.0	34.6	57.0	0.0	4.4
		MIN	0.0	5.5	54.5	0.0	0.0	28.5	55.7	0.0	3.8
	242	MAX	0.0	1.4	27.0	31.6	0.0	0.5	47.7	4.7	6.8
		MIN	0.0	0.0	24.2	27.1	0.0	0.0	46.5	0.0	0.3
	122	MAX	0.0	4.5	31.5	24.1	0.0	10.1	50.3	0.0	6.3
		MIN	0.0	1.5	29.2	22.2	0.0	0.7	49.4	0.0	1.4
	302	MAX	0.0	4.0	37.2	18.7	0.0	17.6	53.6	0.0	2.1
		MIN	0.0	1.4	33.7	14.6	0.0	7.9	52.5	0.0	1.7
	302	MAX	0.0	17.8	37.1	34.1	0.0	61.1	55.1	4.3	4.8
		MIN	0.0	1.7	30.7	16.7	0.0	16.1	52.6	0.0	2.1
	241	MAX	0.0	4.1	40.5	19.5	0.0	26.9	54.4	0.1	2.6
		MIN	0.0	1.4	37.8	13.5	0.0	16.9	53.5	0.0	2.2
	302	MAX	0.0	5.7	37.9	18.9	0.0	24.4	54.4	0.0	3.0
		MIN	0.0	2.8	33.7	14.9	0.0	14.4	53.2	0.0	2.2
		Daily Max	**0.0**	**17.8**	**61.5**	**34.1**	**24.0**	**64.3**	**57.0**	**4.7**	**6.8**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
26-Feb-21											
	121	MAX	0.0	0.0	9.3	54.9	0.0	0.0	30.8	0.0	0.0
		MIN	0.0	0.0	5.6	49.8	0.0	0.0	29.8	0.0	0.0
	241	MAX	0.0	0.0	22.8	38.4	0.0	0.0	36.7	0.0	0.0
		MIN	0.0	0.0	19.2	34.7	0.0	0.0	35.6	0.0	0.0
	302	MAX	0.0	0.8	26.1	34.3	0.0	0.0	39.4	0.0	0.0
		MIN	0.0	0.0	21.4	26.8	0.0	0.0	38.0	0.0	0.0
	301	MAX	0.0	4.6	32.4	28.3	0.0	0.0	41.2	0.0	0.2
		MIN	0.0	1.7	26.7	20.7	0.0	0.0	40.1	0.0	0.0
	422	MAX	0.0	3.2	5.8	69.6	0.0	0.0	25.2	3.1	0.0
		MIN	0.0	0.0	0.0	52.3	0.0	0.0	18.9	0.0	0.0
	362	MAX	0.0	3.4	12.1	55.9	0.0	0.0	29.8	2.0	0.0
		MIN	0.0	0.0	0.9	44.9	0.0	0.0	27.5	0.0	0.0
	241	MAX	0.0	0.0	15.3	47.2	0.0	0.0	31.8	0.0	0.0
		MIN	0.0	0.0	13.1	45.2	0.0	0.0	30.0	0.0	0.0
	422	MAX	0.0	0.0	20.8	49.4	0.0	0.0	33.8	0.0	0.0
		MIN	0.0	0.0	14.3	43.2	0.0	0.0	31.5	0.0	0.0
	302	MAX	0.0	1.4	24.0	39.3	0.0	0.0	37.5	0.0	2.6
		MIN	0.0	0.0	21.4	33.5	0.0	0.0	36.1	0.0	0.0
	543	MAX	0.0	0.0	21.3	44.0	0.0	0.0	36.1	0.4	8.4
		MIN	0.0	0.0	17.9	36.8	0.0	0.0	33.0	0.0	0.0
		Daily Max	**0.0**	**4.6**	**32.4**	**69.6**	**0.0**	**0.0**	**41.2**	**3.1**	**8.4**
27-Feb-21											
	61	MAX	0.0	0.0	0.0	66.5	0.0	0.0	0.0	5.6	0.0
		MIN	0.0	0.0	0.0	62.5	0.0	0.0	0.0	3.9	0.0
	362	MAX	0.0	10.9	0.0	76.0	0.0	10.2	0.0	9.8	0.0
		MIN	0.0	0.0	0.0	46.6	0.0	0.0	0.0	3.1	0.0
	482	MAX	0.0	0.0	0.0	52.1	0.0	0.0	0.0	3.8	0.0
		MIN	0.0	0.0	0.0	44.0	0.0	0.0	0.0	2.3	0.0
	603	MAX	0.0	6.6	0.9	48.6	0.0	0.0	0.4	4.7	0.0
		MIN	0.0	0.0	0.0	41.3	0.0	0.0	0.0	2.7	0.0
	362	MAX	0.0	4.3	4.8	47.3	0.0	0.0	0.6	4.9	0.0
		MIN	0.0	0.0	0.0	41.6	0.0	0.0	0.0	2.8	0.0
		Daily Max	**0.0**	**10.9**	**4.8**	**76.0**	**0.0**	**10.2**	**0.6**	**9.8**	**0.0**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
28-Feb-21											
	482	MAX	0.0	1.7	19.2	35.7	0.0	0.0	19.5	0.0	0.0
		MIN	0.0	0.0	16.2	29.8	0.0	0.0	17.9	0.0	0.0
	482	MAX	0.0	2.8	21.3	32.5	0.0	0.0	19.2	0.0	0.0
		MIN	0.0	0.0	18.6	28.5	0.0	0.0	17.5	0.0	0.0
	543	MAX	0.0	4.0	22.7	36.3	0.0	0.0	19.5	0.0	0.0
		MIN	0.0	0.0	19.0	28.3	0.0	0.0	17.3	0.0	0.0
	483	MAX	0.0	0.9	23.7	32.9	0.0	0.0	19.2	0.0	0.2
		MIN	0.0	0.0	18.7	25.7	0.0	0.0	17.8	0.0	0.0
	463	MAX	0.0	8.8	22.9	40.2	0.0	10.2	19.5	1.8	1.1
		MIN	0.0	0.0	16.8	26.8	0.0	0.0	17.8	0.0	0.0
	422	MAX	0.0	1.0	21.6	35.8	0.0	0.0	19.7	0.0	0.0
		MIN	0.0	0.0	19.3	29.6	0.0	0.0	18.2	0.0	0.0
		Daily Max	**0.0**	**8.8**	**23.7**	**40.2**	**0.0**	**10.2**	**19.7**	**1.8**	**1.1**
2-Mar-21											
	242	MAX	0.0	5.7	64.1	0.0	68.6	37.3	43.3	0.0	4.6
		MIN	0.0	4.5	59.9	0.0	65.5	33.4	41.5	0.0	4.3
	241	MAX	0.0	6.0	59.4	0.0	71.5	37.9	35.8	0.0	4.7
		MIN	0.0	4.1	56.4	0.0	69.0	33.9	34.8	0.0	4.3
	362	MAX	0.0	8.7	59.2	0.0	74.7	39.6	38.0	0.0	4.6
		MIN	0.0	4.7	54.8	0.0	71.1	32.8	33.9	0.0	4.3
	964	MAX	0.0	6.0	61.0	0.0	74.8	40.8	39.2	0.0	4.8
		MIN	0.0	3.7	55.8	0.0	69.2	33.7	35.3	0.0	4.4
	241	MAX	0.0	1.1	20.8	0.0	0.0	0.0	0.0	0.0	1.1
		MIN	0.0	0.0	18.3	0.0	0.0	0.0	0.0	0.0	0.0
	362	MAX	0.0	2.8	25.1	0.0	0.0	7.6	0.1	0.0	3.3
		MIN	0.0	0.3	20.6	0.0	0.0	0.7	0.0	0.0	0.1
	843	MAX	2.6	2.9	35.6	0.0	17.0	15.5	1.0	0.0	2.5
		MIN	0.8	0.0	24.2	0.0	0.0	5.1	0.0	0.0	1.2
	422	MAX	3.5	2.6	29.4	0.0	10.1	16.2	0.2	0.0	1.4
		MIN	0.0	0.0	22.6	0.0	0.0	2.9	0.0	0.0	0.9
	543	MAX	1.1	3.2	25.9	0.0	7.5	13.4	0.7	0.0	1.4
		MIN	1.1	1.0	21.1	0.0	0.0	6.0	0.0	0.0	1.0
	423	MAX	1.7	4.4	32.6	0.0	14.9	19.4	0.4	0.0	1.8
		MIN	0.3	0.8	23.4	0.0	7.8	8.9	0.0	0.0	1.4
		Daily Max	**3.5**	**8.7**	**64.1**	**0.0**	**74.8**	**40.8**	**43.3**	**0.0**	**4.8**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
3-Mar-21											
	362	MAX	23.8	4.5	54.9	0.0	141.6	48.4	35.7	0.0	5.0
		MIN	23.2	2.9	51.4	0.0	137.8	45.2	33.3	0.0	4.7
	423	MAX	21.7	5.5	63.5	0.0	154.0	59.6	46.3	0.0	5.8
		MIN	20.4	4.3	59.6	0.0	150.4	55.1	42.4	0.0	5.4
	302	MAX	10.8	9.3	74.8	0.0	150.8	73.4	63.7	0.0	6.6
		MIN	8.7	7.8	68.8	0.0	146.9	61.5	60.1	0.0	6.2
	362	MAX	9.8	9.1	79.0	0.0	150.4	75.2	65.2	0.0	6.5
		MIN	7.5	5.3	73.5	0.0	142.2	60.8	63.4	0.0	6.3
	483	MAX	0.0	20.0	79.9	0.0	113.5	71.4	76.0	0.0	7.1
		MIN	0.0	7.2	75.1	0.0	104.3	57.6	75.0	0.0	6.2
	422	MAX	0.0	17.5	80.0	0.0	107.9	69.4	77.2	0.0	7.7
		MIN	0.0	8.3	75.2	0.0	99.2	57.9	75.7	0.0	6.1
	241	MAX	0.0	27.0	83.5	0.0	99.9	57.8	76.7	0.0	7.1
		MIN	0.0	9.3	78.5	0.0	96.2	53.1	75.2	0.0	6.1
	483	MAX	0.0	7.3	73.1	0.0	54.9	55.5	79.5	0.0	5.5
		MIN	0.0	5.4	70.1	0.0	47.6	48.9	77.7	0.0	5.1
	362	MAX	0.0	8.0	130.6	0.0	67.0	71.6	84.2	0.0	5.7
		MIN	0.0	6.6	68.0	0.0	49.1	52.8	78.8	0.0	5.0
		Daily Max	**23.8**	**27.0**	**130.6**	**0.0**	**154.0**	**75.2**	**84.2**	**0.0**	**7.7**
5-Mar-21											
	302	MAX	6.4	1.0	23.2	0.0	18.1	0.7	0.0	0.0	1.2
		MIN	4.3	0.0	20.9	0.0	10.3	0.0	0.0	0.0	1.0
	362	MAX	9.8	1.5	20.7	0.0	25.0	2.2	0.0	0.0	1.3
		MIN	8.5	0.0	17.2	0.0	20.4	0.0	0.0	0.0	0.9
	302	MAX	0.0	2.3	21.9	0.2	0.0	4.5	3.9	0.0	5.3
		MIN	0.0	0.1	13.7	0.0	0.0	0.0	2.9	0.0	2.6
	363	MAX	0.0	1.6	26.2	0.0	7.0	7.6	0.5	0.0	6.1
		MIN	0.0	0.0	19.9	0.0	0.0	2.4	0.0	0.0	4.1
	241	MAX	0.7	1.0	23.8	0.0	15.7	10.7	0.0	0.0	1.9
		MIN	0.0	0.1	19.9	0.0	12.2	6.7	0.0	0.0	1.7
	542	MAX	0.0	49.6	15.0	30.4	0.0	0.0	4.5	13.7	1.6
		MIN	0.0	0.0	0.0	10.0	0.0	0.0	1.5	0.0	0.0
	422	MAX	0.0	0.0	20.8	4.8	0.0	0.0	6.3	0.0	0.8
		MIN	0.0	0.0	16.6	0.0	0.0	0.0	3.9	0.0	0.2
	422	MAX	0.0	3.4	25.1	0.0	0.0	13.0	3.4	0.0	1.7
		MIN	0.0	1.2	19.7	0.0	0.0	0.0	1.8	0.0	0.9
		Daily Max	**9.8**	**49.6**	**26.2**	**30.4**	**25.0**	**13.0**	**6.3**	**13.7**	**6.1**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
6-Mar-21											
	362	MAX	0.0	1.5	34.9	0.0	0.0	8.5	6.6	0.0	1.5
		MIN	0.0	0.0	30.0	0.0	0.0	2.6	4.4	0.0	1.1
	239	MAX	2.8	1.8	34.3	0.0	16.2	19.6	0.0	0.0	1.8
		MIN	1.5	0.0	29.0	0.0	11.9	9.1	0.0	0.0	1.5
	302	MAX	11.5	0.0	19.6	0.0	15.7	12.1	1.8	0.0	0.0
		MIN	8.4	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0
	362	MAX	14.1	0.7	20.3	0.0	26.6	18.7	0.0	0.4	0.5
		MIN	12.9	0.0	17.6	0.0	18.4	8.9	0.0	0.0	0.2
	543	MAX	0.0	1.8	25.4	1.1	0.0	0.0	5.8	0.0	0.0
		MIN	0.0	0.0	12.3	0.0	0.0	0.0	3.4	0.0	0.0
	478	MAX	0.0	2.2	19.1	3.9	0.0	0.1	4.8	0.0	1.2
		MIN	0.0	0.3	12.7	0.0	0.0	0.0	3.2	0.0	0.1
	302	MAX	0.0	0.8	12.6	13.1	0.0	0.0	8.8	0.0	0.0
		MIN	0.0	0.0	10.5	10.2	0.0	0.0	7.1	0.0	0.0
		Daily Max	**14.1**	**2.2**	**34.9**	**13.1**	**26.6**	**19.6**	**8.8**	**0.4**	**1.8**
7-Mar-21											
	302	MAX	17.8	1.9	67.8	0.0	111.9	31.5	37.7	0.0	3.5
		MIN	15.7	0.0	52.7	0.0	99.7	25.1	36.2	0.0	3.2
	302	MAX	14.9	4.2	62.6	0.0	124.0	38.6	44.8	0.0	4.3
		MIN	14.1	2.1	59.0	0.0	119.8	34.4	43.1	0.0	4.1
	422	MAX	0.0	0.8	29.2	0.0	0.0	4.2	1.5	0.0	0.7
		MIN	0.0	0.0	14.9	0.0	0.0	0.0	0.0	0.0	0.2
	301	MAX	2.3	1.2	17.4	0.0	2.2	3.0	0.0	0.8	0.8
		MIN	1.3	0.0	11.7	0.0	0.0	0.0	0.0	0.0	0.3
	543	MAX	0.0	25.4	21.2	0.0	0.0	0.6	2.0	2.3	5.1
		MIN	0.0	0.0	12.2	0.0	0.0	0.0	0.0	0.0	0.0
	361	MAX	0.0	2.2	28.9	0.0	0.0	8.8	0.4	0.8	1.1
		MIN	0.0	0.0	14.1	0.0	0.0	1.5	0.0	0.0	0.6
		Daily Max	**17.8**	**25.4**	**67.8**	**0.0**	**124.0**	**38.6**	**44.8**	**2.3**	**5.1**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
9-Mar-21											
	422	MAX	0.00	5.88	37.66	19.20	0.00	21.87	25.23	0.08	2.85
		MIN	0.00	0.22	21.80	0.78	0.00	4.34	24.03	0.00	1.03
	298	MAX	0.00	2.40	40.05	6.31	0.00	16.36	25.32	0.00	2.58
		MIN	0.00	0.15	32.48	1.91	0.00	9.64	22.44	0.00	1.53
	122	MAX	0	2.55	44.06	2.67	0.00	14.51	21.71	0.00	2.14
		MIN	0	0.00	36.20	0.00	0.00	7.86	20.15	0.00	1.67
	483	MAX	0.00	3.36	39.55	2.79	0.00	19.36	18.83	0.00	2.24
		MIN	0.00	0.16	28.28	0.00	0.00	10.77	14.58	0.00	1.63
	603	MAX	0	5.17	38.27	4.29	0.00	26.40	19.47	0.24	2.20
		MIN	0	1.08	28.84	0.00	0.00	13.83	15.41	0.00	1.88
	121	MAX	0.00	3.43	36.47	0.09	0.00	18.72	16.35	0.00	2.25
		MIN	0.00	2.06	32.74	0.00	0.00	16.78	15.45	0.00	2.09
	663	MAX	0.00	4.82	48.17	4.79	0.00	22.48	18.52	0.00	2.57
		MIN	0.00	0.90	31.68	0.00	0.00	12.15	16.24	0.00	2.06
	543	MAX	0.00	1.99	27.91	9.73	0.00	15.91	21.37	0.39	1.44
		MIN	0.00	0.73	23.56	1.85	0.00	4.53	14.71	0.00	0.78
	362	MAX	0.00	4.01	34.70	8.84	0.00	20.81	24.68	0.00	2.63
		MIN	0.00	2.36	30.19	3.17	0.00	8.35	19.99	0.00	1.45
		Daily Max	**0.0**	**5.9**	**48.2**	**19.2**	**0.0**	**26.4**	**25.3**	**0.4**	**2.8**
10-Mar-21											
	783	MAX	0.00	0.00	21.54	14.41	0.00	0.00	4.67	0.00	0.12
		MIN	0.00	0.00	8.02	1.21	0.00	0.00	2.88	0.00	0.00
	542	MAX	0.00	1.06	26.10	5.13	0.00	10.46	2.45	1.40	1.61
		MIN	0.00	0.00	17.88	0.00	0.00	0.00	0.00	0.00	0.38
	543	MAX	0.00	0.47	27.79	13.33	0.00	11.11	4.98	2.18	2.17
		MIN	0.00	0.00	13.46	3.85	0.00	0.00	1.53	0.00	0.53
	483	MAX	0.00	0.00	29.05	7.62	0.00	5.28	2.11	0.54	1.22
		MIN	0.00	0.00	20.17	0.00	0.00	0.00	0.42	0.00	0.64
	663	MAX	0.00	4.28	1.38	40.17	0.00	27.14	8.70	7.03	0.76
		MIN	0.00	3.14	0.00	29.78	0.00	20.97	7.36	5.25	0.38
	423	MAX	0.00	0.00	14.87	29.04	0.00	0.00	4.12	1.41	4.35
		MIN	0.00	0.00	6.37	18.66	0.00	0.00	0.82	0.00	0.00
		Daily Max	**0.0**	**4.3**	**29.0**	**40.2**	**0.0**	**27.1**	**8.7**	**7.0**	**4.3**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
11-Mar-21											
	603	MAX	0.00	0.72	47.94	11.03	0.00	0.00	15.54	0.00	0.56
		MIN	0.00	0.00	20.61	0.00	0.00	0.00	11.89	0.00	0.00
	783	MAX	0.00	4.32	35.36	13.89	0.00	16.99	13.77	0.00	2.18
		MIN	0.00	0.00	22.39	0.00	0.00	0.00	10.11	0.00	0.36
	241	MAX	0.00	2.02	30.25	6.88	0.00	5.42	10.41	0.00	5.97
		MIN	0.00	1.15	26.48	3.82	0.00	0.32	9.86	0.00	0.98
	302	MAX	0.00	1.26	33.78	7.43	0.00	1.24	9.10	0.00	0.70
		MIN	0.00	0.00	24.84	0.00	0.00	0.00	5.96	0.00	0.32
	602	MAX	0.00	2.83	25.67	10.47	0.00	2.75	10.41	0.00	1.23
		MIN	0.00	0.44	20.66	3.23	0.00	0.00	8.89	0.00	0.29
	483	MAX	0.00	2.02	27.50	12.19	0.00	6.80	10.86	0.00	1.09
		MIN	0.00	0.10	24.31	5.45	0.00	0.00	9.10	0.00	0.42
	603	MAX	0.00	16.17	26.89	22.22	0.00	5.99	15.78	1.03	2.96
		MIN	0.00	0.00	20.38	9.39	0.00	0.00	9.72	0.00	0.00
	478	MAX	0.00	12.90	32.07	19.38	0.00	8.03	13.31	0.85	2.90
		MIN	0.00	1.62	23.38	10.04	0.00	0.00	11.30	0.00	0.50
	483	MAX	0.00	17.12	27.86	18.71	0.00	10.16	15.02	1.35	3.36
		MIN	0.00	1.50	20.65	10.82	0.00	0.00	11.30	0.00	0.62
	302	MAX	0.00	4.85	27.51	19.53	0.00	16.44	12.12	1.90	0.72
		MIN	0.00	1.85	18.49	10.15	0.00	3.82	9.47	0.00	0.47
	903	MAX	0.00	3.86	27.98	16.77	0.00	4.24	12.21	0.51	3.05
		MIN	0.00	1.00	23.20	9.65	0.00	0.00	10.15	0.00	0.55
	663	MAX	0.00	4.84	25.99	18.42	0.00	3.93	12.10	0.70	0.93
		MIN	0.00	0.16	19.32	13.71	0.00	0.00	10.49	0.00	0.05
		Daily Max	**0.0**	**17.1**	**47.9**	**22.2**	**0.0**	**17.0**	**15.8**	**1.9**	**6.0**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
12-Mar-21											
	663	MAX	0.00	0.00	37.44	0.00	0.00	0.00	2.74	0.00	3.20
		MIN	0.00	0.00	19.52	0.00	0.00	0.00	0.00	0.00	0.00
	601	MAX	0.00	0.00	28.07	0.00	0.00	0.00	0.01	0.00	7.60
		MIN	0.00	0.00	23.34	0.00	0.00	0.00	0.00	0.00	0.82
	361	MAX	0.00	0.17	29.05	0.00	0.00	2.48	0.00	0.00	2.78
		MIN	0.00	0.00	25.40	0.00	0.00	0.00	0.00	0.00	0.68
	903	MAX	1.80	0.37	42.56	0.00	2.88	8.61	0.00	0.00	1.19
		MIN	0.00	0.00	24.11	0.00	0.00	0.00	0.00	0.00	0.64
	361	MAX	0.69	2.02	26.99	0.00	4.04	9.40	0.00	0.18	3.45
		MIN	0.15	0.00	23.74	0.00	0.00	0.00	0.00	0.00	0.83
	722	MAX	3.27	1.90	31.21	0.00	4.46	8.35	0.00	0.09	4.53
		MIN	0.00	0.00	24.61	0.00	0.00	1.50	0.00	0.00	1.09
	482	MAX	2.76	1.28	31.27	0.00	2.48	8.68	0.00	0.06	3.39
		MIN	0.00	0.00	23.73	0.00	0.00	2.03	0.00	0.00	1.01
	541	MAX	2.06	7.35	29.58	0.00	2.58	14.07	0.00	0.94	2.64
		MIN	0.00	0.00	22.79	0.00	0.00	0.00	0.00	0.00	0.59
	783	MAX	0.00	7.03	32.52	8.80	0.00	8.38	0.00	0.16	2.96
		MIN	0.00	0.00	22.80	0.00	0.00	0.00	0.00	0.00	0.61
	842	MAX	0.00	23.37	28.47	0.00	0.00	6.56	0.00	1.13	2.25
		MIN	0.00	0.00	20.75	0.00	0.00	0.00	0.00	0.00	0.27
	602	MAX	0.00	10.89	29.57	0.00	0.00	5.44	0.00	1.51	2.49
		MIN	0.00	0.15	24.54	0.00	0.00	0.00	0.00	0.00	0.66
	180	MAX	0.00	7.83	26.05	0.00	0.00	11.54	0.00	1.06	2.47
		MIN	0.00	0.10	23.28	0.00	0.00	0.00	0.00	0.00	1.06
		Daily Max	**3.3**	**23.4**	**42.6**	**8.8**	**4.5**	**14.1**	**2.7**	**1.5**	**7.6**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
13-Mar-21											
	662	MAX	0.4	7.1	37.1	2.2	30.9	52.6	21.5	1.1	3.3
		MIN	0.0	0.0	17.9	0.0	10.9	8.6	10.9	0.0	1.4
	662	MAX	0.0	4.2	44.1	0.0	35.9	26.8	35.0	0.0	6.4
		MIN	0.0	0.8	33.4	0.0	28.8	18.5	21.5	0.0	2.2
	421	MAX	0.0	5.4	41.8	0.0	31.2	29.8	36.2	0.0	4.4
		MIN	0.0	2.5	36.7	0.0	27.9	19.2	33.8	0.0	2.4
	601	MAX	0.0	4.8	47.6	0.0	31.3	29.3	42.6	0.0	4.0
		MIN	0.0	2.9	40.1	0.0	20.4	20.2	36.2	0.0	2.9
	541	MAX	0.0	10.7	48.2	0.0	17.2	30.1	45.3	0.0	5.3
		MIN	0.0	2.3	43.0	0.0	7.4	20.1	38.7	0.0	2.6
	482	MAX	0.0	5.5	54.8	0.0	11.8	29.7	49.5	0.0	3.3
		MIN	0.0	3.8	45.3	0.0	0.0	21.9	46.1	0.0	2.7
	842	MAX	0.0	22.9	51.3	0.0	0.0	35.4	55.1	0.0	4.0
		MIN	0.0	4.9	45.3	0.0	0.0	20.2	53.0	0.0	2.6
	541	MAX	0.0	20.5	49.0	0.0	0.0	24.7	55.0	0.0	5.3
		MIN	0.0	4.7	45.0	0.0	0.0	14.9	53.1	0.0	2.4
	541	MAX	0.0	20.1	53.0	15.9	0.0	100.1	59.0	4.0	3.9
		MIN	0.0	4.9	31.7	0.0	0.0	26.1	52.1	0.0	2.5
	601	MAX	0.0	16.7	52.0	0.0	0.0	36.6	56.9	0.0	6.0
		MIN	0.0	4.9	45.2	0.0	0.0	20.9	52.8	0.0	2.5
		Daily Max	**0.4**	**22.9**	**54.8**	**15.9**	**35.9**	**100.1**	**59.0**	**4.0**	**6.4**
14-Mar-21											
	542	MAX	0.0	1.8	28.3	0.0	6.3	4.9	11.3	0.0	8.9
		MIN	0.0	0.0	23.0	0.0	1.1	0.0	9.5	0.0	1.0
	542	MAX	0.0	2.3	31.3	0.0	8.1	11.0	17.5	0.0	5.2
		MIN	0.0	0.7	28.1	0.0	1.3	2.1	13.0	0.0	2.2
	301	MAX	0.0	3.7	42.7	0.0	2.2	22.8	33.7	0.0	2.7
		MIN	0.0	2.3	36.7	0.0	0.0	8.4	31.3	0.0	2.2
	661	MAX	0.0	3.7	49.0	0.0	0.0	26.7	34.8	0.0	3.0
		MIN	0.0	1.6	41.0	0.0	0.0	14.0	33.0	0.0	2.4
		Daily Max	**0.0**	**3.7**	**49.0**	**0.0**	**8.1**	**26.7**	**34.8**	**0.0**	**8.9**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
15-Mar-21											
	602	MAX	0.0	4.5	33.7	13.2	44.9	26.6	17.0	1.2	3.0
		MIN	0.0	0.5	7.9	0.0	0.0	10.8	2.4	0.0	0.8
	361	MAX	4.8	2.5	46.5	0.0	65.3	31.1	25.1	0.0	3.3
		MIN	2.9	0.5	41.9	0.0	53.8	25.3	20.3	0.0	2.8
	541	MAX	5.3	4.8	50.7	0.0	85.1	37.9	33.0	0.0	4.2
		MIN	3.9	2.7	45.3	0.0	76.6	32.7	29.8	0.0	3.6
	662	MAX	0.0	3.4	33.8	4.5	0.0	12.1	14.7	0.0	1.0
		MIN	0.0	0.0	20.7	0.0	0.0	3.1	10.2	0.0	0.6
	181	MAX	0.0	3.0	28.4	0.6	0.0	11.1	10.6	0.0	1.1
		MIN	0.0	2.1	24.5	0.0	0.0	6.2	9.2	0.0	0.9
	241	MAX	0.0	7.7	29.9	7.3	0.0	43.0	11.8	1.9	1.2
		MIN	0.0	2.7	21.3	0.0	0.0	24.4	9.9	0.0	0.9
	843	MAX	0.0	2.4	32.0	9.6	0.0	10.0	12.6	0.0	1.3
		MIN	0.0	0.0	21.9	0.0	0.0	1.9	8.5	0.0	0.7
	722	MAX	0.0	2.3	32.1	12.5	0.0	7.8	17.5	0.0	1.1
		MIN	0.0	0.0	23.0	0.3	0.0	0.4	15.4	0.0	0.6
	662	MAX	0.0	2.6	25.7	10.5	0.0	6.6	16.1	0.0	1.1
		MIN	0.0	0.3	23.1	2.4	0.0	0.0	14.0	0.0	0.6
	602	MAX	0.0	1.3	30.1	14.1	0.0	6.0	16.9	0.0	1.3
		MIN	0.0	0.0	23.3	5.9	0.0	0.0	15.4	0.0	0.7
		Daily Max	**5.3**	**7.7**	**50.7**	**14.1**	**85.1**	**43.0**	**33.0**	**1.9**	**4.2**
17-Mar-21											
	482	MAX	0.0	1.1	25.0	11.1	0.0	26.3	3.3	0.0	1.2
		MIN	0.0	0.0	17.5	0.0	0.0	0.0	0.0	0.0	0.0
	721	MAX	6.6	1.3	29.0	0.0	22.1	12.2	0.0	0.0	1.6
		MIN	1.1	0.0	24.7	0.0	5.6	5.8	0.0	0.0	1.1
	361	MAX	8.5	0.9	29.2	0.0	25.5	13.0	0.0	0.0	1.4
		MIN	6.2	0.0	23.2	0.0	21.7	8.1	0.0	0.0	1.2
	602	MAX	10.9	2.1	28.1	0.0	35.5	17.5	0.0	0.0	1.8
		MIN	8.7	0.2	25.1	0.0	26.7	9.4	0.0	0.0	1.4
	482	MAX	0.0	0.8	28.6	22.8	0.0	7.2	1.3	2.3	0.0
		MIN	0.0	0.0	1.9	6.7	0.0	0.0	0.0	0.0	0.0
	722	MAX	0.0	0.0	15.2	31.2	0.0	0.0	0.4	0.0	0.0
		MIN	0.0	0.0	3.2	11.3	0.0	0.0	0.0	0.0	0.0
	301	MAX	0.0	2.6	18.6	13.5	0.0	0.0	1.7	0.0	0.0
		MIN	0.0	0.0	13.9	6.1	0.0	0.0	0.7	0.0	0.0
	478	MAX	0.0	1.0	24.4	10.3	0.0	3.9	1.0	0.0	0.2
		MIN	0.0	0.0	20.3	0.0	0.0	0.0	0.0	0.0	0.0
		Daily Max	**10.9**	**2.6**	**29.2**	**31.2**	**35.5**	**26.3**	**3.3**	**2.3**	**1.8**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
18-Mar-21											
	421	MAX	4.6	0.0	29.7	0.0	11.2	8.6	0.0	0.0	1.2
		MIN	2.7	0.0	17.4	0.0	3.5	4.5	0.0	0.0	0.7
	482	MAX	5.1	0.9	36.7	0.0	18.8	17.3	0.0	3.9	4.2
		MIN	2.9	0.0	22.2	0.0	9.6	10.7	0.0	0.0	1.8
	522	MAX	5.1	1.6	27.9	1.0	17.4	19.3	0.0	0.6	2.1
		MIN	2.1	0.0	18.3	0.0	6.7	12.6	0.0	0.0	1.5
	481	MAX	2.8	0.7	26.3	0.0	19.0	21.8	0.0	0.3	2.3
		MIN	1.6	0.0	21.6	0.0	15.7	10.9	0.0	0.0	1.8
	542	MAX	2.2	1.5	27.4	0.0	18.2	18.3	0.0	0.2	2.1
		MIN	0.2	0.0	22.2	0.0	11.5	10.9	0.0	0.0	1.8
	421	MAX	0.6	1.4	31.8	0.0	21.1	19.7	0.0	0.1	2.4
		MIN	0.0	0.0	25.4	0.0	15.0	15.3	0.0	0.0	2.2
	602	MAX	0.0	2.4	40.1	0.0	18.0	26.1	13.5	0.0	3.2
		MIN	0.0	0.5	35.4	0.0	12.4	18.2	12.4	0.0	2.7
	602	MAX	0.0	2.9	51.5	0.0	13.2	27.6	16.0	0.0	3.2
		MIN	0.0	0.0	37.1	0.0	3.7	22.2	14.4	0.0	2.8
	542	MAX	0.0	3.5	47.7	0.0	10.9	28.6	17.2	0.0	3.1
		MIN	0.0	0.9	34.8	0.0	3.0	24.1	15.4	0.0	2.9
	662	MAX	0.0	5.4	56.8	0.0	0.0	32.5	24.5	0.0	3.1
		MIN	0.0	0.0	35.3	0.0	0.0	22.3	21.7	0.0	2.6
	723	MAX	0.0	3.7	46.7	0.0	2.0	30.3	22.7	0.0	3.3
		MIN	0.0	1.6	38.6	0.0	0.0	22.8	20.4	0.0	2.8
		Daily Max	**5.1**	**5.4**	**56.8**	**1.0**	**21.1**	**32.5**	**24.5**	**3.9**	**4.2**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
19-Mar-21											
	843	MAX	1.0	1.1	29.0	0.0	19.5	15.7	7.2	0.0	2.0
		MIN	0.0	0.0	25.3	0.0	15.4	6.4	0.0	0.0	1.6
	662	MAX	1.8	1.3	27.4	0.0	21.0	18.3	0.0	0.0	2.3
		MIN	0.4	0.0	21.6	0.0	13.6	11.0	0.0	0.0	1.8
	541	MAX	0.0	2.7	31.5	0.0	20.3	22.4	3.1	0.0	3.3
		MIN	0.0	0.0	27.1	0.0	12.5	12.3	0.8	0.0	1.8
	602	MAX	0.0	3.6	40.3	0.0	26.0	34.1	7.8	0.5	3.3
		MIN	0.0	0.0	28.8	0.0	9.1	19.0	3.3	0.0	2.5
	538	MAX	0.0	2.4	35.0	0.0	27.1	30.0	7.0	0.0	3.2
		MIN	0.0	0.2	30.4	0.0	20.9	21.2	3.8	0.0	2.7
	482	MAX	0.0	2.4	34.5	0.0	24.7	24.9	7.5	0.0	2.9
		MIN	0.0	0.3	29.3	0.0	19.3	16.4	3.2	0.0	2.5
	601	MAX	0.0	2.6	25.3	0.0	0.0	1.4	14.0	4.8	2.0
		MIN	0.0	0.7	21.4	0.0	0.0	0.0	10.7	0.0	0.9
	662	MAX	0.0	2.7	28.9	0.0	0.0	4.3	17.5	0.0	1.6
		MIN	0.0	0.8	22.6	0.0	0.0	0.0	12.9	0.0	0.9
	601	MAX	0.0	3.1	30.4	0.0	0.0	4.2	22.2	0.0	1.7
		MIN	0.0	0.5	25.6	0.0	0.0	0.0	18.9	0.0	1.2
	482	MAX	0.0	3.4	31.4	0.0	0.0	2.8	24.8	0.0	1.6
		MIN	0.0	1.3	27.9	0.0	0.0	0.0	23.4	0.0	1.2
	541	MAX	0.0	3.0	41.9	0.0	0.0	1.8	26.3	0.0	1.5
		MIN	0.0	0.0	28.0	0.0	0.0	0.0	23.7	0.0	1.2
		Daily Max	**1.8**	**3.6**	**41.9**	**0.0**	**27.1**	**34.1**	**26.3**	**4.8**	**3.3**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
20-Mar-21											
	663	MAX	2.3	0.6	28.1	0.0	15.3	7.5	0.7	0.0	1.5
		MIN	0.0	0.0	18.5	0.0	11.0	0.0	0.0	0.0	0.9
	302	MAX	0.0	0.0	23.8	0.0	11.4	2.7	1.3	0.0	1.1
		MIN	0.0	0.0	15.5	0.0	5.2	0.0	0.0	0.0	0.8
	483	MAX	1.2	0.8	29.5	0.0	14.9	7.3	2.2	0.0	1.6
		MIN	0.0	0.0	24.1	0.0	8.1	0.8	0.0	0.0	1.1
	482	MAX	9.9	0.4	32.6	0.0	0.0	6.8	16.3	0.0	1.5
		MIN	0.0	0.0	27.3	0.0	0.0	0.0	11.0	0.0	0.6
	602	MAX	0.0	1.3	34.7	0.0	2.0	10.4	16.8	0.0	1.8
		MIN	0.0	0.0	32.1	0.0	0.0	1.8	14.7	0.0	1.4
	242	MAX	0.0	1.5	35.7	0.0	2.5	9.9	16.1	0.0	2.0
		MIN	0.0	0.0	33.6	0.0	0.2	8.0	14.4	0.0	1.6
	540	MAX	0.0	1.2	36.5	0.0	1.4	11.5	19.6	0.0	1.9
		MIN	0.0	0.0	31.7	0.0	0.0	2.7	14.5	0.0	1.5
	241	MAX	0.0	1.3	35.9	0.0	0.0	8.8	21.1	0.0	1.7
		MIN	0.0	0.1	31.3	0.0	0.0	6.9	18.5	0.0	1.5
	302	MAX	0.0	0.8	38.6	0.0	0.0	9.1	21.6	0.0	2.0
		MIN	0.0	0.0	35.2	0.0	0.0	3.3	20.4	0.0	1.3
	603	MAX	0.0	1.0	37.4	0.0	0.0	8.9	21.3	0.0	2.2
		MIN	0.0	0.0	33.9	0.0	0.0	2.1	19.2	0.0	1.4
		Daily Max	**9.9**	**1.5**	**38.6**	**0.0**	**15.3**	**11.5**	**21.6**	**0.0**	**2.2**
21-Mar-21											
	663	MAX	0.0	8.3	38.3	1.6	0.0	36.2	45.1	0.0	2.3
		MIN	0.0	4.9	32.9	0.0	0.0	26.3	42.8	0.0	1.4
	422	MAX	0.0	5.8	35.0	7.9	0.0	30.4	45.9	0.0	1.4
		MIN	0.0	4.0	32.6	0.0	0.0	25.5	43.2	0.0	0.8
	482	MAX	0.0	2.5	34.6	14.7	0.0	23.8	46.0	0.0	0.5
		MIN	0.0	1.1	29.3	8.0	0.0	14.5	43.8	0.0	0.1
	479	MAX	0.0	2.6	31.8	21.2	0.0	20.2	44.5	0.0	0.3
		MIN	0.0	1.0	26.2	13.8	0.0	12.2	42.8	0.0	0.0
	542	MAX	0.0	3.0	29.0	28.4	0.0	21.0	44.6	0.1	0.1
		MIN	0.0	1.2	25.6	18.6	0.0	13.9	42.5	0.0	0.0
	242	MAX	0.0	2.6	28.1	28.6	0.0	18.2	43.6	0.5	0.0
		MIN	0.0	1.3	23.3	22.5	0.0	12.2	42.1	0.0	0.0
	121	MAX	0.0	2.4	26.2	25.4	0.0	15.0	42.5	0.3	0.0
		MIN	0.0	1.7	24.7	22.8	0.0	12.9	41.9	0.0	0.0
	241	MAX	0.0	2.1	25.8	31.1	0.0	16.7	43.0	0.7	0.0
		MIN	0.0	0.5	23.5	24.2	0.0	8.4	41.7	0.0	0.0
	423	MAX	0.0	1.9	25.4	36.6	0.0	17.7	42.3	1.5	0.0
		MIN	0.0	0.5	23.0	30.7	0.0	8.5	40.9	0.4	0.0
		Daily Max	**0.0**	**8.3**	**38.3**	**36.6**	**0.0**	**36.2**	**46.0**	**1.5**	**2.3**

		AMCV (ppb)		180	4000	20000	1700	1700	1700	26	230
		NAAQS (ppb)	75								
Date	**# of Samples**	**Max/Min (ppb)**	**SO_2**	**Benzene**	**Toluene**	**Ethylbenzene**	**m-Xylene**	**o-Xylene**	**p-Xylene**	**Styrene**	**1,3 - Butadiene**
22-Mar-21											
	603	MAX	0.0	0.3	25.1	19.8	0.0	0.0	28.8	0.0	0.0
		MIN	0.0	0.0	20.4	10.4	0.0	0.0	18.8	0.0	0.0
	482	MAX	0.0	0.3	26.7	17.8	0.0	0.0	27.1	0.0	0.0
		MIN	0.0	0.0	23.2	11.5	0.0	0.0	18.8	0.0	0.0
	422	MAX	0.0	7.6	25.8	17.3	0.0	0.0	21.6	0.0	0.7
		MIN	0.0	0.3	21.8	10.1	0.0	0.0	18.9	0.0	0.0
	302	MAX	0.0	10.9	26.4	16.7	0.0	0.0	19.8	0.0	1.6
		MIN	0.0	0.0	22.7	12.0	0.0	0.0	18.5	0.0	0.0
	422	MAX	0.0	9.6	26.0	18.3	0.0	0.0	19.9	0.0	1.0
		MIN	0.0	0.4	22.8	12.9	0.0	0.0	18.7	0.0	0.0
	422	MAX	0.0	6.6	22.9	31.1	0.0	23.2	21.8	3.0	0.1
		MIN	0.0	1.1	14.6	13.0	0.0	0.0	17.8	0.0	0.0
	543	MAX	0.0	5.7	27.9	33.9	0.0	32.4	24.3	3.4	0.0
		MIN	0.0	0.0	16.5	15.7	0.0	0.0	18.6	0.0	0.0
	422	MAX	0.0	0.9	26.3	22.8	0.0	0.0	20.0	0.0	0.0
		MIN	0.0	0.0	21.8	15.5	0.0	0.0	18.5	0.0	0.0
	242	MAX	0.0	2.2	38.7	23.3	0.0	10.1	22.8	0.0	0.0
		MIN	0.0	0.0	19.9	8.5	0.0	0.0	18.9	0.0	0.0
	362	MAX	0.0	1.1	27.7	20.3	0.0	0.0	19.8	0.0	0.2
		MIN	0.0	0.0	24.0	15.4	0.0	0.0	18.6	0.0	0.0
	242	MAX	0.0	1.4	27.0	17.8	0.0	0.0	19.3	0.0	0.3
		MIN	0.0	0.6	25.5	12.2	0.0	0.0	18.3	0.0	0.0
	302	MAX	0.0	1.5	28.3	16.4	0.0	0.0	19.3	9.1	2.5
		MIN	0.0	0.0	25.5	11.4	0.0	0.0	18.0	0.0	0.0
	181	MAX	0.0	0.9	32.6	14.5	0.0	0.0	18.1	65.9	2.5
		MIN	0.0	0.0	28.1	7.4	0.0	0.0	16.9	9.1	0.4
		Daily Max	**0.0**	**10.9**	**38.7**	**33.9**	**0.0**	**32.4**	**28.8**	**65.9**	**2.5**
23-Mar-21											
	722	MAX	0.0	11.6	5.6	103.8	0.7	24.9	33.8	0.0	0.0
		MIN	0.0	0.0	0.0	93.6	0.0	22.0	23.6	0.0	0.0
	241	MAX	0.0	0.6	24.1	34.3	0.0	0.0	33.4	0.0	0.0
		MIN	0.0	0.0	19.0	27.5	0.0	0.0	31.5	0.0	0.0
	842	MAX	0.0	0.0	23.2	35.4	0.0	0.0	32.9	0.0	0.0
		MIN	0.0	0.0	18.5	28.2	0.0	0.0	31.4	0.0	0.0
	542	MAX	0.0	0.0	15.7	52.3	0.0	0.0	28.6	2.1	0.0
		MIN	0.0	0.0	4.5	34.5	0.0	0.0	24.4	0.0	0.0
	657	MAX	0.0	0.0	15.7	49.8	0.0	0.0	26.5	0.3	0.0
		MIN	0.0	0.0	7.1	41.9	0.0	0.0	24.4	0.0	0.0
	892	MAX	0.0	5.7	22.1	50.5	0.0	0.0	27.8	1.5	0.4
		MIN	0.0	0.0	6.5	33.8	0.0	0.0	24.7	0.0	0.0
	481	MAX	0.0	0.0	13.1	51.3	0.0	0.0	26.8	0.7	0.0
		MIN	0.0	0.0	8.5	41.8	0.0	0.0	24.9	0.0	0.0
		Daily Max	**0.0**	**11.6**	**24.1**	**103.8**	**0.7**	**24.9**	**33.8**	**2.1**	**0.4**

ITC Fire GC Monitoring Summary

					AMCV (ppb)	SA	1200	25000	SA	SA
Date	**# of Samples**	**Time-Start**	**Time-End**	**Survey site**	**Daily Max (ppb)**	**Ethane**	**Ethylene**	**Acetylene**	**Propane**	**Propylene**
3/18/2019	**15**	14:39	23:39	Richmond Avenue and Sage Street	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
3/19/2019	**25**	0:02	16:45	Richmond Avenue and Sage Street	MAX	0.00	0.00	0.00	9.27	0.00
		20:10	23:37	7728 Lockwood Driv	MAX	0.00	0.00	0.00	241.62	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**241.62**	**0.00**
3/20/2019	**34**	0:12	8:44	7728 Lockwood Driv	MAX	0.00	0.00	0.00	41.45	0.00
		10:47	13:07	801 East P Street	MAX	0.00	0.00	0.00	0.00	0.00
		15:33	15:57	14659 East Freeway	MAX	0.00	0.00	0.00	0.00	0.00
		16:38	22:08	15631 Jacintoport Boulevard	MAX	0.00	0.00	0.00	12.89	0.00
		23:05	23:27	891 Independence Parkway North at Lynchburg Ferry	MAX	0.00	0.00	0.00	27.79	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**41.45**	**0.00**
3/21/2019	**34**	0:21	2:15	891 Independence Parkway North at Lynchburg Ferry	MAX	0.00	0.00	0.00	68.36	0.00
		5:47	9:22	9705 Spencer Highway	MAX	0.00	0.00	0.00	0.00	0.00
		10:26	20:03	200 Brownwood Drive	MAX	1.14	0.00	0.00	26.30	82.07
		22:31	23:44	4514 1/2 Durant Street	MAX	0.00	0.00	0.00	0.00	29.26
					Daily Max	**1.14**	**0.00**	**0.00**	**68.36**	**82.07**
3/22/2019	**28**	0:07	11:12	4514 1/2 Durant Street	MAX	0.00	0.00	0.00	23.69	104.63
		13:56	14:19	15631 Jacintoport Boulevard	MAX	0.00	0.00	0.00	17.82	0.00
		14:58	15:49	16398 Jacintoport Boulevard	MAX	0.00	0.00	0.00	0.00	0.00
		18:22	21:40	15631 Jacintoport Boulevard	MAX	0.00	0.00	0.00	34.79	29.11
					Daily Max	**0.00**	**0.00**	**0.00**	**34.79**	**104.63**
3/23/2019	**39**	0:04	7:57	891 Independence Parkway North at Lynchburg Ferry	MAX	0.00	94.31	0.00	0.00	20.01
		10:20	0:41	15631 Jacintoport Boulevard	MAX	2.01	0.00	0.00	36.96	20.62
					Daily Max	**2.01**	**94.31**	**0.00**	**36.96**	**20.62**
3/24/2019	**33**	1:55	5:28	San Jacinto Boulevard, 0.3 miles east of Sheldon Road	MAX	0.00	39.25	0.00	0.00	21.52
		7:53	10:20	16375 Jacintoport Boulevard	MAX	0.00	0.00	0.00	0.00	0.00
		14:08	23:35	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**39.25**	**0.00**	**0.00**	**21.52**
3/25/2019	**34**	2:11	3:21	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
		5:16	14:23	200 Brownwood Drive	MAX	0.00	0.00	0.00	0.00	19.2
		16:00	19:27	9705 Spencer Highway	MAX	0.00	0.00	0.00	0.00	0.00
		19:55	20:41	201 West X Street	MAX	0.00	0.00	0.00	0.00	0.00
		21:34	21:56	14659 East Freeway	MAX	0.00	0.00	0.00	0.00	0.00
		22:40	23:28	9705 Spencer Highway	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**19.2**
3/26/2019	**55**	0:06	0:58	9705 Spencer Highway	MAX	0.00	0.00	0.00	0.00	0.00
		1:32	2:42	2518 Magnolia Lane	MAX	0.00	0.00	0.00	0.00	0.00
		4:57	23:17	1809 Center Street	MAX	83.8	0.00	0.00	64.3	76.4
					Daily Max	**83.8**	**0.00**	**0.00**	**64.3**	**76.4**

					AMCV (ppb)	SA	1200	25000	SA	SA
Date	**# of Samples**	**Time-Start**	**Time-End**	**Survey site**	**Daily Max (ppb)**	**Ethane**	**Ethylene**	**Acetylene**	**Propane**	**Propylene**
3/27/2019	**51**	2:05	10:31	1809 Center Street	MAX	0.00	0.00	0.00	0.00	0.00
		11:36	23:58	16430 DeZavalla Road	MAX	63.82	0.00	0.00	196.20	31.78
					Daily Max	**63.80**	**0.00**	**0.00**	**196.20**	**31.78**
3/28/2019	**55**	1:55	23:57	16430 DeZavalla Road	MAX	0.00	0.00	0.00	55.60	63.77
					Daily Max	**0.00**	**0.00**	**0.00**	**55.60**	**63.77**
3/29/2019	**61**	0:20	23:05	16430 DeZavalla Road	MAX	0.00	2.03	0.00	32.55	26.52
					Daily Max	**0.00**	**2.03**	**0.00**	**32.55**	**26.52**
3/30/2019	**47**	3:26	14:10	716 Lakeside Drive	MAX	0.00	0.00	0.00	14.66	0.00
		16:00	23:26	2518 Magnolia Lane	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**14.66**	**0.00**
3/31/2019	**52**	1:03	2:58	2519 Magnolia Lane	MAX	0.00	0.00	0.00	0.00	0.00
		4:54	11:19	9705 Spencer Highway	MAX	0.00	0.00	0.00	0.00	0.00
		3:51	23:23	2518 Magnolia Lane	MAX	0.00	0.00	0.00	0.00	32.84
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**32.84**
4/1/2019	**53**	1:08	1:33	2518 Magnolia Lane	MAX	0.00	0.00	0.00	0.00	0.00
		2:43	4:57	306 East 1st Street	MAX	0.00	0.00	0.00	0.00	16.89
		5:31	13:37	1809 Center Street	MAX	0.00	0.00	0.00	0.00	0.00
		14:07	22:47	2518 Magnolia Lane	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**16.89**
4/2/2019	**33**	1:36	2:20	2518 Magnolia Lane	MAX	0.00	0.00	0.00	0.00	26.35
		2:57	12:57	1809 Center Street	MAX	0.00	0.00	0.00	0.00	36.09
		21:13	22:19	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**36.09**
4/3/2019	**52**	0:21	5:56	16430 DeZavalla Road	MAX	35.00	0.22	0.00	20.03	21.23
		7:06	9:05	1809 Center Street	MAX	0.00	0.00	0.00	0.00	0.00
		21:45	22:32	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**35.00**	**0.22**	**0.00**	**20.03**	**21.23**
4/4/2019	**50**	1:32	12:48	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
		13:22	21:59	891 Independence Parkway North	MAX	0.00	4.16	0.00	0.00	0.00
					Daily Max	**0.00**	**4.16**	**0.00**	**0.00**	**0.00**
4/5/2019	**49**	0:37	3:12	891 Independence Parkway North	MAX	0.00	14.03	0.00	0.00	13.72
		5:35	13:59	2518 Magnolia Lane	MAX	195.11	55.42	0.00	0.00	129.13
		14:59	21:52	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**195.11**	**55.42**	**0.00**	**0.00**	**129.13**
4/6/2019	**56**	0:06	23:05	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
4/7/2019	**31**	2:00	11:56	16430 DeZavalla Road	MAX	0.00	5.98	0.00	0.00	0.00
		22:07	23:18	200 Brownwood Drive	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**5.98**	**0.00**	**0.00**	**0.00**
4/8/2019	**46**	2:36	9:42	200 Brownwood Drive	MAX	0.00	0.00	0.00	0.00	0.00
		10:45	22:16	11707 Bexar Dr., La Porte	MAX	0.00	0.00	0.00	0.00	22.02
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**22.02**

					AMCV (ppb)	SA	1200	25000	SA	SA
Date	**# of Samples**	**Time-Start**	**Time-End**	**Survey site**	**Daily Max (ppb)**	**Ethane**	**Ethylene**	**Acetylene**	**Propane**	**Propylene**
4/9/2019	**37**	0:15	19:04	11707 Bexar Dr., La Porte	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
4/10/2019	**23**	0:25	6:35	891 Independence Parkway North	MAX	0.00	30.36	0.00	0.00	43.93
		19:59	21:31	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**30.36**	**0.00**	**0.00**	**43.93**
4/11/2019	**51**	0:12	21:55	16430 DeZavalla Road	MAX	0.00	0.00	0.00	9.44	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**9.44**	**0.00**
4/12/2019	**56**	0:29	22:03	1809 Center Street	MAX	0.00	1.51	0.00	0.00	0.00
					Daily Max	**0.00**	**1.51**	**0.00**	**0.00**	**0.00**
4/13/2019	**44**	0:52	8:01	15631 Jacintoport Blvd.	MAX	0.00	88.42	0.00	17.51	25.62
		8:37	14:24	16430 DeZavalla Road	MAX	24.10	2.07	0.00	70.31	
		12:57	15:42	200 Brownwood Drive	MAX	0.00	0.00	0.00	0.00	0.00
		17:17	22:15	100 MacArthur Avenue, Baytown	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**24.10**	**88.42**	**0.00**	**70.31**	**25.62**
4/14/2019	**46**	1:27	2:27	100 MacArthur Avenue, Baytown	MAX	0.00	0.00	0.00	0.00	0.00
		3:22	7:48	9705 Spencer Highway	MAX	0.00	0.00	0.00	0.00	0.00
		8:28	22:28	11707 Bexar Drive, La Porte	MAX	0.00	0.00	0.00	0.00	17.22
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**17.22**
4/15/2019		1:16	7:11	11707 Bexar Drive, La Porte	MAX	0.00	0.00	0.00	0.00	0.00
	48	8:58	22:13	16430 DeZavalla Road	MAX	0.00	0.00	0.00	36.36	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**36.36**	**0.00**
4/16/2019		1:59	23:19	16430 DeZavalla Road	MAX	0.00	3.69	0.00	14.69	15.24
	53				**Daily Max**	**0.00**	**3.69**	**0.00**	**14.69**	**15.24**
4/17/2019	**56**	1:29	23:01	16430 DeZavalla Road	MAX	66.00	8.69	0.00	91.53	0.00
					Daily Max	**66.00**	**8.69**	**0.00**	**91.53**	**0.00**
4/18/2019	**30**	1:44	4:48	16430 DeZavalla Road	MAX	0.00	0.00	0.00	22.65	0.00
		16:11	23:06	11707 Bexar Drive, La Porte	MAX	0.00	58.40	0.00	0.00	19.46
					Daily Max	**0.00**	**58.40**	**0.00**	**22.65**	**19.46**
4/19/2019	**28**	1:48	13:39	11707 Bexar Drive, La Porte	MAX	0.00	42.78	0.00	0.00	24.37
					Daily Max	**0.00**	**42.78**	**0.00**	**0.00**	**24.37**
4/22/2019	**5**	22:13	23:49	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
4/23/2019	**25**	0:23	23:33	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
4/24/2019	**34**	0:25	23:32	16430 DeZavalla Road	MAX	0.00	1.11	0.00	17.48	33.12
					Daily Max	**0.00**	**1.11**	**0.00**	**17.48**	**33.12**
4/25/2019	**29**	0:37	1:32	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
		4:54	23:36	11707 Bexar Drive, La Porte	MAX	0.00	0.00	0.00	14.16	26.10
					Daily Max	**0.00**	**0.00**	**0.00**	**14.16**	**26.10**
4/26/2019	**15**	0:00	5:55	11707 Bexar Drive, La Porte	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

					AMCV (ppb)	SA	1200	25000	SA	SA
Date	**# of Samples**	**Time-Start**	**Time-End**	**Survey site**	**Daily Max (ppb)**	**Ethane**	**Ethylene**	**Acetylene**	**Propane**	**Propylene**
5/13/2019	**8**	20:50	23:43	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
5/14/2019	**39**	0:10	1:02	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
		1:54	7:25	1809 Center Street	MAX	0.00	0.00	0.00	11.22	36.36
		13:49	23:53	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**11.22**	**36.36**
5/15/2019	**28**	0:16	1:50	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
		2:43	5:01	1809 Center Street	MAX	0.00	0.00	0.00	0.00	0.00
		5:52	17:52	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
		17:52	23:59	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
5/16/2019	**32**	0:22	6:41	16430 DeZavalla Road	MAX	0.00	0.00	0.00	11.01	0.00
		17:39	23:46	16430 DeZavalla Road	MAX	0.00	0.00	0.00	46.05	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**46.05**	**0.00**
5/17/2019	**34**	0:10	6:35	16430 DeZavalla Road	MAX	0.00	0.00	0.00	60.32	23.73
		17:21	23:54	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**60.32**	**23.73**
5/18/2019	**31**	0:20	11:47	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	85.52
		17:27	23:31	16430 DeZavalla Road	MAX	0.00	0.00	0.00	12.06	20.21
					Daily Max	**0.00**	**0.00**	**0.00**	**12.06**	**85.52**
5/19/2019	**35**	0:09	6:42	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
		17:45	23:57	16430 DeZavalla Road	MAX	0.00	0.00	0.00	11.45	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**11.45**	**0.00**
5/20/2019	**32**	0:33	7:00	16430 DeZavalla Road	MAX	0.00	0.00	0.00	75.72	99.01
		17:46	23:46	16430 DeZavalla Road	MAX	0.00	0.00	0.00	19.29	18.61
					Daily Max	**0.00**	**0.00**	**0.00**	**75.72**	**99.01**
5/21/2019	**32**	0:09	6:31	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	118.78
		17:52	23:43	16430 DeZavalla Road	MAX	0.00	11.82	0.00	0.00	15.58
					Daily Max	**0.00**	**11.82**	**0.00**	**0.00**	**118.78**
5/22/2019	**29**	0:09	6:24	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	17.92
		19:10	23:45	16430 DeZavalla Road	MAX	8.83	0.00	0.00	56.43	14.64
					Daily Max	**8.83**	**0.00**	**0.00**	**56.43**	**17.92**
5/23/2019	**17**	0:09	6:31	16430 DeZavalla Road	MAX	0.00	0.00	0.00	29.36	15.58
		18:08	23:54	16430 DeZavalla Road	MAX	0.00	0.00	0.00	21.44	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**29.63**	**15.58**
5/24/2019	**15**	0:17	5:42	16430 DeZavalla Road	MAX	0.00	0.00	0.00	0.00	0.00
					Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

		AMCV (ppb)	33000	92000	27000	230	1000	180	4100	4000	20000	26	1700	1700
Date	**# of Samples**	**Daily Max (ppb)**	**Isobutane**	**n-Butane**	**1-Butene**	**1,3-Butadiene**	**Hexane + Cyclohexane**	**Benzene**	**n-Octane**	**Toluene**	**Ethylbenzene**	**Styrene**	**m+p-Xylene**	**o-Xylene**
3/18/2019	**15**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	8.66	13.18
		Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**8.66**	**13.18**
3/19/2019	**25**	MAX	0.00	13.35	0.00	8.62	0.00	0.00	0.00	0.00	0.59	10.80	0.00	0.00
		MAX	0.00	16.80	0.00	7.42	0.00	0.00	0.00	0.00	0.00	0.00	5.95	0.00
		Daily Max	**0.00**	**16.80**	**0.00**	**8.62**	**0.00**	**0.00**	**0.00**	**0.00**	**0.59**	**10.80**	**5.95**	**0.00**
3/20/2019	**34**	MAX	0.00	46.86	0.00	13.65	0.00	0.00	3.13	0.00	4.44	6.19	10.52	5.71
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	43.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	14.42	0.00	9.05	0.00	0.00	6.96	0.00	0.00	8.29	9.43	0.00
		Daily Max	**0.00**	**46.86**	**0.00**	**13.65**	**0.00**	**0.00**	**6.96**	**0.00**	**4.44**	**8.29**	**10.52**	**5.71**
3/21/2019	**34**	MAX	0.00	11.34	0.00	0.00	0.00	24.68	0.00	6.38	9.38	26.76	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	20.32	8.37	31.79	10.11
		MAX	0.00	18.88	0.00	9.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	9.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**18.88**	**0.00**	**9.02**	**9.26**	**24.68**	**0.00**	**6.38**	**20.32**	**26.76**	**31.79**	**10.11**
3/22/2019	**28**	MAX	14.61	18.91	0.00	17.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	14.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	38.13	143.04	31.48	43.39	10.65	0.00	76.53	39.78
		MAX	22.02	34.70	0.00	17.24	9.78	0.00	5.46	3.24	0.00	0.00	0.00	0.00
		Daily Max	**22.02**	**34.70**	**0.00**	**17.85**	**38.13**	**143.04**	**31.48**	**43.39**	**10.65**	**0.00**	**76.53**	**39.78**
3/23/2019	**39**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.57	0.00	0.00	0.37	0.00
		MAX	10.63	18.94	0.00	9.41	0.00	10.01	0.00	0.00	0.00	0.00	2.28	0.00
		Daily Max	**10.63**	**18.94**	**0.00**	**9.41**	**0.00**	**10.01**	**0.00**	**3.57**	**0.00**	**0.00**	**2.28**	**0.00**
3/24/2019	**33**	MAX	12.74	0.00	0.00	11.95	0.00	114.15	19.25	9.39	2.14	28.28	0.00	12.52
		MAX	0.00	0.00	0.00	9.33	0.00	72.62	23.98	6.45	164.68	23.46	82.18	46.58
		MAX	0.00	0.00	0.00	0.00	0.00	61.84	14.05	18.28	0.00	7.74	19.06	13.36
		Daily Max	**12.74**	**0.00**	**0.00**	**11.95**	**0.00**	**114.15**	**23.98**	**18.28**	**164.68**	**28.28**	**82.18**	**46.58**
3/25/2019	**34**	MAX	0.00	11	0.00	0.00	0.00	0.00	0.00	0.00	0.8	0.00	2	0.00
		MAX	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	9.2	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**11.00**	**12.00**	**0.00**	**0.00**	**0.00**	**9.20**	**0.00**	**0.00**	**0.80**	**0.00**	**2.00**	**0.00**
3/26/2019	**55**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	20.2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	10.2	15.1	0.00	9.2	8.9	86.2	0.00	12.9	1.6	0.00	4.9	0.00
		Daily Max	**20.20**	**15.10**	**0.00**	**9.20**	**8.90**	**86.20**	**0.00**	**12.90**	**1.60**	**0.00**	**4.90**	**0.00**

		AMCV (ppb)	33000	92000	27000	230	1000	180	4100	4000	20000	26	1700	1700
Date	**# of Samples**	**Daily Max (ppb)**	**Isobutane**	**n-Butane**	**1-Butene**	**1,3-Butadiene**	**Hexane + Cyclohexane**	**Benzene**	**n-Octane**	**Toluene**	**Ethylbenzene**	**Styrene**	**m+p-Xylene**	**o-Xylene**
3/27/2019	**51**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	5.74	0.00	7.17	0.00	21.44	14.22
		MAX	39.51	112.87	0.00	64.15	15.50	34.99	0.00	6.67	0.00	0.00	0.28	8.98
		Daily Max	**39.51**	**112.87**	**0.00**	**64.15**	**15.50**	**34.99**	**5.74**	**6.67**	**7.17**	**0.00**	**21.44**	**14.22**
3/28/2019	**55**	MAX	44.41	31.50	0.00	8.00	8.01	27.22	5.31	10.59	6.15	0.00	16.35	12.02
		Daily Max	**44.41**	**31.50**	**0.00**	**8.00**	**8.01**	**27.22**	**5.31**	**10.59**	**6.15**	**0.00**	**16.35**	**12.02**
3/29/2019	**61**	MAX	29.88	52.59	0.00	66.22	9.55	502.81	0.00	9.66	0.00	0.00	0.00	0.00
		Daily Max	**29.88**	**52.59**	**0.00**	**66.22**	**9.55**	**502.81**	**0.00**	**9.66**	**0.00**	**0.00**	**0.00**	**0.00**
3/30/2019	**47**	MAX	0.00	25.38	0.00	36.10	0.00	10.19	0.00	3.14	0.53	2.71	3.28	7.78
		MAX	0.00	0.00	0.00	0.00	0.00	28.06	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**25.38**	**0.00**	**36.10**	**0.00**	**10.19**	**0.00**	**3.14**	**0.53**	**2.71**	**3.28**	**7.78**
3/31/2019	**52**	MAX	0.00	0.00	0.00	26.70	58.21	195.95	0.00	18.12	1.61	0.00	10.04	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	9.95	0.00	2.96	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	10.48	33.81	268.93	0.00	16.47	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**0.00**	**0.00**	**26.70**	**58.21**	**268.93**	**0.00**	**18.12**	**1.61**	**0.00**	**10.04**	**0.00**
4/1/2019	**53**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	32.25	0.00	0.00	21.77	12.86	126.99	0.00	30.44	0.00	0.00	4.10	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	53.61	0.00	12.63	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	6.31	45.65	0.00	12.09	4.32	0.00	17.71	9.57
		Daily Max	**32.25**	**0.00**	**0.00**	**21.77**	**12.86**	**126.99**	**0.00**	**30.44**	**4.32**	**0.00**	**17.71**	**9.57**
4/2/2019	**33**	MAX	19.72	0.00	0.00	0.00	0.00	12.23	0.00	0.00	0.00	0.00	0.39	0.00
		MAX	0.00	0.00	0.00	0.00	6.55	41.36	0.00	13.73	0.00	0.00	2.02	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**19.72**	**0.00**	**0.00**	**0.00**	**6.55**	**41.36**	**0.00**	**13.73**	**0.00**	**0.00**	**2.02**	**0.00**
4/3/2019	**52**	MAX	26.29	15.92	7.25	9.12	9.15	15.81	0.00	5.93	0.00	0.00	2.11	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**26.29**	**15.92**	**7.25**	**9.12**	**9.15**	**15.81**	**0.00**	**5.93**	**0.00**	**0.00**	**2.11**	**0.00**
4/4/2019	**50**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	6.62	3.72	4.70	0.00	12.81	8.53
		MAX	0.00	0.00	0.00	0.00	0.00	51.01	0.00	0.00	0.00	0.00	5.98	16.77
		Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**51.01**	**6.62**	**3.72**	**4.70**	**0.00**	**12.81**	**8.53**
4/5/2019	**49**	MAX	0.00	0.00	0.00	0.00	0.00	19.48	0.00	5.49	0.00	0.00	1.57	0.00
		MAX	0.00	12.67	0.00	12.18	7.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	19.11	0.00	0.00	0.00	15.75	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**19.11**	**0.00**	**12.18**	**7.98**	**19.48**	**0.00**	**5.49**	**0.00**	**0.00**	**1.57**	**0.00**
4/6/2019	**56**	MAX	0.00	13.93	0.00	0.00	0.00	0.00	0.00	11.67	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**13.93**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**11.67**	**0.00**	**0.00**	**0.00**	**0.00**
4/7/2019	**31**	MAX	19.49	0.00	0.00	0.00	5.87	6.77	4.72	0.00	3.26	7.10	8.68	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**19.49**		**0.00**	**0.00**	**5.87**	**6.77**	**4.72**	**0.00**	**3.26**	**7.10**	**8.68**	**0.00**
4/8/2019	**46**	MAX	0.00	20.18	0.00	10.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	20.49	11.34	0.00	0.00	0.00	5.36	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**20.49**	**20.18**	**0.00**	**10.58**	**0.00**	**5.36**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

		AMCV (ppb)	33000	92000	27000	230	1000	180	4100	4000	20000	26	1700	1700
Date	**# of Samples**	**Daily Max (ppb)**	**Isobutane**	**n-Butane**	**1-Butene**	**1,3-Butadiene**	**Hexane + Cyclohexane**	**Benzene**	**n-Octane**	**Toluene**	**Ethylbenzene**	**Styrene**	**m+p-Xylene**	**o-Xylene**
4/9/2019	**37**	MAX	0.00	12.57	0.00	9.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**12.57**	**0.00**	**9.29**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
4/10/2019	**23**	MAX	0.00	0.00	0.00	0.00	5.71	9.86	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**5.71**	**9.86**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
4/11/2019	**51**	MAX	32.38	15.67	0.00	0.00	0.00	13.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**32.38**	**15.67**	**0.00**	**0.00**	**0.00**	**13.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
4/12/2019	**56**	MAX	22.70	0.00	0.00	0.00	0.00	50.23	0.00	3.99	0.00	0.00	0.00	0.00
		Daily Max	**22.70**	**0.00**	**0.00**	**0.00**	**0.00**	**50.23**	**0.00**	**3.99**	**0.00**	**0.00**	**0.00**	**0.00**
4/13/2019	**44**	MAX	14.95	11.49	0.00	0.00	0.00	6.13	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	14.77	42.88	0.00	7.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**14.95**	**42.88**	**0.00**	**7.80**	**0.00**	**6.13**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
4/14/2019	**46**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
4/15/2019		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	48	MAX	0.00	25.07	0.00	6.55	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00
		Daily Max	**0.00**	**25.07**	**0.00**	**6.55**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.13**	**0.00**
4/16/2019		MAX	19.09	0.00	0.00	0.00	0.00	7.42	0.00	0.00	0.00	0.00	3.69	1.29
	53	**Daily Max**	**19.09**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**3.69**	**1.29**
4/17/2019	**56**	MAX	20.32	44.96	0.00	10.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**20.32**	**44.96**	**0.00**	**10.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
4/18/2019	**30**	MAX	0.00	19.79	0.00	0.00	0.00	0.00	0.00	0.00	1.67	0.00	3.86	0.00
		MAX	19.77	0.00	0.00	0.00	0.00	16.18	0.00	0.00	0.00	0.00	0.00	31.14
		Daily Max	**19.77**	**19.79**	**0.00**	**0.00**	**0.00**	**16.18**	**0.00**	**0.00**	**1.67**	**0.00**	**3.86**	**31.14**
4/19/2019	**28**	MAX	0.00	0.00	0.00	0.00	6.90	0.00	0.00	0.00	0.00	0.00	0.26	0.00
		Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**6.90**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.26**	**0.00**
4/22/2019	**5**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.20	0.00
		Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.20**	**0.00**
4/23/2019	**25**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00
		Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.73**	**0.00**
4/24/2019	**34**	MAX	13.73	14.37	0.00	48.90	290.44	523.41	6.53	37.54	2.70	4.18	274.44	8.20
		Daily Max	**13.73**	**14.37**	**0.00**	**48.90**	**290.44**	**523.41**	**6.53**	**37.54**	**2.70**	**4.18**	**274.44**	**8.20**
4/25/2019	**29**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	10.99	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	1.77	0.00
		Daily Max	**0.00**	**10.99**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.20**	**0.00**	**1.77**	**0.00**
4/26/2019	**15**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Date	# of Samples	Daily Max (ppb)	Isobutane	n-Butane	1-Butene	1,3-Butadiene	Hexane + Cyclohexane	Benzene	n-Octane	Toluene	Ethylbenzene	Styrene	m+p-Xylene	o-Xylene
		AMCV (ppb)	33000	92000	27000	230	1000	180	4100	4000	20000	26	1700	1700
5/13/2019	**8**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
5/14/2019	**39**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	10.85	0.00	0.00	0.00	0.00	12.54	0.00	0.00	0.00	0.00	2.59	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	10.83	0.00	0.00	0.53	0.00	2.64	0.00
		Daily Max	**10.85**	**0.00**	**0.00**	**0.00**	**0.00**	**12.54**	**0.00**	**0.00**	**0.53**	**0.00**	**2.64**	**0.00**
5/15/2019	**28**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
5/16/2019	**32**	MAX	14.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	27.87	0.00	6.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**14.06**	**27.87**	**0.00**	**6.24**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
5/17/2019	**34**	MAX	24.63	14.84	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00
		Daily Max	**24.63**	**14.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.50**	**0.00**
5/18/2019	**31**	MAX	11.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	18.81	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	0.00	1.72	0.00
		Daily Max	**18.81**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**1.42**	**0.00**	**1.72**	**0.00**
5/19/2019	**35**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	13.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.43	0.00
		Daily Max	**0.00**	**13.98**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.43**	**0.00**
5/20/2019	**32**	MAX	18.91	43.25	14.98	10.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	13.40	0.00	0.00	0.00	0.00	0.00	0.00	0.69	0.00	4.33	0.00
		Daily Max	**18.91**	**43.25**	**14.98**	**10.45**	**0.00**	**0.00**	**0.00**	**0.00**	**0.69**	**0.00**	**4.33**	**0.00**
5/21/2019	**32**	MAX	9.67	0.00	0.00	0.00	0.00	0.00	12.67	3.19	1.75	0.00	2.09	11.34
		MAX	11.85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**11.85**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**12.67**	**3.19**	**1.75**	**0.00**	**2.09**	**11.34**
5/22/2019	**29**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	20.62	27.56	0.00	8.51	0.00	0.00	0.00	0.00	0.00	0.00	2.74	0.00
		Daily Max	**20.62**	**27.56**	**0.00**	**8.51**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.74**	**0.00**
5/23/2019	**17**	MAX	12.20	15.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		MAX	0.00	23.11	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	5.07	0.00
		Daily Max	**12.20**	**23.11**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.04**	**0.00**	**5.07**	**0.00**
5/24/2019	**15**	MAX	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Daily Max	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Picarro - Hydrogen Sulfide Monitoring Summary, Hurricane Delta

										H_2S State Std = 80 ppb			
										Instantaneous Data		30 min Rolling Avg	
Date	**Survey**	**Stationary /Mobile**	**# of Samples**	**Time-Start**	**Time-End**	**City/Area**	**Location Specifics**	**Latitude**	**Longitude**	**Min (ppb)**	**Max (ppb)**	**Min (ppb)**	**Max (ppb)**
10-Oct-20													
	A	S	600	15:50	16:40	Port Neches, TX	W of Indorama and RB Fuels Biodiesel.	29.960165	-93.944829	--	--	1.1	1.3
	B	M	274	17:20	17:42	Port Neches, TX	E of Lion Elastomer plant.	29.975229	-93.944829	-3	4.6	--	--
									Daily Max		**4.6**		**1.3**
11-Oct-20													
	A	M	321	8:52	9:11	Port Arthur, TX	NE of Motiva, Memorial Pkwy @ SH87	29.901622	-93.930484	-1.7	6.4	--	--
	B	M	234	10:05	10:23	Port Arthur, TX	E of BASF/Total	29.957403	-93.870484	1.5	10.2	--	--
	C	M	355	11:56	12:20	Beaumont, TX	NE of Exxon (Rose City)	30.091006	-94.072227	2.18	10.71	--	--
	D	M	521	13:43	14:20	Beaumont, TX	NE of Exxon	NP	NP	0.22	7.54	--	--
									Daily Max		**10.71**		
12-Oct-20													
	A	M	284	10:25	10:45	Orange, TX	Adjacent to several plants (DOW, Chevron Phillips, Lion Elastomers)	30.050949	-93.782148	-3.7	5.1	--	--
	B	M	208	11:28	11:43	Orange, TX	Neighborhood around West Orange-Stark High School NE of Chem 32 plant.	30.07724	-93.764981	-3.6	5.61	--	--
	C	M	263	12:27	12:46	Orange, TX	Neighborhood W of Degussa Engineered Carbons LP plant.	30.152618	-93.738774	-4.01	4.41	--	--
	D	M	265	1:49	14:10	Orange, TX	Neighborhood NW of International Paper plant	30.235125	-93.768486	-3.48	5.49	--	--
									Daily Max		**5.61**		

Picarro - Hydrogen Sulfide Monitoring Summary, Hurricane Laura

Picarro Transit Data

									H_2S State Std = 80 ppb			
									Instantaneous Data		30 min Rolling Avg	
Date	**Code/ Survey**	**Stationary /Mobile**	**# of Samples**	**Time-Start**	**Time-End**	**City/Area**	**Location Specifics**	**Start Latitude**	**Start Longitude**	**Min (ppb)**	**Max (ppb)**	**Min (ppb)**	**Max (ppb)**
29-Aug-20													
	1424	M	567	10:27:23	10:37:24	Port Arthur, TX	E of Motiva near Avenue A fenceline	29.877863	-93.951263	-5.6	7		
	1539	M	568	15:39:01	15:49:04	Port Arthur, TX	NW of Motiva by HO Mills Blvd fenceline	29.901577	-93.972374	-7.2	7.3		
	1605	M	322	16:05:20	16:11:02	Port Arthur, TX	N of Motiva area W of Sam Houston Elementary	29.917229	-93.946175	-5.8	10.7		
	1612	M	819	16:12:39	16:27:11	Port Arthur, TX	N of Motiva by Memorial Blvd	29.919092	-93.947304	0.9	5.5		
	1654	M	1261	16:54:40	17:17:02	Port Neches, TX	In neighborhood W of Indorama and RB Fuels Biodiesel.	29.962139	-93.968346	-6.3	12.7		
	1808	M	271	18:08:15	18:13:03	Port Arthur, TX	N of Motiva by Savannah Ave fenceline	29.911182	-93.962387	-3.9	8.8		
									Daily Max		**12.7**		
30-Aug-20													
	0852	M	735	8:52:34	9:05:34	Beaumont, TX	In neighborhood W of Exxon	30.071976	-94.093323	-13	12.1		
	1052	M	578	10:52:52	11:03:05	Port Arthur, TX	NE of BASF to W of BASF along Atlantic Rd	29.96928	-93.872734	-4.4	10.2		
	1152	M	507	12:01:25	12:01:25	Port Arthur, TX	N top corner of Motiva fenceline	29.902851	-93.966324	-9.8	9.6		
	1224	M	753	12:24:35	12:37:53	Port Arthur, TX	N of Motiva by Memorial Blvd	29.913496	-93.949806	-7.6	14.2		
	1308	M	871	13:08:35	13:23:59	Port Arthur, TX	In neighborhood E of Motiva and W of Port Arthur terminal	29.871063	-93.941338	-10.9	12.4		
									Daily Max		**14.2**		
31-Aug-20													
	1014	M	585	10:14:11	10:24:31	Port Arthur, TX	N to W of Motiva along Hwy 73	29.913828	-93.94944	-10.7	11.2		
	1029	M	486	10:29:37	10:38:11	Port Arthur, TX	Through Motiva from W to E on Savannah Ave	29.898483	-93.975143	-4.6	14.1		
	1040	M	673	10:40:42	10:52:34	Port Arthur, TX	Through Motiva from E to W on Savannah Ave	29.887396	-93.944664	-8.8	14.3		
	1420	M	514	14:20:15	14:29:20	Beaumont, TX	N of Jefferson Railport & Optimus Steel	30.094645	-94.077347	-4.5	7.8		
	1435	M	240	14:35:10	14:39:23	Rose City, TX	Along Old Hwy 90	30.099911	-94.058136	-6.0	8.3		
	1450	M	260	14:50:15	14:54:50	Beaumont, TX	Along I-10 from Rose City to Beaumont	30.112238	-94.045364	-3.6	11.8		
									Daily Max		**14.3**		
1-Sep-20													
	920	M	248	9:20:35	9:24:57	Port Arthur, TX	Following TX 73 from N of Motiva S along W fenceline	29.920151	-93.956039	-2.8	9.9		
	927	M	196	9:27:06	9:30:33	Port Arthur, TX	Following TX 82 on S Motiva fenceline and N Valero fenceline	29.875738	-93.976357	-3.1	11.0		
	931	M	288	9:31:33	9:36:38	Port Arthur, TX	E side of Valero fencelines	29.858013	-93.952225	-4.2	10.4		
	1033	M	204	10:33:15	10:36:50	Port Arthur, TX	In neighborhood N of Valero & E of Motiva	29.869545	-93.957344	-3.9	7.8		
	1256	M	668	12:56:15	13:08:03	Beaumont, TX	Through Exxon on Gulf States Rd	30.060133	-94.078575	-6.7	9.9		
	1353	M	363	13:53:15	13:59:38	Beaumont, TX	Along N Twin City Hwy past multiple terminals and Dow	30.031261	-94.060486	-4.6	9.3		
	1408	M	213	14:08:41	14:12:25	Beaumont, TX	Along US 69 inland from terminals & Dow	30.005606	-94.042892	-3.2	9.4		
									Daily Max		**11.0**		

										H_2S State Std = 80 ppb			
										Instantaneous Data		30 min Rolling Avg	
Date	Code/ Survey	Stationary /Mobile	# of Samples	Time-Start	Time-End	City/Area	Location Specifics	Start Latitude	Start Longitude	Min (ppb)	Max (ppb)	Min (ppb)	Max (ppb)
2-Sep-20													
	1547	M	135	15:47:28	15:49:51	Port Neches, TX	N of Total/BASF, S of Veterans Memorial Bridge	29.968895	-93.874954	-3.4	7.1		
	1552	M	147	15:52:34	15:55:09	Port Arthur, TX	Along Atlantic R on S fenceline of BASF/Total	29.952375	-93.890816	-6.6	8.6		
	1559	M	626	15:59:30	16:10:33	Port Neches, TX	Along 366 N of Huntsman to TPC	29.967396	-93.925507	-6.8	9.6		
									Daily Max		**9.6**		
3-Sep-20													
	1111	M	68	11:11:10	11:16:45	Beaumont, TX	Neighborhood W of Exxon	30.063145	-94.087936	-3.5	7.6		
	1119	M	91	11:19:15	11:26:45	Beaumont, TX	Neighborhood W of Exxon	30.071178	-94.088165	-4.99	9.45		
	1127	M	80	11:27:35	11:34:10	Beaumont, TX	Gulf States Rd through Exxon	30.059931	-94.07959	-7.35	9.15		
	1447	M	50	14:47:50	14:51:55	Port Arthur, TX	Along Levee Rd by S Motiva & N Valero fencelines	29.873856	-93.973709	-5.87	8.16		
	1454	M	74	14:54:40	15:00:45	Port Arthur, TX	SH 87 through Valero to W of Oxbow	29.861647	-93.956329	-2.58	7.38		
									Daily Max		**9.45**		
10-Sep-20													
	0919	M	261	9:19:22	9:24:00	Port Arthur, TX	Along 82 b/w Motiva & Valero, thru Valero on 87	29.878405	-93.98024	0.85	14.35		
	0925	M	161	9:25:50	9:28:40	Port Arthur, TX	Along 87 past Chevron Phillips and Oxbow	29.846106	-93.972008	0.96	9.84		
	0948	M	340	9:48:20	9:54:21	Port Arthur, TX	Along Atlantic R on S fenceline of BASF/Total	29.951351	-93.889236	-4.39	12.17		
	1001	M	280	10:01:27	10:06:24	Port Neches, TX	S of TPC to W of Lion Elastomers	29.974754	-93.946777	-2.42	9.72		
	1012	M	263	10:12:28	10:17:07	Port Neches, TX	S past Huntsman along Hwy 136	29.975574	-93.955086	-2.28	11.21		
	1034	M	318	10:34:10	10:39:47	Port Arthur, TX	Along W and S fenceline of Motiva	29.902798	-93.970169	-2.66	11.05		
	1329	M	736	13:29:51	13:42:52	Beaumont, TX	Neighborhood W of Exxon	30.061005	-94.079742	-5.12	11.99		
	1448	M	340	14:48:00	14:54:00	Orange, TX	Along DuPont Dr on N fenceline of Dow/DuPont	30.050207	-93.780998	-3.64	9.27		

Picarro_SIFT Van

										H_2S State Std = 80 ppb				
										Instantaneous Data		30 min Rolling Avg		
Date	Code/ Survey	Stationary /Mobile	# of Samples	Time-Start	Time-End	City/Area	Location Specifics	Latitude	Longitude	Min (ppb)	Max (ppb)	Avg (ppb)	Min (ppb)	Max (ppb)
10-Sep-20														
	A	S	3093	9:51:54	10:51:54	Port Neches, TX	SW of Indorama on Cambridge Circle	29.956653	-93.953927	-1.31	19.53	11.01	3.13	15.18
	C	S	3137	11:50:28	12:50:28	Port Arthur, TX	W of Lion Elastomers at Hebert Woods Dr.	29.985024	-93.956432	1.52	12.69	7.45	6.86	8.06
	D	S	3141	13:51:06	14:51:06	Port Arthur, TX	W of Motiva in El Vista Neighborhood	29.893255	-93.984812	-2.71	9.12	2.8	2.18	3.41
	E	S	3150	15:17:12	16:17:12	Port Arthur, TX	W of Chevron/Valero on TX Hwy 87	29.847993	-93.972459	-4.52	7.26	1.54	1.45	1.63
	B(111128)	M	1231	11:11:28	11:33:28	Port Neches, TX	Neighborhood W of Indorama, Huntsman, RB Fuels	29.954644	-93.954305	5.67	13.95	---	---	---
								10-Sep-20	**Daily Max**		**19.53**			**15.18**
16-Sep-20														
	A	S	288	10:05:32	11:10:19	Orange, TX	W of Chevron Phillips & SW of Lion Elastomers	30.045418	-93.790376	-5.00	6.00	-0.56	-0.85	-0.35
	B	M	389	12:28:00	13:00:20	Orange, TX	Along DuPont Dr on N fenceline of Dow/DuPont	30.045418	-93.790376	-4.82	4.09	---	---	---
	C	S	3111	15:03:08	16:02:43	Port Arthur, TX	NW of Total, close to fenceline	29.95096	-93.896088	-4.43	4.79	-0.29	-0.31	0.220
									Daily Max		**6.00**			**0.22**

Picarro - Hydrogen Sulfide Monitoring Summary, ITC Fire

								H_2S State Std = 80 ppb 30 min Rolling Avg	
Date	**Sample Period**	**Stationary /Mobile**	**# of samples**	**Time-Start**	**Time-End**	**City/Area**	**Location Specifics**	**Min (ppb)**	**Max (ppb)**
18-Mar-19									
	1	S	13050	19:10	23:55	Houston, TX	Richmond Avenue and Sage Road	2.921	3.386
								Daily Max	**3.386**
19-Mar-19									
	1 - 3	S	48375	0:00	18:05	Houston, TX	Richmond Avenue and Sage Road	2.89	4.337
	3	S	10125	20:05	23:55	Houston, TX	7728 Lockwood Drive	3.03	3.56
								Daily Max	**4.337**
20-Mar-19									
	3 & 4	S	26325	0:00	9:45	Houston, TX	7728 Lockwood Drive	2.817	4.005
	4	S	9900	11:05	14:40	Deer Park, TX	801 East P Street	3.242	3.449
	4	S	2925	15:30	16:30	Houston, TX	14659 East Freeway	3.197	3.245
	4 & 5	S	18225	16:50	0:15	Houston, TX	15631 Jacintoport Boulevard	2.557	3.597
								Daily Max	**4.005**
21-Mar-19									
	5	S	6750	0:40	3:05	Baytown, TX	891 Independence Parkway North at Lynchburg Ferry	2.382	3.108
	5 & 6	S	19800	3:45	11:00	La Porte, TX	9705 Spencer Highway	2.582	3.321
	6 & 7	S	20475	11:50	20:45	Houston, TX	15631 Jacintoport Boulevard	2.342	3.217
	7	S	7425	21:15	23:55	Baytown, TX	200 Brownwood Drive	2.131	2.484
								Daily Max	**3.321**
22-Mar-19									
	7 & 8	S	38025	0:00	14:05	Baytown, TX	200 Brownwood Drive	1.541	3.267
	8	S	8100	14:20	17:15	Houston, TX	15631 Jacintoport Boulevard	2.08	2.317
								Daily Max	**3.267**
23-Mar-19									
	9	S	6075	0:00	2:15	Baytown, TX	891 Independence Parkway North at Lynchburg Ferry	1.530	2.000
								Daily Max	**2.000**

SIFT-MS Monitoring Summary, Hurricane Delta

Monitoring Survey Details

Date	Survey	Stationary/ Mobile	Time-Start	Time-End	# Samples	City/Area	Location Specifics	Latitude	Longitude
10-Oct-20									
	A	S	16:44	17:44	784	Port Neches, TX	W of Indorama and RB Fuels Biodiesel.	29.960165	-93.9448294
	B	M	17:20	17:42	265	Port Neches, TX	E of Lion Elastomer plant.	29.9752287	-93.9448294
11-Oct-20									
	A	M	8:52	9:11	265	Port Arthur, TX	NE of Motiva, Memorial Pkwy @ SH87	29.9016216	-93.9304843
	B	M	10:05	10:23	218	Port Arthur, TX	E of BASF/Total	29.9574025	-93.8704843
	C	M	11:56	12:20	320	Beaumont, TX	W of Exxon	NP	NP
	D	M	13:43	14:20	498	Beaumont, TX	NE of Exxon (Rose City)	30.0910064	-94.0722273
12-Oct-20									
	A	M	10:25	10:45	270	Orange, TX	Adjacent to several plants (DOW, Chevron Phillips, Lion Elastomers)	30.0509486	-93.7821477
	B	M	11:28	11:43	220	Orange, TX	Neighborhood around West Orange-Stark High School NE of Chem 32 plant.	30.0772403	-93.7649806
	C	M	12:27	12:46	252	Orange, TX	Neighborhood W of Degussa Engineered Carbons LP plant.	30.1526176	-93.7387744
	D	M	13:49	14:10	265	Orange, TX	Neighborhood NW of International Paper plant	30.2351251	-93.7684862

Monitoring Survey Data Summary

			AMCV (ppb)	230	27000	180	5400	1200	1700	SA	SA	4000	33000	1000	92000
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**1,3-Butadiene**	**1-Butene**	**Benzene**	**n-Hexane**	**Ethane + Ethylene**	**Xylene + Ethylbenzene**	**Propylene**	**Propane**	**Toluene**	**Isobutane**	**Cyclohexane**	**n-Butane**
10-Oct-20															
	A	784	MIN	0.00	0.00	0.00	0.00	0.85	0.00	0.30	2.87	0.00	0.92	0.22	6.83
			MAX	0.38	11.06	2.67	13.83	283.05	2.60	19.41	32.59	3.30	11.28	6.95	70.75
			AVG	0.03	1.05	0.67	4.98	15.19	0.51	2.26	8.54	0.63	4.65	2.21	39.41
	B	265	MIN	0.00	0.00	0.00	0.00	1.36	0.06	0.64	4.89	0.00	2.21	0.22	18.62
			MAX	15.60	33.15	1.59	11.02	14.70	1.43	5.01	13.73	2.32	11.03	4.03	63.53
			Daily Max	**15.60**	**33.15**	**2.67**	**13.83**	**283.05**	**2.60**	**19.41**	**32.59**	**3.30**	**11.28**	**6.95**	**70.75**
11-Oct-20															
	A	265	MIN	0.00	0.00	0.22	0.00	1.05	0.00	0.54	5.03	0.09	3.43	0.76	13.47
			MAX	0.72	10.18	2.45	12.16	62.00	4.06	11.76	19.14	8.71	10.68	10.28	55.39
	B	218	MIN	0.00	0.00	0.21	0.00	0.71	0.05	0.56	4.27	0.09	3.43	0.26	19.32
			MAX	2.23	6.97	2.43	10.58	28.94	0.88	14.04	33.77	1.35	16.31	7.39	58.22
	C	320	MIN	0.00	0.00	0.10	0.00	0.74	0.00	0.28	4.40	0.00	2.93	0.78	21.38
			MAX	0.75	4.02	1.87	11.85	12.52	1.89	5.52	13.62	3.30	7.92	5.58	58.02
	D	498	MIN	0.00	0.00	0.00	0.00	0.36	0.00	0.00	4.09	0.00	2.61	0.00	16.42
			MAX	0.30	4.44	1.59	10.83	7.63	1.64	7.04	12.65	1.36	32.19	7.75	60.41
			Daily Max	**2.23**	**10.18**	**2.45**	**12.16**	**62.00**	**4.06**	**14.04**	**33.77**	**8.71**	**32.19**	**10.28**	**60.41**
12-Oct-20															
	A	270	MIN	0.00	0.00	0.87	0.85	0.72	0.06	0.28	4.24	0.18	2.88	0.27	20.17
			MAX	6.30	5.59	23.19	24.89	32.84	1.20	5.36	184.47	2.50	7.37	7.89	74.25
	B	220	MIN	0.00	0.00	0.00	0.00	0.67	0.00	0.26	4.83	0.08	2.26	0.48	16.47
			MAX	0.23	2.68	3.86	9.30	9.15	0.84	4.23	42.40	1.41	6.89	4.77	67.51
	C	252	MIN	0.00	0.00	0.10	0.00	0.33	0.00	0.26	4.17	0.00	2.67	0.00	17.41
			MAX	0.23	3.45	1.74	9.11	7.55	0.88	4.96	10.88	1.26	16.76	4.47	51.50
	D	265	MIN	0.00	0.00	0.10	0.00	0.32	0.00	0.26	4.87	0.00	2.62	0.23	18.21
			MAX	0.31	3.47	2.34	12.71	9.79	1.15	5.76	13.22	1.65	7.00	4.23	58.05
			Daily Max	**6.30**	**5.59**	**23.19**	**24.89**	**32.84**	**1.20**	**5.76**	**184.47**	**2.50**	**16.76**	**7.89**	**74.25**

			AMCV (ppb)	26	27775	25000	4100
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**Styrene**	**C3 - C4 Saturated**	**Acetylene**	**n-Octane**
10-Oct-20							
	A	784	MIN	0.00	11.49	0.00	0.39
			MAX	2.67	130.45	5.92	6.25
			AVG	0.56	34.20	0.25	2.05
	B	265	MIN	0.18	19.60	0.00	0.63
			MAX	6.44	54.97	2.10	4.05
			Daily Max	**6.44**	**130.45**	**5.92**	**6.25**
11-Oct-20							
	A	265	MIN	0.08	20.12	0.00	0.76
			MAX	0.76	76.63	2.30	10.40
	B	218	MIN	0.10	17.08	0.00	0.30
			MAX	0.78	135.19	1.75	5.26
	C	320	MIN	0.00	17.61	0.00	0.78
			MAX	0.88	54.52	2.96	6.54
	D	498	MIN	0.00	16.38	0.00	0.16
			MAX	0.90	50.65	1.21	5.01
			Daily Max	**0.90**	**135.19**	**2.96**	**10.40**
12-Oct-20							
	A	270	MIN	0.09	16.98	0.00	0.91
			MAX	2.73	738.48	1.79	8.76
	B	220	MIN	0.00	19.32	0.00	0.70
			MAX	0.90	169.74	1.11	3.32
	C	252	MIN	0.00	16.69	0.00	0.56
			MAX	0.80	43.56	1.09	3.61
	D	265	MIN	0.00	19.48	0.00	0.41
			MAX	0.74	52.91	1.64	4.37
			Daily Max	**2.73**	**738.48**	**1.79**	**8.76**

SIFT-MS Monitoring Summary, Hurricane Laura

Monitoring Survey Details

Date	Survey	Stationary/ Mobile	Time-Start	Time-End	# Samples	City/Area	Location Specifics	Latitude	Longitude
10-Sep-20									
	A	S	9:51:54	10:51:54	582	Port Neches, TX	SW of Indorama on Cambridge Circle and Saba Ln.	29.956653	-93.953927
	B	M	11:11:28	11:33:28	231	Port Neches, TX	Neighborhood N of Twin City Hwy and W of the canal	29.954644	-93.954305
	C	S	11:50:28	11:33:28	585	Port Arthur, TX	W of Lion Elastomers at the intersection of Hebert Woods Dr. and Woodland Dr.	29.985024	-93.956432
	D	S	13:51:06	14:51:06	586	Port Arthur, TX	W of Motiva in El Vista Neighborhood at the SE end of Minnie St.	29.893255	-93.984812
	E	S	15:17:12	16:17:12	587	Port Arthur, TX	W of Chevron/Valero on TX Hwy 87 ~ 500 ft N of Gulf Copper South Yard	29.847993	-93.972459
16-Sep-20									
	A	S	10:08:04	11:08:04	581	Orange, TX	W of Chevron Phillips & SW of Lion Elastomers	30.045418	-93.790376
	B	M	12:27:59	13:00:44	319	Orange, TX	Along DuPont Dr on N fenceline of Dow/DuPont	30.045418	-93.790376
	C	S	15:03:08	16:03:08	581	Port Arthur, TX	NW of Total, close to fenceline	29.95096	-93.896088

Monitoring Survey Data Summary

			AMCV (ppb)	33000	4000	92000	1000	1700	5400	26	1200	230	180	25000	27000
Date	**Survey**	**# Samples**	**Min/Max/ Avg (ppb)**	**Isobutane**	**Toluene**	**n-Butane**	**Cyclohexane**	**Xylene + Ethylbenzene**	**n-Hexane**	**Styrene**	**Ethane + Ethylene**	**1,3-Butadiene**	**Benzene**	**Acetylene**	**1-Butene**
10-Sep-20															
	A	582	MAX	16.79	3.67	140.82	12.48	4.54	26.20	2.59	23.89	0.56	3.09	4.85	6.49
			MIN	2.28	0.00	4.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			AVG	5.66	0.84	35.13	2.76	0.35	6.44	0.28	11.15	0.06	1.20	0.28	0.13
	B	231	MAX	34.89	5.76	91.90	20.71	4.92	24.15	0.94	12.28	0.68	4.00	5.67	5.20
			MIN	5.05	0.48	35.68	1.77	0.18	0.00	0.08	1.25	0.00	0.00	0.00	0.00
	C	585	MAX	35.49	7.53	129.75	44.21	12.86	33.65	1.81	63.16	2.36	6.88	13.83	9.31
			MIN	2.37	0.30	25.35	1.08	0.18	0.00	0.00	0.39	0.00	0.00	0.00	0.00
			AVG	6.70	1.42	51.46	5.05	1.03	7.82	0.40	4.09	0.24	0.98	0.51	0.20
	D	586	MAX	9.56	2.25	84.26	8.30	1.54	19.09	1.04	8.09	0.66	2.60	3.28	2.74
			MIN	2.34	0.54	17.72	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			AVG	5.30	1.23	46.39	3.38	0.65	6.02	0.33	2.62	0.04	0.81	0.21	0.00
	E	587	MAX	14.76	2.93	81.49	9.09	1.92	18.93	1.01	7.29	0.39	7.40	2.43	3.36
			MIN	2.90	0.39	19.75	0.00	0.28	0.00	0.00	0.00	0.00	0.27	0.00	0.00
			AVG	5.89	1.28	47.03	3.71	0.81	6.56	0.33	2.18	0.03	1.50	0.21	0.04
			Daily Max	**35.49**	**7.53**	**129.75**	**44.21**	**12.86**	**33.65**	**1.81**	**63.16**	**2.36**	**6.88**	**13.83**	**9.31**
16-Sep-20															
	A	581	MAX	46.80	2.31	244.32	101.36	1.90	224.02	1.14	71.37	250.27	2.78	7.24	42.55
			MIN	1.95	0.65	26.36	0.89	0.00	0.00	0.08	0.37	0.00	0.00	0.00	0.00
			AVG	10.78	1.40	59.53	9.20	0.65	19.56	0.53	14.17	11.41	0.98	0.94	0.45
	B	319	MAX	7.45	2.20	70.33	7.08	1.03	18.11	0.94	7.23	0.43	2.55	2.12	2.68
			MIN	1.90	0.00	20.93	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	581	MAX	10.90	3.93	68.11	16.22	2.97	18.06	1.12	6.57	0.34	2.93	2.79	3.16
			MIN	1.70	0.55	17.12	0.40	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
			AVG	4.94	1.34	39.61	4.12	0.78	6.51	0.37	2.32	0.03	0.87	0.20	0.00
			Daily Max	**46.80**	**3.93**	**244.32**	**101.36**	**2.97**	**224.02**	**1.14**	**71.37**	**250.27**	**2.93**	**7.24**	**42.55**

			AMCV (ppb)	4100	SA	27775
Date	**Survey**	**# Samples**	**Min/Max/ Avg (ppb)**	**n-Octane**	**Propylene**	**C3 - C4 Saturated**
10-Sep-20						
	A	582	MAX	12.15	9.88	144.42
			MIN	0.00	0.34	6.91
			AVG	2.88	3.07	37.09
	B	231	MAX	23.92	7.44	95.40
			MIN	3.02	2.07	42.08
	C	585	MAX	48.69	6.47	124.66
			MIN	2.24	1.38	33.73
			AVG	6.04	3.25	49.69
	D	586	MAX	9.75	6.42	65.97
			MIN	0.63	1.35	30.78
			AVG	3.99	3.16	44.35
	E	587	MAX	10.39	19.92	637.09
			MIN	1.28	0.00	34.69
			AVG	4.57	5.41	81.28
			Daily Max	**48.69**	**19.92**	**637.09**
16-Sep-20						
	A	581	MAX	14.60	9.65	391.37
			MIN	2.41	1.88	35.78
			AVG	7.35	4.53	92.05
	B	319	MAX	7.97	5.73	53.32
			MIN	1.38	1.35	26.53
	C	581	MAX	13.63	10.83	77.17
			MIN	1.34	1.20	29.86
			AVG	4.76	4.48	43.56
			Daily Max	**14.60**	**10.83**	**391.37**

SIFT-MS Monitoring Summary, Winter Storm Uri, Region 10 (Beaumont)

Monitoring Survey Details

Date	Survey	Stationary/ Mobile	Time-Start	Time-End	# Samples	City/Area	Location Specifics	Latitude	Longitude
24-Feb-21									
	D	S	9:37	9:59	220	Beaumont, TX	South of Vulcan Materials	30.071939	-94.086508
	E	M	10:30	11:03	259	Port Arthur, TX	Survey in neighborhood NW of Motiva	29.90118 29.89804	-93.971884 -93.98564
	F	M	12:11	12:49	382	Port Arthur, TX	Survey from E to N of Motiva	29.872976 29.906848	-93.957259 -93.939004
	G	S	13:24	13:41	179	Port Neches, TX	N of Lion Elastomers	29.992247	-93.947688
26-Feb-21									
	R	M	13:05	13:16	134	Port Neches, TX	Survey in neighborhood W of Lion Elastomers & TPC	29.987453 29.992096	-93.956704 -93.94762
2-Mar-21									
	S	M	9:05	9:30	258	Beaumont, TX	Survey in neighborhood SW of Exxon	30.038756 30.048622	-94.085149 -94.083222
	T	M	10:18	10:47	320	Port Arthur, TX	Survey in neighborhood E of Valero	29.859724 29.872082	-93.949629 -93.954193
	U	M	11:51	12:06	182	Groves, TX	Survey in neighborhood S of BASF/Total	29.944868 29.944868	-93.89375 -93.89375
	V	M	13:12	13:34	245	Port Neches, TX	Survey in neighborhood W of Huntsman & TPC	29.968181 29.981142	-93.957913 -93.955371
	W	S	14:00	14:15	168	Groves, TX	SW of RB Biofuels	29.953233 29.953233	-93.926154 -93.926154
	X	M	15:12	15:31	215	Port Arthur, TX	Survey in neighborhood NW of Motiva	29.901327 29.898227	-93.971922 -93.976038
3-Mar-21									
	Y	M	9:20	9:47	300	Beaumont, TX	Survey in neighborhood S and W of Exxon	30.048666 30.05589	-94.083401 -94.085929
	Z	M	10:18	10:43	278	Port Neches, TX	Survey in neighborhood W of Huntsman	29.97381 29.973654	-93.954544 -93.954446
	AA	M	11:01	11:43	465	Groves, TX	Survey in neighborhood SW of RB Biofuels	29.95333 29.95333	-93.926522 -93.926522
	AB	S	12:53	13:15	257	Port Arthur, TX	W of Total	29.965211 29.965211	-93.901372 -93.901372
	AC	M	13:42	13:53	132	Port Arthur, TX	Survey in neighborhood NW of Motiva	29.896392 29.891862	-93.976784 -93.990355

Date	Survey	Stationary/ Mobile	Time-Start	Time-End	# Samples	City/Area	Location Specifics	Latitude	Longitude
9-Mar-21									
	AI	M	10:52	10:57	51	Port Arthur, TX	Survey in neighborhood NW of Motiva	29.901283	-93.97185
	AJ	M	11:15	11:30	162	Port Arthur, TX	Survey in neighborhood W of Motiva	29.8969022	-93.9862977
	AK	M	11:46	12:00	150	Port Arthur, TX	Survey in neighborhood E of Motiva	29.8695894 29.8901645	-93.9558369 -93.9372455
	AL	M	12:16	12:39:00	236	Groves, TX	Survey in neighborhood S of BASF/Total	29.944556	-93.893513
	AM	M	13:07	13:20	130	Port Neches, TX	Survey in neighborhood W of Lion Elastomers & TPC	29.9922882	-93.9476383
	AN	M	13:32	13:48	176	Port Neches, TX	Survey in neighborhood W of Huntsman	29.9746135	-93.9541739
	AO	M	13:57	14:11	144	Groves, TX	Survey in neighborhood E of RB Biofuels	29.9585601	-93.9248345
10-Mar-21									
	AP	M	10:52	10:59	80	Port Arthur, TX	Survey in neighborhood NW of Motiva	29.901285	-93.9719536
	AQ	M	11:15	11:30	173	Port Arthur, TX	Survey in neighborhood W of Motiva	29.8969022	-93.9862977
	AR	M	11:34	11:46	117	Port Arthur, TX	Survey in neighborhood E of Motiva	29.8868237	-93.9444643
	AS	M	12:09	12:24	157	Groves, TX	Survey in neighborhood S of BASF/Total	29.944529	-93.8935503
	AT	M	12:48	13:01	155	Groves, TX	Survey in neighborhood E of RB Biofuels	29.9585046	-93.9249764
	AU	M	13:15	13:28	146	Port Neches, TX	Survey in neighborhood W of Lion Elastomers & TPC	29.9922215	-93.9476839
	AO	M	13:39	13:49	125	Port Neches, TX	Survey in neighborhood W of Huntsman	29.9746615	-93.9541491
11-Mar-21									
	AW	M	10:47	10:55	82	Port Arthur, TX	Survey in neighborhood NW of Motiva	29.90126	-93.9719603
	AX	M	11:04	11:19	174	Port Arthur, TX	Survey in neighborhood W of Motiva	29.8965122	-93.98629
	AY	M	11:35	11:46	137	Port Arthur, TX	Survey in neighborhood E of Motiva	29.8695289 29.890109	-93.9558131 -93.9372448
	AZ	M	12:04	12:20	188	Groves, TX	Survey in neighborhood S of BASF/Total	29.9444964	-93.8934674
	BA	M	12:47	13:02	173	Groves, TX	Survey in neighborhood E of RB Biofuels	29.958538	-93.9249707
	BB	M	13:15	13:28	163	Port Neches, TX	Survey in neighborhood W of Lion Elastomers & TPC	29.9922607	-93.9476622
	BC	M	13:40	13:59	218	Port Neches, TX	Survey in neighborhood W of Huntsman	29.9745839	-93.9541487

Monitoring Survey Data Summary

Date	Survey	# Samples	AMCV (ppb)	230	27000	180	1200	1700	SA	4000	33000	26	25000	SA	92000	27775
			Min/Max/Avg (ppb)	1,3-Butadiene	1-Butene	Benzene	Ethane + Ethylene	Xylene + Ethylbenzene	Propylene	Toluene	Isobutane	Styrene	Acetylene	Propane	n-Butane	C3 - C4 Saturated
24-Feb-21																
	D	220	**MAX**	0.52	2.67	1.87	295.48	2.43	98.12	3.41	17.35	1.22	3.49	26.29	17.69	52.41
			MIN	0.00	0.00	0.00	59.29	0.26	0.00	0.33	5.04	0.00	0.00	0.00	5.14	15.22
			AVG	0.05	0.51	0.51	166.40	1.22	20.35	1.60	8.16	0.47	0.17	2.75	8.32	24.64
	E	259	**MAX**	1.29	14.74	2.58	328.40	13.69	92.15	5.11	21.22	1.07	3.69	25.07	21.64	64.11
			MIN	0.00	0.00	0.00	52.56	0.26	0.00	0.64	3.71	0.00	0.00	0.00	3.79	11.22
	F	382	**MAX**	1.13	5.32	3.24	378.08	5.31	106.51	4.39	16.00	1.59	3.05	30.20	16.32	48.35
			MIN	0.00	0.00	0.00	49.45	0.13	0.00	0.17	3.61	0.00	0.00	0.00	3.68	10.90
	G	179	**MAX**	0.67	2.08	1.22	313.17	2.48	67.72	2.22	11.06	1.17	2.48	17.86	11.28	33.43
			MIN	0.00	0.00	0.00	33.23	0.00	0.00	0.16	3.32	0.00	0.00	0.00	3.38	10.03
			AVG	0.06	0.55	0.43	172.13	1.02	16.41	1.01	6.62	0.35	0.14	2.60	6.75	19.99
			Daily Max	**1.29**	**14.74**	**3.24**	**378.08**	**13.69**	**106.51**	**5.11**	**21.22**	**1.59**	**3.69**	**30.20**	**21.64**	**64.11**
26-Feb-21																
	R	134	**MAX**	1.07	2.29	1.27	319.32	2.31	63.61	1.86	11.90	1.26	1.31	21.63	12.13	35.94
			MIN	0.00	0.00	0.00	65.21	0.12	0.00	0.08	2.58	0.00	0.00	0.00	2.63	7.80
			Daily Max	**1.07**	**2.29**	**1.27**	**319.32**	**2.31**	**63.61**	**1.86**	**11.90**	**1.26**	**1.31**	**21.63**	**12.13**	**35.94**
2-Mar-21																
	S	258	**MAX**	0.65	2.27	1.62	236.71	45.93	67.42	5.29	10.45	15.08	2.97	24.47	10.65	31.56
			MIN	0.00	0.00	0.00	9.74	0.00	0.00	0.12	3.55	0.06	0.00	0.00	3.62	10.72
	T	320	**MAX**	2.50	2.59	1.84	228.03	1.84	77.01	1.28	14.12	0.92	4.35	30.38	14.39	42.65
			MIN	0.00	0.00	0.00	33.99	0.00	0.00	0.13	4.63	0.00	0.00	0.00	4.72	13.99
	U	182	**MAX**	0.44	2.61	1.52	201.14	1.39	112.49	1.75	15.45	0.86	3.47	27.72	15.75	46.68
			MIN	0.00	0.00	0.00	27.55	0.00	0.00	0.18	3.79	0.00	0.00	0.00	3.86	11.44
	V	245	**MAX**	1.69	1.83	1.25	184.56	1.75	56.59	1.12	89.77	0.71	2.42	25.30	91.53	271.20
			MIN	0.00	0.00	0.00	27.81	0.00	0.00	0.16	2.87	0.00	0.00	0.00	2.92	8.66
	W	168	**MAX**	0.79	1.69	1.70	222.69	2.47	84.29	1.22	15.42	0.83	3.42	25.03	15.72	46.59
			MIN	0.00	0.00	0.00	35.49	0.00	0.00	0.00	2.94	0.00	0.00	0.00	3.00	8.89
			AVG	0.06	0.34	0.34	102.59	0.47	13.85	0.56	5.28	0.17	0.27	4.84	5.38	15.95
	X	215	**MAX**	1.25	1.64	1.08	202.85	1.31	57.83	1.36	10.21	0.71	3.62	19.29	10.42	30.86
			MIN	0.00	0.00	0.00	18.47	0.00	0.00	0.07	2.35	0.00	0.00	0.00	2.39	7.09
			Daily Max	**2.50**	**2.61**	**1.84**	**236.71**	**45.93**	**112.49**	**5.29**	**89.77**	**15.08**	**4.35**	**30.38**	**91.53**	**271.20**

			AMCV (ppb)	230	27000	180	1200	1700	SA	4000	33000	26	25000	SA	92000	27775
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**1,3-Butadiene**	**1-Butene**	**Benzene**	**Ethane + Ethylene**	**Xylene + Ethylbenzene**	**Propylene**	**Toluene**	**Isobutane**	**Styrene**	**Acetylene**	**Propane**	**n-Butane**	**C3 - C4 Saturated**
3-Mar-21																
	Y	300	**MAX**	1.17	2.45	2.21	241.37	2.03	92.40	2.72	15.95	0.86	3.73	36.93	16.26	48.19
			MIN	0.00	0.00	0.00	10.42	0.00	0.00	0.00	4.75	0.00	0.00	0.00	4.84	14.35
	Z	278	**MAX**	11.36	2.24	1.58	191.57	1.61	91.25	1.04	8.71	1.28	5.05	13.74	8.88	26.32
			MIN	0.00	0.00	0.00	10.33	0.00	0.00	0.00	3.62	0.00	0.00	2.70	3.69	10.94
	AA	465	**MAX**	0.70	1.62	1.71	240.53	12.28	72.77	1.99	90.93	0.72	3.96	25.19	92.71	274.72
			MIN	0.00	0.00	0.00	9.92	0.00	0.00	0.00	3.29	0.00	0.00	0.00	3.35	9.94
	AB	257	**MAX**	1.15	2.69	2.06	221.38	2.21	97.78	2.53	25.36	0.64	5.52	29.45	25.86	76.62
			MIN	0.00	0.00	0.00	20.05	0.00	0.00	0.12	3.44	0.00	0.00	0.00	3.51	10.39
			AVG	0.17	0.71	0.58	94.90	0.88	23.69	0.73	10.17	0.15	0.46	9.44	10.37	30.73
	AC	132	**MAX**	0.85	2.05	1.36	200.82	1.93	56.50	1.29	15.26	0.72	3.66	15.53	15.56	46.11
			MIN	0.00	0.00	0.00	21.85	0.12	0.00	0.00	5.91	0.00	0.00	6.01	6.03	17.86
			Daily Max	**11.36**	**2.69**	**2.21**	**241.37**	**12.28**	**97.78**	**2.72**	**90.93**	**1.28**	**5.52**	**36.93**	**92.71**	**274.72**
9-Mar-21																
	AI	51	**MAX**	0.65	1.89	2.34	214.33	2.68	74.11	2.13	18.39	1.62	1.90	23.89	18.75	55.57
			MIN	0.00	0.00	0.00	66.22	0.66	0.00	0.32	7.48	0.00	0.00	0.00	7.63	22.60
	AJ	162	**MAX**	0.96	3.01	2.09	277.44	3.90	91.63	2.93	25.22	1.22	4.94	21.67	25.71	76.19
			MIN	0.00	0.00	0.00	45.74	0.37	0.00	0.15	5.53	0.00	0.00	0.00	5.64	16.70
	AK	150	**MAX**	1.54	2.96	1.49	274.17	2.58	73.06	2.41	19.04	1.09	7.15	24.89	19.42	57.53
			MIN	0.00	0.00	0.00	34.30	0.25	0.00	0.00	4.17	0.00	0.00	0.00	4.25	12.59
	AL	236	**MAX**	0.94	2.21	1.33	261.18	2.23	83.33	2.82	23.50	1.07	4.26	19.63	23.96	71.00
			MIN	0.00	0.00	0.00	38.65	0.22	0.00	0.14	4.72	0.00	0.00	0.00	4.81	14.26
	AM	130	**MAX**	59.24	3.52	1.69	266.87	2.67	67.79	1.52	13.09	4.91	3.06	53.63	13.35	39.56
			MIN	0.29	0.00	0.00	63.02	0.12	0.00	0.13	5.05	0.00	0.00	0.00	5.15	15.25
	AN	176	**MAX**	0.92	2.27	1.40	236.90	2.19	77.80	4.25	16.81	0.95	2.54	32.23	17.14	50.79
			MIN	0.00	0.00	0.00	30.10	0.12	0.00	0.00	4.79	0.00	0.00	0.00	4.88	14.46
	AO	144	**MAX**	1.10	1.64	1.50	235.67	1.75	60.71	1.49	9.34	0.81	3.79	22.80	9.53	28.22
			MIN	0.00	0.00	0.00	34.89	0.22	0.00	0.00	4.47	0.00	0.00	0.00	4.56	13.51
			Daily Max	**59.24**	**3.52**	**2.34**	**277.44**	**3.90**	**91.63**	**4.25**	**25.22**	**4.91**	**7.15**	**53.63**	**25.71**	**76.19**

			AMCV (ppb)	230	27000	180	1200	1700	SA	4000	33000	26	25000	SA	92000	27775
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**1,3-Butadiene**	**1-Butene**	**Benzene**	**Ethane + Ethylene**	**Xylene + Ethylbenzene**	**Propylene**	**Toluene**	**Isobutane**	**Styrene**	**Acetylene**	**Propane**	**n-Butane**	**C3 - C4 Saturated**
10-Mar-21																
	AP	80	**MAX**	2.07	4.08	3.50	329.50	1.75	80.25	1.84	11.46	0.97	2.38	11.65	11.68	34.61
			MIN	0.00	0.00	0.00	88.72	0.00	0.00	0.22	5.11	0.00	0.00	5.20	5.21	15.45
	AQ	173	**MAX**	0.96	3.01	2.09	277.44	3.90	91.63	2.93	25.22	1.22	4.94	21.67	25.71	76.19
			MIN	0.00	0.00	0.00	45.74	0.37	0.00	0.15	5.53	0.00	0.00	0.00	5.64	16.70
	AR	117	**MAX**	0.45	1.49	1.20	336.31	1.27	103.95	1.78	7.05	0.70	3.10	13.12	7.18	21.29
			MIN	0.00	0.00	0.00	78.54	0.00	0.00	0.00	2.60	0.00	0.00	0.00	2.65	7.87
	AS	157	**MAX**	0.38	1.94	1.47	321.28	2.11	62.17	3.58	8.37	0.73	2.21	19.43	8.54	25.30
			MIN	0.00	0.00	0.00	68.35	0.00	0.00	0.13	2.50	0.00	0.00	0.00	2.55	7.54
	AT	155	**MAX**	0.69	1.88	1.68	289.09	2.19	60.50	2.63	7.62	0.93	4.45	22.82	7.77	23.02
			MIN	0.00	0.00	0.00	72.95	0.00	0.00	0.00	1.80	0.00	0.00	0.00	1.84	5.45
	AU	146	**MAX**	8.37	1.97	1.32	309.19	1.65	73.31	1.29	10.97	13.41	2.30	24.93	11.19	33.16
			MIN	0.00	0.00	0.00	67.70	0.00	0.00	0.15	1.67	0.00	0.00	0.00	1.70	5.03
	AO	125	**MAX**	0.72	1.65	1.11	410.75	1.42	53.64	1.82	7.05	1.07	161.49	20.39	8.79	21.30
			MIN	0.00	0.00	0.00	67.03	0.00	0.00	0.00	2.50	0.00	17.45	0.00	3.16	7.56
			Daily Max	**8.37**	**4.08**	**3.50**	**410.75**	**3.90**	**103.95**	**3.58**	**25.22**	**13.41**	**161.49**	**24.93**	**25.71**	**76.19**
11-Mar-21																
	AW	82	**MAX**	29.29	10.95	3.96	310.48	2.23	98.25	1.95	28.23	0.66	1.51	28.72	28.78	85.29
			MIN	0.00	0.00	0.00	93.29	0.00	0.00	0.23	3.10	0.00	0.00	3.15	3.16	9.36
	AX	174	**MAX**	0.58	7.25	2.01	344.18	2.39	135.52	2.64	56.68	0.77	2.74	20.06	57.79	171.25
			MIN	0.00	0.00	0.00	67.38	0.11	0.00	0.13	2.84	0.00	0.00	0.00	2.89	8.58
	AY	137	**MAX**	0.50	3.34	1.13	291.15	1.44	50.51	1.67	7.68	0.70	2.58	20.52	7.83	23.19
			MIN	0.00	0.00	0.00	74.51	0.00	0.00	0.00	2.21	0.00	0.00	0.00	2.25	6.67
	AZ	188	**MAX**	0.77	1.75	1.29	333.67	1.47	49.49	2.13	13.94	1.10	2.38	16.60	14.21	42.10
			MIN	0.00	0.00	0.00	88.54	0.00	0.00	0.25	2.57	0.00	0.00	0.00	2.62	7.77
	BA	173	**MAX**	0.39	1.84	1.05	350.69	1.60	87.65	1.41	7.63	0.88	1.56	20.86	7.78	23.05
			MIN	0.00	0.00	0.00	62.30	0.00	0.00	0.15	2.12	0.00	0.00	0.00	2.16	6.41
	BB	163	**MAX**	35.18	3.07	1.52	360.33	1.89	64.78	1.24	7.43	8.75	4.29	20.56	7.57	22.43
			MIN	0.00	0.00	0.00	74.99	0.00	0.00	0.00	1.83	0.00	0.00	0.00	1.87	5.54
	BC	218	**MAX**	0.61	1.85	1.36	330.70	1.81	68.56	2.08	9.07	0.84	3.18	23.24	9.24	27.39
			MIN	0.00	0.00	0.00	54.48	0.00	0.00	0.00	0.98	0.00	0.00	0.00	1.00	2.96
			Daily Max	**35.18**	**10.95**	**3.96**	**360.33**	**2.39**	**135.52**	**2.64**	**56.68**	**8.75**	**4.29**	**28.72**	**57.79**	**171.25**

SIFT-MS Monitoring Summary, Winter Storm Uri, Region 14 (Corpus Christi)

Monitoring Survey Details

Date	Survey	Stationary/ Mobile	Time-Start	Time-End	# Samples	City/Area	Location Specifics	Latitude	Longitude
23-Feb-21									
	A	M	9:37	9:52	173	Corpus Christi, TX	Survey along Hwy 558 NE of Flint Hill Resources	27.851692	-97.556813
								27.847552	-97.539552
	B	M	9:55	11:11	980	Corpus Christi, TX	Survey along Hwy 558 NE N of length of ship channel	27.845968	-97.52767
								27.818936	-97.398984
	C	M	12:15	12:48	440	Corpus Christi, TX	Survey S of Citgo, Magellan, Valero fencelines	27.805871	-97.410559
								27.805549	-97.446759
	D	M	12:50	13:59	831	Corpus Christi, TX	Survey S of Valero to S of Flint Hills on Up River Rd	27.805549	-97.446759
								27.833265	-97.544401
	E	M	14:12	14:32	257	Corpus Christi, TX	Survey N to W of LyondellBassel	27.827457	-97.580653
								27.813988	-97.602153
	F	M	15:08	15:26	235	Corpus Christi, TX	Survey around BASF	27.573706	-97.822743
								27.560451	-97.829157
24-Feb-21									
	G	M	14:45	15:34	701	Portland, TX	Survey in area of Voestalpine plant	27.884424	-97.286459
								27.895078	-97.260103
	H	M	15:37	16:08	450	Ingleside, TX	Survey in area of Voestalpine, Chemours, and Oxychem	27.895078	-97.260103
								27.884427	-97.215269
	I	M	16:21	16:59	517	Ingleside, TX	Survey N of Flint Hills Ingleside	27.8814	-97.209724
								27.837915	-97.193868
25-Feb-21									
	J	M	9:28	10:31	896	Corpus Christi, TX	Survey along N side of ship channel	27.845965	-97.527753
								27.818919	-97.398783
	K	M	10:51	11:32	585	Corpus Christi, TX	Survey past refineries S of ship channel	27.809729	-97.453953
								27.832645	-97.542124
	L	M	12:32	12:54	305	Corpus Christi, TX	Survey N to W of LyondellBassel	27.827968	-97.580512
								27.806478	-97.603822
	M	M	13:06	13:24	248	Corpus Christi, TX	Past industrial area along Hwy 1694	27.80999	-97.619216
								27.841156	-97.615067
	N	M	13:38	14:46	977	Corpus Christi, TX	Survey along N side of ship channel	27.845965	-97.527753
								27.818919	-97.398783
	O	M	15:07	16:42	1373	Gregory, TX	Along industrial areas from Gregory to Ingleside	27.9145592	-97.2929042
						Ingleside, TX		27.83756	-97.215799

Date	Survey	Stationary/ Mobile	Time-Start	Time-End	# Samples	City/Area	Location Specifics	Latitude	Longitude
26-Feb-21									
	P	M	9:32	10:54	1161	Corpus Christi, TX	Survey along N side of ship channel	27.845907 27.818902	-97.527243 -97.398793
	Q	M	11:28	12:17	678	Corpus Christi, TX	Survey past refineries S of ship channel	27.809692 27.832594	-97.453984 -97.542276
	R	M	13:25	13:38	186	Corpus Christi, TX	Survey N to W of LyondellBassel	27.832253 27.809045	-97.598897 -97.603385
	S	M	13:55	15:15	1129	Corpus Christi, TX	Survey along N side of ship channel	27.845907 27.818902	-97.527243 -97.398793
	T	M	15:41	16:32	700	Portland, TX	Around industrial area in Portland	27.884858 27.898316	-97.2886616 -97.246061
27-Feb-21									
	U	M	9:22	10:58	1313	Corpus Christi, TX	Survey along N side of ship channel	27.850951 27.818902	-97.55778 -97.398793
	V	M	11:23	12:25	872	Corpus Christi, TX	Survey along N side of ship channel	27.818902 27.838367	-97.398793 -97.49759
	W	M	14:03	14:20	246	Ingleside on the Bay, TX Ingleside, TX	Ingleside on the Bay, TX	27.837383 27.825769	-97.218007 -97.218103
	X	M	14:51	16:02	992	Corpus Christi, TX	Survey along N side of ship channel	27.818902 27.841935	-97.398793 -97.508504
28-Feb-21									
	Y	M	9:24	11:01	1295	Corpus Christi, TX	Survey along N side of ship channel	27.852391 27.818902	-97.556355 -97.398793
	Z	M	11:32	12:21	692	Gregory, TX Portland, TX	E of Martin Marietta & Voestelpine	27.914009 27.884537	-97.293381 -97.293381
	AA	M	13:15	14:46	1263	Corpus Christi, TX	Survey along N side of ship channel	27.819118 27.845918	-97.397462 -97.525611
	AB	M	15:06	16:00	733	Corpus Christi, TX	Survey along N side of ship channel	27.845897 27.825744	-97.52719 -97.438817
1-Mar-21									
	AC	M	9:46	10:58	441	Corpus Christi, TX	Survey past refineries S of ship channel	27.801163 27.833086	-97.424964 -97.544134
	AD	M	11:24	12:24	842	Corpus Christi, TX	Survey through neighborhoods S of ship channel	27.82505 27.797019	-97.54638 -97.447086

Date	Survey	Stationary/ Mobile	Time-Start	Time-End	# Samples	City/Area	Location Specifics	Latitude	Longitude
2-Mar-21									
	AE	M	11:27	11:41	216	Port Comfort, TX	Hwy 35 S of Formosa Plastics	28.6769623	-96.552283
								28.6890577	-96.5275462
	AF	M	11:50	12:10	295	Port Comfort, TX	E and S of Alcoa	28.6760769	-96.5528197
								28.6468528	-96.5535003
	AG	M	13:37	13:50	180	Bloomington, TX	Hwy 1432 Past several terminals	28.7011205	-96.9482138
								28.6905706	-96.9648449
	AH	M	14:08	14:24	248	Bloomington, TX	SW of Dupont	28.6703634	-96.9354864
								28.6555753	-96.9591345
	AI	M	14:54	15:15	300	Long Mott, TX	S and E of Dow and Union Carbide	28.50855241	-96.779406
								28.4950873	-96.7545805
3-Mar-21									
	AJ	M	9:23	10:05	600	Corpus Christi, TX	Survey past refineries S of ship channel	27.8014321	-97.424311
								27.8097359	-97.4765322
	AK	M	10:17	10:55	548	Corpus Christi, TX	Survey past refineries S of ship channel	27.8056929	-97.4847428
								27.8327622	-97.5431392
	AL	M	10:59	12:04	941	Corpus Christi, TX	Survey past refineries S of ship channel	27.8327622	-97.5431392
								27.8038078	-97.445119
	AM	M	13:20	14:47	1255	Corpus Christi, TX	Survey along N side of ship channel	27.8524758	-97.5485184
								27.8190173	-97.4004956
	AN	M	15:01	15:16	213	Corpus Christi, TX	Survey past refineries S of ship channel	27.8030568	-97.5485184
								27.8045387	-97.4365589
	AO	M	15:23	15:34	171	Corpus Christi, TX	From S to N of Valero plant	27.8051508	-97.446124
								27.8176746	-97.4377498
4-Mar-21									
	AP	M	9:09	9:33	346	Corpus Christi, TX	Survey past refineries S of ship channel	27.80116311	-97.4248337
								27.8045761	-97.4723705
	AQ	M	9:39	10:10	454	Corpus Christi, TX	Survey past refineries S of ship channel	27.8057855	-97.4854077
								27.8327783	-97.5428965
	AR	M	10:13	11:16	922	Corpus Christi, TX	Survey past refineries S of ship channel	27.8327783	-97.5428965
								27.8041929	-97.4450243
	AS	M	12:12	13:26	1055	Corpus Christi, TX	Survey along N side of ship channel	27.853034	97.5495956
								27.8189085	-97.4004869
5-Mar-21									
	AT	M	9:29	9:57	396	Corpus Christi, TX	Survey past refineries S of ship channel	27.8016641	-97.4248591
								27.8046298	-97.4718709
	AU	M	10:11	10:49	559	Corpus Christi, TX	Survey past refineries S of ship channel	27.8057905	-97.4854171
								27.8326946	-97.5429256
	AV	M	10:53	11:56	914	Corpus Christi, TX	From N to S of Valero plant	27.8326946	-97.4529256
								27.8040541	-97.4450988
	AW	M	12:58	14:38	1418	Corpus Christi, TX	Survey along N side of ship channel	27.8528155	-97.5491996
								27.8189085	-97.4004869

Date	Survey	Stationary/ Mobile	Time-Start	Time-End	# Samples	City/Area	Location Specifics	Latitude	Longitude
6-Mar-21									
	AX	M	9:27	9:54	377	Corpus Christi, TX	Survey past refineries S of ship channel	27.802068 27.804621	-97.426322 -97.471944
	AY	M	10:06	11:10	901	Corpus Christi, TX	Survey past refineries S of ship channel	27.832863 27.804116	-97.543343 -97.444982
	AZ	M	11:11	11:28	171	Corpus Christi, TX	Survey past refineries S of ship channel	27.801797 27.819907	-97.424966 -97.435466
	BA	M	12:32	13:07	486	Corpus Christi, TX	Survey past refineries S of ship channel	27.801797 27.812504	-97.424966 -97.466738
	BB	M	13:21	13:24	35	Corpus Christi, TX	Survey through neighborhoods S of ship channel	27.782805	-97.470076
	BC	S	12:12	13:26	841	Corpus Christi, TX	Intersection 44 & 358 S and E of industry	27.780104	-97.471152
	BD	M	14:59	15:24	357	Portland, TX Corpus Christi, TX	Survey from N to S of Nueces Bay	27.901797 27.819907	-97.424966 -97.435466
	BE	M	15:25	15:38	137	Portland, TX Corpus Christi, TX	Survey from N to S of Nueces Bay	27.901797 27.819907	-97.424966 -97.435466
7-Mar-21									
	BF	M	9:11	9:34	301	Corpus Christi, TX	Survey in neighborhood S of Flint Hill Resources East	27.801962 27.801962	-97.423324 -97.423324
	BG	M	9:35	9:58	334	Corpus Christi, TX	Survey past refineries S of ship channel	27.801962 27.803374	-97.423324 -97.437593
	BH	M	10:01	10:26	371	Corpus Christi, TX	Survey from N to S of Valero plant	27.803374 27.820045	-97.437593 -97.435316
	BI	M	10:27	10:44	176	Corpus Christi, TX	Survey from S to N of Valero plant	27.820045 27.803715	-97.435316 -97.447028
	BJ	M	10:46	11:27	587	Corpus Christi, TX	Survey past refineries S of ship channel	27.803715 27.811518	-97.447028 -97.464996
	BK	M	12:42	14:42	1674	Corpus Christi, TX	Survey past refineries S of ship channel	27.801706 27.848371	-97.424869 -97.540571
	BL	M	14:56	15:33	517	Corpus Christi, TX	Survey from S to N of Citgo	27.804097 27.820045	-97.430856 -97.435316

Date	Survey	Stationary/ Mobile	Time-Start	Time-End	# Samples	City/Area	Location Specifics	Latitude	Longitude
8-Mar-21									
	BM	M	9:21	10:01	390	Corpus Christi, TX	Survey past refineries S of ship channel	27.801683	-97.424861
								27.819447	-97.436098
	BN	M	10:15	10:37	239	Corpus Christi, TX	Survey past refineries S of ship channel	27.804511	-97.454071
								27.811473	-97.464929
	BO	M	1:43	11:15	337	Corpus Christi, TX	Survey past refineries S of ship channel	27.811473	-97.464929
								27.825264	-97.520821
	BP	M	11:36	12:52	770	Corpus Christi, TX	Survey along N side of ship channel	27.845971	-97.527457
								27.818848	-97.397547
	BQ	M	14:15	15:17	649	Corpus Christi, TX	Survey past refineries S of ship channel	27.834344	-97.546668
								27.804497	-97.445548
	BR	M	15:22	15:57	352	Corpus Christi, TX	Survey past refineries S of ship channel	27.804097	-97.430856
								27.820045	-97.435316
9-Mar-21									
	BS	M	10:17	10:54	516	Robstown, TX	Survey near LyondellBasell	27.806506	-97.603792
						Corpus Christi, TX		27.845119	-97.586329
	BT	M	11:08	12:38	1291	Corpus Christi, TX	Survey along N side of ship channel	27.850837	-97.557999
								27.818996	-97.398946
	BU	M	14:50	16:13	1191	Ingleside, TX	Survey around Ingleside	27.880209	-97.209465
								27.880209	-97.209465
10-Mar-21									
	BV	M	10:11	10:48	544	Robstown, TX	Survey near LyondellBasell	27.806506	-97.603792
						Corpus Christi, TX		27.845119	-97.586329
	BW	M	11:10	12:51	1466	Corpus Christi, TX	Survey along N side of ship channel	27.850837	-97.557999
								27.818996	-97.398946
	BX	M	13:56	15:25	1301	Portland, TX	Survey from Martin Marietta past Oxychem	27.906371	-97.30005
						Ingleside, TX		27.891645	-97.233226
11-Mar-21									
	BY	M	10:07	10:49	591	Bishop, TX	Survey around BASF	27.571931	-97.816793
								27.567043	-97.821487
	BZ	M	11:28	12:00	456	Robstown, TX	Survey near LyondellBasell	27.806506	-97.603792
						Corpus Christi, TX		27.845119	-97.586329
	CA	M	13:05	13:44	550	Corpus Christi, TX	Survey past refineries S of ship channel	27.81011	-97.453798
								27.825018	-97.520029
	CB	M	14:03	14:59	788	Corpus Christi, TX	Survey along N side of ship channel	27.837855	-97.497532
								27.818996	-97.398946
	CC	M	15:35	16:07	431	Ingleside, TX	Survey from Ingleside to N of Flint Hills Ingleside	27.880209	-97.209465
								27.838413	-97.19307

Monitoring Survey Data Summary

			AMCV (ppb)	230	27000	180	5400	1200	1700	SA	4000	33000	1000	26	25000	4100
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**1,3-Butadiene**	**1-Butene**	**Benzene**	**n-Hexane**	**Ethane + Ethylene**	**Xylene + Ethylbenzene**	**Propylene**	**Toluene**	**Isobutane**	**Cyclohexane**	**Styrene**	**Acetylene**	**n-Octane**
23-Feb-21																
	A	173	**MAX**	0.30	3.18	1.98	12.11	15.67	1.59	5.84	1.47	7.59	3.91	1.03	1.80	3.89
			MIN	0.00	0.24	0.22	1.23	5.20	0.11	1.28	0.13	3.52	0.59	0.06	0.00	1.17
	B	980	**MAX**	0.39	22.77	4.77	18.37	215.01	3.05	49.18	3.90	64.42	17.00	0.97	3.27	11.88
			MIN	0.00	0.00	0.11	0.62	5.30	0.11	0.86	0.07	3.37	0.19	0.00	0.00	0.67
	C	440	**MAX**	0.73	140.49	6.21	17.88	634.16	5.16	147.01	5.22	69.46	16.35	0.64	8.74	13.44
			MIN	0.00	0.00	0.20	0.00	0.54	0.00	0.85	0.07	2.03	0.00	0.00	0.00	0.47
	D	831	**MAX**	0.91	79.48	7.59	33.13	49.71	1.55	57.85	13.29	224.26	8.36	0.64	1.77	7.65
			MIN	0.00	0.00	0.10	0.00	0.26	0.00	0.20	0.00	1.82	0.36	0.00	0.00	0.32
	E	257	**MAX**	0.37	2.07	2.31	8.76	26.93	0.48	4.67	1.41	4.75	2.96	0.50	1.28	2.49
			MIN	0.00	0.00	0.21	0.00	0.51	0.00	0.41	0.00	1.51	0.18	0.00	0.00	0.22
	F	235	**MAX**	0.25	1.88	1.75	7.27	4.91	0.38	3.58	0.79	4.62	2.86	0.57	0.44	2.95
			MIN	0.00	0.00	0.11	0.00	0.00	0.00	0.40	0.00	1.23	0.00	0.00	0.00	0.10
			Daily Max	**0.91**	**140.49**	**7.59**	**33.13**	**634.16**	**5.16**	**147.01**	**13.29**	**224.26**	**17.00**	**1.03**	**8.74**	**13.44**

			AMCV (ppb)	SA	92000	27775
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**Propane**	**n-Butane**	**C3 - C4 Saturated**
23-Feb-21						
	A	173	**MAX**	14.95	52.70	59.83
			MIN	9.29	22.29	37.20
	B	980	**MAX**	185.44	125.77	742.39
			MIN	9.58	16.85	38.35
	C	440	**MAX**	133.73	146.68	535.36
			MIN	5.21	14.55	20.85
	D	831	**MAX**	130.64	140.01	522.98
			MIN	3.81	9.08	15.27
	E	257	**MAX**	9.30	33.34	37.25
			MIN	3.39	8.31	13.56
	F	235	**MAX**	6.72	33.27	26.90
			MIN	3.56	9.35	14.25
			Daily Max	**185.44**	**146.68**	**742.39**

			AMCV (ppb)	230	27000	180	5400	1200	1700	SA	4000	33000	1000	26	25000	4100
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**1,3-Butadiene**	**1-Butene**	**Benzene**	**n-Hexane**	**Ethane + Ethylene**	**Xylene + Ethylbenzene**	**Propylene**	**Toluene**	**Isobutane**	**Cyclohexane**	**Styrene**	**Acetylene**	**n-Octane**
24-Feb-21																
	G	701	**MAX**	0.57	2.77	2.05	10.18	9.13	1.42	4.22	1.25	6.11	4.39	0.86	1.70	3.45
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	0.22	0.00	0.00	0.38
	H	450	**MAX**	0.29	2.21	2.06	8.31	33.42	6.32	3.85	1.45	5.11	3.50	0.91	1.29	3.01
			MIN	0.00	0.00	0.10	0.00	0.00	0.00	0.44	0.07	1.51	0.00	0.00	0.00	0.37
	I	517	**MAX**	0.85	3.64	1.97	9.24	11.68	8.57	6.30	11.03	15.10	13.43	0.88	2.48	13.38
			MIN	0.00	0.00	0.10	0.00	0.00	0.00	0.21	0.00	1.61	0.21	0.00	0.00	0.36
			Daily Max	**0.85**	**3.64**	**2.06**	**10.18**	**33.42**	**8.57**	**6.30**	**11.03**	**15.10**	**13.43**	**0.91**	**2.48**	**13.38**
25-Feb-21																
	J	896	**MAX**	0.94	48.49	7.57	38.78	314.04	2.28	91.48	4.35	166.55	22.47	1.22	5.09	18.25
			MIN	0.00	0.00	0.11	0.00	0.30	0.06	0.24	0.08	2.12	0.00	0.00	0.00	0.41
	K	585	**MAX**	0.52	8.24	3.56	18.17	42.01	3.21	14.50	4.35	17.35	14.77	1.05	2.48	11.83
			MIN	0.00	0.00	0.11	0.00	0.00	0.00	0.48	0.00	2.22	0.24	0.00	0.00	0.28
	L	305	**MAX**	5.45	5.38	2.42	9.78	31.40	0.63	7.62	1.05	5.80	3.63	0.95	2.00	3.08
			MIN	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	1.80	0.23	0.00	0.00	0.28
	M	248	**MAX**	1.08	5.40	2.22	8.30	18.60	0.58	6.95	1.37	9.93	3.79	0.78	2.42	4.17
			MIN	0.00	0.00	0.22	0.00	0.00	0.00	0.24	0.00	1.15	0.46	0.00	0.00	0.55
	N	977	**MAX**	0.30	59.59	10.27	39.90	360.03	11.98	107.82	9.49	591.74	22.11	0.85	3.50	22.12
			MIN	0.00	0.00	0.11	0.00	0.00	0.00	0.24	0.00	1.80	0.00	0.00	0.00	0.28
	O	1373	**MAX**	0.45	4.52	1.97	9.00	13.01	1.22	7.78	2.42	12.25	9.12	0.78	5.90	6.30
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.51	0.00	0.00	0.00	0.00
26-Feb-21																
	P	1161	**MAX**	0.38	45.09	17.53	46.62	347.09	3.11	100.88	2.88	202.56	24.79	1.01	3.40	22.22
			MIN	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	1.94	0.00	0.00	0.00	0.52
	Q	678	**MAX**	0.30	16.80	4.13	34.26	367.31	4.60	34.06	5.92	36.78	23.39	0.69	5.16	23.05
			MIN	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	1.97	0.22	0.00	0.00	0.26
	R	186	**MAX**	0.31	4.04	1.87	13.36	5.07	6.97	6.72	3.51	13.72	9.58	0.59	1.36	11.24
			MIN	0.00	0.00	0.11	0.00	0.00	0.00	0.22	0.00	1.55	0.00	0.00	0.00	0.39
	S	1129	**MAX**	0.32	72.71	14.85	47.09	528.69	7.57	142.33	3.92	234.62	36.67	0.77	3.46	31.51
			MIN	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	1.63	0.00	0.00	0.00	0.27
	T	700	**MAX**	1.04	8.57	3.54	8.78	77.42	2.29	4.84	1.31	5.49	4.59	0.61	0.97	3.03
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.72	0.00	0.00	0.00	0.27
			Daily Max	**1.04**	**72.71**	**17.53**	**47.09**	**528.69**	**7.57**	**142.33**	**5.92**	**234.62**	**36.67**	**1.01**	**5.16**	**31.51**

			AMCV (ppb)	230	27000	180	5400	1200	1700	SA	4000	33000	1000	26	25000	4100
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**1,3-Butadiene**	**1-Butene**	**Benzene**	**n-Hexane**	**Ethane + Ethylene**	**Xylene + Ethylbenzene**	**Propylene**	**Toluene**	**Isobutane**	**Cyclohexane**	**Styrene**	**Acetylene**	**n-Octane**
27-Feb-21																
	U	1313	**MAX**	0.46	82.88	9.15	75.46	463.36	28.89	170.47	28.47	299.02	62.41	0.93	9.93	72.61
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.00	0.00	0.00	0.14
	V	872	**MAX**	0.39	23.88	3.52	13.68	189.38	1.81	40.91	2.26	75.87	10.25	0.76	2.37	9.87
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.75	0.23	0.00	0.00	0.40
	W	246	**MAX**	0.23	5.08	2.72	16.09	31.71	4.10	32.25	2.20	9.14	6.47	2.23	1.51	4.21
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00
	X	992	**MAX**	0.38	8.65	2.57	15.42	63.45	15.35	88.01	5.87	41.67	8.09	1.98	2.96	8.64
			MIN	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.58	0.00	0.05	0.00	0.09
			Daily Max	**0.46**	**82.88**	**9.15**	**75.46**	**463.36**	**28.89**	**170.47**	**28.47**	**299.02**	**62.41**	**2.23**	**9.93**	**72.61**
28-Feb-21																
	Y	1295	**MAX**	0.25	67.07	14.26	48.11	368.98	7.37	131.94	6.57	378.63	27.12	0.81	5.63	26.01
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.48	0.00	0.00	0.00	0.24
	Z	692	**MAX**	0.25	1.92	1.34	7.60	12.62	4.71	3.51	1.18	4.87	3.18	0.54	0.87	3.30
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.36	0.00	0.00	0.00	0.23
	AA	1263	**MAX**	0.26	24.40	4.13	27.70	161.86	1.60	50.83	2.20	125.72	12.10	0.67	3.09	14.20
			MIN	0.00	0.00	0.09	0.00	0.00	0.00	0.00	0.00	1.29	0.00	0.00	0.00	0.24
	AB	733	**MAX**	0.19	62.40	5.46	44.88	384.55	1.50	129.13	4.36	259.96	28.81	0.60	4.57	24.18
			MIN	0.00	0.00	0.09	0.00	0.26	0.00	0.21	0.00	1.81	0.00	0.00	0.00	0.54
			Daily Max	**0.26**	**67.07**	**14.26**	**48.11**	**384.55**	**7.37**	**131.94**	**6.57**	**378.63**	**28.81**	**0.81**	**5.63**	**26.01**
1-Mar-21																
	AC	441	**MAX**	6.46	31.91	18.67	55.61	700.68	113.39	40.44	17.59	67.73	40.29	30.07	5.85	51.52
			MIN	0.00	0.00	0.09	0.00	1.77	0.10	0.35	0.06	1.64	0.16	0.10	0.00	0.59
	AD	842	**MAX**	0.73	27.97	5.00	23.28	205.77	3.56	55.26	3.76	82.31	13.01	0.64	5.27	15.80
			MIN	0.00	0.00	0.00	0.00	1.09	0.00	0.17	0.00	1.44	0.00	0.00	0.00	0.41
			Daily Max	**6.46**	**31.91**	**18.67**	**55.61**	**700.68**	**113.39**	**55.26**	**17.59**	**82.31**	**40.29**	**30.07**	**5.85**	**51.52**
2-Mar-21																
	AE	216	**MAX**	0.46	5.64	1.74	6.13	30.99	6.06	6.19	0.91	4.78	2.88	0.38	2.46	2.37
			MIN	0.00	0.00	0.00	0.00	0.88	0.00	0.00	0.00	1.35	0.16	0.00	0.00	0.09
	AF	295	**MAX**	0.47	2.03	1.57	5.58	7.84	0.35	3.46	0.69	4.31	3.05	0.48	1.75	2.92
			MIN	0.00	0.00	0.09	0.00	0.81	0.00	0.16	0.00	1.10	0.00	0.00	0.00	0.18
	AG	180	**MAX**	112.16	221.82	12.05	44.62	214.07	0.65	125.33	2.65	105.77	20.40	0.37	2.46	18.34
			MIN	0.00	0.00	0.13	0.00	0.83	0.00	0.16	0.00	1.26	0.15	0.00	0.00	0.49
	AH	248	**MAX**	0.27	1.65	1.59	4.83	8.25	0.44	2.57	0.53	3.96	4.80	0.36	1.37	1.92
			MIN	0.00	0.00	0.00	0.00	0.41	0.00	0.16	0.00	0.54	0.00	0.00	0.00	0.26
	AI	300	**MAX**	0.21	1.87	1.07	5.56	4.05	0.40	2.52	0.60	4.52	2.12	0.43	1.05	1.98
			MIN	0.00	0.00	0.00	0.00	0.42	0.00	0.00	0.00	0.83	0.00	0.00	0.00	0.19
			Daily Max	**112.16**	**221.82**	**12.05**	**44.62**	**214.07**	**6.06**	**125.33**	**2.65**	**105.77**	**20.40**	**0.48**	**2.46**	**18.34**

			AMCV (ppb)	230	27000	180	5400	1200	1700	SA	4000	33000	1000	26	25000	4100
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**1,3-Butadiene**	**1-Butene**	**Benzene**	**n-Hexane**	**Ethane + Ethylene**	**Xylene + Ethylbenzene**	**Propylene**	**Toluene**	**Isobutane**	**Cyclohexane**	**Styrene**	**Acetylene**	**n-Octane**
3-Mar-21																
	AJ	600	**MAX**	0.84	19.63	4.54	25.65	98.50	3.10	39.66	7.31	26.73	17.13	0.77	23.00	16.20
			MIN	0.00	0.00	0.33	0.73	1.54	0.00	0.49	0.08	2.62	0.23	0.00	0.00	0.59
	AK	548	**MAX**	0.45	98.18	5.97	77.29	758.26	6.81	177.23	9.74	264.46	43.92	0.67	6.24	46.35
			MIN	0.00	0.00	0.13	0.00	2.93	0.00	0.45	0.00	3.23	0.22	0.00	0.00	0.45
	AL	941	**MAX**	1.27	9.20	3.94	16.06	54.02	3.11	16.29	3.18	26.08	33.04	1.56	2.91	10.69
			MIN	0.00	0.00	0.00	0.00	1.17	0.00	0.23	0.07	2.22	0.44	0.00	0.00	0.67
	AM	1255	**MAX**	0.36	5.07	2.92	11.33	36.15	5.43	8.65	19.71	13.51	7.07	0.55	1.87	7.25
			MIN	0.00	0.00	0.00	0.00	0.58	0.00	0.22	0.00	1.60	0.00	0.00	0.00	0.12
	AN	213	**MAX**	0.27	165.71	5.99	16.50	818.98	11.64	168.31	12.32	55.46	19.24	0.48	10.90	11.76
			MIN	0.00	0.00	0.25	0.00	0.84	0.00	0.22	0.11	1.58	0.21	0.00	0.00	0.00
	AO	171	**MAX**	0.74	18.18	5.56	27.79	28.08	3.66	45.73	6.43	35.83	22.93	0.42	1.83	11.87
			MIN	0.00	0.00	0.24	0.00	0.84	0.06	0.44	0.21	2.09	0.64	0.00	0.00	0.00
			Daily Max	**1.27**	**165.71**	**5.99**	**77.29**	**818.98**	**11.64**	**177.23**	**19.71**	**264.46**	**43.92**	**1.56**	**23.00**	**46.35**
4-Mar-21																
	AP	346	**MAX**	9.40	33.19	10.66	52.75	108.54	20.95	46.12	19.08	85.10	39.26	1.21	4.78	46.02
			MIN	0.00	0.00	0.00	0.00	0.30	0.00	0.23	0.00	1.98	0.00	0.00	0.00	0.28
	AQ	454	**MAX**	0.43	6.84	2.23	14.83	41.17	2.08	14.64	2.08	21.41	7.11	0.83	3.19	7.65
			MIN	0.00	0.00	0.12	0.00	0.58	0.00	0.22	0.00	1.99	0.00	0.00	0.00	0.41
	AR	922	**MAX**	0.34	11.33	5.66	20.40	51.54	3.36	16.35	4.20	26.40	16.66	0.86	1.86	14.74
			MIN	0.00	0.00	0.00	0.00	0.29	0.00	0.00	0.00	1.86	0.23	0.00	0.00	0.12
	AS	1055	**MAX**	0.57	4.50	6.54	9.08	28.30	7.44	7.55	1.73	15.39	4.14	1.90	2.29	5.28
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.71	0.00	0.00	0.00	0.13
			Daily Max	**9.40**	**33.19**	**10.66**	**52.75**	**108.54**	**20.95**	**46.12**	**19.08**	**85.10**	**39.26**	**1.90**	**4.78**	**46.02**
5-Mar-21																
	AT	396	**MAX**	0.48	53.88	12.62	138.11	471.03	11.40	102.81	25.31	157.90	66.92	0.91	2.88	34.86
			MIN	0.00	0.26	0.00	1.43	2.05	0.18	0.23	0.47	3.38	0.45	0.00	0.00	0.00
	AU	559	**MAX**	0.88	11.59	3.42	14.42	34.83	2.95	26.81	3.13	38.24	14.09	0.85	1.76	10.42
			MIN	0.00	0.00	0.00	0.00	0.60	0.00	0.23	0.00	1.82	0.00	0.00	0.00	0.55
	AV	914	**MAX**	0.32	13.90	11.07	58.87	31.54	23.09	20.41	43.56	41.48	105.94	0.78	2.31	85.84
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.15	0.00	0.00	0.00	0.29
	AW	1418	**MAX**	0.86	9.33	5.05	19.14	65.26	2.74	13.25	3.08	31.54	10.84	0.61	2.64	8.23
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.42	0.00	0.00	0.00	0.27
			Daily Max	**0.88**	**53.88**	**12.62**	**138.11**	**471.03**	**23.09**	**102.81**	**43.56**	**157.90**	**105.94**	**0.91**	**2.88**	**85.84**

			AMCV (ppb)	230	27000	180	5400	1200	1700	SA	4000	33000	1000	26	25000	4100
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**1,3-Butadiene**	**1-Butene**	**Benzene**	**n-Hexane**	**Ethane + Ethylene**	**Xylene + Ethylbenzene**	**Propylene**	**Toluene**	**Isobutane**	**Cyclohexane**	**Styrene**	**Acetylene**	**n-Octane**
6-Mar-21																
	AX	377	**MAX**	0.51	56.37	10.43	39.90	1944.17	6.58	30.67	14.47	62.81	34.87	0.68	20.54	37.84
			MIN	0.00	0.00	0.00	0.00	2.11	0.00	0.20	0.00	2.55	0.20	0.00	0.00	0.62
	AY	901	**MAX**	0.24	62.75	6.01	24.37	74.49	17.32	122.12	5.25	81.00	15.85	0.66	1.66	15.19
			MIN	0.00	0.00	0.00	0.00	0.73	0.00	0.20	0.00	1.40	0.00	0.00	0.00	0.40
	AZ	171	**MAX**	0.23	5.61	3.19	9.78	33.64	1.67	13.88	3.04	10.73	9.09	0.45	1.22	7.33
			MIN	0.00	0.00	0.11	0.00	0.96	0.00	0.19	0.06	1.59	0.00	0.00	0.00	0.48
	BA	486	**MAX**	0.40	13.05	7.89	52.69	123.12	12.31	29.15	21.49	49.45	49.52	0.57	3.15	29.94
			MIN	0.00	0.00	0.00	0.00	1.44	0.00	0.38	0.10	1.80	0.00	0.00	0.00	0.00
	BB	35	**MAX**	3.38	12.12	10.83	13.47	82.26	2.33	24.88	4.76	13.96	7.73	3.15	6.09	5.78
			MIN	0.00	0.21	0.44	0.60	2.16	0.00	0.78	0.20	2.66	0.39	0.00	0.00	0.80
	BC	841	**MAX**	12.72	59.08	31.39	58.43	292.69	8.08	111.11	14.75	36.63	28.94	8.41	20.63	14.40
			MIN	0.00	0.00	0.00	0.61	0.74	0.00	0.40	0.13	2.00	0.39	0.00	0.00	0.80
			AVG	2.00	10.26	7.18	11.15	49.69	1.72	17.53	3.56	9.91	8.07	2.62	3.27	4.14
	BD	357	**MAX**	0.47	17.24	4.37	23.14	43.25	7.88	32.05	6.54	29.19	23.99	0.58	2.04	19.64
			MIN	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.20	1.72	0.19	0.00	0.00	0.50
	BE	137	**MAX**	0.23	6.50	3.97	18.13	22.71	10.25	11.94	9.45	15.14	45.09	0.45	1.63	28.99
			MIN	0.00	0.21	0.22	0.62	0.74	0.00	0.38	0.36	1.69	0.78	0.00	0.00	0.96
			Daily Max	**12.72**	**62.75**	**31.39**	**58.43**	**1944.17**	**17.32**	**122.12**	**21.49**	**81.00**	**49.52**	**8.41**	**20.63**	**37.84**

			AMCV (ppb)	SA	92000	27775	11000
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**Propane**	**n-Butane**	**C3 - C4 Saturated**	**Acetone**
6-Mar-21							
	AX	377	**MAX**				
			MIN				
	AY	901	**MAX**				
			MIN				
	AZ	171	**MAX**				4.52
			MIN				2.27
	BA	486	**MAX**				
			MIN				
	BB	35	**MAX**	40.40	148.04	161.73	
			MIN	5.12	17.63	20.50	
	BC	841	**MAX**				
			MIN				
			AVG				
	BD	357	**MAX**				
			MIN				
	BE	137	**MAX**				4.54
			MIN				2.11
			Daily Max	**40.40**	**148.04**	**161.73**	**4.54**

			AMCV (ppb)	230	27000	180	5400	1200	1700	SA	4000	33000	1000	26	25000	4100
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**1,3-Butadiene**	**1-Butene**	**Benzene**	**n-Hexane**	**Ethane + Ethylene**	**Xylene + Ethylbenzene**	**Propylene**	**Toluene**	**Isobutane**	**Cyclohexane**	**Styrene**	**Acetylene**	**n-Octane**
7-Mar-21																
	BF	301	**MAX**	0.34	3.13	1.68	12.74	29.16	1.84	8.13	1.13	10.36	4.77	0.77	2.62	3.96
			MIN	0.00	0.00	0.00	0.00	0.54	0.06	0.21	0.07	1.95	0.00	0.00	0.00	0.63
	BG	334	**MAX**	0.33	163.11	33.69	97.59	286.75	23.47	285.15	30.90	245.33	52.81	0.92	4.67	15.14
			MIN	0.00	0.00	0.00	0.66	1.31	0.13	0.00	0.25	2.38	0.41	0.00	0.00	0.00
	BH	371	**MAX**	0.32	17.07	5.66	38.41	91.81	4.32	37.49	9.90	28.75	18.71	0.67	2.53	17.89
			MIN	0.00	0.00	0.00	0.00	0.51	0.06	0.20	0.28	1.66	0.41	0.00	0.00	0.73
	BI	176	**MAX**	0.57	16.03	7.39	26.83	45.01	4.50	36.96	5.63	35.46	19.70	0.61	1.28	19.13
			MIN	0.00	0.00	0.12	0.64	0.52	0.00	0.41	0.07	2.47	0.41	0.00	0.00	0.65
	BJ	587	**MAX**	0.66	12.11	13.17	20.82	196.97	4.77	14.01	6.40	16.56	14.12	0.60	15.01	14.29
			MIN	0.00	0.00	0.23	0.63	1.30	0.00	0.40	0.24	2.51	0.20	0.00	0.00	0.00
	BK	1674	**MAX**	0.56	10.54	4.57	15.68	23.21	9.35	19.87	2.87	23.61	11.93	0.66	2.09	11.61
			MIN	0.00	0.00	0.00	0.00	0.48	0.00	0.19	0.00	0.87	0.00	0.00	0.00	0.30
	BL	517	**MAX**	0.33	48.00	15.15	16.14	344.69	16.58	43.80	13.25	34.82	38.81	0.39	4.74	30.63
			MIN	0.00	0.21	0.15	0.00	1.45	0.00	0.19	0.17	1.95	0.19	0.00	0.00	0.69
			Daily Max	**0.66**	**163.11**	**33.69**	**97.59**	**344.69**	**23.47**	**285.15**	**30.90**	**245.33**	**52.81**	**0.92**	**15.01**	**30.63**

			AMCV (ppb)	270000	11000
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**Isobutene**	**Acetone**
7-Mar-21					
	BF	301	**MAX**		
			MIN		
	BG	334	**MAX**		
			MIN		
	BH	371	**MAX**		
			MIN	2.38	3.70
	BI	176	**MAX**	0.17	1.18
			MIN		
	BJ	587	**MAX**		
			MIN		
	BK	1674	**MAX**		
			MIN		
	BL	517	**MAX**		
			MIN	2.38	3.70
			Daily Max	**2.38**	**3.70**

			AMCV (ppb)	230	27000	180	5400	1200	11000	1700	270000	SA	4000	33000	1000	26
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**1,3-Butadiene**	**1-Butene**	**Benzene**	**n-Hexane**	**Ethane + Ethylene**	**Acetone**	**Xylene + Ethylbenzene**	**Isobutene**	**Propylene**	**Toluene**	**Isobutane**	**Cyclohexane**	**Styrene**
8-Mar-21																
	BM	390	**MAX**	0.48	27.24	7.61	59.12	218.41	4.90	19.12	3.57	43.41	8.83	47.39	72.00	8.29
			MIN	0.00	0.00	0.11	0.68	0.81	1.83	0.29	0.16	0.22	0.34	2.12	0.43	0.19
	BN	239	**MAX**	0.39	4.10	8.89	9.15	96.01	4.94	1.11	3.29	5.57	1.11	11.75	3.68	0.81
			MIN	0.00	0.00	0.00	0.00	0.83	1.68	0.00	0.16	0.22	0.08	1.97	0.22	0.00
	BO	337	**MAX**	0.45	4.19	1.89	10.47	23.10	5.05	2.40	1.68	6.53	2.49	12.73	13.47	0.82
			MIN	0.00	0.00	0.00	0.00	0.84	1.75	0.00	0.00	0.00	0.00	1.70	0.00	0.00
	BP	770	**MAX**	0.23	6.38	2.21	12.85	21.09	3.75	1.48	1.74	9.21	1.78	10.62	11.21	0.76
			MIN	0.00	0.00	0.00	0.00	0.58	1.36	0.00	0.08	0.22	0.00	1.77	0.00	0.00
	BQ	649	**MAX**	0.46	13.78	3.84	39.20	29.88	8.19	6.59	3.05	26.87	9.59	42.07	35.89	0.57
			MIN	0.00	0.00	0.00	0.00	0.53	1.83	0.00	0.16	0.22	0.00	1.72	0.00	0.00
	BR	352	**MAX**	0.30	78.00	13.62	119.05	458.34	5.64	11.66	8.44	95.64	14.29	104.83	124.23	0.43
			MIN	0.00	0.00	0.00	0.00	0.54	1.49	0.00	0.16	0.41	0.10	2.16	0.40	0.00
			Daily Max	**0.48**	**78.00**	**13.62**	**119.05**	**458.34**	**8.19**	**19.12**	**8.44**	**95.64**	**14.29**	**104.83**	**124.23**	**8.29**

Corpus Christi Region **Monitoring Survey Data Summary**

			AMCV (ppb)	25000	4100
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**Acetylene**	**n-Octane**
8-Mar-21					
	BM	390	**MAX**	3.24	49.74
			MIN	0.00	1.01
	BN	239	**MAX**	5.77	4.07
			MIN	0.00	0.51
	BO	337	**MAX**	1.85	10.62
			MIN	0.00	0.51
	BP	770	**MAX**	1.86	10.32
			MIN	0.00	0.39
	BQ	649	**MAX**	15.76	28.94
			MIN	0.00	0.57
	BR	352	**MAX**	4.97	44.46
			MIN	0.00	0.00
			Daily Max	**15.76**	**49.74**

			AMCV (ppb)	230	27000	180	5400	1200	1700	SA	4000	33000	1000	26	25000	4100
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**1,3-Butadiene**	**1-Butene**	**Benzene**	**n-Hexane**	**Ethane + Ethylene**	**Xylene + Ethylbenzene**	**Propylene**	**Toluene**	**Isobutane**	**Cyclohexane**	**Styrene**	**Acetylene**	**n-Octane**
9-Mar-21																
	BS	516	**MAX**	0.57	17.27	2.11	7.52	46.43	1.87	13.51	4.32	7.08	7.80	0.62	2.62	9.17
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	0.20
	BT	1291	**MAX**	0.31	22.16	5.63	11.16	160.96	6.21	37.67	3.41	81.37	10.36	0.53	3.02	7.38
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.22	0.00	0.00	0.00	0.20
	BU	1191	**MAX**	0.42	6.25	1.50	11.97	14.79	9.70	13.14	67.92	24.07	10.25	0.86	26.47	6.23
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.06	0.00	0.00	0.00	0.21
			Daily Max	**0.57**	**22.16**	**5.63**	**11.97**	**160.96**	**9.70**	**37.67**	**67.92**	**81.37**	**10.36**	**0.86**	**26.47**	**9.17**
10-Mar-21																
	BV	544	**MAX**	0.52	2.53	8.29	9.43	21.49	1.04	5.90	1.36	108.73	3.59	0.94	1.84	3.45
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.61	0.00	0.00	0.00	0.00
	BW	1466	**MAX**	0.37	29.03	3.05	28.63	186.76	1.51	43.02	2.37	120.34	19.49	0.65	2.28	14.54
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.00	0.00	0.00	0.13
	BX	1301	**MAX**	0.37	2.86	1.66	9.05	15.94	6.02	4.69	2.34	29.24	6.18	0.62	1.95	6.60
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.59	0.00	0.00	0.00	0.14
			Daily Max	**0.52**	**29.03**	**8.29**	**28.63**	**186.76**	**6.02**	**43.02**	**2.37**	**120.34**	**19.49**	**0.94**	**2.28**	**14.54**
11-Mar-21																
	BY	591	**MAX**	0.24	2.58	2.99	9.11	38.92	0.67	3.30	1.75	4.67	3.85	0.59	1.52	4.20
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.23	0.00	0.00	0.00	0.00
	BZ	456	**MAX**	0.59	2.29	2.59	6.86	9.82	0.72	3.59	0.97	4.69	2.76	0.48	1.16	2.42
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.48	0.00	0.00	0.00	0.11
	CA	550	**MAX**	0.31	14.34	4.37	17.63	39.38	6.33	21.72	7.93	58.51	36.74	1.42	3.85	20.06
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.27	0.00	0.00	0.00	0.22
	CB	788	**MAX**	0.48	25.22	3.20	14.97	153.01	10.23	33.07	2.78	98.09	9.27	0.45	1.92	10.11
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.44	0.00	0.00	0.00	0.33
	CC	431	**MAX**	0.18	3.11	0.91	7.12	6.56	0.55	4.02	0.72	5.55	2.86	0.50	0.80	2.14
			MIN	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.19	0.00	0.00	0.00	0.00
			Daily Max	**0.48**	**25.22**	**4.37**	**17.63**	**153.01**	**10.23**	**33.07**	**7.93**	**98.09**	**36.74**	**1.42**	**3.85**	**20.06**

SIFT-MS Monitoring Summary, Winter Storm Uri, Region 12 (Houston)

Monitoring Survey Details

Date	Survey	Stationary/ Mobile	Time-Start	Time-End	# Samples	City/Area	Location Specifics	Latitude	Longitude
23-Feb-21									
	A	S	15:35	~15:59	244	Houston, TX	Manchester Neighborhood Hartman Park Area	29.720964	-95.261687
	B	S	16.:12	~16:29	166	Houston, TX	Milby Park Area, Downwind of Texas Petrochemical Flare	29.705344	-95.264439
	C	S	16:57	~17:23	242	Channellview, TX	Channelview just N of industrial parks	29.7715124	-95.124714
25-Feb-21									
	H	M	9:51	10:06	190	Baytown, TX	Neighborhood N of Exxon Mobil	29.7715226	-95.0112935
								29.771928	-95.004237
	I	M	10:22	10:38	200	Baytown, TX	Baytown Village ~ 1000 ft NE of Exxon	29.773042	-94.982752
								29.776446	-94.990067
	J	M	11:06	11:20	170	Baytown, TX	Mont Belvieu neighborhood ~1000 ft E of Targa	29.83942	-94.856871
								29.839297	-94.858258
	K	M	12:20	12:24	120	Baytown, TX	Hunters Village neighborhood NW of Chevron	29.831787	-94.953171
								29.831787	-94.953171
	L	M	13:18	13:38	232	Channellview, TX	Sterling Green neighborhood SW of LyondellBasell	29.798842	-95.142778
								29.8022959	-95.160808
	M	M	14:44	15:09	283	Houston, TX	Cloverleaf neighborhood N of ship channel industry	29.771625	-95.171583
								29.771658	-95.178318
4-Mar-21									
	AD	M	9:37	10:01	271	La Porte, TX	Fairmont Park West neighborhood N of Bayport N industrial park	29.659642	-95.075664
								29.654988	-95.07233
	AE	M	10:48	11:03	176	Houston, TX	Manchester neighborhood	29.720836	-95.260916
								29.71574	-95.257789
	AF	S	11:19	11:42	265	Houston, TX	Milby Park	29.705589	-95.26438
	AG	M	13:14	13:33	222	Baytown, TX	E of Exxon by Burnet Bay	29.764361	-95.042136
								29.760736	-95.031575
	AH	M	14:23	14:50	306	Houston, TX	Cloverleaf neighborhood N of ship channel industry	29.771896	-95.171583
								29.771772	-95.18285

Date	Survey	Stationary/ Mobile	Time-Start	Time-End	# Samples	City/Area	Location Specifics	Latitude	Longitude
30-Mar-21									
	BD	M	9:58	10:20	436	Baytown, TX	N to NE of Exxon Baytown	29.7699883	-94.9901654
								29.7695325	-95.0315871
	BE	M	10:47	11:02	315	Baytown, TX	E of Enterprise & Targa Resources	29.8435178	-94.9842783
								29.8507032	-94.9405626
	BF	M	11:13	11:18	146	Mont Belvieu, TX	Crosby Rd through Mont Bielvieu industrial area	29.8550706	-94.9131779
								29.858362	-94.898704
	BG	M	12:40	12:49	211	La Porte, TX	Bayport industrial area	29.6037376	-95.0237238
								29.603954	-95.028988
	BH	M	13:16	13:32	321	La Porte, TX	W Fairmont Pkwy N of industrial area	29.6513398	-95.0982564
								29.650752	-95.047864
	BI	M	14:06	14:13	166	Channelview, TX	Industrial area N of ship channel	29.753787	-95.113367
								29.750876	-95.129533
	BJ	M	14:27	14:47	404	Channelview, TX	Market St N of ship channel	29.771605	-95.124665
								29.78708	-95.09639
31-Mar-21									
	BK	M	10:12	10:32	369	Baytown, TX	N to NE of Exxon Baytown	29.769851	-94.990499
								29.769534	-95.031588
	BL	M	11:07	11:27	384	Mont Belvieu, TX	Crosby Rd through Mont Bielvieu industrial area	29.848466	-94.953354
								29.858466	-94.89933
	BM	M	12:17	12:31	247	Pasadena, TX	Bayport industrial area	29.6036918	-95.0254814
								29.603861	-95.033416
	BN	M	13:02	13:12	179	Houston, TX	Manchester neighborhood	29.715064	-95.257719
								29.7211672	-95.2610179
	BO	M	14:12	14:33	388	Channelview, TX	Market St N of ship channel	29.771549	-95.1246876
								29.786762	-95.097064

Monitoring Survey Data Summary

			AMCV (ppb)	33000	25000	4000	27775	230	180	SA	26	1700	1200	92000	SA	27000
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**Isobutane**	**Acetylene**	**Toluene**	**C3 - C4 Saturated**	**1,3-Butadiene**	**Benzene**	**Propane**	**Styrene**	**Xylene + Ethylbenzene**	**Ethane + Ethylene**	**n-Butane**	**Propylene**	**1-Butene**
23-Feb-21																
	A	244	MAX	27.42	3.40	4.21	82.85	4.09	2.60	34.28	1.70	3.67	229.33	27.96	104.16	5.12
			MIN	10.46	0.00	1.21	31.61	0.00	0.00	0.00	0.19	0.37	24.89	10.67	0.00	0.00
			AVG	15.08	0.28	2.68	45.57	0.92	0.68	5.29	0.83	1.69	120.62	15.38	35.72	1.50
	B	166	MAX	17.91	4.00	3.49	54.10	1.76	1.74	22.11	23.68	2.85	316.22	18.26	86.19	4.60
			MIN	8.32	0.00	0.90	25.12	0.00	0.00	0.00	0.18	0.48	36.95	8.48	0.00	0.00
			AVG	12.16	0.27	2.19	36.74	0.15	0.52	4.75	2.30	1.37	117.28	12.40	26.27	0.81
	C	142	MAX	46.45	9.57	4.77	140.35	0.59	6.41	30.94	1.00	6.14	233.18	47.37	104.32	3.81
			MIN	7.26	0.00	0.74	21.94	0.00	0.00	0.00	0.00	0.36	33.23	7.40	0.00	0.00
			AVG	12.53	0.33	2.20	37.86	0.06	1.00	5.41	0.43	1.69	105.10	12.78	25.67	0.76
			Daily Max	**46.45**	**9.57**	**4.77**	**140.35**	**4.09**	**6.41**	**34.28**	**23.68**	**6.14**	**316.22**	**47.37**	**104.32**	**5.12**
25-Feb-21																
	H	190	MAX			2.15	36.57	0.55	1.44	23.13	1.37	2.11	302.91	12.34	72.43	2.55
			MIN			0.16	13.99	0.00	0.00	0.00	0.00	0.21	51.22	4.72	0.00	0.00
	I	200	MAX			2.10	48.95	0.85	1.62	29.84	0.88	2.31	297.34	16.52	57.94	1.93
			MIN			0.16	11.79	0.00	0.00	0.00	0.00	0.12	63.78	3.98	0.00	0.00
	J	170	MAX			16.05	84.99	0.52	1.54	15.59	0.84	2.56	270.54	28.68	67.02	1.16
			MIN			0.36	7.70	0.00	0.00	0.00	0.00	0.22	31.41	2.60	0.00	0.00
	K	120	MAX			2.80	27.97	0.49	1.66	18.88	0.92	1.71	292.80	9.44	60.00	1.41
			MIN			0.00	7.31	0.00	0.00	0.00	0.00	0.13	57.49	2.47	0.00	0.00
	L	232	MAX			2.31	65.20	2.11	2.21	20.30	0.91	4.70	314.35	22.01	66.32	3.13
			MIN			0.15	14.80	0.00	0.00	0.00	0.00	0.23	80.62	4.99	0.00	0.00
	M	283	MAX			4.78	76.91	1.75	7.12	42.84	1.89	4.80	429.38	25.96	102.24	7.33
			MIN			0.56	22.39	0.00	0.00	0.00	0.00	0.33	79.79	7.56	0.00	0.00
			Daily Max			**16.05**	**84.99**	**2.11**	**7.12**	**42.84**	**1.89**	**4.80**	**429.38**	**28.68**	**102.24**	**7.33**
4-Mar-21																
	AD	271	MAX	19.34	2.91	6.64	58.44	0.77	1.59	25.52	1.05	6.05	224.42	19.72	93.61	2.75
			MIN	4.03	0.00	0.00	12.16	0.00	0.00	0.00	0.00	0.00	31.29	4.11	0.00	0.00
	AE	176	MAX	31.50	5.87	7.10	95.18	1.05	2.42	54.37	0.84	4.29	234.48	32.12	77.79	3.05
			MIN	6.30	0.00	0.00	19.02	0.00	0.00	0.00	0.00	0.00	25.24	6.42	0.00	0.00
	AF	265	MAX	11.67	3.93	1.39	35.25	9.02	1.80	30.91	1.23	1.42	206.31	11.90	79.53	3.53
			MIN	2.85	0.00	0.00	8.62	0.00	0.00	0.00	0.00	0.00	11.54	2.91	0.00	0.00
			AVG	7.00	0.35	0.47	21.16	1.30	0.45	6.07	0.31	0.56	103.06	7.14	15.80	0.71
	AG	222	MAX	10.09	3.32	2.54	30.49	0.55	1.30	26.09	0.98	1.81	201.07	10.29	94.61	2.14
			MIN	3.34	0.00	0.00	10.10	0.00	0.00	0.00	0.00	0.00	0.00	3.41	0.00	0.00
	AH	306	MAX	93.85	3.51	16.22	283.55	1.06	2.99	39.78	0.88	3.61	392.82	95.69	150.50	2.87
			MIN	5.72	0.00	0.00	17.28	0.00	0.00	0.00	0.00	0.00	23.26	5.83	0.00	0.00
			Daily Max	**93.85**	**5.87**	**16.22**	**283.55**	**9.02**	**2.99**	**54.37**	**1.23**	**6.05**	**392.82**	**95.69**	**150.50**	**3.53**

			AMCV (ppb)	26	1700	4000	230	180
Date	**Survey**	**# Samples**	**Min/Max/Avg (ppb)**	**Styrene**	**Xylene + Ethylbenzene**	**Toluene**	**1,3-Butadiene**	**Benzene**
30-Mar-21								
	BD	436	MAX	48.51	153.51	28.63	4.33	17.65
			MIN	0.00	0.24	0.10	0.00	0.00
	BE	315	MAX	2.18	3.26	2.98	0.71	1.45
			MIN	0.00	0.11	0.17	0.00	0.00
	BF	146	MAX	1.57	2.90	3.18	1.34	2.95
			MIN	0.00	0.00	0.00	0.00	0.00
	BG	211	MAX	2.48	6.19	4.94	0.95	6.73
			MIN	0.00	0.00	0.00	0.00	0.00
	BH	321	MAX	4.65	3.52	14.81	0.70	1.67
			MIN	0.00	0.00	0.43	0.00	0.00
	BI	166	MAX	2.58	4.32	3.64	1.29	6.05
			MIN	0.06	0.00	0.40	0.00	0.00
	BJ	404	MAX	1.58	35.67	6.35	2.07	18.09
			MIN	0.00	0.00	0.00	0.00	0.00
			Daily Max	**48.51**	**153.51**	**28.63**	**4.33**	**18.09**
31-Mar-21								
	BK	369	MAX	4.74	7.18	11.72	1.25	2.86
			MIN	0.00	0.21	0.29	0.00	0.00
	BL	384	MAX	2.31	2.39	2.20	0.68	1.98
			MIN	0.00	0.00	0.13	0.00	0.00
	BM	247	MAX	1.55	2.37	4.58	1.31	3.71
			MIN	0.00	0.00	0.00	0.00	0.00
	BN	179	MAX	1.31	2.09	3.64	0.75	2.28
			MIN	0.00	0.00	0.43	0.00	0.00
	BO	388	MAX	1.33	9.49	17.84	0.73	3.99
			MIN	0.00	0.00	0.00	0.00	0.00
			Daily Max	**4.74**	**9.49**	**17.84**	**1.31**	**3.99**

Appendix D: Handheld Instrument Data

Hurricane Delta Handheld Data Summary, Region 10, 10/10 - 10/12/2020

	Comparison Values (ppm)	3	0.08	35	0.075	0.019	3	0.08	0.075	35	0.08	35	3	0.08
	Chemicals	VOC	H_2S	CO	SO_2	HCN	VOC	H_2S	SO_2	CO	H_2S	CO	VOC	H_2S
		MultiRAE/MiniRAE 1					MultiRAE/MiniRAE 2			QRAE		AreaRAE		
10-Oct	No. of samples	17	8	1	15	9	0	0	0	9	8	7	7	7
	No. of detections	8	0	0	0	0	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max (ppm)	0.3	0	0	0	0	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0
11-Oct	No. of samples	19	1	0	10	9	1	10	10	9	9	8	8	8
	No. of detections	0	0	0	0	0	0	0	0	0	0	0	2	0
	Min (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0	0	0	0	0.6	0
	No. of exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0
12-Oct	No. of samples	24	7	0	7	0	0	0	0	18	18	7	7	7
	No. of detections	0	0	0	0	0	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0

ITC Fire Handheld Data Summary, Region 12, 03/17/19 - 06/11/19

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
3/17/19	No. of samples	16	15	16	16	16	16	16	0
	No. of detections	0	14	0	0	0	0	0	0
	Min (ppm)	0	-0.3	0	0	0	0	0	0
	Max (ppm)	0	28.6	0	0	0	0	0	0
	No. of exceedances	0	5	0	0	0	0	0	0
3/18/19	No. of samples	40	40	40	40	40	40	40	0
	No. of detections	0	14	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	2.9	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
3/19/19	No. of samples	79	77	79	79	79	79	79	0
	No. of detections	0	30	0	0	0	0	0	0
	Min (ppm)	0	-1	0	0	0	0	0	0
	Max (ppm)	0	6.21	0	0	0	0	0	0
	No. of exceedances	0	18	0	0	0	0	0	0
3/20/19	No. of samples	89	89	89	89	89	89	89	0
	No. of detections	0	29	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	3.4	0	0	0	0	0	0
	No. of exceedances	0	4	0	0	0	0	0	0
3/21/19	No. of samples	273	273	273	273	273	273	273	0
	No. of detections	0	50	0	0	0	3	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	42.8	0	0	0	0.1	0	0
	No. of exceedances	0	19	0	0	0	3	0	0
3/22/19	No. of samples	279	278	279	279	279	278	279	0
	No. of detections	0	23	0	0	0	6	0	0
	Min (ppm)	0	-1.2	0	0	0	0	0	0
	Max (ppm)	0	12	0	0	0	0.1	0	0
	No. of exceedances	0	13	0	0	0	6	0	0
3/23/19	No. of samples	86	85	86	86	86	86	86	0
	No. of detections	0	2	0	0	0	0	0	0
	Min (ppm)	0	-1.6	0	0	0	0	0	0
	Max (ppm)	0	10.81	0	0	0	0	0	0
	No. of exceedances	0	2	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
3/24/19	No. of samples	217	216	217	217	217	217	217	0
	No. of detections	2	47	0	0	0	0	0	0
	Min (ppm)	0	-1.31	0	0	0	0	0	0
	Max (ppm)	0.75	3.4	0	0	0	0	0	0
	No. of exceedances	2	2	0	0	0	0	0	0
3/25/19	No. of samples	212	212	212	212	212	212	212	0
	No. of detections	0	49	0	0	0	0	0	0
	Min (ppm)	0	-1.38	0	0	0	0	0	0
	Max (ppm)	0	3.5	0	0	0	0	0	0
	No. of exceedances	0	7	0	0	0	0	0	0
3/26/19	No. of samples	113	113	113	113	113	113	113	0
	No. of detections	0	48	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	2.81	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
3/27/19	No. of samples	150	150	150	150	150	150	150	0
	No. of detections	0	32	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	3.78	0	0	0	0	0	0
	No. of exceedances	0	6	0	0	0	0	0	0
3/28/19	No. of samples	226	226	226	226	225	226	226	0
	No. of detections	0	80	0	0	0	3	0	0
	Min (ppm)	0	-0.41	0	0	0	0	0	0
	Max (ppm)	0	8.52	0	0	0	0.1	0	0
	No. of exceedances	0	8	0	0	0	3	0	0
3/29/19	No. of samples	211	211	211	211	211	211	202	0
	No. of detections	8	40	0	0	0	0	0	0
	Min (ppm)	0	-0.75	0	0	0	0	0	0
	Max (ppm)	0.024	8.8	0	0	0	0	0	0
	No. of exceedances	0	15	0	0	0	0	0	0
3/30/19	No. of samples	252	191	252	252	252	252	238	0
	No. of detections	48	32	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	34.55	2.23	0	0	0	0	0	0
	No. of exceedances	31	0	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
3/31/19	No. of samples	236	200	237	237	237	237	236	0
	No. of detections	18	58	0	0	0	0	13	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	2.5	1.94	0	0	0	0	0.2	0
	No. of exceedances	16	0	0	0	0	0	13	0
4/1/19	No. of samples	216	216	216	216	216	216	216	0
	No. of detections	0	61	0	0	0	0	22	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	3.77	0	0	0	0	0.2	0
	No. of exceedances	0	11	0	0	0	0	22	0
4/2/19	No. of samples	158	201	198	96	198	104	96	0
	No. of detections	0	39	0	0	0	0	6	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	7.19	0	0	0	0	0.1	0
	No. of exceedances	0	5	0	0	0	0	6	0
4/3/19	No. of samples	136	214	211	0	211	14	0	0
	No. of detections	0	47	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	5.1	0	0	0	0	0	0
	No. of exceedances	0	15	0	0	0	0	0	0
4/4/19	No. of samples	162	223	139	84	145	19	84	0
	No. of detections	0	40	0	0	0	1	18	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	3.6	0	0	0	0.1	0.1	0
	No. of exceedances	0	5	0	0	0	1	18	0
4/5/19	No. of samples	171	248	121	127	121	0	127	0
	No. of detections	0	48	0	0	0	0	19	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	6.59	0	0	0	0	0.1	0
	No. of exceedances	0	20	0	0	0	0	19	0
4/6/19	No. of samples	172	225	152	73	152	13	73	0
	No. of detections	0	31	0	0	0	0	0	0
	Min (ppm)	0	-1.34	0	0	0	0	0	0
	Max (ppm)	0	5.17	0	0	0	0	0	0
	No. of exceedances	0	6	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
4/7/19	No. of samples	164	220	162	41	162	8	58	17
	No. of detections	0	29	0	0	1	0	0	0
	Min (ppm)	0	-0.89	0	0	0	0	0	0
	Max (ppm)	0	5.7	0	0	35	0	0	0
	No. of exceedances	0	4	0	0	1	0	0	0
4/8/19	No. of samples	175	234	195	20	195	20	19	39
	No. of detections	0	39	0	0	1	5	0	0
	Min (ppm)	0	-0.8	0	0	0	0	0	0
	Max (ppm)	0	3.51	0	0	35	0.2	0	0
	No. of exceedances	0	8	0	0	1	5	0	0
4/9/19	No. of samples	195	228	166	62	166	23	41	21
	No. of detections	1	42	0	0	0	7	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0.93	5.1	0	0	0	0.1	0	0
	No. of exceedances	1	5	0	0	0	7	0	0
4/10/19	No. of samples	190	231	174	57	174	10	37	20
	No. of detections	0	29	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	3.13	0	0	0	0	0	0
	No. of exceedances	0	5	0	0	0	0	0	0
4/11/19	No. of samples	198	235	198	19	198	37	18	37
	No. of detections	0	33	0	0	0	0	0	0
	Min (ppm)	0	-1.3	0	0	0	0	0	0
	Max (ppm)	0	4.38	0	0	0	0	0	0
	No. of exceedances	0	3	0	0	0	0	0	0
4/12/19	No. of samples	208	243	207	17	207	13	35	18
	No. of detections	0	32	0	0	0	0	0	0
	Min (ppm)	0	-1.1	0	0	0	0	0	0
	Max (ppm)	0	16.07	0	0	0	0	0	0
	No. of exceedances	0	11	0	0	0	0	0	0
4/13/19	No. of samples	186	186	170	16	170	0	17	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
4/14/19	No. of samples	189	189	171	18	171	0	18	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
4/15/19	No. of samples	187	187	172	15	172	0	15	0
	No. of detections	2	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0.3	0	0	0	0	0	0	0
	No. of exceedances	1	0	0	0	0	0	0	0
4/16/19	No. of samples	190	190	190	0	190	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
4/17/19	No. of samples	184	184	184	0	184	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
4/18/19	No. of samples	168	168	168	0	168	0	0	0
	No. of detections	3	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	1.4	0	0	0	0	0	0	0
	No. of exceedances	3	0	0	0	0	0	0	0
4/19/19	No. of samples	166	166	166	0	166	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
4/20/19	No. of samples	52	52	52	0	52	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
4/21/19	No. of samples	53	53	53	0	53	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
4/22/19	No. of samples	158	181	155	26	155	10	26	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
4/23/19	No. of samples	153	171	171	0	171	18	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
4/24/19	No. of samples	168	182	182	0	182	0	0	0
	No. of detections	2	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0.5	0	0	0	0	0	0	0
	No. of exceedances	2	0	0	0	0	0	0	0
4/25/19	No. of samples	174	193	193	0	193	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
4/26/19	No. of samples	148	170	170	0	170	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
4/27/19	No. of samples	65	65	65	0	65	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
4/28/19	No. of samples	60	60	60	0	60	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
4/29/19	No. of samples	157	167	167	0	167	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
4/30/19	No. of samples	195	206	206	0	206	11	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/1/19	No. of samples	178	196	196	0	196	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/2/19	No. of samples	184	200	200	0	200	6	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/3/19	No. of samples	149	170	170	0	170	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/4/19	No. of samples	58	58	58	0	58	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
5/5/19	No. of samples	58	58	58	0	58	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/6/19	No. of samples	143	160	160	0	160	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/7/19	No. of samples	170	178	178	0	178	20	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/8/19	No. of samples	177	186	186	0	186	11	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/9/19	No. of samples	163	171	171	0	171	0	10	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/10/19	No. of samples	118	123	123	0	123	5	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/11/19	No. of samples	44	44	44	0	44	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
5/12/19	No. of samples	54	54	54	0	54	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/13/19	No. of samples	112	119	119	0	119	9	0	0
	No. of detections	0	4	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0.1	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/14/19	No. of samples	136	147	147	0	147	0	11	0
	No. of detections	0	2	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0.1	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/15/19	No. of samples	141	151	151	0	151	11	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/16/19	No. of samples	134	145	145	0	145	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/17/19	No. of samples	139	150	150	0	150	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/18/19	No. of samples	116	116	116	0	116	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
5/19/19	No. of samples	128	128	128	0	128	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/20/19	No. of samples	159	169	169	0	169	10	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/21/19	No. of samples	156	156	163	0	163	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/22/19	No. of samples	172	178	178	0	178	6	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/23/19	No. of samples	172	182	182	0	182	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/24/19	No. of samples	171	180	180	0	180	9	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/25/19	No. of samples	104	104	104	0	104	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
5/26/19	No. of samples	80	80	80	0	80	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/27/19	No. of samples	82	82	82	0	82	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/28/19	No. of samples	70	70	70	0	70	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/29/19	No. of samples	53	53	53	0	53	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/30/19	No. of samples	52	52	52	0	52	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
5/31/19	No. of samples	53	53	53	0	53	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
6/1/19	No. of samples	54	54	54	0	54	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
6/2/19	No. of samples	54	54	54	0	54	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
6/3/19	No. of samples	53	53	53	0	53	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
6/4/19	No. of samples	52	52	52	0	52	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
6/5/19	No. of samples	13	13	13	0	13	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
6/6/19	No. of samples	52	52	52	0	52	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
6/7/19	No. of samples	49	49	49	0	49	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
6/8/19	No. of samples	22	22	22	0	22	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0

	Comparison Values (ppm)	0.18	3	0.08	0.85	35	0.075	0.048	0.85
	Chemicals	Benzene	VOC	H_2S	NH_3	CO	SO_2	Cl_2	NH_3
6/9/19	No. of samples	21	21	21	0	21	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
6/10/19	No. of samples	21	21	21	0	21	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0
6/11/19	No. of samples	21	21	21	0	21	0	0	0
	No. of detections	0	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0	0

Hurricane Laura Handheld Data Summary, Region 10, 08/28 - 09/16/2020

	Comparison Values (ppm)	3	0.08	35	0.048	0.075	0.019	0.18
	Chemicals	VOC	H_2S	CO	Cl_2	SO_2	HCN	Benzene
28-Aug	No. of samples	17	13	7	4	9	3	0
	No. of detections	4	2	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.3	1.2	0	0	0	0	0
	No. of exceedances	0	2	0	0	0	0	0
29-Aug	No. of samples	84	59	36	14	33	10	0
	No. of detections	0	1	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	1.4	0	0	0	0	0
	No. of exceedances	0	1	0	0	0	0	0
30-Aug	No. of samples	92	63	52	71	15	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
31-Aug	No. of samples	101	95	85	40	49	28	0
	No. of detections	1	0	8	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.3	0	1	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1-Sep	No. of samples	81	78	64	27	55	16	0
	No. of detections	26	7	6	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.7	1.8	1	0	0	0	0
	No. of exceedances	0	7	0	0	0	0	0
2-Sep	No. of samples	76	69	50	30	66	20	0
	No. of detections	15	0	4	0	0	3	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	1.8	0	1	0	0	0.5	0
	No. of exceedances	0	0	0	0	0	3	0
3-Sep	No. of samples	99	91	25	7	35	10	0
	No. of detections	4	0	0	0	0	4	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.6	0	0	0	0	0.5	0
	No. of exceedances	0	0	0	0	0	4	0

	Comparison Values (ppm)	3	0.08	35	0.048	0.075	0.019	0.18
	Chemicals	VOC	H_2S	CO	Cl_2	SO_2	HCN	Benzene
4-Sep	No. of samples	196	184	61	0	83	19	1
	No. of detections	9	0	1	0	0	7	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	7.1	0	1	0	0	1	0
	No. of exceedances	1	0	0	0	0	7	0
5-Sep	No. of samples	147	147	118	0	130	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
6-Sep	No. of samples	158	159	137	0	159	0	0
	No. of detections	1	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.1	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
7-Sep	No. of samples	132	131	76	0	121	0	2
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
8-Sep	No. of samples	139	139	122	0	138	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
9-Sep	No. of samples	148	147	110	0	149	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
10-Sep	No. of samples	126	126	91	0	126	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0

	Comparison Values (ppm)	3	0.08	35	0.048	0.075	0.019	0.18
	Chemicals	VOC	H_2S	CO	Cl_2	SO_2	HCN	Benzene
11-Sep	No. of samples	82	82	47	0	79	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12-Sep	No. of samples	68	68	68	0	68	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
13-Sep	No. of samples	61	61	61	0	61	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
14-Sep	No. of samples	70	70	64	0	70	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
15-Sep	No. of samples	64	64	52	0	64	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
16-Sep	No. of samples	60	60	24	0	60	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0

TPC Fire Handheld Data Summary, Region 10, 11/27/19 - 01/13/20

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.18	0.019
	Chemicals	VOC	H_2S	CO	SO_2	1,3-Butadiene	Benzene	HCN
11/27/19	No. of samples	172	172	116	48	34	17	0
	No. of detections	32	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	6.2	0	0	0	0	0	0
	No. of exceedances	9	0	0	0	0	0	0
11/28/19	No. of samples	309	292	295	26	9	0	24
	No. of detections	0	2	1	0	0	0	2
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0.01	1	0	0	0	0.5
	No. of exceedances	0	0	0	0	0	0	2
11/29/19	No. of samples	313	311	274	130	104	1	0
	No. of detections	18	1	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.5	0.2	0	0	0	0	0
	No. of exceedances	0	1	0	0	0	0	0
11/30/19	No. of samples	186	157	145	63	52	1	30
	No. of detections	13	0	0	0	0	0	8
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.4	0	0	0	0	0	2
	No. of exceedances	0	0	0	0	0	0	8
12/1/19	No. of samples	235	184	148	127	29	0	25
	No. of detections	25	0	2	1	17	0	2
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	4	0	3	0.2	0.6	0	1
	No. of exceedances	1	0	0	1	8	0	2
12/2/19	No. of samples	196	142	126	92	10	1	46
	No. of detections	31	0	0	0	9	1	4
	Min (ppm)	0	0	0	0	0	0.1	0
	Max (ppm)	8	0	0	0	4.21	0.1	1
	No. of exceedances	4	0	0	0	7	0	4
12/3/19	No. of samples	212	155	113	80	10	0	63
	No. of detections	45	0	0	0	6	0	1
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	8	0	0	0	3.62	0	0.5
	No. of exceedances	1	0	0	0	3	0	1

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.18	0.019
	Chemicals	VOC	H_2S	CO	SO_2	1,3-Butadiene	Benzene	HCN
12/4/19	No. of samples	206	175	123	83	19	0	31
	No. of detections	56	0	0	0	15	0	2
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	12.93	0	0	0	8.15	0	0.5
	No. of exceedances	5	0	0	0	13	0	2
12/5/19	No. of samples	158	142	80	91	35	13	53
	No. of detections	33	0	0	0	9	0	14
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	8.13	0	0	0	6.07	0	1
	No. of exceedances	3	0	0	0	9	0	14
12/6/19	No. of samples	179	147	147	70	54	42	70
	No. of detections	32	0	1	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.35	0	3	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/7/19	No. of samples	204	204	151	53	1	0	26
	No. of detections	16	0	1	0	1	0	0
	Min (ppm)	0	0	0	0	0.22	0	0
	Max (ppm)	0.34	0	3	0	0.22	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/8/19	No. of samples	193	177	141	51	4	0	15
	No. of detections	15	0	0	0	3	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.5	0	0	0	0.3	0	0
	No. of exceedances	0	0	0	0	2	0	0
12/9/19	No. of samples	211	194	146	64	3	0	16
	No. of detections	4	0	0	0	1	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.2	0	0	0	0.17	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/10/19	No. of samples	196	169	124	87	2	0	27
	No. of detections	4	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.3	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.18	0.019
	Chemicals	VOC	H_2S	CO	SO_2	1,3-Butadiene	Benzene	HCN
12/11/19	No. of samples	182	151	109	73	1	0	31
	No. of detections	14	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.075	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/12/19	No. of samples	119	119	109	10	6	0	0
	No. of detections	32	0	0	0	4	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.63	0	0	0	0.59	0	0
	No. of exceedances	0	0	0	0	3	0	0
12/13/19	No. of samples	115	115	99	16	10	0	0
	No. of detections	16	0	0	0	1	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.7	0	0	0	0.68	0	0
	No. of exceedances	0	0	0	0	1	0	0
12/14/19	No. of samples	97	97	83	14	4	0	0
	No. of detections	26	0	0	0	4	0	0
	Min (ppm)	0	0	0	0	0.02	0	0
	Max (ppm)	0.5	0	0	0	0.24	0	0
	No. of exceedances	0	0	0	0	1	0	0
12/15/19	No. of samples	108	108	70	38	3	0	0
	No. of detections	31	0	0	0	3	0	0
	Min (ppm)	0	0	0	0	0.17	0	0
	Max (ppm)	0.46	0	0	0	0.44	0	0
	No. of exceedances	0	0	0	0	2	0	0
12/16/19	No. of samples	74	74	63	11	0	0	0
	No. of detections	20	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.19	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/17/19	No. of samples	83	69	69	14	0	0	14
	No. of detections	44	0	1	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.14	0	2	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.18	0.019
	Chemicals	VOC	H_2S	CO	SO_2	1,3-Butadiene	Benzene	HCN
12/18/19	No. of samples	88	76	76	12	0	0	12
	No. of detections	17	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.04	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/19/19	No. of samples	89	89	75	14	0	0	0
	No. of detections	8	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.05	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/20/19	No. of samples	63	63	63	0	0	0	0
	No. of detections	10	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.6	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/21/19	No. of samples	36	36	36	0	0	0	0
	No. of detections	2	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.02	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/22/19	No. of samples	33	33	33	0	0	0	0
	No. of detections	9	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.02	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/23/19	No. of samples	39	39	39	0	0	0	0
	No. of detections	2	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.1	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/24/19	No. of samples	37	37	37	0	1	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.18	0.019
	Chemicals	VOC	H_2S	CO	SO_2	1,3-Butadiene	Benzene	HCN
12/25/19	No. of samples	27	27	27	0	0	0	0
	No. of detections	8	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.02	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/26/19	No. of samples	39	39	39	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/27/19	No. of samples	34	34	34	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/28/19	No. of samples	30	30	30	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/29/19	No. of samples	40	40	40	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/30/19	No. of samples	34	34	34	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
12/31/19	No. of samples	30	30	30	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.18	0.019
	Chemicals	VOC	H_2S	CO	SO_2	1,3-Butadiene	Benzene	HCN
1/1/20	No. of samples	30	30	30	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1/2/20	No. of samples	40	40	40	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1/3/20	No. of samples	30	30	30	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1/4/20	No. of samples	30	30	30	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1/5/20	No. of samples	38	38	38	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1/6/20	No. of samples	40	40	40	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1/7/20	No. of samples	30	30	30	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.18	0.019
	Chemicals	VOC	H_2S	CO	SO_2	1,3-Butadiene	Benzene	HCN
1/8/20	No. of samples	31	31	31	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1/9/20	No. of samples	31	31	31	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1/10/20	No. of samples	31	31	31	0	0	0	0
	No. of detections	3	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0.2	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1/11/20	No. of samples	32	32	32	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1/12/20	No. of samples	31	31	31	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0
1/13/20	No. of samples	13	13	13	0	0	0	0
	No. of detections	0	0	0	0	0	0	0
	Min (ppm)	0	0	0	0	0	0	0
	Max (ppm)	0	0	0	0	0	0	0
	No. of exceedances	0	0	0	0	0	0	0

Winter Storm Uri Handheld Data Summary, Region 10, 02/20 - 3/12/2021

	Comparison Values (ppm)	3	0.08	35	0.075	0.019	3	0.08	0.075	35	3
	Chemicals	VOC	H_2S	CO	SO_2	HCN	VOC	H_2S	SO_2	CO	VOC
		MultiRAE 1					MultiRAE 2			AreaRAE	
Feb. 20	No. of samples	13	13		12						
	No. of detections	0	0		0						
	Min (ppm)	0	0		0						
	Max (ppm)	0	0		0						
	No. of exceedances	0	0		0						
Feb. 21	No. of samples	26	15	1	15			11	11		
	No. of detections	0	0	0	0			0	0		
	Min (ppm)	0	0	0	0			0	0		
	Max (ppm)	0	0	0	0			0	0		
	No. of exceedances	0	0	0	0			0	0		
Feb. 22	No. of samples	8	22	1	22		14				
	No. of detections	0	0	0	0		0				
	Min (ppm)	0	0	0	0		0				
	Max (ppm)	0	0	0	0		0				
	No. of exceedances	0	0	0	0		0				
Feb. 23	No. of samples	20	10		20	9				10	10
	No. of detections	0	0		0	0				0	0
	Min (ppm)	0	0		0	0				0	0
	Max (ppm)	0	0		0	0				0	0
	No. of exceedances	0	0		0	0				0	0
Feb. 24	No. of samples	30	16		30						
	No. of detections	0	0		0						
	Min (ppm)	0	0		0						
	Max (ppm)	0	0		0						
	No. of exceedances	0	0		0						
Feb. 25	No. of samples	11	27		27					16	16
	No. of detections	0	0		0					1	3
	Min (ppm)	0	0		0					0	0
	Max (ppm)	0	0		0					2	0.7
	No. of exceedances	0	0		0					0	0
Feb. 26	No. of samples	16	16		32						17
	No. of detections	0	0		0						17
	Min (ppm)	0	0		0						0.1
	Max (ppm)	0	0		0						2.5
	No. of exceedances	0	0		0						0

	Comparison Values (ppm)	3	0.08	35	0.075	0.019	3	0.08	0.075	35	3
	Chemicals	VOC	H_2S	CO	SO_2	HCN	VOC	H_2S	SO_2	CO	VOC
		MultiRAE 1					MultiRAE 2			AreaRAE	
Feb. 27	No. of samples	13	26		26		16				
	No. of detections	3	0		0		14				
	Min (ppm)	0	0		0		0				
	Max (ppm)	0.2	0		0		0.2				
	No. of exceedances	0	0		0		0				
Feb. 28	No. of samples	21	37		21		16		16		
	No. of detections	0	0		0		0		0		
	Min (ppm)	0	0		0		0		0		
	Max (ppm)	0	0		0		0		0		
	No. of exceedances	0	0		0		0		0		
Mar. 1	No. of samples	27	12					15			
	No. of detections	12	0					0			
	Min (ppm)	0	0					0			
	Max (ppm)	0.3	0					0			
	No. of exceedances	0	0					0			
Mar. 2	No. of samples	34	20		34	12		7	7		
	No. of detections	0	0		0	1		0	0		
	Min (ppm)	0	0		0	0		0	0		
	Max (ppm)	0	0		0	0.5		0	0		
	No. of exceedances	0	0		0	1		0	0		
Mar. 3	No. of samples	25	12		25	14				14	14
	No. of detections	0	0		0	0				0	3
	Min (ppm)	0	0		0	0				0	0
	Max (ppm)	0	0		0	0				0	0.4
	No. of exceedances	0	0		0	0				0	0
Mar. 4	No. of samples	44	18		44	28				28	28
	No. of detections	0	0		0	0				0	0
	Min (ppm)	0	0		0	0				0	0
	Max (ppm)	0	0		0	0				0	0
	No. of exceedances	0	0		0	0				0	0
Mar. 5	No. of samples	23	10		23	12				13	13
	No. of detections	0	0		0	0				0	0
	Min (ppm)	0	0		0	0				0	0
	Max (ppm)	0	0		0	0				0	0
	No. of exceedances	0	0		0	0				0	0

	Comparison Values (ppm)	3	0.08	35	0.075	0.019	3	0.08	0.075	35	3
	Chemicals	VOC	H_2S	CO	SO_2	HCN	VOC	H_2S	SO_2	CO	VOC
		MultiRAE 1					MultiRAE 2			AreaRAE	
Mar. 6	No. of samples	31	21		31	10				10	10
	No. of detections	0	0		0	2				0	5
	Min (ppm)	0	0		0	0				0	0
	Max (ppm)	0	0		0	0.5				0	2.5
	No. of exceedances	0	0		0	2				0	0
Mar. 7	No. of samples	36	16		35	20				20	20
	No. of detections	0	0		0	0				0	7
	Min (ppm)	0	0		0	0				0	0
	Max (ppm)	0	0		0	0				0	2.5
	No. of exceedances	0	0		0	0				0	0
Mar. 8	No. of samples	36	21		35	16				16	16
	No. of detections	0	0		0	0				0	0
	Min (ppm)	0	0		0	0				0	0
	Max (ppm)	0	0		0	0				0	0
	No. of exceedances	0	0		0	0				0	0
Mar. 9	No. of samples	9	9		9						
	No. of detections	0	0		0						
	Min (ppm)	0	0		0						
	Max (ppm)	0	0		0						
	No. of exceedances	0	0		0						
Mar. 10	No. of samples	16	16		16						
	No. of detections	0	0		0						
	Min (ppm)	0	0		0						
	Max (ppm)	0	0		0						
	No. of exceedances	0	0		0						
Mar. 11	No. of samples	25	25		25						
	No. of detections	0	0		0						
	Min (ppm)	0	0		0						
	Max (ppm)	0	0		0						
	No. of exceedances	0	0		0						
Mar. 12	No. of samples	5	5		5						
	No. of detections	0	0		0						
	Min (ppm)	0	0		0						
	Max (ppm)	0	0		0						
	No. of exceedances	0	0		0						

Winter Storm Uri Handheld Data Summary, Region 14, 02/20 - 3/19/2021

	Comparison Values (ppm)	3	0.08	35	0.048	0.18	0.075	0.85	0.08
	Chemicals	VOC	H_2S	CO	Cl_2	Benzene	SO_2	NH_3	H_2S
		MultiRAE							Jerome
Feb. 20	No. of samples	62	62	62		1	17		
	No. of detections	1	0	1		0	0		
	Min (ppm)	0	0	0		0	0		
	Max (ppm)	0.35	0	21		0	0		
	No. of exceedances	0	0	0		0	0		
Feb. 21	No. of samples	48	47	48			18		48
	No. of detections	1	0	3			0		35
	Min (ppm)	0	0	0			0		0
	Max (ppm)	0.31	0	6			0		0.015
	No. of exceedances	0	0	0			0		0
Feb. 22	No. of samples	37	37	37			23		37
	No. of detections	6	0	0			0		28
	Min (ppm)	0	0	0			0		0
	Max (ppm)	0.03	0	0			0		0.007
	No. of exceedances	0	0	0			0		0
Feb. 23	No. of samples	37	37	37			25	12	37
	No. of detections	0	0	0			0	1	24
	Min (ppm)	0	0	0			0	0	0
	Max (ppm)	0	0	0			0	1	0.024
	No. of exceedances	0	0	0			0	1	0
Feb. 24	No. of samples	40	40	40	14		10		40
	No. of detections	0	0	1	0		0		29
	Min (ppm)	0	0	0	0		0		0
	Max (ppm)	0	0	2	0		0		0.003
	No. of exceedances	0	0	0	0		0		0
Feb. 25	No. of samples	43	43	43			29		43
	No. of detections	12	0	0			0		30
	Min (ppm)	0	0	0			0		0
	Max (ppm)	1.1	0	0			0		0.005
	No. of exceedances	0	0	0			0		0
Feb. 26	No. of samples	35	35	35	9		12		22
	No. of detections	0	0	0	0		0		12
	Min (ppm)	0	0	0	0		0		0
	Max (ppm)	0	0	0	0		0		0.004
	No. of exceedances	0	0	0	0		0		0

	Comparison Values (ppm)	3	0.08	35	0.048	0.18	0.075	0.85	0.08
	Chemicals	VOC	H_2S	CO	Cl_2	Benzene	SO_2	NH_3	H_2S
		MultiRAE							Jerome
Feb. 27	No. of samples	31	31	31					
	No. of detections	0	0	0					
	Min (ppm)	0	0	0					
	Max (ppm)	0	0	0					
	No. of exceedances	0	0	0					
Feb. 28	No. of samples	49	49	49			15		
	No. of detections	5	5	0			0		
	Min (ppm)	0	0	0			0		
	Max (ppm)	0.02	1	0			0		
	No. of exceedances	0	5	0			0		
Mar. 1	No. of samples	15	15	15			9		
	No. of detections	0	0	0			0		
	Min (ppm)	0	0	0			0		
	Max (ppm)	0	0	0			0		
	No. of exceedances	0	0	0			0		
Mar. 2	No. of samples	27	27	27			15		
	No. of detections	0	0	0			1		
	Min (ppm)	0	0	0			0		
	Max (ppm)	0	0	0			0		
	No. of exceedances	0	0	0			0		
Mar. 3	No. of samples	41	41	41			29		
	No. of detections	5	0	0			0		
	Min (ppm)	0	0	0			0		
	Max (ppm)	0.05	0	0			0		
	No. of exceedances	0	0	0			0		
Mar. 4	No. of samples	53	53	53			41		
	No. of detections	0	0	5			0		
	Min (ppm)	0	0	0			0		
	Max (ppm)	0	0	11			0		
	No. of exceedances	0	0	0			0		
Mar. 5	No. of samples	38	38	38			11		
	No. of detections	0	0	0			0		
	Min (ppm)	0	0	0			0		
	Max (ppm)	0	0	0			0		
	No. of exceedances	0	0	0			0		

	Comparison Values (ppm)	3	0.08	35	0.048	0.18	0.075	0.85	0.08
	Chemicals	VOC	H_2S	CO	Cl_2	Benzene	SO_2	NH_3	H_2S
		MultiRAE							Jerome
Mar. 6	No. of samples	31	31	31			18	13	
	No. of detections	3	0	0			0	0	
	Min (ppm)	0	0	0			0	0	
	Max (ppm)	0.25	0	0			0	0	
	No. of exceedances	0	0	0			0	0	
Mar. 7	No. of samples	36	36	36			14		
	No. of detections	0	0	0			0		
	Min (ppm)	0	0	0			0		
	Max (ppm)	0	0	0			0		
	No. of exceedances	0	0	0			0		
Mar. 8	No. of samples	34	34	34			21		
	No. of detections	2	0	2			0		
	Min (ppm)	0	0	0			0		
	Max (ppm)	0.1	0	50			0		
	No. of exceedances	0	0	1			0		
Mar. 9	No. of samples	45	45	45			35		
	No. of detections	1	0	1			0		
	Min (ppm)	0	0	0			0		
	Max (ppm)	0.1	0	4			0		
	No. of exceedances	0	0	0			0		
Mar. 10	No. of samples	39	39	39			10		
	No. of detections	1	0	0			0		
	Min (ppm)	0	0	0			0		
	Max (ppm)	0.1	0	0			0		
	No. of exceedances	0	0	0			0		
Mar. 11	No. of samples	28	28	28			9		
	No. of detections	0	0	0			0		
	Min (ppm)	0	0	0			0		
	Max (ppm)	0	0	0			0		
	No. of exceedances	0	0	0			0		
Mar. 18	No. of samples	5	5	5					
	No. of detections	3	0	0					
	Min (ppm)	0	0	0					
	Max (ppm)	0.1	0	0					
	No. of exceedances	0	0	0					

	Comparison Values (ppm)	3	0.08	35	0.048	0.18	0.075	0.85	0.08
	Chemicals	VOC	H_2S	CO	Cl_2	Benzene	SO_2	NH_3	H_2S
		MultiRAE							Jerome
Mar. 19	No. of samples	1	1	1					
	No. of detections	1	0	0					
	Min (ppm)	0.01	0	0					
	Max (ppm)	0.01	0	0					
	No. of exceedances	0	0	0					

Winter Storm Uri Handheld Data Summary, Region 12, 02/20 - 3/29/2021

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.08	0.075
	Chemicals	VOC	H_2S	CO	SO_2	VOC	H_2S	CO
		MultiRAE 1				MultiRAE 2		
Feb. 20	No. of samples	30	29	29	7			
	No. of detections	8	0	0	0			
	Min (ppm)	0	0	0	0			
	Max (ppm)	0.2	0	0	0			
	No. of exceedances	0	0	0	0			
Feb. 21	No. of samples	17	17	17				
	No. of detections	2	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0.01	0	0				
	No. of exceedances	0	0	0				
Feb. 22	No. of samples	24	24	24	14			
	No. of detections	11	0	0	0			
	Min (ppm)	0	0	0	0			
	Max (ppm)	0.3	0	0	0			
	No. of exceedances	0	0	0	0			
Feb. 23	No. of samples	20	20	20				
	No. of detections	3	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0.09	0	0				
	No. of exceedances	0	0	0				
Feb. 24	No. of samples	22	22	22				
	No. of detections	0	0	3				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	8				
	No. of exceedances	0	0	0				
Feb. 25	No. of samples	23	23	23				
	No. of detections	9	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0.9	0	0				
	No. of exceedances	0	0	0				
Feb. 26	No. of samples	29	29	29				
	No. of detections	0	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.08	0.075
	Chemicals	VOC	H_2S	CO	SO_2	VOC	H_2S	CO
		MultiRAE 1				MultiRAE 2		
Feb. 27	No. of samples	24	24	24				
	No. of detections	0	0	5				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	28				
	No. of exceedances	0	0	0				
Feb. 28	No. of samples	31	30	31				
	No. of detections	0	0	5				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	15				
	No. of exceedances	0	0	0				
Mar. 1	No. of samples	28	28	28				
	No. of detections	0	0	2				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	8				
	No. of exceedances	0	0	0				
Mar. 2	No. of samples	20	20	20		1	1	1
	No. of detections	3	1	1		0	0	0
	Min (ppm)	0	0	0		0	0	0
	Max (ppm)	0.06	1.2	6		0	0	0
	No. of exceedances	0	1	0		0	0	0
Mar. 3	No. of samples	24	24	24				
	No. of detections	1	0	1				
	Min (ppm)	0	0	0				
	Max (ppm)	0.02	0	3				
	No. of exceedances	0	0	0				
Mar. 4	No. of samples	25	25	25				
	No. of detections	8	0	1				
	Min (ppm)	0	0	0				
	Max (ppm)	0.4	0	10				
	No. of exceedances	0	0	0				
Mar. 5	No. of samples	19	19	19				
	No. of detections	0	0	1				
	Min (ppm)	0	0	3				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.08	0.075
	Chemicals	VOC	H_2S	CO	SO_2	VOC	H_2S	CO
		MultiRAE 1				MultiRAE 2		
Mar. 6	No. of samples	10	10	10				
	No. of detections	0	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				
Mar. 7	No. of samples	13	12	13				
	No. of detections	7	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0.9	0	0				
	No. of exceedances	0	0	0				
Mar. 8	No. of samples	8	8	8				
	No. of detections	1	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0.14	0	0				
	No. of exceedances	0	0	0				
Mar. 9	No. of samples	9	9	9				
	No. of detections	0	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				
Mar. 10	No. of samples	14	14	14	14			
	No. of detections	1	0	0	0			
	Min (ppm)	0	0	0	0			
	Max (ppm)	0.1	0	0	0			
	No. of exceedances	0	0	0	0			
Mar. 11	No. of samples	11	11	11				
	No. of detections	1	0	1				
	Min (ppm)	0	0	0				
	Max (ppm)	0.1	0	22				
	No. of exceedances	0	0	0				
Mar. 12	No. of samples	9	9	9		3	3	3
	No. of detections	1	0	0		1	0	0
	Min (ppm)	0	0	0		0	0	0
	Max (ppm)	0.08	0	0		0.1	0	0
	No. of exceedances	0	0	0		0	0	0

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.08	0.075
	Chemicals	VOC	H_2S	CO	SO_2	VOC	H_2S	CO
		MultiRAE 1				MultiRAE 2		
Mar. 13	No. of samples	13	13	13				
	No. of detections	1	0	1				
	Min (ppm)	0	0	0				
	Max (ppm)	1.7	0	5				
	No. of exceedances	0	0	0				
Mar. 14	No. of samples	12	12	12				
	No. of detections	0	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				
Mar. 15	No. of samples	10	10	10				
	No. of detections	0	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				
Mar. 16	No. of samples	12	12	12				
	No. of detections	0	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				
Mar. 17	No. of samples	14	14	14				
	No. of detections	0	0	2				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	16				
	No. of exceedances	0	0	0				
Mar. 18	No. of samples	17	17	17				
	No. of detections	2	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0.06	0	0				
	No. of exceedances	0	0	0				
Mar. 19	No. of samples	12	12	12				
	No. of detections	0	0	1				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	14				
	No. of exceedances	0	0	0				

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.08	0.075
	Chemicals	VOC	H_2S	CO	SO_2	VOC	H_2S	CO
		MultiRAE 1				MultiRAE 2		
Mar. 20	No. of samples	15	15	15				
	No. of detections	2	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0.07	0	0				
	No. of exceedances	0	0	0				
Mar. 21	No. of samples	11	11	11				
	No. of detections	0	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				
Mar. 22	No. of samples	13	13	13				
	No. of detections	0	0	1				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	8				
	No. of exceedances	0	0	0				
Mar. 23	No. of samples	9	9	9				
	No. of detections	0	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				
Mar. 24	No. of samples	13	13	13				
	No. of detections	0	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				
Mar. 25	No. of samples	13	13	13				
	No. of detections	3	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0.05	0	0				
	No. of exceedances	0	0	0				
Mar. 26	No. of samples	17	17	17				
	No. of detections	0	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				

	Comparison Values (ppm)	3	0.08	35	0.075	3	0.08	0.075
	Chemicals	VOC	H_2S	CO	SO_2	VOC	H_2S	CO
		MultiRAE 1				MultiRAE 2		
Mar. 29	No. of samples	12	12	12				
	No. of detections	0	0	0				
	Min (ppm)	0	0	0				
	Max (ppm)	0	0	0				
	No. of exceedances	0	0	0				