

Knox County Department of Air  
Quality Management

Exceptional Events  
Demonstration

2023 Canadian Wildfire Smoke  
Event

December 23, 2024



KNOX COUNTY  
TENNESSEE

HEALTH DEPARTMENT

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## Section I. Introduction

### 1.1 Overview

This Exceptional Event Demonstration will show that all three of Knox County’s 2.5-micron particulate matter (PM<sub>2.5</sub>) monitors were impacted by smoke from wildfires that roared across Canada starting in Spring 2023<sup>1</sup>. Daily PM<sub>2.5</sub> concentrations at all of Knox County’s sites exceed the 24-hour PM<sub>2.5</sub> National Ambient Air Quality Standard (NAAQS) of 35 µg/m<sup>3</sup> over several days yet maintained compliance with the 24-hour NAAQS for the 2021-2023 design value (DV) period. In addition, several days had higher than normal PM<sub>2.5</sub> values contributing to the Rule monitor (47-093-1017) exceeding the newly promulgated 2024 annual NAAQS of 9.0 µg/m<sup>3</sup>. The “regulatorily significant” dates that contributed to the PM<sub>2.5</sub> NAAQS exceedances at the Rule monitor are: June 7<sup>th</sup>, 9<sup>th</sup>, 18<sup>th</sup>, 28<sup>th</sup>, 29<sup>th</sup>, July 17<sup>th</sup> and 18<sup>th</sup>. These exceedances are directly connected to the Canadian Wildfire smoke. Knox County submitted the initial notification for this demonstration to the Environmental Protection Agency (EPA) Region 4 via email on September 24, 2024 (**Appendix A**).

Knox County Air Quality requests that EPA concur with the exclusion of the specified PM<sub>2.5</sub> concentrations in **Table 1** from regulatory decisions. These data are in the PM<sub>2.5</sub> Tier 1 threshold of EPA’s PM<sub>2.5</sub> Tiering Tool<sup>2</sup>. These data impact regulatory decisions about the attainment of the NAAQS for the Knoxville, Metropolitan Statistical Area (MSA). The days and sites for which Knox County is requesting concurrence were impacted by an event consistent with EPA’s definition of “unusual or naturally occurring events that can affect air quality but are not reasonably controllable using techniques that tribal, state, or local air agencies may implement in order to attain and maintain the [NAAQS]”<sup>2,3</sup>.

An examination of data collected on the same dates at Knox County’s other regulatory PM<sub>2.5</sub> monitor’s identified additional data in **Table 2** that were impacted by this event, but because their 2021-2023 design values are below the 2024 PM<sub>2.5</sub> NAAQS, they are not currently “regulatorily significant.” If these data become “regulatorily significant” this demonstration should serve to exclude those events. Knox County may submit future demonstrations requesting exclusion of additional data affected by this event.

*Table 1: Regulatorily Significant DATA CONTRIBUTING TO EXCEEDING THE ANNUAL NATIONAL AMBIENT AIR QUALITY STANDARD MONITORING SITE(S)*

County	Monitor Name	AQS Site ID	Date	Air Quality Index Category	24-hour Average Concentration (µg/m3)
Knox	Rule High School	47-093-1017	6/7/23	Moderate	31.5
Knox	Rule High School	47-093-1017	6/9/23	Moderate	25
Knox	Rule High School	47-093-1017	6/18/23	Moderate	26
Knox	Rule High School	47-093-1017	6/28/23	Moderate	34.7

<sup>1</sup> [Canada’s record-breaking wildfires in 2023: A fiery wake-up call](#)

<sup>2</sup> [PM2.5 Tiering Tool - for Exceptional Events Analysis | US EPA](#)

<sup>3</sup> [What is an exceptional event? | US EPA](#)

Knox	Rule High School	47-093-1017	6/29/23	USG	49.1
Knox	Rule High School	47-093-1017	7/17/23	USG	51.2
Knox	Rule High School	47-093-1017	7/18/23	USG	38.3

Table 2: Additional Data Affected by Wildland Fire Smoke

County	Monitor Name	AQS Site ID	Date	Air Quality Index Category	24-hour Average Concentration (µg/m <sup>3</sup> )
Knox	Air Lab	47-093-1013	6/7/23	Moderate	29
Knox	Air Lab	47-093-1013	6/9/23	Moderate	23.9
Knox	Air Lab	47-093-1013	6/18/23	Moderate	24.6
Knox	Air Lab	47-093-1013	6/28/23	Moderate	33.5
Knox	Air Lab	47-093-1013	6/29/23	USG	46.9
Knox	Air Lab	47-093-1013	7/17/23	USG	49.8
Knox	Air Lab	47-093-1013	7/18/23	USG	37.1
Knox	Springhill	47-093-1020	6/7/23	Moderate	30.2
Knox	Springhill	47-093-1020	6/9/23	Moderate	25.3
Knox	Springhill	47-093-1020	6/18/23	Moderate	26.2
Knox	Springhill	47-093-1020	6/28/23	Moderate	34.7
Knox	Springhill	47-093-1020	6/29/23	USG	50.3
Knox	Springhill	47-093-1020	7/17/23	USG	53.9
Knox	Springhill	47-093-1020	7/18/23	USG	39.4

## 1.2 Clean Air Act Requirements

The U.S Environmental Protection Agency’s 2024 PM<sub>2.5</sub> NAAQS has two components: an annual average standard of 9.0 µg/m<sup>3</sup>, and a 24-hour average standard of 35 µg/m<sup>3</sup>. The annual PM<sub>2.5</sub> standard is met when the annual weighted quarterly average averaged over three years is less than or equal to 9.0 µg/m<sup>3</sup> (40 CFR § 50.20)<sup>4</sup>. Promulgation of the 2024 NAAQS has triggered the state attainment recommendation process and states are required to submit their area recommendations by February 7, 2025. As part of this process, Knox County is submitting this exceptional event demonstration to exclude certain data from the 2021-2023 design value

<sup>4</sup> [eCFR :: 40 CFR 50.20 -- National primary ambient air quality standards for PM2.5.](#)

calculations that will be relied upon by the state in making its recommendation. (The exclusion of this data will also impact EPA's designation process as the events will be part of the 2022-2024 design value also.)

### 1.3 Exceptional Events Rule Requirements

EPA's *Treatment of Data Influenced by Exceptional Events* (Exceptional Event Rule) (81 Fed. Reg. 68,216<sup>5</sup>) details what air agencies must demonstrate to exclude exceptional event-related concentrations from regulatory determinations. The following are requirements under 40 CFR § 50.14(c)(3)(iv)(A–E):

*A. A narrative conceptual model that describes the event(s) causing the exceedance or violation and a discussion of how emissions from the event(s) led to the exceedance or violation at the affected monitor(s); (See Section III of this document)*

*B. A demonstration that the event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance or violation; (See Section IV of this document)*

*C. Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times to support the requirement in paragraph (c)(3)(iv)(B) of this section. The Administrator shall not require a State to prove a specific percentile point in the distribution of data; (See Section IV of this document)*

*D. A demonstration that the event was both not reasonably controllable and not reasonably preventable; and (See Section V of this document)*

*E. A demonstration that the event was a human activity that is unlikely to recur at a location or was a natural event. (See Section VI of this document)*

The Exceptional Events Rule further provides that for wildfire exceptional events, the wildfire must occur predominantly on wildland.

*40 CFR 50.14(b)(4): Wildfires. The Administrator shall exclude data from use in determinations of exceedances and violations where a State demonstrates to the Administrator's satisfaction that emissions from wildfires caused a specific air pollution concentration more than one or more national ambient air quality standard at a particular air quality monitoring location and otherwise satisfies the requirements of this section. Provided the Administrator determines that there is no compelling evidence to the contrary in the record, the Administrator will determine every wildfire occurring predominantly on wildland to have met the requirements identified in paragraph (c)(3)(iv)(D) of this section regarding the not reasonably controllable or preventable criterion.*

The definition for "wildland" is provided in 40 CFR § 50.1(o). The term "wildland" issued in this document consistent with this definition.

*40 CFR § 50.1(o): Wildland means an area in which human activity and development are essentially non-existent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any, are widely scattered.*

This demonstration addresses the above requirements in showing transported smoke from the 2023 Canadian Wildfires on wildlands is responsible for the PM<sub>2.5</sub> exceedances at the Rule monitoring site in Knox County. In addition, Knox County will provide a 30-day public comment period on this exceptional event demonstration.

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<sup>5</sup> [2016-22983.pdf](#)

## 1.4 Canadian Wildfire Impacts on PM<sub>2.5</sub> Design Values in Knoxville

The annual PM<sub>2.5</sub> design value is calculated using the three-year average of the design value year's annual average with the previous two-year annual averages. Annual averages are an average of the four quarter averages of a given calendar year. If the EPA includes the **Table 1** dates from the Rule Monitor 24-hour PM<sub>2.5</sub> concentrations in the 2023 design value for the Knoxville Metropolitan Statistical Area (MSA), then the 2023 design value for this MSA will be 9.1 µg/m<sup>3</sup>. Excluding these data points lowers the 2023 design value to 8.9 µg/m<sup>3</sup>. Removal of these data points from the 2021 – 2023 preliminary design value is regulatorily significant because it directly influences the initial area designation for the 2024 Primary Annual PM<sub>2.5</sub> NAAQS.

## 1.5 Action Requested

This demonstration meets all EPA documentation standards for Exceptional Events (see **Section 1.3**). Pursuant to federal regulations, Knox County requests EPA concurrence that the PM<sub>2.5</sub> concentrations shown in **Table 1** were caused by an exceptional event and should be excluded from regulatory decisions for the 2024 Primary Annual PM<sub>2.5</sub> NAAQS and any other applicable regulatory purposes (40 CFR §50.14(b)). EPA's Air Quality System (AQS) initially had the "IF" flag applied for the dates in **Table 1** at the Rule monitor. A copy of the AMP 350 report from EPA's AQS system is included in (**Appendix B**) and shows the data included in this demonstration has the "IF" flag applied. EPA approved Knox County's intent to submit an exceptional event demonstration on November 1<sup>st</sup>, 2024 (**Appendix A**). Knox County updated the "IF" flags to "rt" flags. An updated AMP report including the "rt" flags is included in **Appendix B**.

## Section II. Overview of the Knoxville Metropolitan Statistical Area Network

### 2.1 Knox County Particulate Ambient Air Monitoring Network

Knox County Air Quality (Knox County) is a local monitoring agency operating under a certificate of exemption from the State of Tennessee. Knox County's ambient particulate monitoring program consists of 3 PM<sub>2.5</sub> sites and is part of the Knoxville MSA. Each site consists of a primary monitor and two sites include a collocated monitor. Based upon the MSA population data and the design values the Knoxville MSA is required to operate a minimum of 2 primary and 2 collocated PM<sub>2.5</sub> monitors.



Figure 1: Knox County's Particulate Monitoring Network

## Section III. Narrative Conceptual Model

**This section satisfies the following requirement:**

A narrative conceptual model that describes the event(s) causing the exceedance or violation at the affected monitor(s); (40 CFR 50.14(c)(3)(iv)(A)).

The Exceptional Event Rule requires that demonstrations include a narrative conceptual model describing the event. This section will describe the 2023 Canadian wildfires that affected public health and impacted air quality monitors across much of the United States, including Knox County Tennessee. It will also describe the general meteorological conditions that supported the transportation of the wildfire smoke and spread it across the Knoxville MSA. PM<sub>2.5</sub> pollution from the wildfire smoke impacted Knox County’s ambient monitors and caused air quality concentrations that exceeded the NAAQS and were well above normal conditions across the state.

### 3.1 2023 Canadian Smoke and Wildfires

The 2023 Canadian Wildfires were well documented and impacted much of North America, including the United States. The 2023 Wildfire season was “record breaking”. These wildfires were the most destructive ever recorded.<sup>6</sup> In the first week of June, large amounts of smoke from fires in Quebec poured south into the eastern U.S. and degraded the quality of surface-level air. Winds typically move smoke from fires in Quebec toward the east and out to sea. But in June 2023, a persistent coastal low centered near Prince Edward Island instead steered smoke south into the United States.<sup>7</sup>

Many of Canada’s 2023 fires, ignited by early summer lightning storms, burned for months in remote areas. The fires in Quebec, which heavily impacted air quality in the eastern United States, predominately started around June 1 because of lightning strikes and experienced surging growth by late June and into early July, a period when temperatures were unusually high and widespread drought gripped the region. On June 1, 2023, more than 120 wildfires were started by lightning in Quebec. From June 1 until June 25, more forested land in southern Quebec burned than had burned during the previous 20 years combined<sup>6</sup>. These fires had a significant impact on air quality and spiked PM<sub>2.5</sub> monitors to levels significantly higher than normal across the eastern half of North America. The smoke plume generated by these wildland fires was transported to Knox County, Tennessee in early and late June and mid-July, as will be shown in this demonstration.

**Figure 2** is a map of Canada illustrating wildland areas which burned in 2023. Wildfire events were more frequent than normal and highly unusual.

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<sup>6</sup> [Canada’s record-breaking wildfires in 2023: A fiery wake-up call](#)

<sup>7</sup> [Smoke Smothers the Northeast](#)



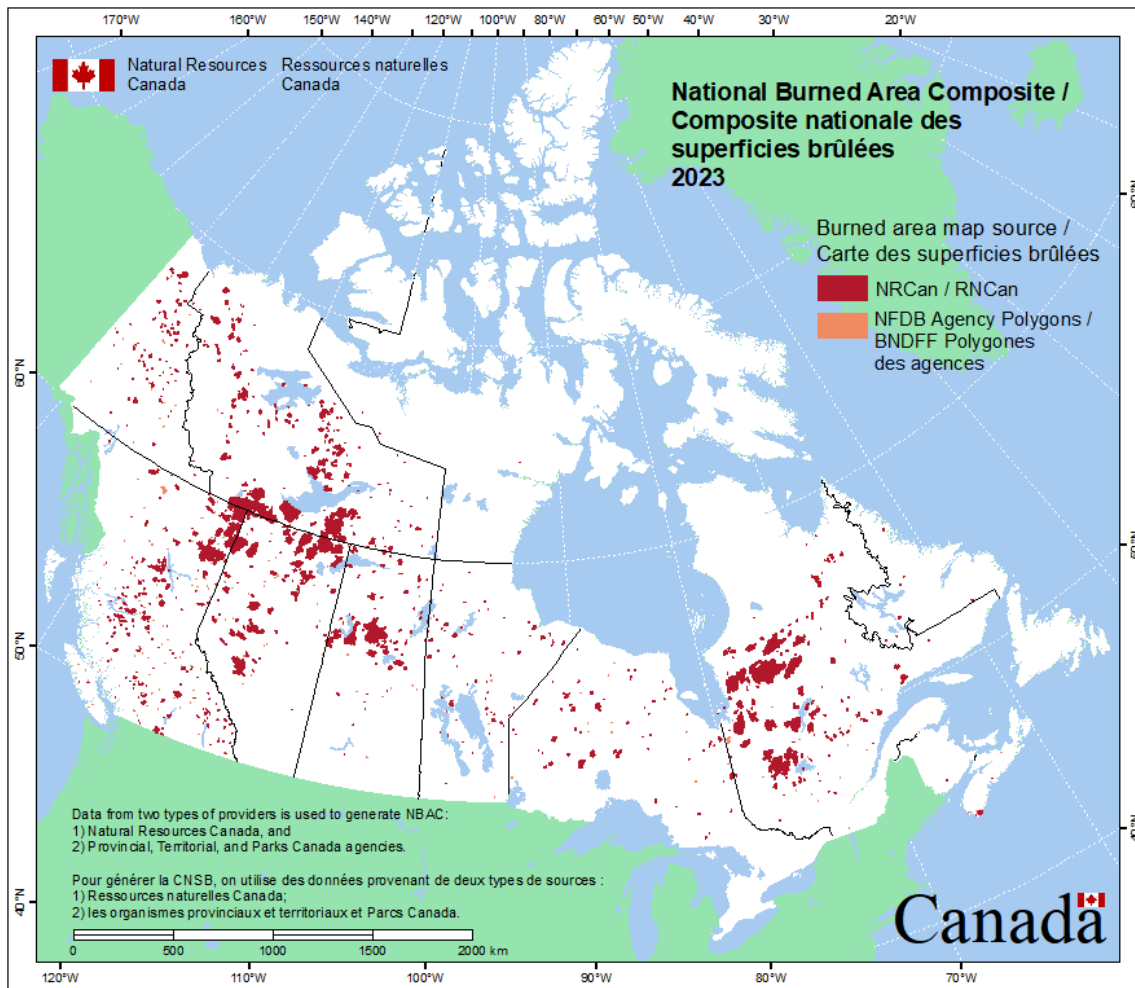


Figure 2: Canadian Fires, Total Burned Area (Red)

## 3.2 Knox County Smoke Impacts

### 3.2.1 Early June 2023

Early in June, the jet stream was positioned in a way that carried smoke from Quebec and Ontario southward into the northeastern United States. A cold front moving through the eastern U.S acted as a conduit for the southward movement of smoke. A high-pressure system situated over the Mid-Atlantic region reinforced the southward movement of the smoke. This pattern steered the smoke down the eastern seaboard and into parts of the southeastern United States, including Tennessee. Knoxville began to experience the effects of the smoke plume between June 7 and June 9. The high-pressure system over the region trapped the smoke near the surface, leading to elevated PM<sub>2.5</sub> concentrations and hazy skies. Residents reported a noticeable decrease in air quality, with some experiencing respiratory discomfort or irritation.

The following series of images illustrate, for each day of requested exclusion, the National Oceanic and Atmospheric Administration (NOAA) Surface Analysis Weather predictive Center<sup>8</sup> synoptic meteorology across the demonstration area within the US and Canada, the NOAA Hazard Mapping System<sup>9</sup> mapping smoke plume

<sup>8</sup> [WPC Surface Analysis Archive](#)

<sup>9</sup> [Hazard Mapping System | OSPO](#)

intensity. A descriptive text narrative for smoke/dust observed in satellite imagery from NOAA is also included for each day of requested exclusion<sup>10</sup>

### 3.2.1.1 June 7<sup>th</sup>

“DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 0030Z June 7, 2023:

SMOKE: Canada, Central United States and Eastern United States... Wildfire activity in northern British Columbia and the Northwest Territories continued to produce high-density smoke, contributing to a lengthy plume of moderate to high-density remnant smoke extending eastward over northern Canada and southward over Ontario and Quebec. In northern Ontario and especially southern Quebec, wildfire activity was producing a large area of high-density smoke extending southwestward and southward, adding to the smoke from the western fires. This area of moderate to high density smoke was extending south and southwestward over much of the Eastern United States to as far south and west as portions of the Southeastern United States and Midwestern United States as well as over the northwestern Atlantic Ocean.”<sup>11</sup>

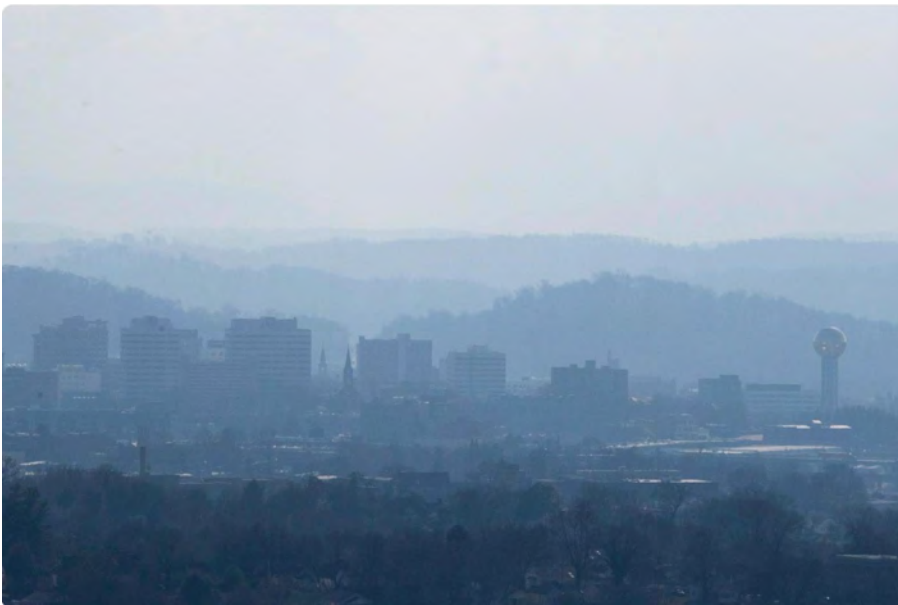


Figure 3: Photo from the Knoxville News Sentinel June 7<sup>th</sup>, 2023,

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<sup>10</sup> [Satellite Smoke Text Product - Office of Satellite and Product Operations](#)

<sup>11</sup> [Smoke Text Product - Satellite Services Division](#)

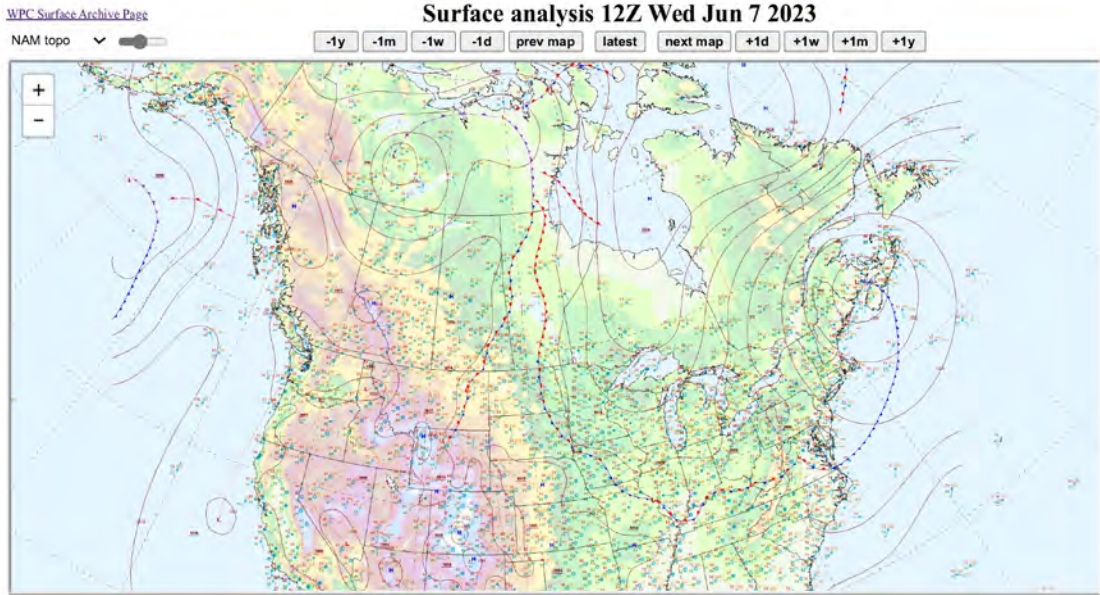


Figure 4: Surface Analysis Weather Predictive Center June 7th, 2023

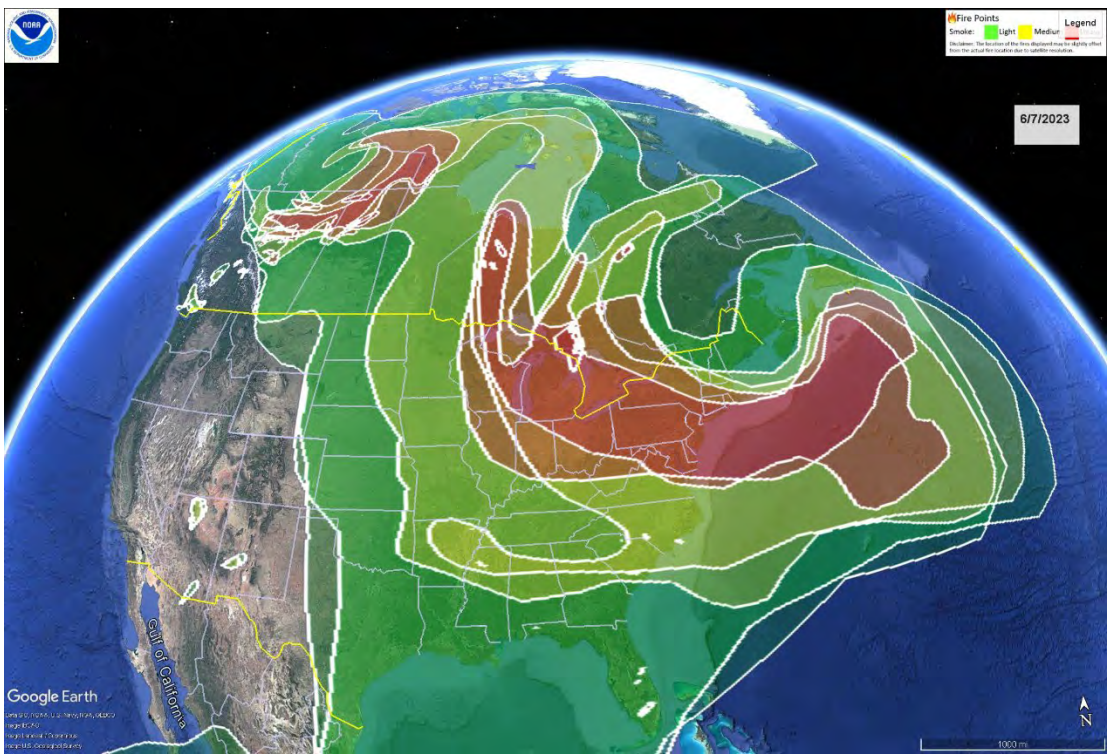


Figure 5: Smoke Layer, NOAA Hazard Mapping System Fire and Smoke Product June 7th, 2023

### 3.2.1.1 June 9<sup>th</sup>

“DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 0140 Z June 9, 2023:

SMOKE: Canada, Central and Eastern United States and the northwestern Atlantic Ocean... multiple large wildfires across western and central Canada continued to produce large amounts of moderate to high density smoke in a plume stretching from northeastern British Columbia east through central Alberta, central

Saskatchewan to central Manitoba. This area of smoke extended east and northeast through northeastern Canada and into the north Atlantic Ocean where an area of moderate density smoke was seen over the north Atlantic Ocean. Additional fires in Quebec and Ontario were adding moderate to high density smoke that was extending southwest and southward through much of Ontario, the Upper Midwest and much of the Eastern United States extending as far south as northern Alabama and northern Georgia. Within this area, an area of high-density smoke was seen along and east of the I95 corridor from Raleigh and Richmond northeast to Boston and extended from there further northeast into southeastern Canada.”<sup>12</sup>

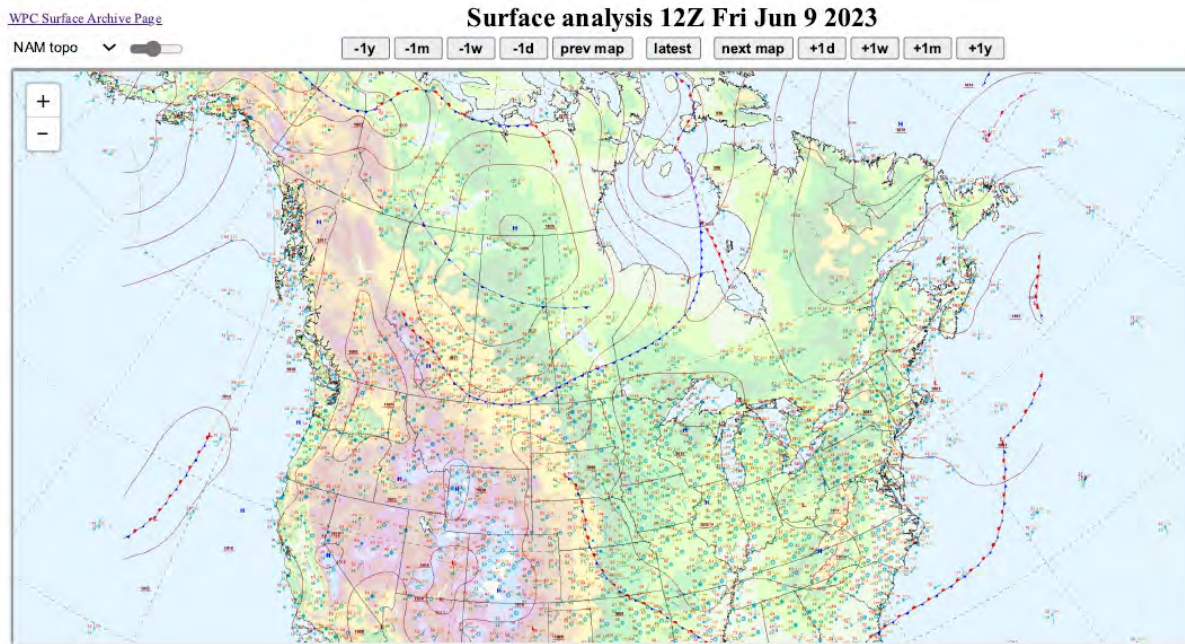


Figure 6: Surface Analysis Weather Predictive Center, Friday June 9th, 2023

<sup>12</sup> Smoke Text Product - Satellite Services Division

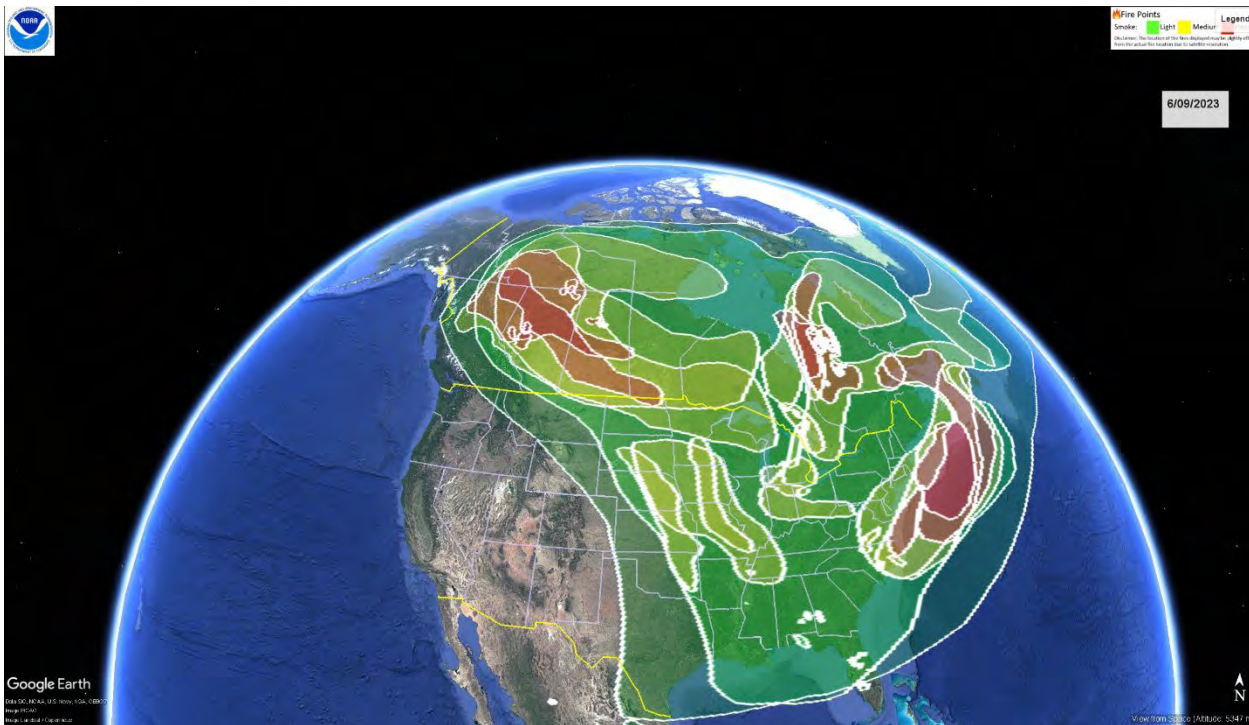


Figure 7: Smoke Layer, NOAA Hazard Mapping System Fire and Smoke Product June 9th, 2023

### 3.2.2 Mid-June

Fires continued to rage across Canada into mid-June, intensified by persistent drought, high temperatures and strong winds. A high-pressure system settled over the eastern US, including the Tennessee Valley. This created stable atmospheric conditions leading to limited vertical mixing of the air and trapped smoke closer to ground level. Low wind speeds slowed dispersion of smoke and allowed it to linger over Knoxville.

#### 3.2.2.1 June 18<sup>th</sup>

“DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 1645Z June 18, 2023

SMOKE: Canada/United States/Atlantic Ocean... Cloudiness has spread over some of the wildfires in various spots across Canada which has affected both fire and smoke detection in satellite imagery. This was especially true over western and central Canada. The numerous large wildfires (some of which are still visible in satellite imagery), which have been scattered across portions of the southern half of Canada generally from northern British Columbia and the southwestern part of the Northwest Territories eastward over the southern tier of Canadian provinces to Quebec over the past number of weeks, continued to result in a patches of moderate to thick density smoke which covered parts of Canada. Moderate to thick smoke also spread to the south and southeast from the Upper Mississippi Valley and Great Lakes regions to and off the Mid-Atlantic and southeastern U.S. coast. Thinner density smoke from these fires covered a sizable part of the Atlantic reaching as far east as Europe. Embedded relatively smaller areas of moderate to thick density smoke were also seen over the northern Atlantic. In addition, it is likely that the southern portion of the smoke from Canada merged with smoke spreading northward from Mexico somewhere over the south central and southeastern U.S.”<sup>13</sup>

<sup>13</sup> [Smoke Text Product - Satellite Services Division](#)

### Surface analysis 12Z Sun Jun 18 2023

NAM topo

-1y -1m -1w -1d prev map latest next map +1d +1w +1m +1y

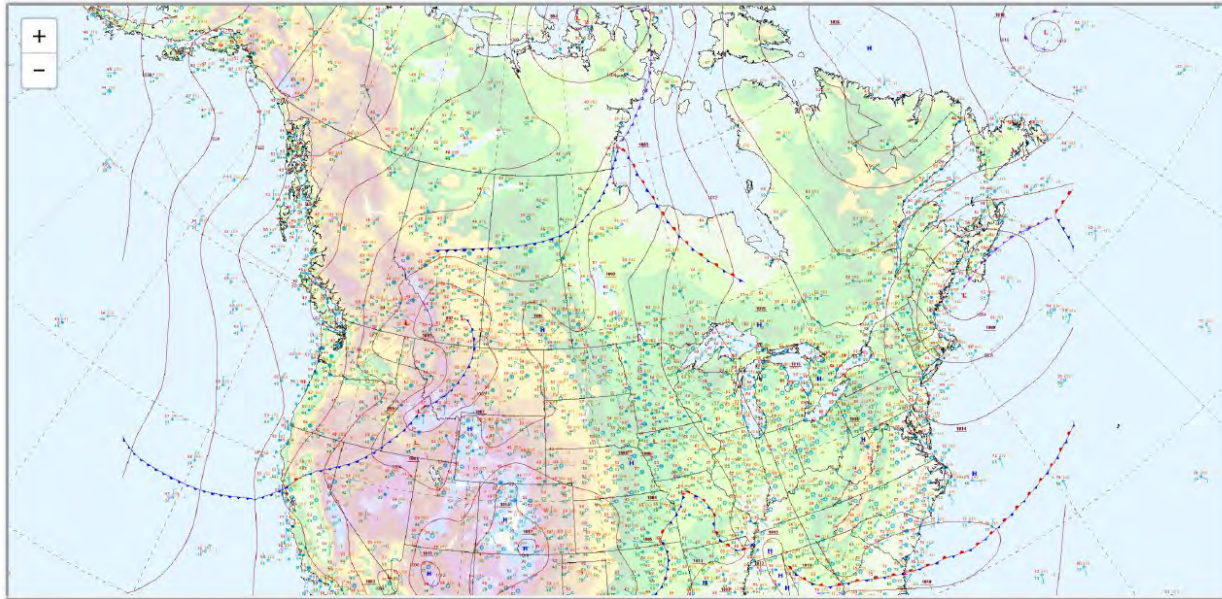


Figure 8: Surface

Analysis Weather Predictive Center June 18th, 2023

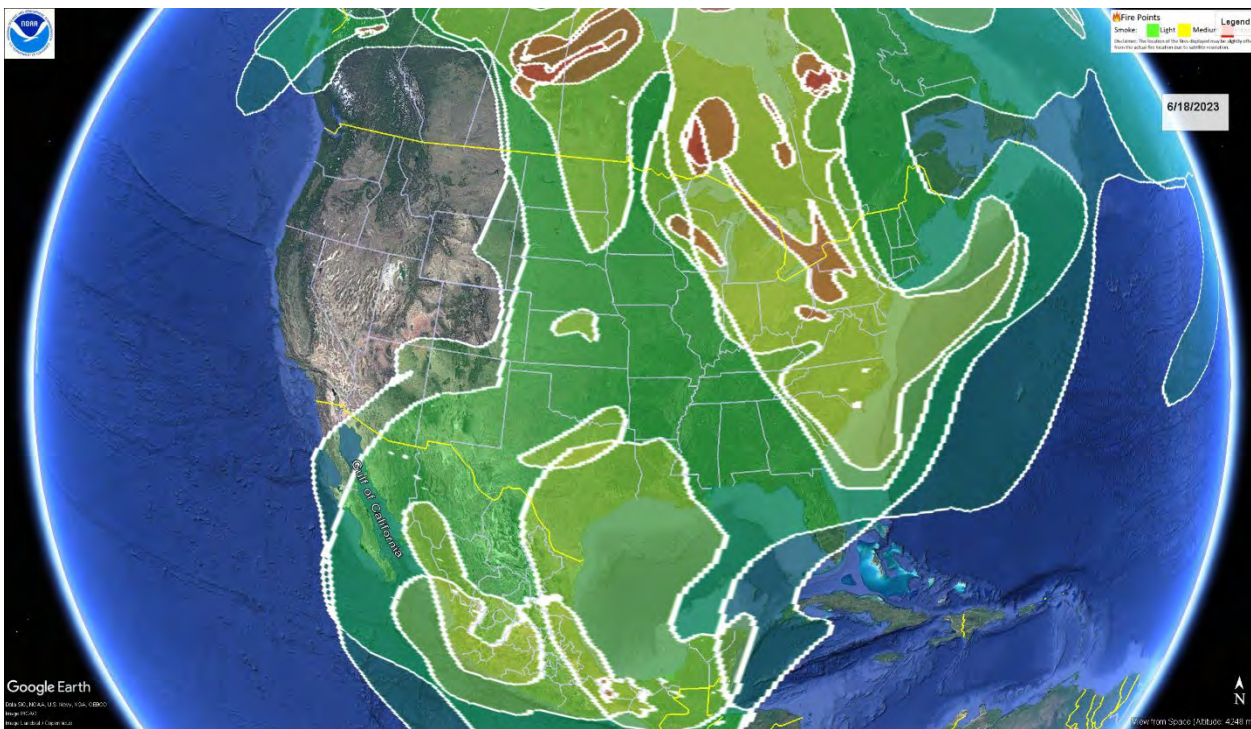


Figure 9: Smoke Layer, NOAA Hazard Mapping System Fire and Smoke Product June 18th, 2023

### 3.2.3 Late June

Canadian wildfires continued to burn fueled by prolonged drought, high temperatures and strong surface winds. The jet stream directed smoke southward from eastern Canada into the central and eastern US. Lower and mid-level atmosphere winds steered the smoke toward the Ohio Valley and the southeastern US, including Tennessee. A high-pressure system was dominant over the southeastern US causing the smoke to settle closer to the ground.

### 3.2.3.1 June 28<sup>th</sup>

#### “DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 1550Z June 28, 2023

SMOKE: Canada, Eastern and Central United States, Atlantic Ocean... The major wildfires across portions of Canada continue with a large area of smoke over much of Canada and extending to the south over the Central and Southeastern United States. The smoke also extended well off the east coasts of Canada and the United States over the northern and central Atlantic to western portions of Europe. To the west, some of the thinner density smoke had spread to the west and south to just off the southwestern coast of Canada and the Pacific Northwest United States and into the far northeastern Pacific Ocean. Within this area, the thickest smoke was located from western Quebec through southern Ontario and into portions of the Midwestern and Upper Midwest of the United States and over northern Alberta, the southern Northwest Territories and northern British Columbia.”<sup>14</sup>

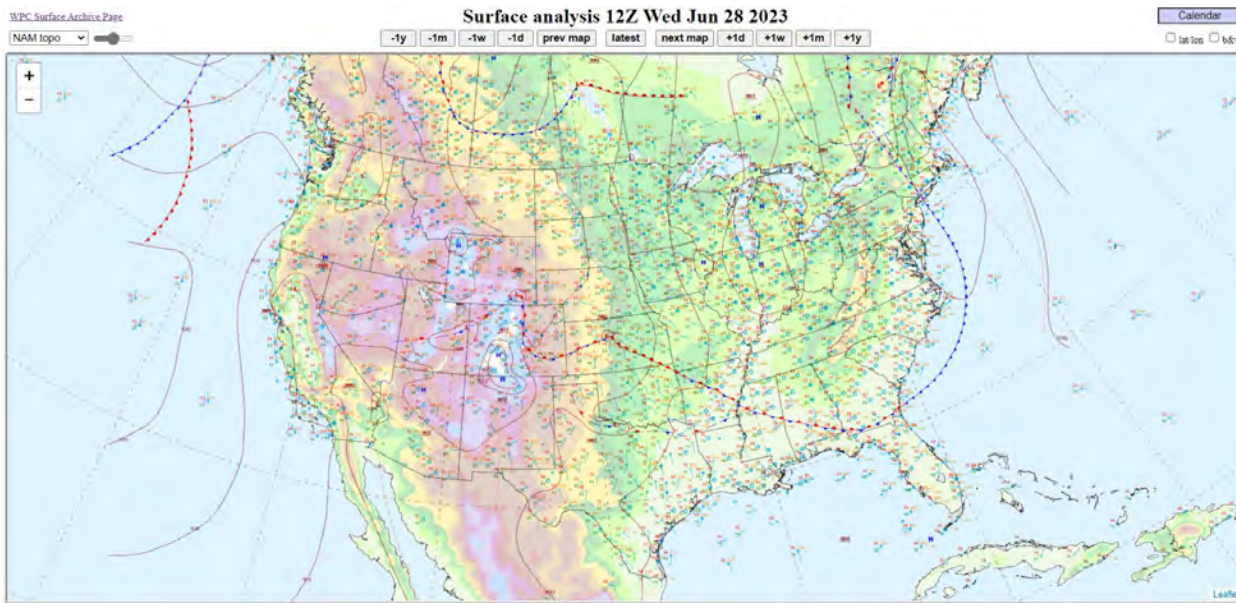


Figure 10: Surface Analysis Weather Predictive Center June 28th, 2023

<sup>14</sup> Smoke Text Product - Satellite Services Division

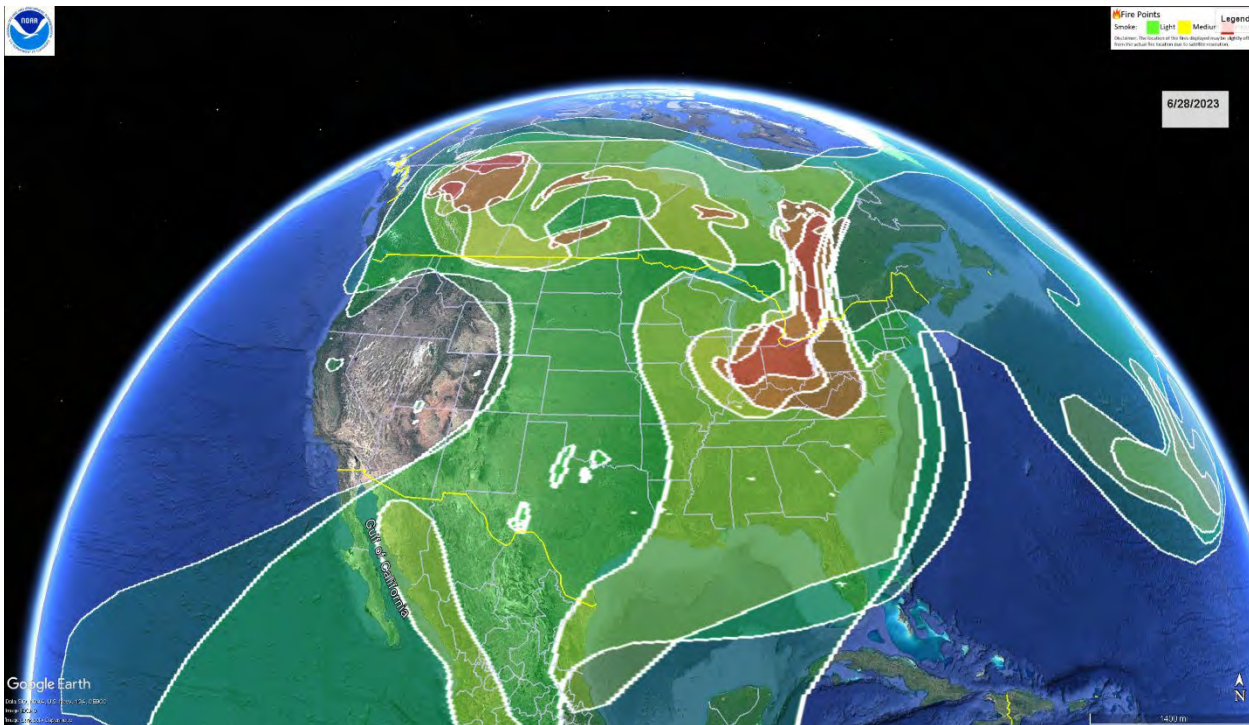


Figure 11: Smoke Layer, NOAA Hazard Mapping System Fire and Smoke Product June 28th, 2023

### 3.2.3.2 June 29<sup>th</sup>

“DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 0025Z June 29, 2023

SMOKE:

Canada, Eastern and Central United States, Atlantic Ocean... The major wildfires across portions of Canada continue with a large area of smoke over much of Canada and extending to the south over the Central and Southeastern United States. The smoke also extended well off the east coasts of Canada and the United States over the northern and central Atlantic to western portions of Europe. To the west, some of the thinner density smoke had spread to the west and south to just off the southwestern coast of Canada and the Pacific Northwest United States and into the far northeastern Pacific Ocean. Within this area, the thickest smoke was located from western Quebec through southern Ontario and into portions of the Midwestern and Upper Midwest of the United States and also over northern Alberta, the southern Northwest Territories and northern British Columbia.”<sup>15</sup>

<sup>15</sup> [Smoke Text Product - Satellite Services Division](#)



### Surface analysis 12Z Thu Jun 29 2023

NAM topo

-1y -1m -1w -1d prev map latest next map +1d +1w +1m +1y

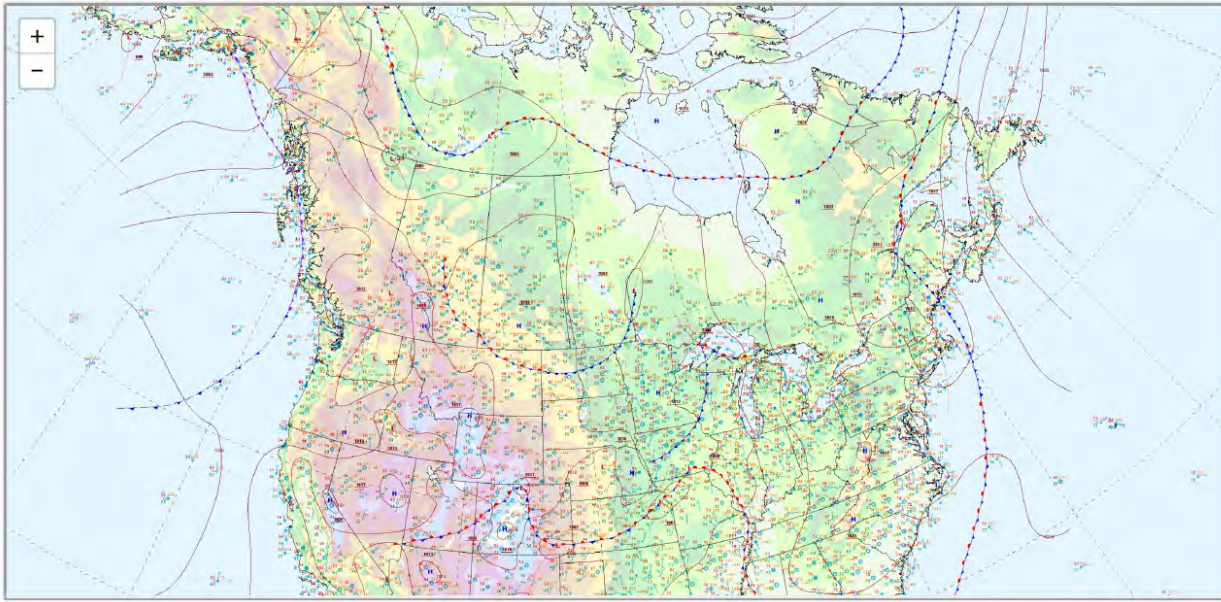


Figure 12: Surface Analysis 12Z June 29th, 2023

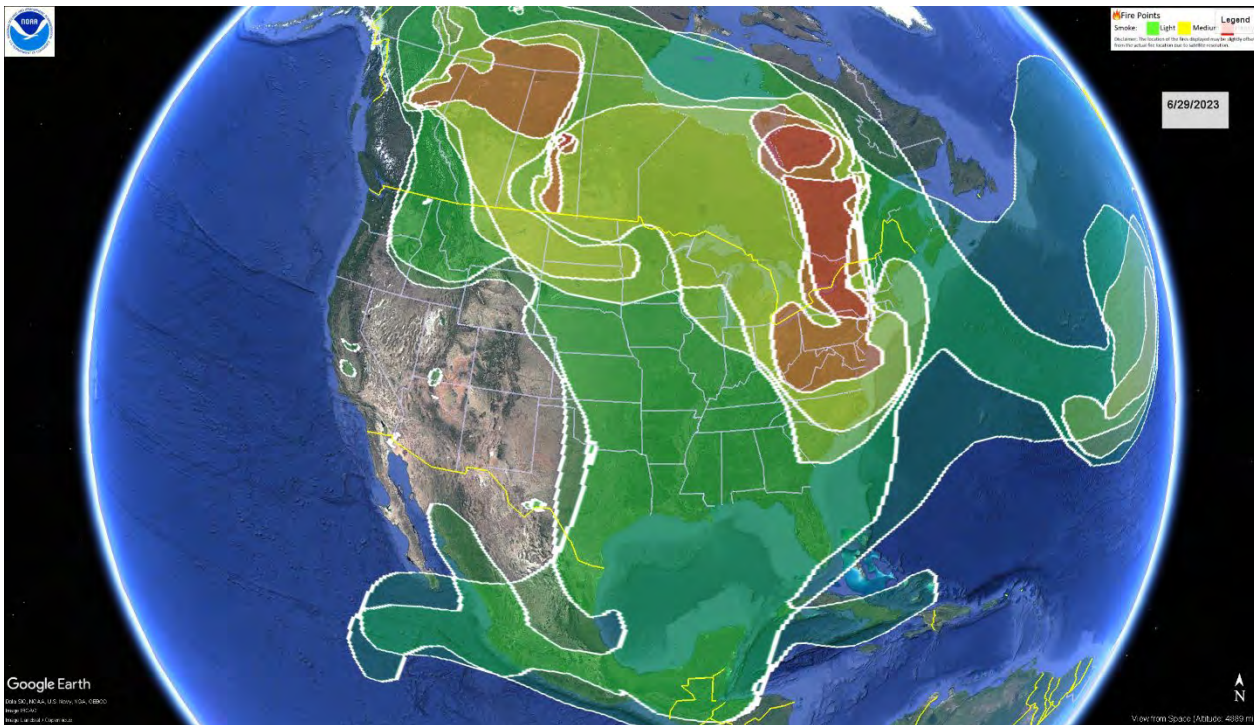


Figure 13: Smoke Layer, NOAA Hazard Mapping System Fire and Smoke Product June 29th, 2023

### 3.2.3 Mid-July

Prolonged drought, high temperatures and strong surface winds continued to drive the extensive wildfires in eastern Canada. Upper atmosphere smoke plumes were carried by the jet stream from eastern Canada toward the eastern and southeastern US. Mid to lower-level winds steered the smoke southeast toward Tennessee.

### 3.2.3.1 July 17<sup>th</sup>

#### “DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 1720Z July 17, 2023

SMOKE: Canada/United States/Atlantic Ocean... Numerous large wildfires continue to burn especially in portions of western and northwestern Canada as well as in southeastern Canada in

western Quebec to the southeast of Hudson Bay. A huge area of thin density smoke primarily from the significant wildfires in Canada was seen covering all of Canada and most of the U.S with the exception of Washington state and portions of the Western U.S. The smoke also extended

well offshore of eastern Canada and the eastern U.S. over the Atlantic and northwest into Eastern Alaska. Large areas of much thicker smoke were present over much of western and northwestern Canada, as well as some of central and eastern Canada and the Labrador Sea, though cloud cover

over eastern Canada made it difficult to distinguish between moderate and thick density. In addition, the batch of thick smoke from the wildfire activity in western and northwestern Canada extended southeast over much of the north central and eastern U.S.”<sup>16</sup>

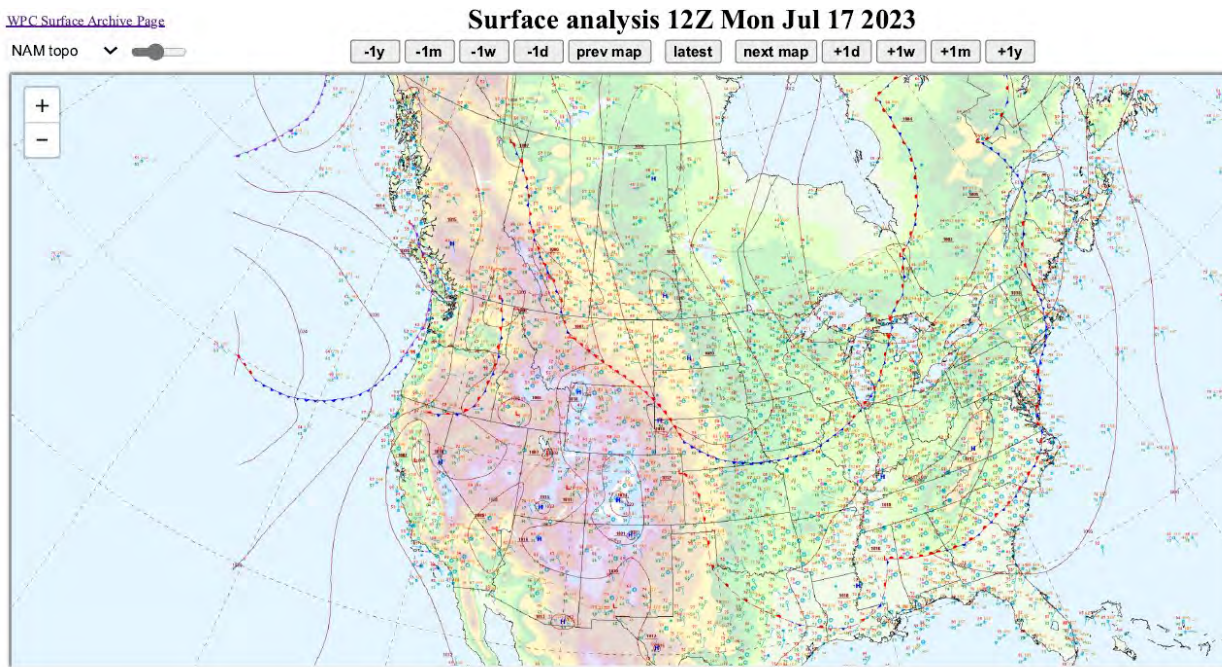


Figure 14: Surface Analysis Weather Predictive Center July 17th, 2023

<sup>16</sup> [Smoke Text Product - Satellite Services Division](#)

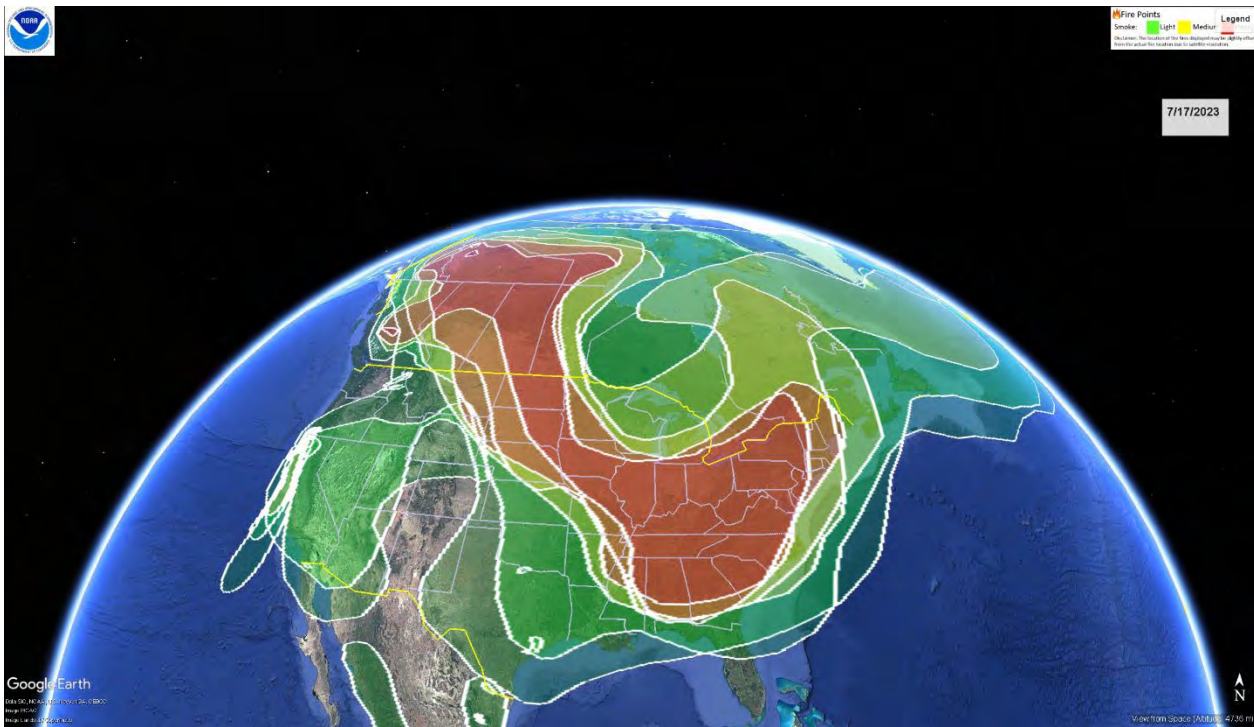


Figure 15: Smoke Layer, NOAA Hazard Mapping System Fire and Smoke Product July 17th, 2023

### 3.2.3.1 July 18<sup>th</sup>

“DESCRIPTIVE TEXT NARRATIVE FOR SMOKE/DUST OBSERVED IN SATELLITE IMAGERY THROUGH 0000Z July 18, 2023

#### SMOKE:

Canada/United States/Atlantic Ocean... Numerous large wildfires continue to burn especially in portions of western and northwestern Canada as well as in southeastern Canada in western Quebec to the southeast of Hudson Bay. A huge area of thin density smoke primarily from the significant wildfires in Canada was seen covering all of Canada and most of the U.S with the exception of Washington state and portions of the Western U.S. The smoke also extended well offshore of eastern Canada and the eastern U.S. over the Atlantic and northwest into Eastern Alaska. Large areas of much thicker smoke were present over much of western and northwestern Canada, as well as some of central and eastern Canada and the Labrador Sea, though cloud cover over eastern Canada made it difficult to distinguish between moderate and thick density. In addition, the batch of thick smoke from the wildfire activity in western and northwestern Canada extended southeast over much of the north central and eastern coast of the U.S.”<sup>17</sup>

<sup>17</sup> [Smoke Text Product - Satellite Services Division](#)

### Surface analysis 12Z Tue Jul 18 2023

NAM topo

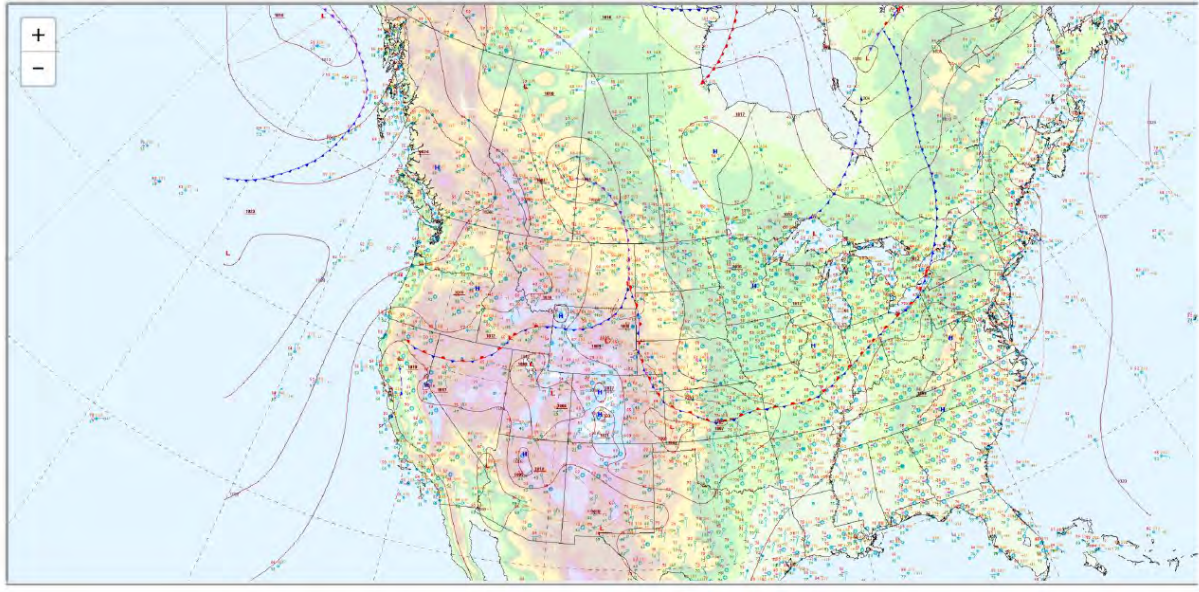


Figure 16: Surface Analysis Weather Predictive Center July 18th 2023

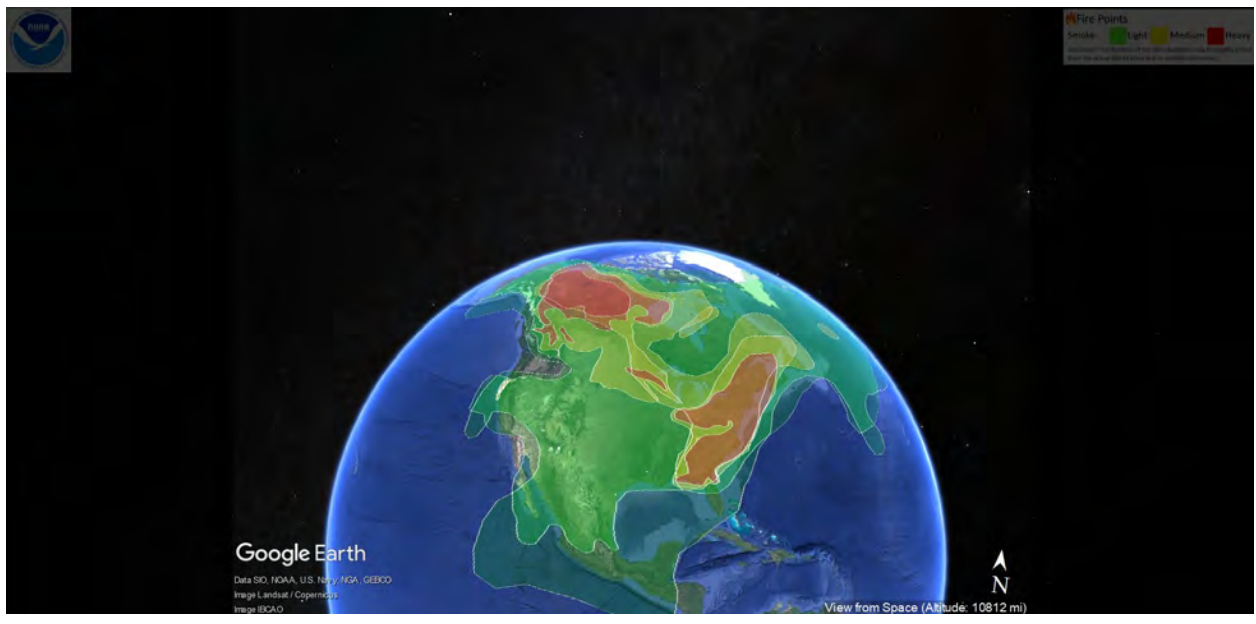


Figure 17: Smoke Layer, NOAA Hazard Mapping System Fire and Smoke Product July 18th, 2023

## Section IV. Clear Causal Relationship

**This section satisfies the following requirements:**

- The event affected air quality in such a way that there exists a clear, causal relationship between the specific event and the monitored exceedance(s) or violation(s). (40CFR 50.14 (c)(3)(iv)(B))
- Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site(s) at other times. (40 CFR 50.14(c)(3)(iv)(C))

The

Exceptional Event Rule requires a clear causal relationship exist between the measured exceedances and the exceptional event to demonstrate the exceptional event caused a specific air pollution concentration at an air quality monitoring location. The analysis provided in this section is consistent with the clear causal relationship examples provided in the Final Rule on the Treatment of Data Influenced by Exceptional Events.

This demonstration follows the process described in the PM<sub>2.5</sub> *Wildland Fire Exceptional Events Tiering Document*<sup>18</sup>. It states:

*“This document outlines a tiered approach for addressing the clear causal relationship element within a wildland fire PM<sub>2.5</sub> demonstration, recognizing that some causal relationships may be clearer and, therefore, require relatively fewer pieces of evidence to satisfy the rule requirements.”*

Tier 1 clear causal analyses are intended for wildland fire events which cause unambiguous PM<sub>2.5</sub> impacts well above historical 24-hour concentrations, thus requiring fewer pieces of evidence to establish a clear causal relationship. This demonstration is for a Tier 1 event.

Tier 1 analyses should include:

- The tiering threshold used for the event days, which calculation methodology was used, and comparison of the 24-hour PM<sub>2.5</sub> value to the tiering threshold. (See **Figure 40, Section 4.2** of this document The Tiering Tool)
- Comparison of the fire-influenced exceedance with historical concentrations, by providing two data plots appropriate to the chosen tiering threshold calculation methodology. (See **Figures 40 and 41, Section 4.2** this document tiering tool vs Tool with exclusion)
- Evidence of transport of fire emissions from fire to the monitor. (See **Section 4.1** of this document)

### 4.1 Canadian Wildfire Smoke Impacting Monitors in Knoxville, Tennessee

Sections 4.1.1 through 4.1.4 illustrate the movement of smoke plumes across North America using the AirNow-Tech Navigator tool with the HMS Smoke from satellites and the PM<sub>2.5</sub> 24-hour average data from stationary monitors reporting to Air Quality Systems (AQS) parameter code 88101.

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<sup>18</sup> U.S. Environmental Protection Agency. PM<sub>2.5</sub> Wildland Fire Exceptional Events Tiering Document, April 2024, P.5. [final-pm-fire-tiering-4-30-24.pdf](#)

PM2.5-88101 - 88101 (ug/m3)

- -5.0 to < 10.0
- 10.0 to < 20.0
- 20.0 to < 30.0
- 30.0 to < 50.0
- 50.0 to < 70.0
- 70.0 to < 90.0
- 90.0 to < 120.0
- > 120.0

Figure 18: AirNow-Tech Navigator Map Legend

### 4.1.1 Early June 2023

**Figure 19** shows dense smoke in the Northeastern US on June 6<sup>th</sup>, 2023, with PM<sub>2.5</sub> concentrations corresponding with the density of the smoke plume.

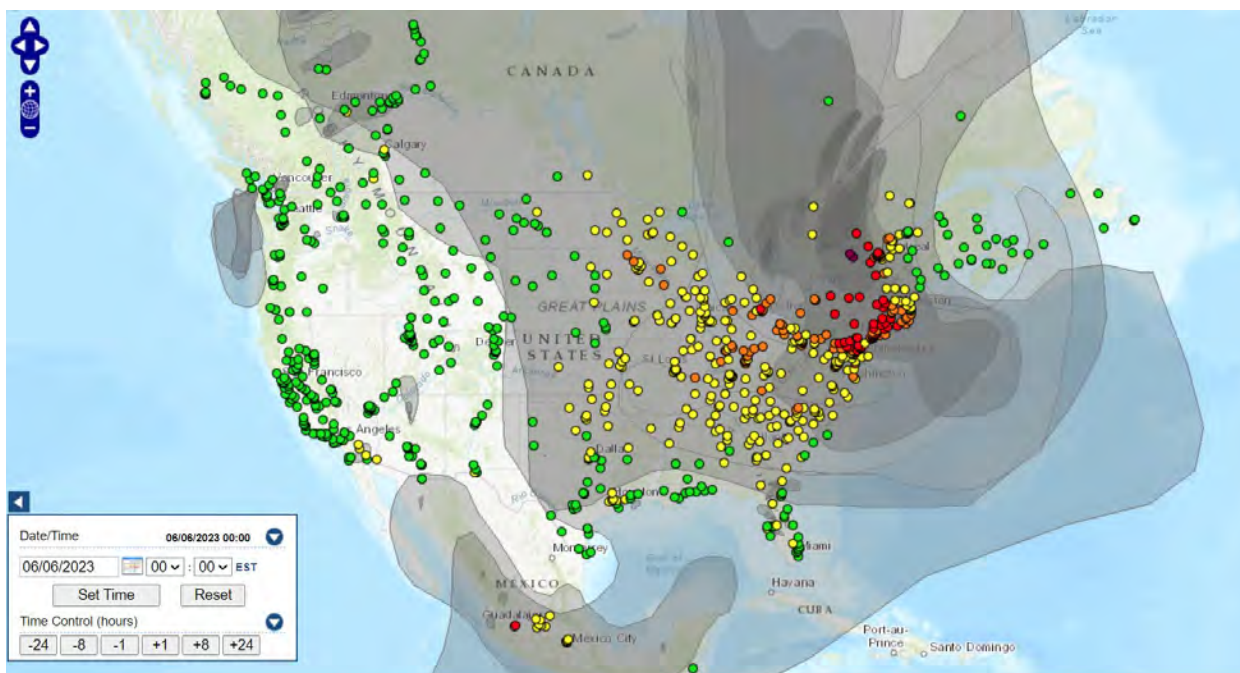


Figure 19: North America PM 2.5 Monitor Values and Smoke Plume June 6, 2023

**Figure 20** shows dense smoke has shifted southeast on June 7<sup>th</sup>, 2023. The smoke plumes continue to move south southeast out of Canada. Moderate PM<sub>2.5</sub> values covered most of the southeastern US, including Knox County's PM<sub>2.5</sub> monitors shown in **Figure 21**.

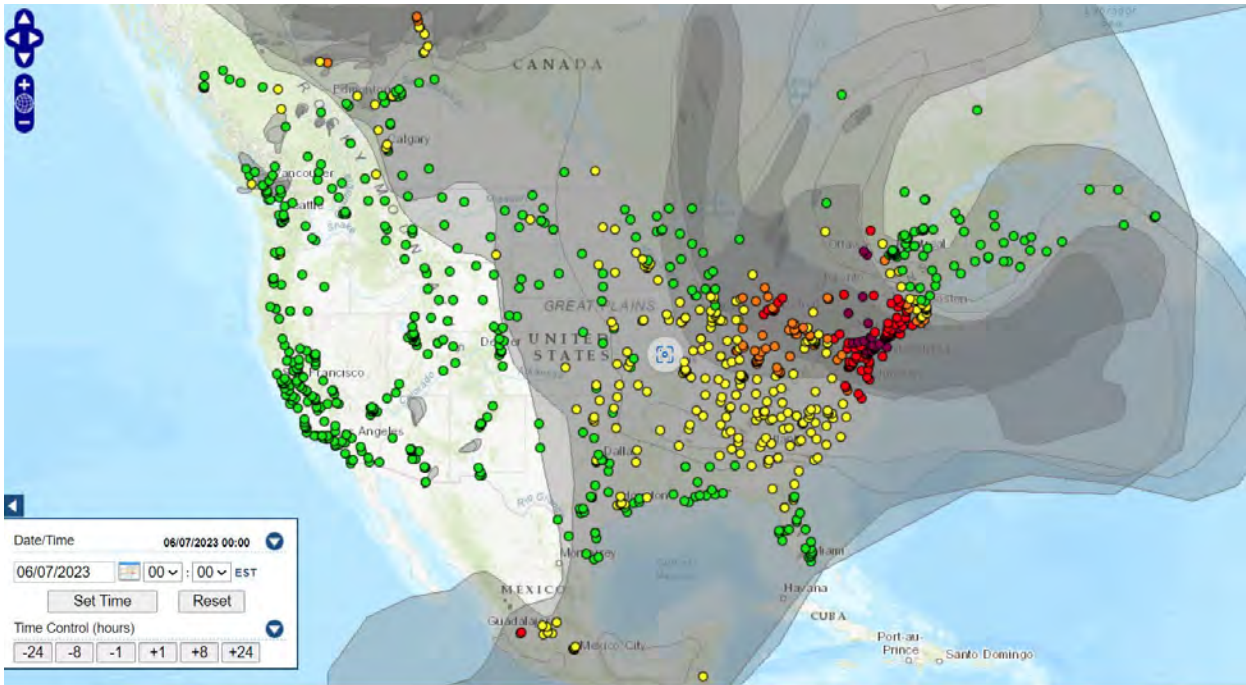


Figure 20: North America  $PM_{2.5}$  Monitor Values and Smoke Plume June 7, 2023

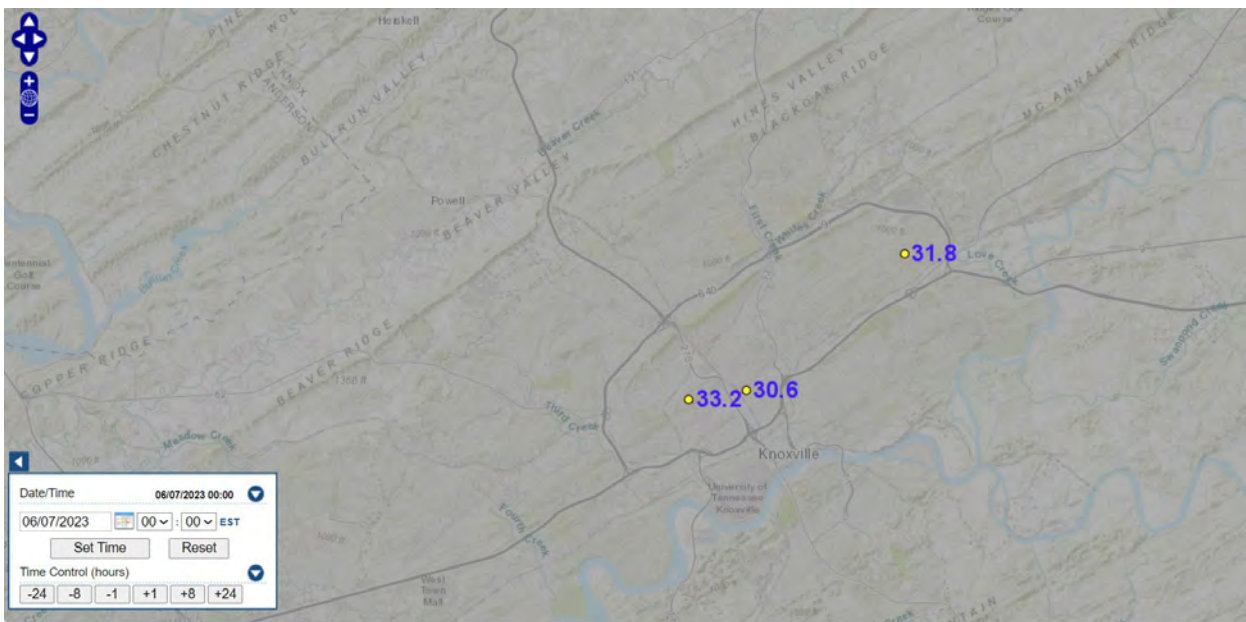


Figure 21: Knox County  $PM_{2.5}$  Monitor Values and Smoke Plume June 7, 2023

**Figure 22** shows the smoke plumes continue to shift south southeast on June 8, 2023, with the densest smoke covering part of the eastern coast from Rhode Island to North Carolina. Dense smoke blankets most of the southeast.  $PM_{2.5}$  concentrations range from very unhealthy in the densest smoke to moderate over the majority of the southeast, including Knox County's 3 monitors **Figure 23**.

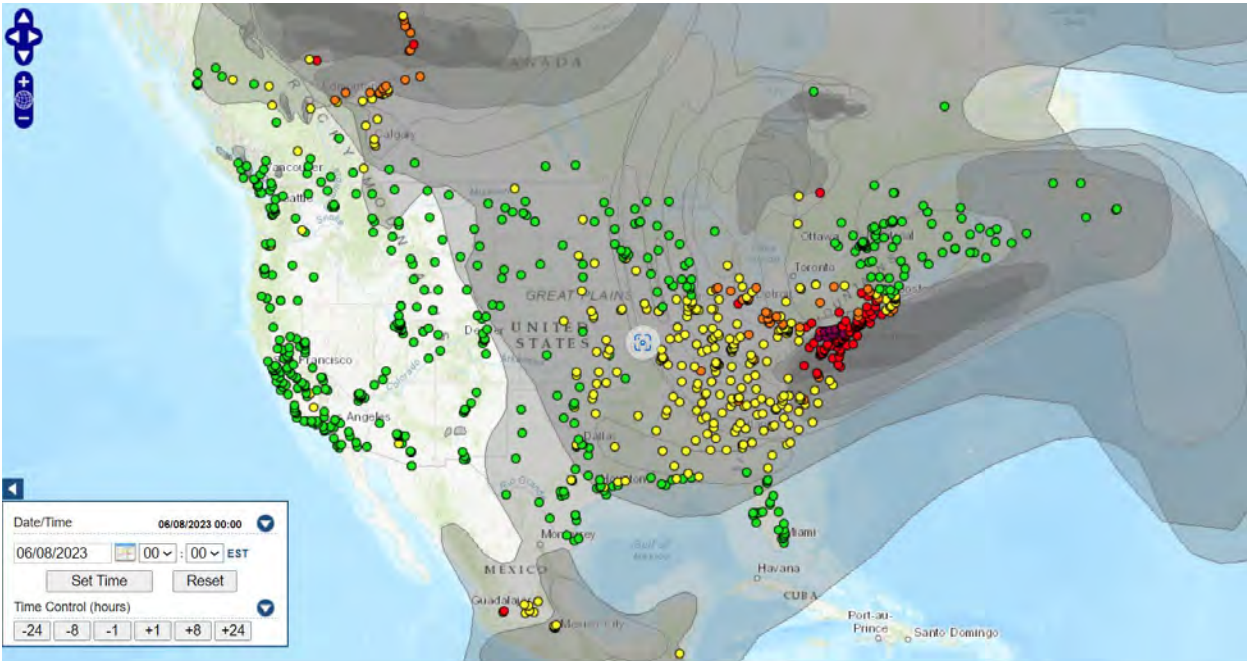


Figure 22: North America  $PM_{2.5}$  Monitor Values and Smoke Plume June 8, 2023

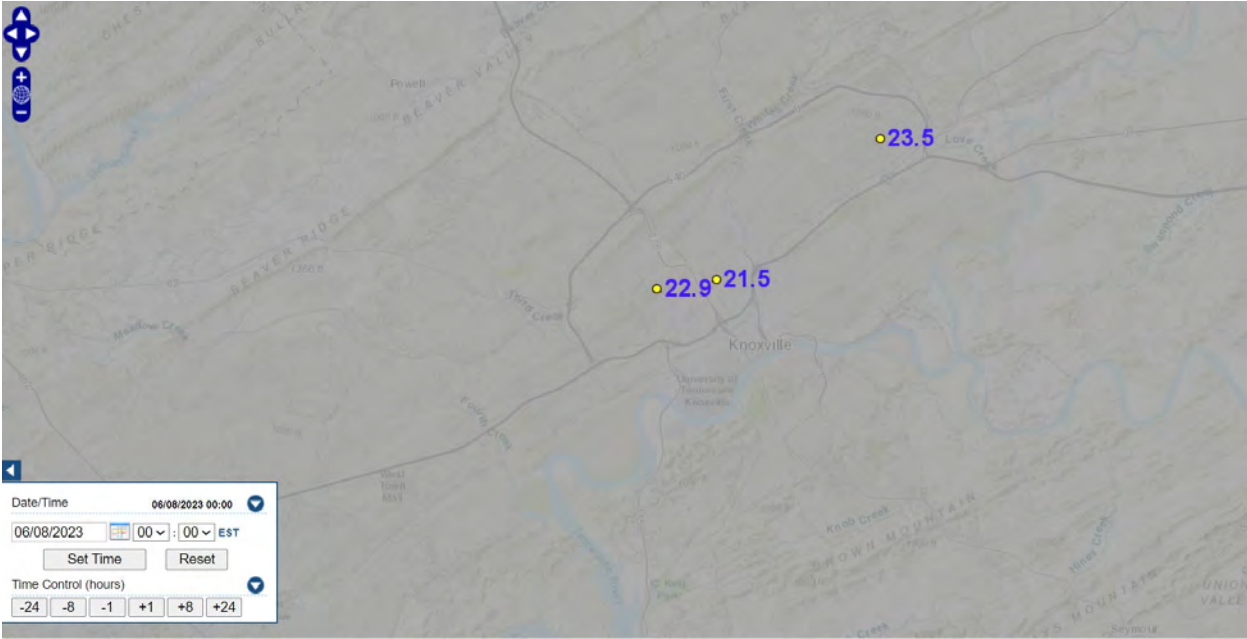


Figure 23: Knox County  $PM_{2.5}$  Monitor Values and Smoke Plume June 8, 2023



Figure 24 shows the smoke plumes continue to shift south southeast on June 9, 2023, with smoke continuing to pour into the U.S from the fires in Canada. Most of the southeastern PM<sub>2.5</sub> monitors report moderate AQI, including Knox County's 3 monitors Figure 25.

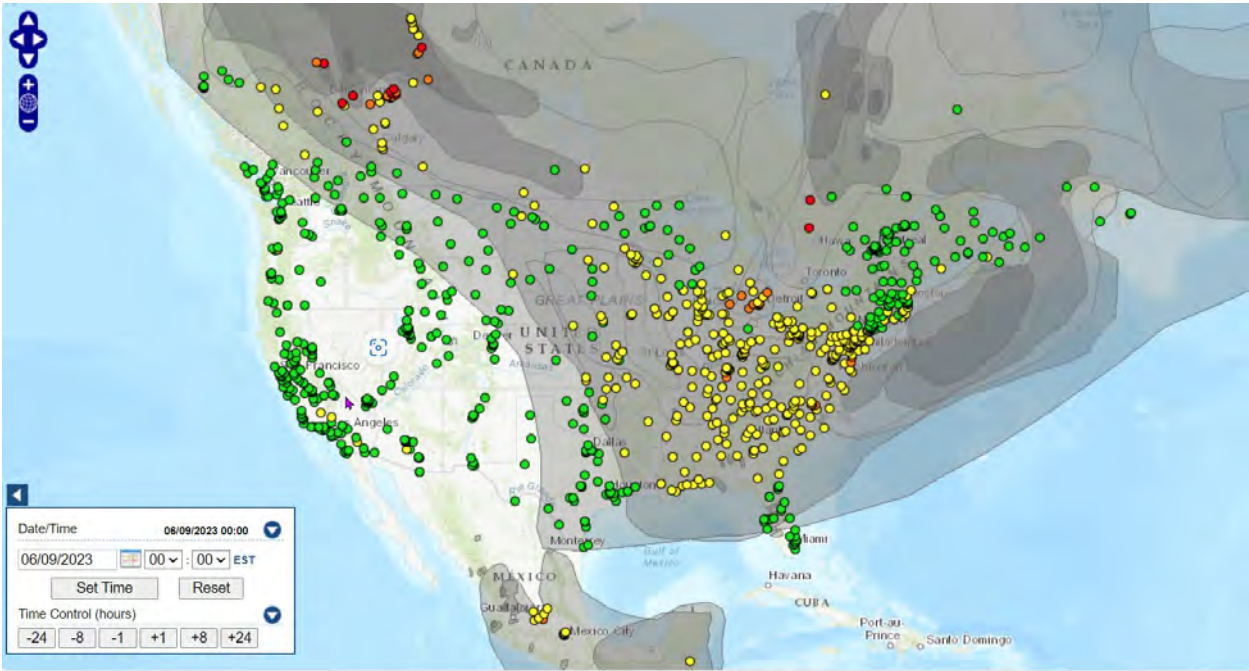


Figure 24: North America PM<sub>2.5</sub> Monitor Values and Smoke Plume June 9, 2023

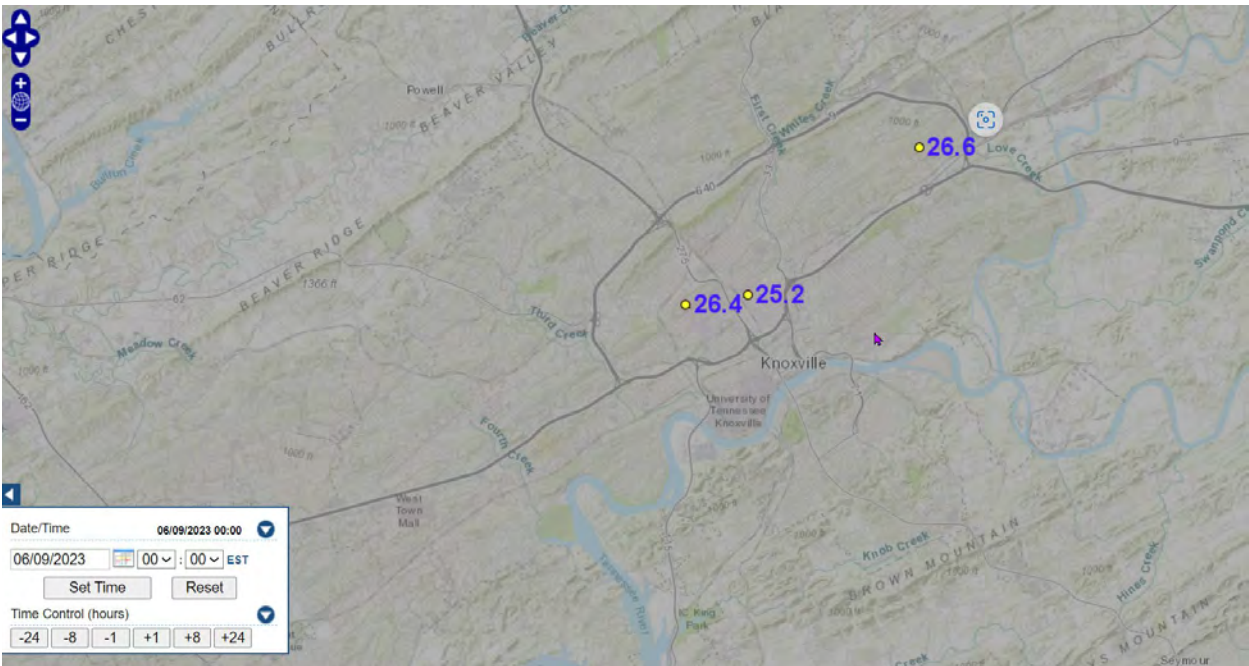


Figure 25: Knox County PM<sub>2.5</sub> Monitor Values and Smoke Plume June 9, 2023

### 4.1.2 Mid-June 2023

**Figure 26 & Figure 28** show smoke covering the southeast. A low-pressure system created a trough for the Canadian wildfire smoke to pour down from North Dakota through the Ohio River Valley and east into Tennessee. **Figure 27 & Figure 29** show the effect of that smoke on the monitors in Knox County.

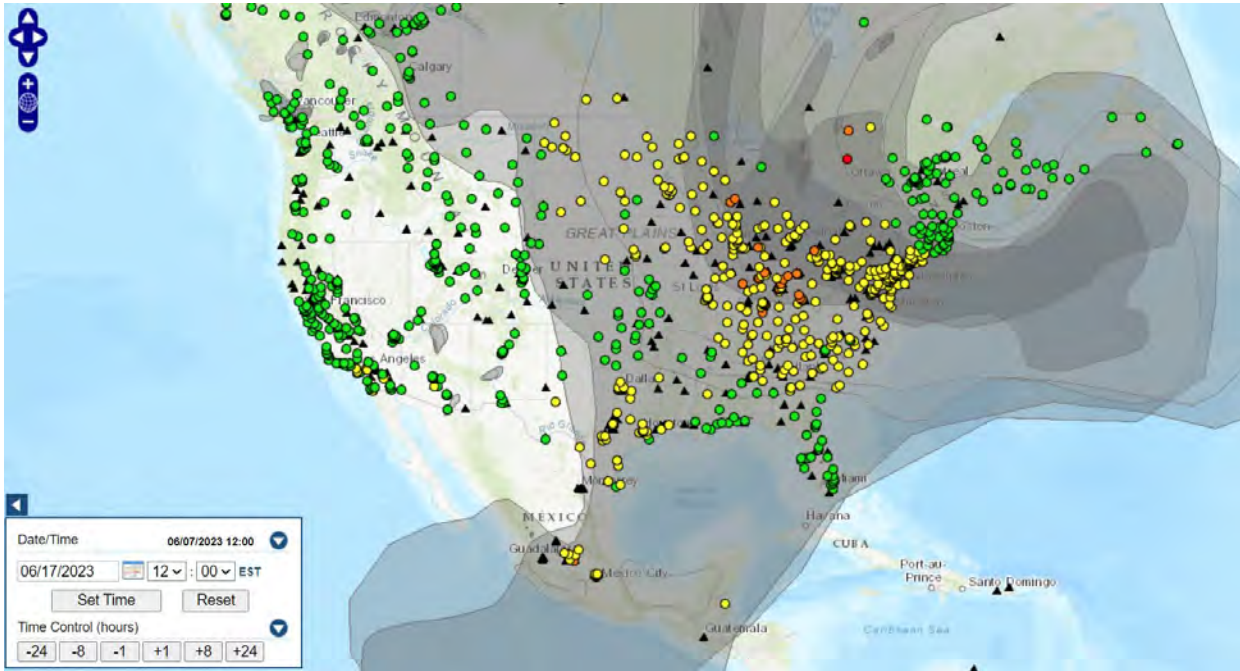


Figure 26: North America  $PM_{2.5}$  Monitor Values and Smoke Plume June 17, 2023

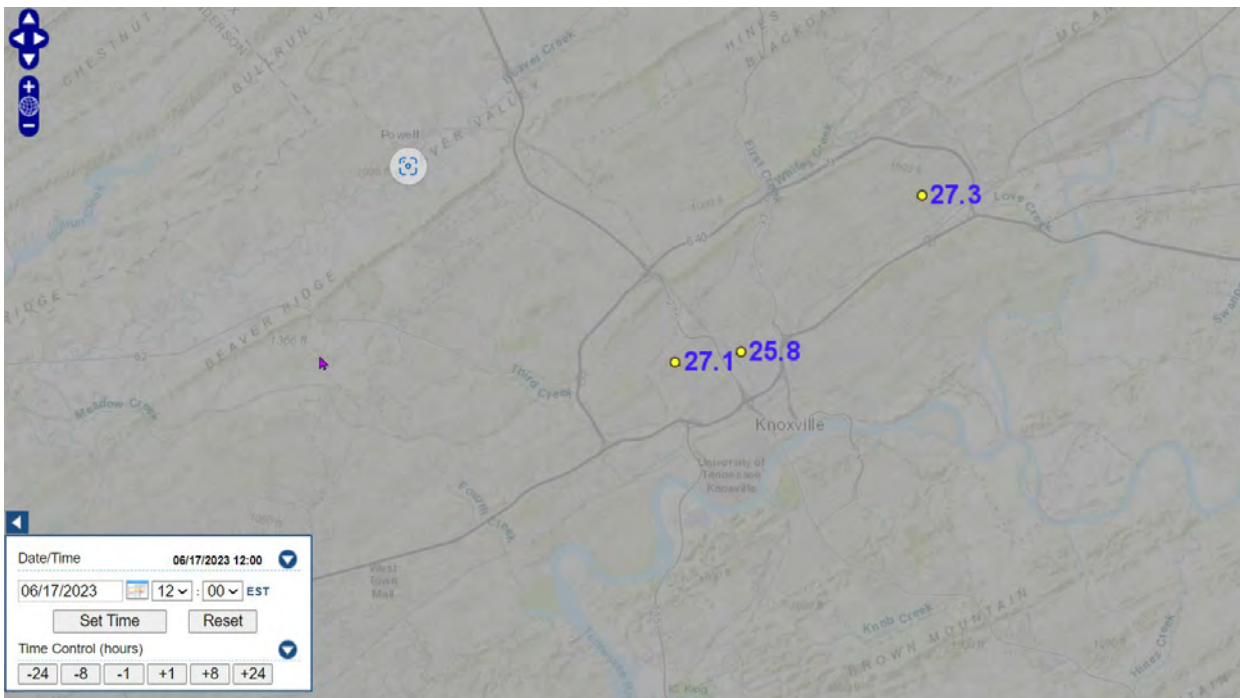


Figure 27: Knox County  $PM_{2.5}$  Monitor Values and Smoke Plume June 17, 2023

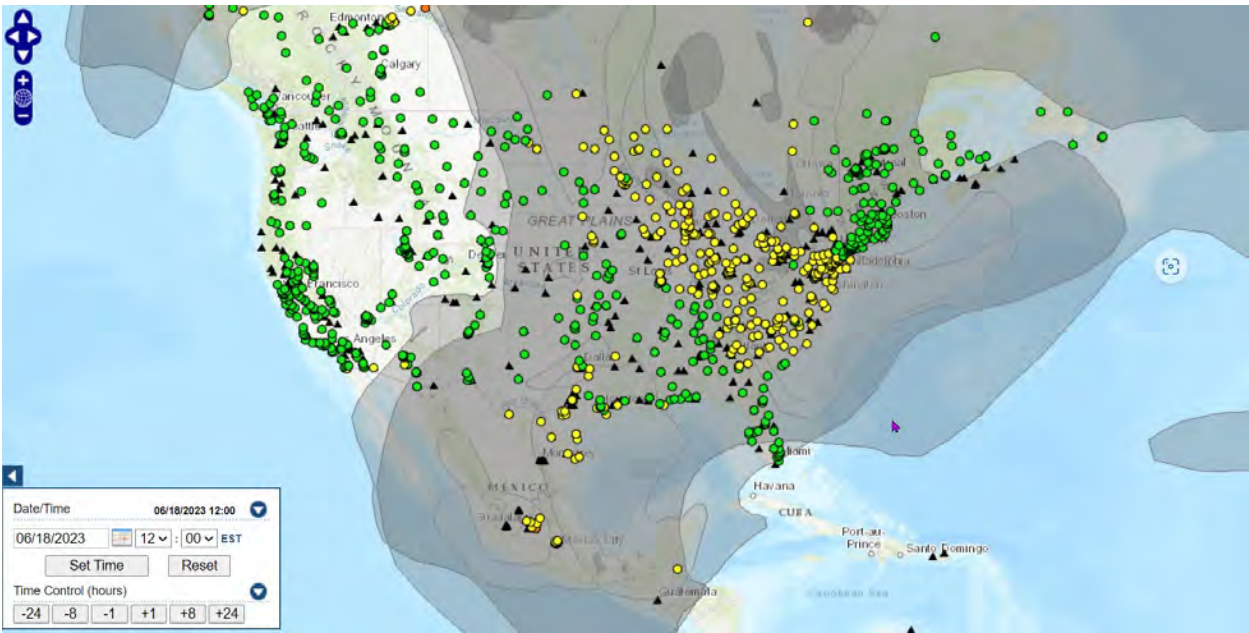


Figure 28: North America PM<sub>2.5</sub> Monitor Values and Smoke Plume June 18, 2023

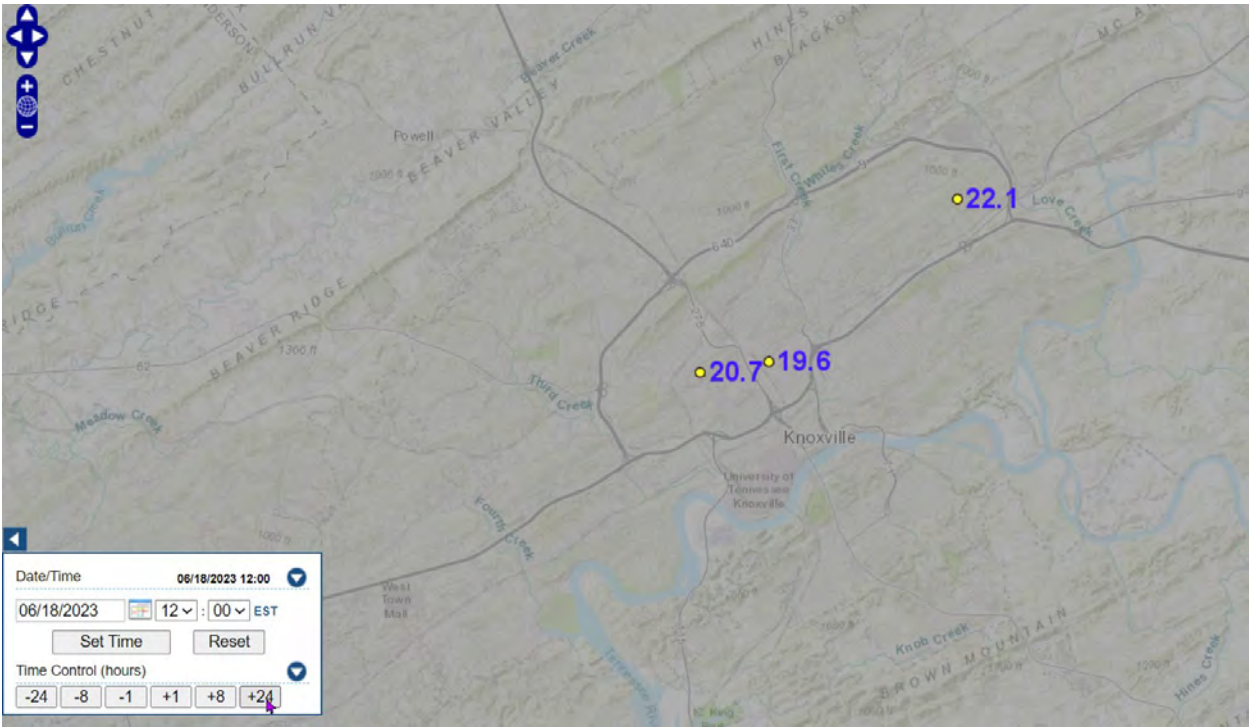


Figure 29: Knox County PM<sub>2.5</sub> Monitor Values and Smoke Plume June 18, 2023

### 4.1.3 Late June 2023

**Figure 30, Figure 32 & Figure 34** show dense smoke covering the southeast. A high-pressure system over the central U.S created a clockwise circulation promoting northerly and northwesterly winds that transported smoke from Canada southward into the U.S. A low-pressure system in the northeast enhanced this flow, channeling smoky air into the southeast, including Tennessee. **Figure 31, Figure 33 & Figure 35** show the effect of that smoke on the monitors in Knox County.

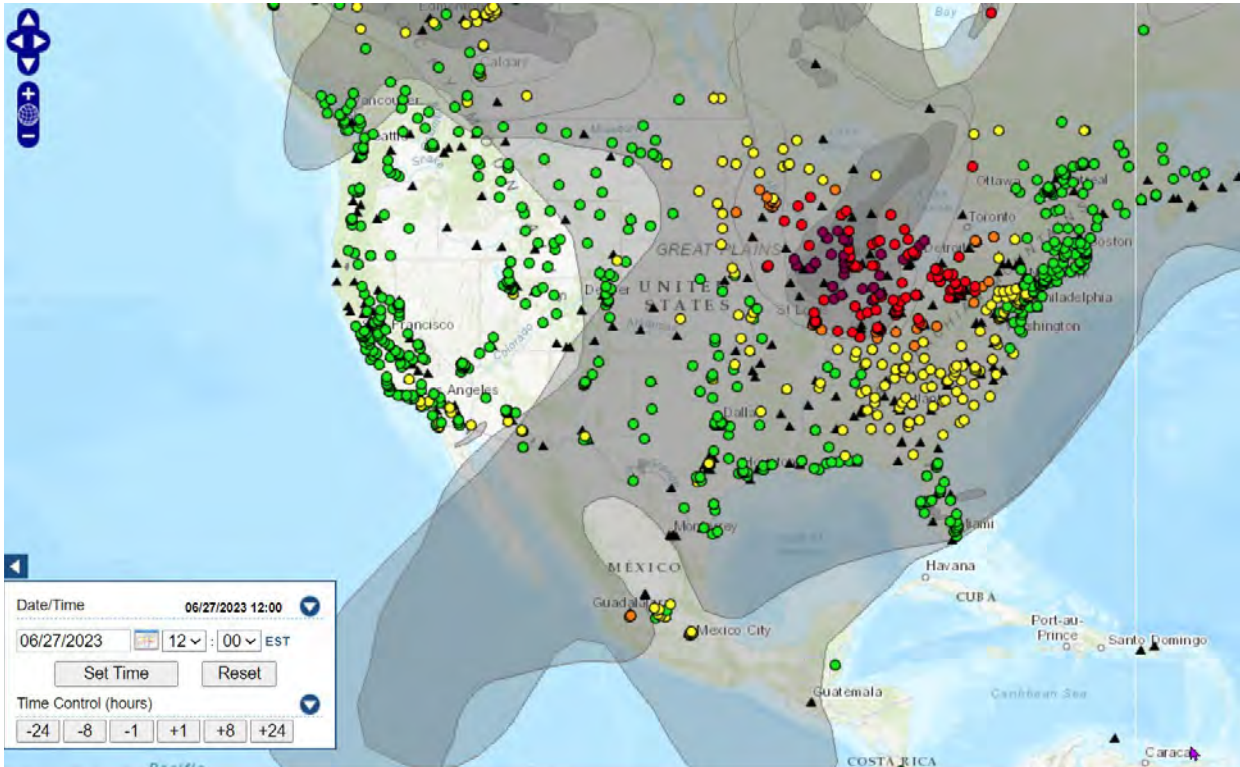


Figure 30: North America PM<sub>2.5</sub> Monitor Values and Smoke Plume June 27, 2023

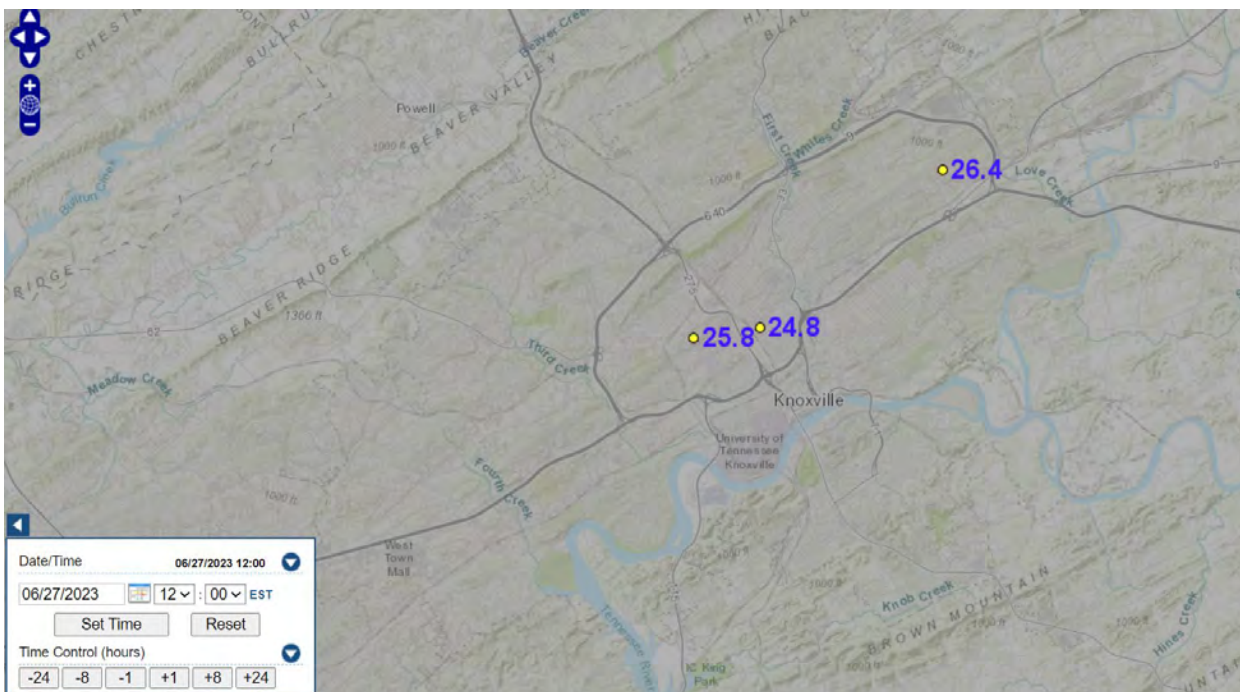


Figure 31: Knox County PM<sub>2.5</sub> Monitor Values and Smoke Plume June 27, 2023

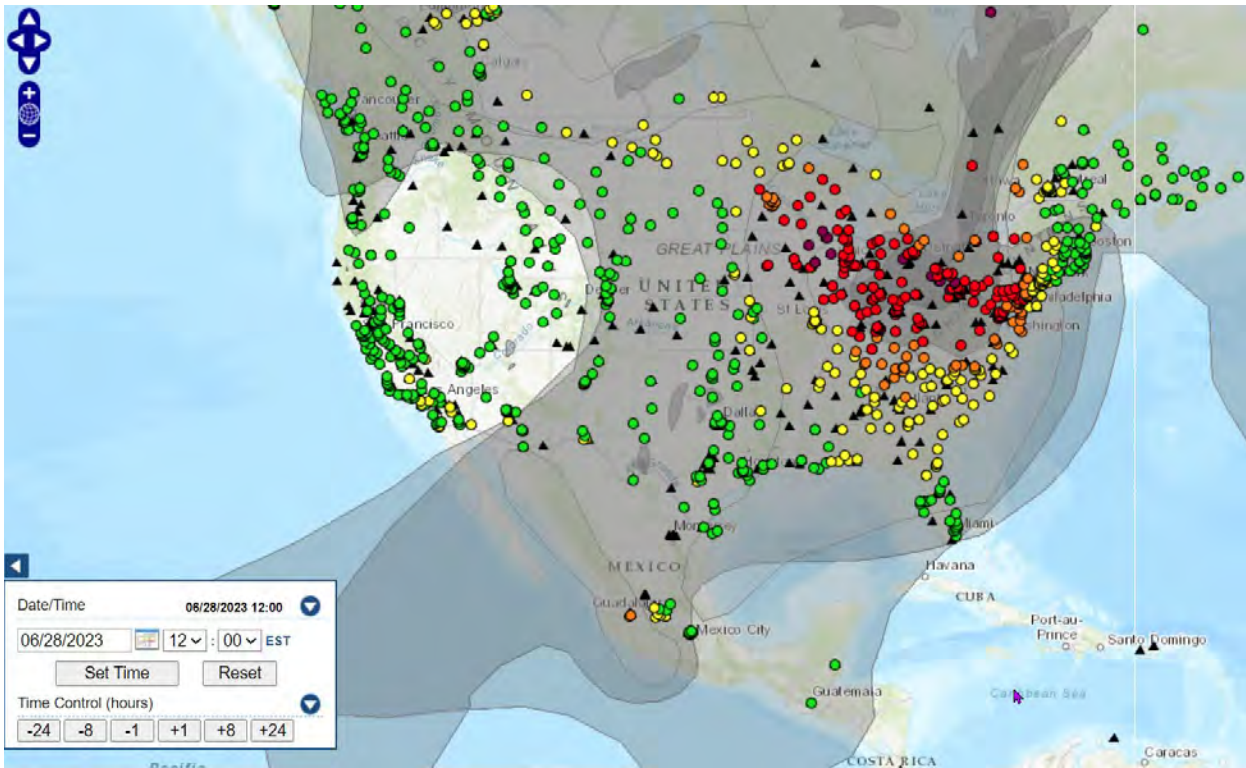


Figure 32: North America PM<sub>2.5</sub> Monitor Values and Smoke Plume June 28, 2023

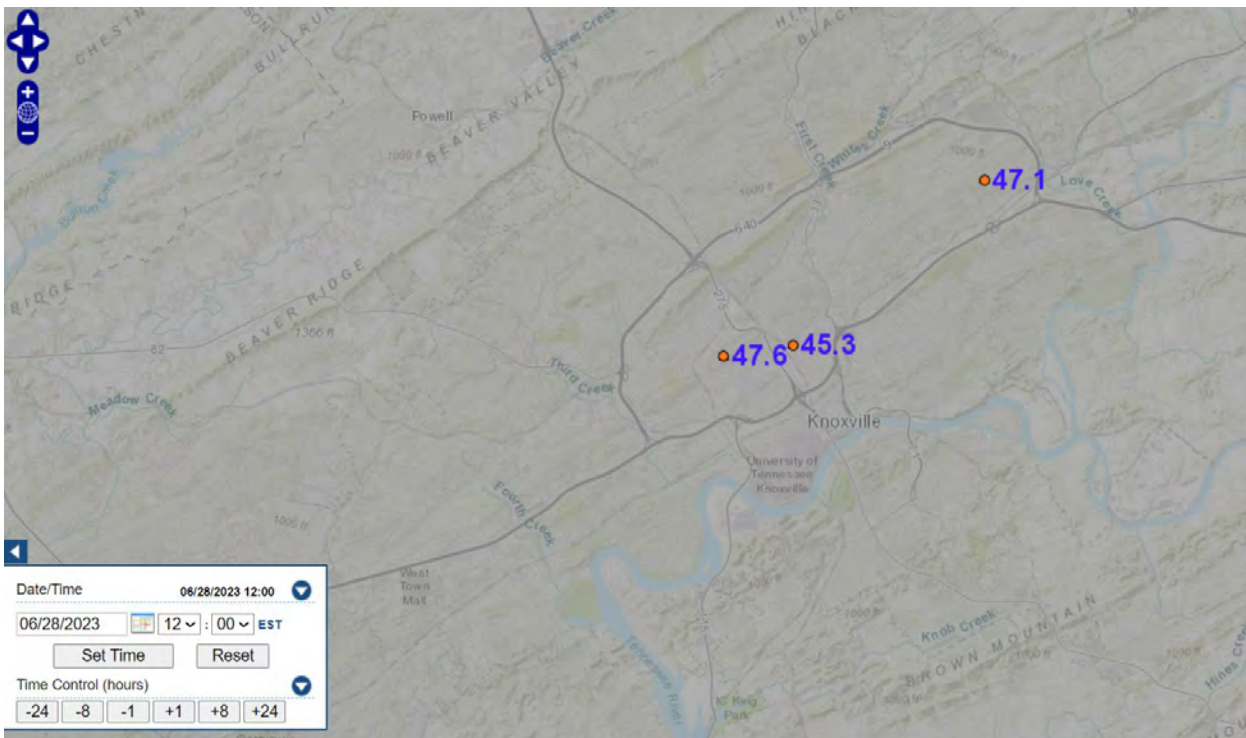


Figure 33: Knox County PM<sub>2.5</sub> Monitor Values and Smoke Plume June 28, 2023

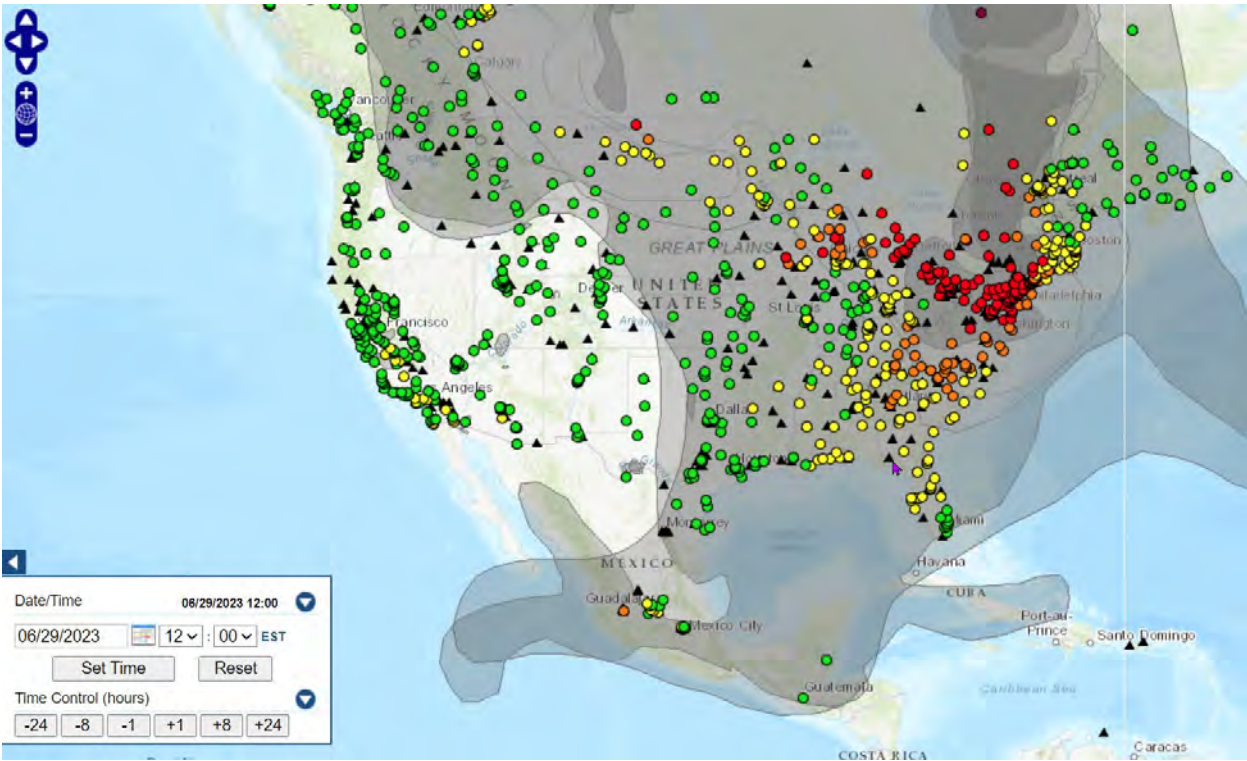


Figure 34: North America PM<sub>2.5</sub> Monitor Values and Smoke Plume June 29, 2023

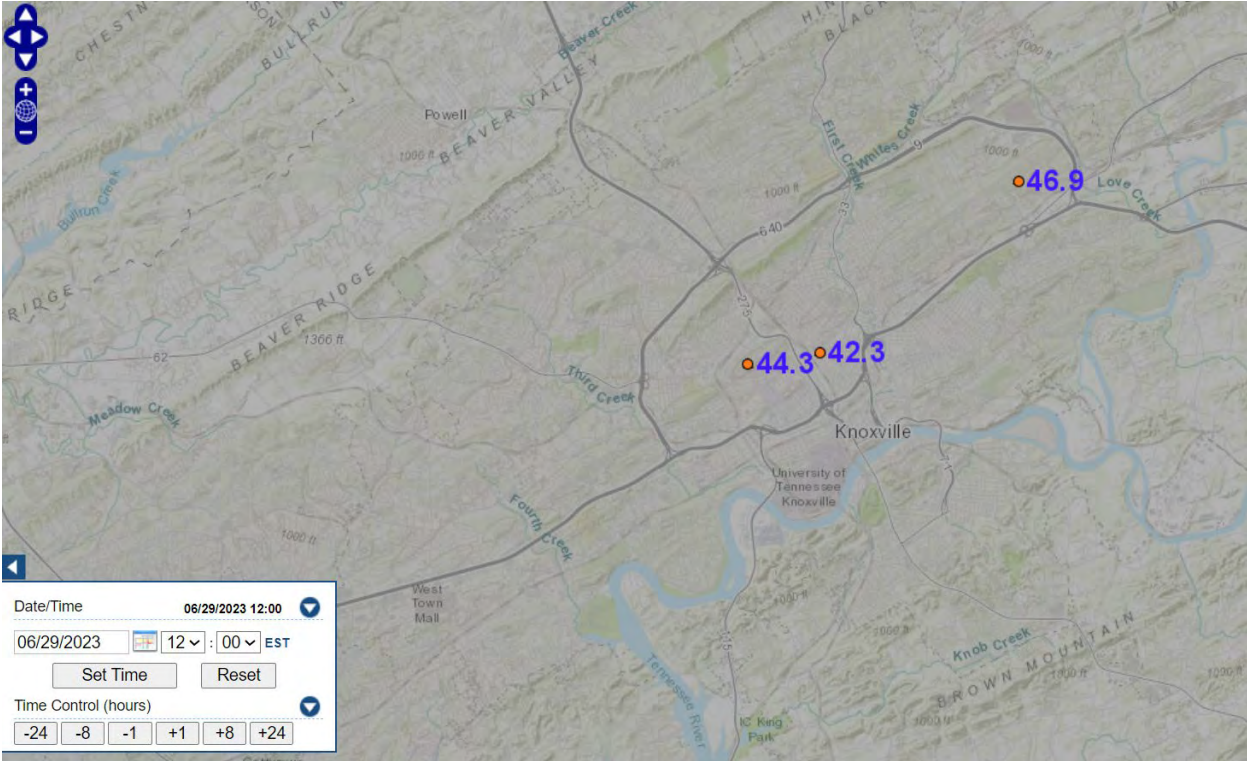


Figure 35: Knox County PM<sub>2.5</sub> Monitor Values and Smoke Plume June 29, 2023

#### 4.1.4 Mid-July 2023

**Figure 36 & Figure 38** show dense smoke covering the southeast. The U.S. experienced significant transport of  $PM_{2.5}$  by mid-July. A high-pressure system across the mid-western U.S coupled with a low-pressure system in the southeast directed smoke from Canada into the southern U.S. including Tennessee. **Figure 37 & Figure 39** show the effect of that smoke on the monitors in Knox County.

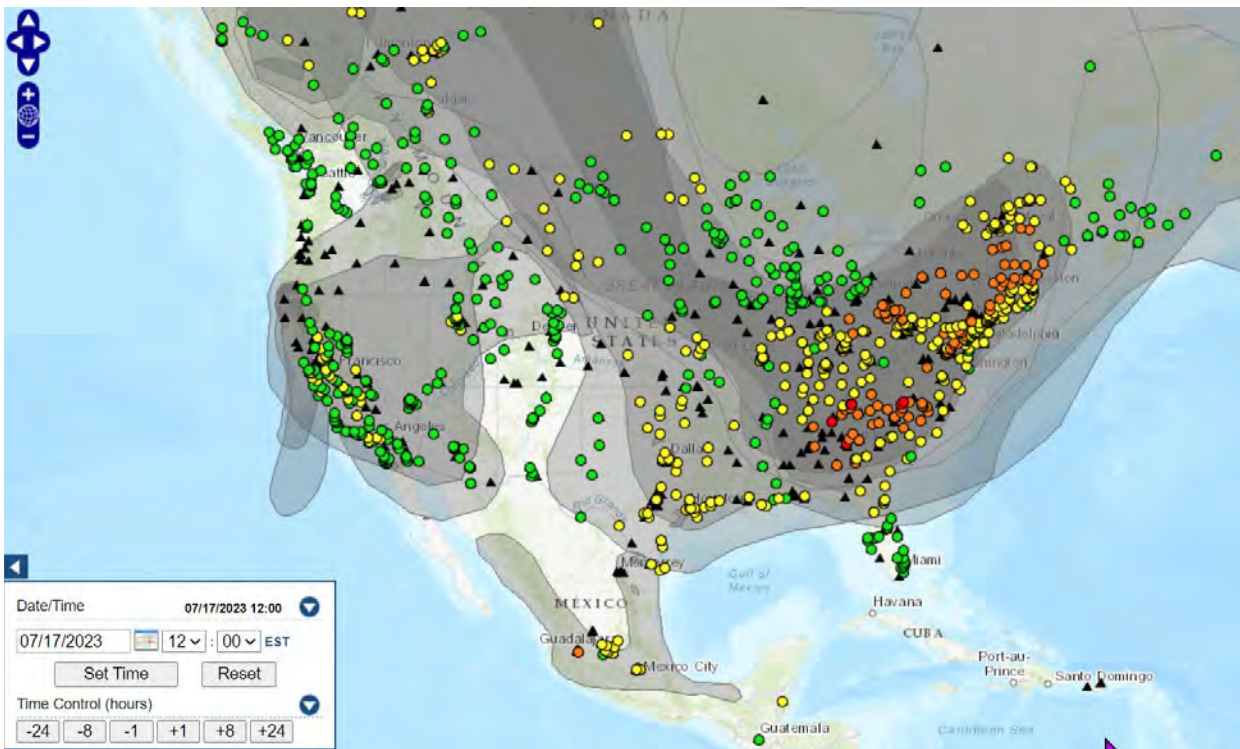


Figure 36: North America  $PM_{2.5}$  Monitor Values and Smoke Plume July 17, 2023

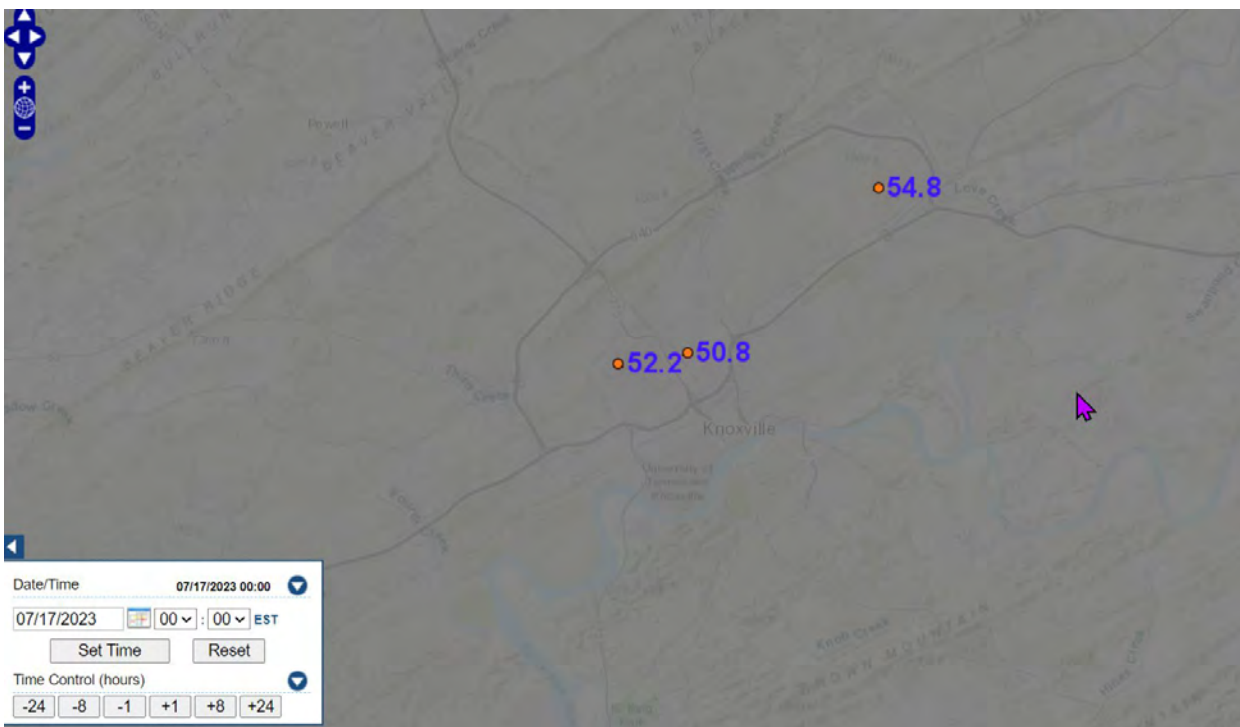


Figure 37: Knox County  $PM_{2.5}$  Monitor Values and Smoke Plume July 17, 2023

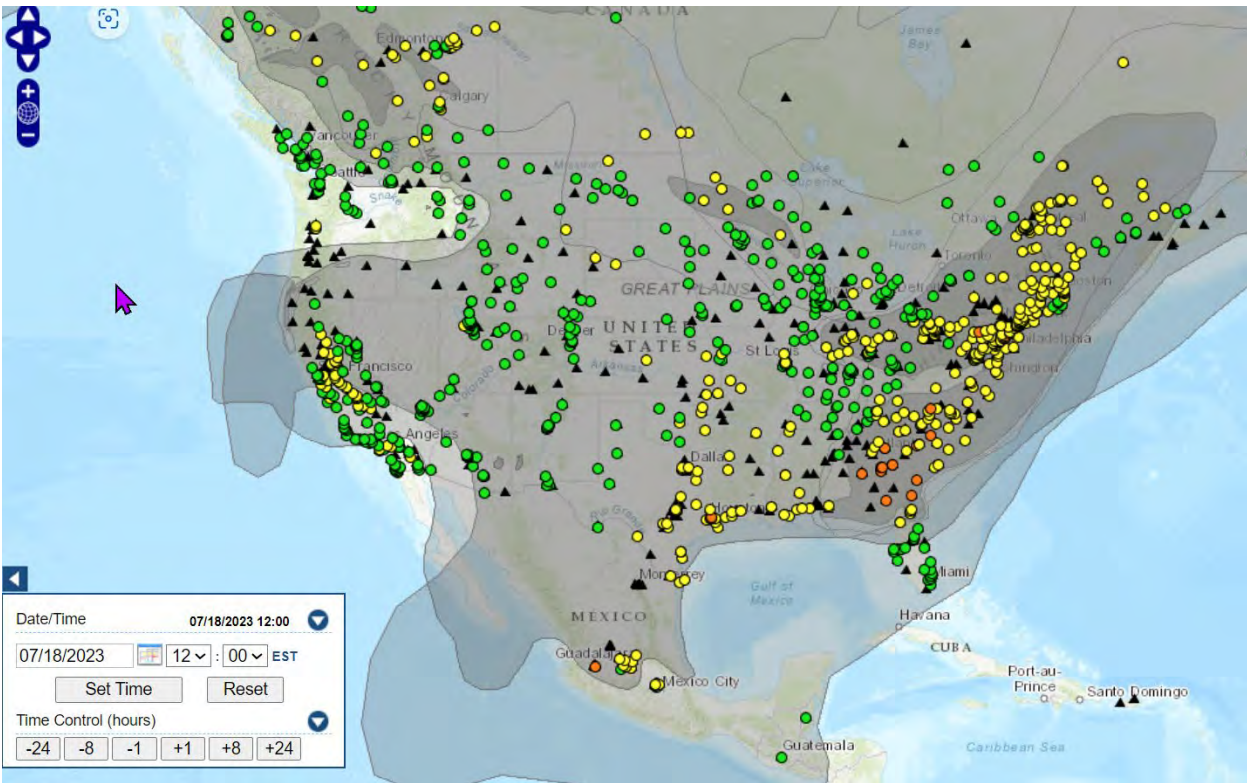


Figure 38: North America PM<sub>2.5</sub> Monitor Values and Smoke Plume July 18, 2023

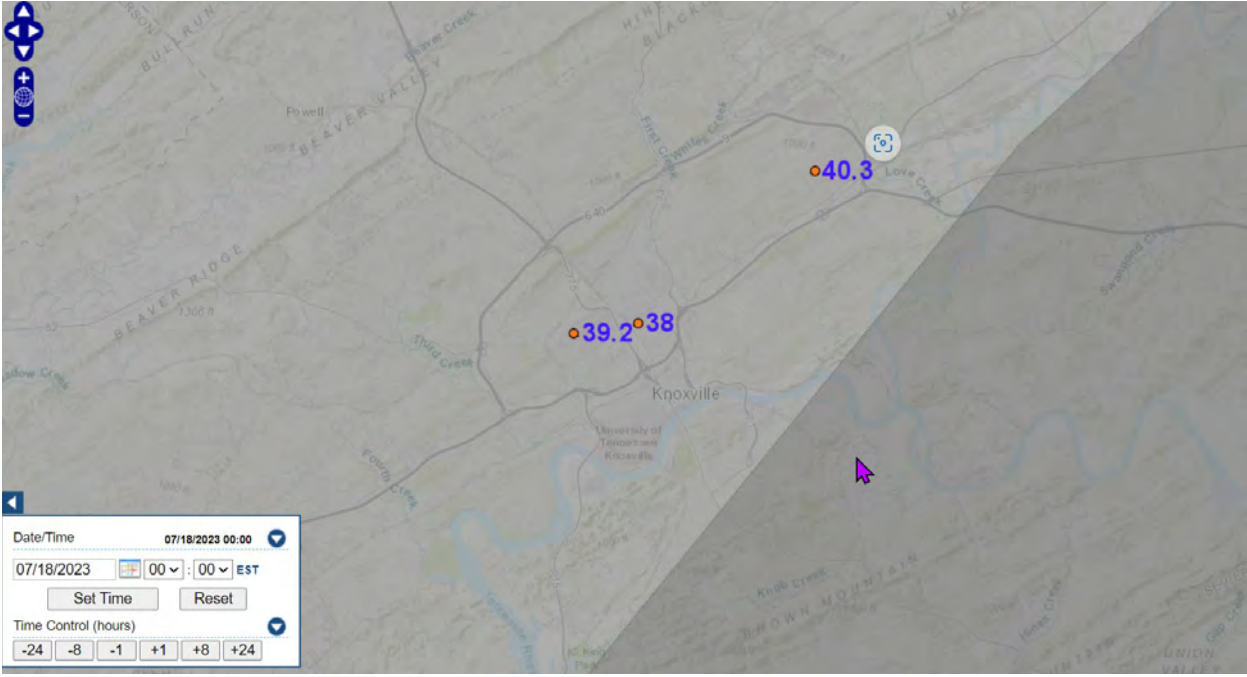


Figure 39: Knox County PM<sub>2.5</sub> Monitor Values and Smoke Plume July 18, 2023



## 4.2 PM<sub>2.5</sub> Tiering Tool for Exceptional Events Analysis

**Figure 40** below displays the Tiering Graph from the EPA’s “PM<sub>2.5</sub> Tiering Tool - for Exceptional Events Analysis”<sup>19</sup> (Tiering Tool) for the Rule Monitor in Knox County. The Tiering Tool indicates the 2023 DV for the Knoxville Metropolitan Statistical Area is 9.1 µg/m<sup>3</sup>, which is above the 9.0 µg/m<sup>3</sup> 2024 standard.



Figure 40: EPA Tiering Tool for the Rule Monitor, No Days Excluded

However, the Tiering Tool also demonstrates in **Figure 41** how the exclusion of the regulatorily significant data points of June 7<sup>th</sup>, June 9<sup>th</sup>, June 18<sup>th</sup>, June 28<sup>th</sup>, June 29<sup>th</sup>, July 17<sup>th</sup> & July 18<sup>th</sup>, 2023, will lower the 2023 DV for the Rule Monitor and thus the Knoxville Metropolitan Statistical Area to 8.9 µg/m<sup>3</sup>, which is the purpose of this exceptional events demonstration.



Figure 41: EPA Tiering Tool for the Rule Monitor, All Requested Days Excluded

<sup>19</sup> PM<sub>2.5</sub> Tiering Tool - for Exceptional Events Analysis | US EPA

## Section V. Not Reasonably Controllable or Not Reasonably Preventable

**This section satisfies the following federal requirements:**

The event was caused by a natural event (40 CFR 50.14 (c)(3)(iv)(A) and 40 CFR 50.1(j)),

An exceptional event is one that is not reasonably controllable or preventable (40 CFR 50.14 (a)(8)(vii) and 40 CFR 50.14(b)(4))

Section 40 CFR 50.14 (a)(8)(vii) provides that a state is not required to provide a case-specific justification to support the not reasonably controllable or preventable criterion when the emissions-generating event was outside the State, as was the case with the 2023 Canadian Wildfires. Specifically, Section 40 CFR 50.14 (a)(8)(vii) states:

*The Administrator shall not require a State to provide case-specific justification to support the not reasonably controllable or preventable criterion for emissions-generating activity that occurs outside of the State's jurisdictional boundaries within which the concentration at issue was monitored.*

## Section VI. Human Activity Unlikely to Recur at a Particular Location or Natural Event

**This section satisfies the following federal requirement:**

A demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event.

The Exceptional Event Rule requires a demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event (40 CFR 50.14(c)(3)(iv)(E)). The definition of wildfire in the Exceptional Events Rule is: "...any fire started by an unplanned ignition caused by lightning; ... A wildfire that predominately occurs on wildland is a natural event." As stated in **Sections III and IV**, the origin and evolution of the 2023 Canadian Wildfires occurred across Canada. As shown in **Figure 2**, the fires burned in remote areas. In the Exceptional Event Rule, EPA clarifies that an event could be considered a natural event by applying the reasonable interpretation that the anthropogenic source had "little" direct causal role.

### 6.1 Wildfire is a Natural Event

Based on the documentation provided in **Section III and Section IV** of this demonstration, the event qualifies as a natural wildfire event since lightning caused the unplanned and unprecedented remote wildfires across Quebec in early June, and these wildfires spread and burned throughout the following several weeks<sup>20</sup>. The EPA generally considers the emissions of PM<sub>2.5</sub> from wildfires on wildland to meet the regulatory definition of a natural event at 40 CFR 50.1(k), defined as one 'in which human activity plays little or no direct causal role.' These multiple wildfire

<sup>20</sup> <https://natural-resources.canada.ca/simply-science/canadas-record-breaking-wildfires-2023-fiery-wake-call/25303>

events occurred on wildland as shown in **Figure 2**. NASA noted many of the Canadian fires were ignited by summer lightning storms (see **Section 3.1**). These wildfires largely burned in deeply wooded and remote inaccessible areas. Wildfires started by lightning during the first week of June 2023<sup>21</sup> rapidly spread for the next few weeks and caused unprecedented smoke concentrations to impact most of the eastern North America, including the monitors in Knox County. This report has demonstrated the 2023 Canadian Wildfires were a natural event and should be considered for treatment as an exceptional event.

## Section VII. Public Notification

**This section satisfies the following federal requirements:**

- (A) Document that the State followed the public comment process and that the comment period was open for a minimum of 30 days, which could be concurrent the beginning of the Administrator’s initial review period of the associated demonstration provided the State can meet all requirements in this paragraph
- (B) Submit the public comments it received along with its demonstration to the Administrator; and
- (C) Address in the submission to the Administrator those comments disputing or contradicting factual evidence provided in the demonstration. (40 CFR 50.14(c)(3)(v)(A, B, C))

The Knox County Department of Air Quality Management will hold a 30-day public comment period to gather public comment regarding this Exceptional Event Demonstration. Notification of the public comment period will be posted on the Knox County Air Quality Management website and emailed to interested stakeholders. After the comment period, a copy of the public notice and any received comments will be included in **Appendix C**.

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<sup>21</sup> <https://cwfis.cfs.nrcan.gc.ca/report>

# *Appendix A*

Notification and Acceptance of Intent to Submit Exceptional Events Demonstration

## EE Initial Notification Summary Information

Submitting Agency: **Knox County Air Quality Management**

Agency Contact: **Amber Talgo**

Date Submitted: **09/20/2024**

Applicable NAAQS: **2024 Annual PM<sub>2.5</sub>**

Affected Regulatory Decision<sup>1</sup>: **Designation for 2024 PM 2.5**

*(for classification decisions, specify level of the classification with/without EE concurrence)*

Area Name/Designation Status: **Knoxville, TN Attainment Area**

Design Value Period (list three year period): **2021-2023**

*(where there are multiple relevant design value periods, summarize separately)*

### **A) Information specific to each flagged site day that may be submitted to EPA in support of the affected regulatory decision listed above**

Date of Event	Type of Event (high wind, volcano, wildfires/prescribed fire, other <sup>2</sup> )	AQS Flag	Site AQS ID	Site Name	Exceedance Concentration (with units)	Tier	Notes (e.g. event name, links to other events)
June 7, 2023	Wildfire	RT	47-093-1017	Rule High School	31.5 µg/m <sup>3</sup>	1	Canadian Wildfires
June 9, 2023	Wildfire	RT	47-093-1017	Rule High School	25 µg/m <sup>3</sup>	1	Canadian Wildfires
June 18, 2023	Wildfire	RT	47-093-1017	Rule High School	26 µg/m <sup>3</sup>	1	Canadian Wildfires
June 28, 2023	Wildfire	RT	47-093-1017	Rule High School	34.7 µg/m <sup>3</sup>	1	Canadian Wildfires
June 29, 2023	Wildfire	RT	47-093-1017	Rule High School	49.1 µg/m <sup>3</sup>	1	Canadian Wildfires
July 17, 2023	Wildfire	RT	47-093-1017	Rule High School	51.2 µg/m <sup>3</sup>	1	Canadian Wildfires
July 18, 2023	Wildfire	RT	47-093-1017	Rule High School	38.3 µg/m <sup>3</sup>	1	Canadian Wildfires

### **B) Violating Sites Information**

**(listing of all violating sites<sup>3</sup> in the planning area, regardless of operating agency, and regardless of whether or not they are affected by EEs)**

Site (AQS ID)	Design Value ( <u>without</u> EPA concurrence on all events listed in table A above)	Design Value ( <u>with</u> EPA concurrence on all events listed in table A above)
Rule High School (47-093-1017)	9.1	8.9

<sup>1</sup> designation, classification, attainment determination, attainment date extension, or finding of SIP inadequacy leading to SIP call

<sup>2</sup> Provide additional information for types of event described as "other"

<sup>3</sup> Note if violating monitor is a near-road monitor

**C) Summary of Maximum Design Value (DV) Site Information (Effect of EPA Concurrence on Maximum Design Value Site Determination)**

**(Two highest values from Table B)**

Maximum DV site (AQS ID) <b>without</b> EPA concurrence on any of the events listed in table A above	Design Value 9.1	Design Value Site Rule High School (47-093-1017)	Comment
Maximum DV site (AQS ID) <b>with</b> EPA concurrence on all events listed in table A above	Design Value 8.9	Design Value Site Rule High School (47-093-1017)	Comment

**D) List of any sites (AQS ID) within planning area with invalid design values (e.g. due to data incompleteness)**

Rule High School (47-093-1017) had a quarter (2<sup>nd</sup>) of incomplete data in 2022 due to a failed leak check and a failed flow verification

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**[External]RE: Knox Co - Exceptional Event Initial Notification**

---

**From** Palmer, Darren <Palmer.Darren@epa.gov>

**Date** Fri 11/1/2024 11:44 AM

**To** Amber Talgo <Amber.Talgo@knoxcounty.org>

**Cc** Bradley King <Bradley.King@tn.gov>; Larry Yocom <Larry.Yocom@tn.gov>; Justin Mayer <Justin.Mayer@knoxcounty.org>; Gillam, Rick <Gillam.Rick@epa.gov>; Jarvis, Simone (she/her/hers) <Jarvis.Simone@epa.gov>

 1 attachments (29 KB)

Initial Notification summary table PM25.docx;

Amber, I am confirming that we have received this Initial Notification and that it meets the Initial Notification requirements of 40 CFR 50.14(c)(2)(i). We believe it is appropriate for your agency to submit a full demonstration for these event days.

Please let us know if you have any questions.

Darren Palmer

Acting Supervisor

USEPA - Region 4 | Air & Radiation Division | Air Data & Analysis Section

(404) 562-9052 | <https://epa.gov/region4>

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# *Appendix B*

AMP 350 Reports



User ID: AIT

RAW DATA REPORT

Report Request ID: 2248866

Report Code: AMP350

Dec. 23, 2024

GEOGRAPHIC SELECTIONS

Tribal Code	State	County	Site	Parameter	POC	City	AQCR	UAR	CBSA	CSA	EPA Region
	47	093	1017	88101							

PROTOCOL SELECTIONS

Parameter Classification	Parameter	Method	Duration
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CRITERIA

SELECTED OPTIONS

Option Type	Option Value
INCLUDE NULLS	YES
DAILY STATISTICS	MAXIMUM
UNITS	STANDARD
RAW DATA EVENTS	INCLUDE EVENTS
MERGE PDF FILES	YES
AGENCY ROLE	PQAO

SORT ORDER

Order	Column
1	STATE_CODE
2	COUNTY_CODE
3	SITE_ID
4	PARAMETER_CODE
5	POC

DATE CRITERIA

Start Date	End Date
2023 06 01	2023 07 31

APPLICABLE STANDARDS

Standard Description
CO 1-hour 1971
Lead 3-Month 2009
Lead 3-Month PM10 Surrogate 2009
NO2 Annual 1971
Ozone 1-hour 1979
PM10 24-hour 2006
PM25 Annual 2024
SO2 1-hour 2010

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 AIR QUALITY SYSTEM  
 RAW DATA REPORT

Dec. 23, 2024

(88101) PM2.5 - Local Conditions

SITE ID: 47-093-1017 POC: 1  
 COUNTY: (093) Knox  
 CITY: (40000) Knoxville  
 SITE ADDRESS: 1613 VERMONT AVENUE  
 SITE COMMENTS: SLAMS, TSP SITE ON RULE HIGH SCHOOL  
 MONITOR COMMENTS:

STATE: (47) Tennessee  
 AQCR: (207) EASTERN TENNESSEE-SOUTHWESTERN VIR  
 URBANIZED AREA: (3840) KNOXVILLE, TN  
 LAND USE: RESIDENTIAL  
 LOCATION SETTING: URBAN AND CENTER CITY

CAS NUMBER:  
 LATITUDE: 35.9780740009  
 LONGITUDE: -83.950666  
 UTM ZONE:  
 UTM NORTHING:  
 UTM EASTING:  
 ELEVATION-MSL: 317  
 PROBE HEIGHT: 3

SUPPORT AGENCY: (0581) Knox County Department Of Air Pollution Control  
 MONITOR TYPE: SLAMS  
 COLLECTION AND ANALYSIS METHOD: (145) R & P Model 2025 PM-2.5 Sequential  
 PQAO: (0581) Knox County Department Of Air Pollution Control

REPORT FOR: 2023

DURATION: 24 HOUR  
 UNITS: Micrograms/cubic meter (LC)  
 MIN DETECTABLE: 2

Day	MONTH											
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1												
2												
3												
4												
5												
6						11.9 IF	18.4					
7												
8												
9												
10												
11						16.4 IF	10.1					
12												
13												
14												
15												
16												
17						19.7 IF	45.0 IF					
18												
19												
20												
21												
22												
23						3.9	8.8 IF					
24												
25												
26												
27												
28												
29						43.7 IF	10.9 IF					
30												
31												
NO.:	0	0	0	0	0	5	5	0	0	0	0	0
MAX:						43.7	45.0					
MEAN:						19.12	18.64					
ANNUAL OBSERVATIONS:	10					ANNUAL MEAN:	18.88	ANNUAL MAX:	45.0			

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk (\*\*\*) indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 AIR QUALITY SYSTEM  
 RAW DATA REPORT

Dec. 23, 2024

(88101) PM2.5 - Local Conditions

SITE ID: 47-093-1017 POC: 23  
 COUNTY: (093) Knox  
 CITY: (40000) Knoxville  
 SITE ADDRESS: 1613 VERMONT AVENUE  
 SITE COMMENTS: SLAMS, TSP SITE ON RULE HIGH SCHOOL  
 MONITOR COMMENTS:

STATE: (47) Tennessee  
 AQCR: (207) EASTERN TENNESSEE-SOUTHWESTERN VIR  
 URBANIZED AREA: (3840) KNOXVILLE, TN  
 LAND USE: RESIDENTIAL  
 LOCATION SETTING: URBAN AND CENTER CITY

CAS NUMBER:  
 LATITUDE: 35.9780740009  
 LONGITUDE: -83.950666  
 UTM ZONE:  
 UTM NORTHING:  
 UTM EASTING:  
 ELEVATION-MSL: 317  
 PROBE HEIGHT: 2.49

SUPPORT AGENCY: (0581) Knox County Department Of Air Pollution Control  
 MONITOR TYPE: SLAMS  
 COLLECTION AND ANALYSIS METHOD: (736) Teledyne T640 at 5.0 LPM (Correcte  
 PQAQ: (0581) Knox County Department Of Air Pollution Control

REPORT FOR: JUNE 2023

DURATION: 1 HOUR  
 UNITS: Micrograms/cubic meter (LC)  
 MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MAXIMUM
1	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	0	
2	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	0	
3	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	0	
4	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	0	
5	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	AZ	BA	AZ				BK	BK	BK	BK	BK	BK	BK	BK	BK	3	35.1
6	BK	BK	BK	BK	BK	BK	BK	BK	BK	19.0IF	18.2IF	18.2IF	19.6IF	20.1IF	20.8IF	21.7IF	20.8IF	27.1IF	37.0IF	38.6IF	41.6IF	38.3IF	36.4IF	38.5IF	15	41.6
7	37.1IF	35.1IF	34.8IF	35.1IF	36.3IF	35.3IF	32.1IF	29.2IF	31.4IF	31.8IF	32.2IF	31.9IF	31.7IF	31.7IF	31.6IF	29.9IF	31.1IF	30.6IF	31.1IF	31.6IF	31.9IF	27.5IF	24.4IF	22.8IF	24	37.1
8	21.2IF	18.8IF	14.1IF	11.5IF	9.4IF	9.4IF	9.8IF	9.8IF	13.7IF	18.3IF	19.2IF	25.6IF	29.6IF	27.7IF	30.2IF	30.1IF	29.0IF	27.5IF	25.3IF	25.7IF	26.5IF	27.7IF	28.4IF	28.1IF	24	30.2
9	29.1IF	27.2IF	27.3IF	28.3IF	27.7IF	25.9IF	25.9IF	26.6IF	27.5IF	28.3IF	28.5IF	25.5IF	25.2IF	24.8IF	22.6IF	20.9IF	20.4IF	21.5IF	22.5IF	22.3IF	22.5IF	23.5IF	23.2IF	24.6IF	24	29.1
10	26.5IF	26.8IF	25.9IF	26.4IF	25.3IF	25.8IF	25.0IF	25.5IF	25.3IF	26.4IF	26.0IF	25.5IF	23.4IF	22.7IF	22.9IF	23.4IF	23.1IF	22.6IF	21.5IF	23.1IF	23.0IF	25.0IF	26.5IF	28.1IF	24	28.1
11	28.3IF	27.7IF	26.0IF	24.2IF	24.1IF	25.2IF	24.5IF	24.9IF	25.7IF	24.8IF	24.2IF	24.4IF	23.6IF	21.6IF	18.1IF	14.4IF	12.4IF	9.8IF	9.3IF	10.1IF	8.8IF	6.8IF	3.4IF	3.4IF	24	28.3
12	3.3	3.5	3.5	3.3	4.3	5.4	5.4	4.7	4.4	4.1	4.6	5.2	6.5	6.8	8.1	11.0	11.8	12.9	13.7	13.2	12.3	12.1	11.0	11.1	24	13.7
13	11.8	12.9	11.9	12.9	12.4	11.4	11.8	11.4	11.6	11.0	10.7	BL	9.6	9.7	10.2	10.1	10.6	10.6	10.3	9.5	9.7	9.9	9.6	9.5	23	12.9
14	11.1	11.3	12.5	13.1	14.0	14.9	15.4	14.4	13.7	13.5	12.1	11.6	12.0	12.8	13.1	12.4	12.7	12.0	6.7	4.9	4.5	4.9	5.8	6.3	24	15.4
15	5.9	5.9	5.4	5.2	5.0	5.6	7.1	8.4	8.9	8.2	8.8	9.5	9.7	9.8	10.0	9.7	9.0	9.6	7.9	6.8	6.6	6.7	7.1	7.1	24	10.0
16	7.0IF	7.1IF	7.0IF	6.4IF	6.7IF	6.6IF	7.2IF	6.9IF	7.1IF	6.9IF	7.3IF	9.4IF	10.8IF	12.8IF	15.4IF	18.7IF	15.8IF	19.4IF	20.7IF	19.4IF	18.9IF	36.0IF	43.6IF	38.8IF	24	43.6
17	33.1IF	28.2IF	26.0IF	24.5IF	22.2IF	20.8IF	20.7IF	20.6IF	21.9IF	21.3IF	21.6IF	20.9IF	22.2IF	23.7IF	25.2IF	22.7IF	22.0IF	20.9IF	21.1IF	21.0IF	21.1IF	23.0IF	25.2IF	26.2IF	24	33.1
18	25.6IF	26.8IF	28.9IF	29.5IF	29.5IF	30.0IF	29.9IF	30.6IF	31.7IF	29.2IF	28.6IF	27.9IF	27.6IF	26.4IF	24.9IF	22.8IF	20.8IF	21.0IF	21.6IF	21.4IF	24.1IF	23.4IF	22.1IF	20.4IF	24	31.7
19	21.0	23.4	24.3	25.4	24.9	21.1	17.6	9.9	6.9	7.6	6.7	7.8	7.8	6.0	3.4	3.3	3.5	4.1	3.7	2.9	3.7	4.1	4.1	5.3	24	25.4
20	6.7	6.6	5.9	4.6	5.2	5.5	5.4	4.8	5.0	4.7	4.9	4.8	5.2	5.3	5.5	4.8	2.3	2.9	3.7	3.7	2.7	3.1	5.7	6.9	24	6.9
21	8.2	8.9	7.7	6.5	5.9	5.8	5.3	5.5	5.9	5.5	5.0	4.8	5.2	5.5	5.6	4.7	4.9	4.5	4.4	3.6	3.3	3.3	2.9	2.8	24	8.9
22	2.5	2.4	2.3	2.0	2.2	2.5	2.5	2.4	2.0	1.8	1.8	1.9	2.0	2.2	2.2	2.5	2.6	2.8	3.3	2.8	4.1	3.6	3.5	3.6	24	4.1
23	3.8	4.3	4.2	3.9	4.8	5.2	5.1	4.5	3.7	2.4	2.9	4.0	5.1	5.3	4.6	4.7	4.2	3.5	3.9	4.1	4.6	4.4	5.2	24	5.3	
24	6.1	5.8	6.0	5.5	5.4	5.6	6.0	6.2	7.2	7.8	8.9	8.3	7.2	7.2	7.7	8.2	6.6	5.6	5.9	6.9	8.2	9.7	11.3	15.7	24	15.7
25	13.2	12.2	12.7	12.4	12.8	13.3	12.6	13.7	14.5	15.8	16.1	17.3	16.8	13.6	12.9	12.6	10.0	8.2	5.3	4.3	4.1	4.3	4.5	4.1	24	17.3
26	6.1	5.9	2.9	3.2	3.2	4.1	3.6	3.8	3.8	3.7	4.3	6.2	6.4	7.4	8.4	8.7	9.0	9.6	10.0	12.5	15.4	17.8	14.0	13.1	24	17.8
27	11.8IF	12.7IF	12.7IF	13.6IF	13.2IF	12.6IF	14.6IF	14.3IF	15.4IF	14.6IF	13.3IF	13.8IF	17.8IF	22.2IF	22.3IF	22.4IF	22.5IF	23.4IF	24.2IF	24.7IF	25.5IF	25.7IF	26.1IF	27.6IF	24	27.6
28	25.7IF	26.0IF	25.2IF	27.6IF	26.5IF	26.0IF	26.9IF	25.0IF	23.6IF	21.7IF	27.0IF	29.7IF	30.2IF	30.4IF	37.9IF	48.5IF	49.7IF	48.2IF	45.2IF	42.7IF	44.9IF	46.5IF	49.0IF	49.4IF	24	49.7
29	51.4IF	49.3IF	50.1IF	49.8IF	50.7IF	51.0IF	51.3IF	49.2IF	47.7IF	47.5IF	48.5IF	49.0IF	51.2IF	52.3IF	51.1IF	50.9IF	53.5IF	50.6IF	46.1IF	44.3IF	44.5IF	45.4IF	46.2IF	47.3IF	24	53.5
30	45.6IF	43.5IF	39.5IF	41.6IF	39.8IF	40.2IF	41.7IF	44.5IF	43.6IF	36.9IF	23.5IF	18.6IF	14.9IF	11.3IF	10.3IF	10.7IF	10.8IF	9.8IF	9.7IF	10.1IF	10.4IF	12.0IF	13.1IF	12.5IF	24	45.6
31																									0	
NO.:	24	24	24	24	24	24	24	24	24	25	25	24	25	25	25	25	25	25	25	25	25	25	25	25	25	
MAX:	51.4	49.3	50.1	49.8	50.7	51.0	51.3	49.2	47.7	47.5	48.5	49.0	51.2	52.3	51.1	50.9	53.5	50.6	46.1	44.3	44.9	46.5	49.0	49.4		
AVG:	18.42	18.01	17.37	17.35	17.15	17.05	16.98	16.53	16.76	16.51	16.20	16.74	16.85	16.77	17.00	17.19	16.76	16.75	16.56	16.41	16.92	17.80	18.06	18.34		

MONTHLY OBSERVATIONS: 593 MONTHLY MEAN: 17.19 MONTHLY MAX: 53.5

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 AIR QUALITY SYSTEM  
 RAW DATA REPORT

Dec. 23, 2024

(88101) PM2.5 - Local Conditions

SITE ID: 47-093-1017 POC: 23  
 COUNTY: (093) Knox  
 CITY: (40000) Knoxville  
 SITE ADDRESS: 1613 VERMONT AVENUE  
 SITE COMMENTS: SLAMS, TSP SITE ON RULE HIGH SCHOOL  
 MONITOR COMMENTS:

STATE: (47) Tennessee  
 AQCR: (207) EASTERN TENNESSEE-SOUTHWESTERN VIR  
 URBANIZED AREA: (3840) KNOXVILLE, TN  
 LAND USE: RESIDENTIAL  
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 LONGITUDE: -83.950666  
 UTM ZONE:  
 UTM NORTHING:  
 UTM EASTING:  
 ELEVATION-MSL: 317  
 PROBE HEIGHT: 2.49

SUPPORT AGENCY: (0581) Knox County Department Of Air Pollution Control  
 MONITOR TYPE: SLAMS  
 COLLECTION AND ANALYSIS METHOD: (736) Teledyne T640 at 5.0 LPM (Correcte  
 PQAQ: (0581) Knox County Department Of Air Pollution Control

REPORT FOR: JULY 2023

DURATION: 1 HOUR  
 UNITS: Micrograms/cubic meter (LC)  
 MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MAXIMUM
1	12.7	12.9	12.8	13.2	12.4	12.2	13.2	12.1	12.3	11.8	12.0	13.4	14.7	14.4	13.8	13.0	13.0	26.5	4.3	4.9	5.7	6.4	7.1	6.9	24	26.5
2	9.4	10.1	8.7	10.4	10.5	10.2	7.4	7.0	7.4	7.5	7.6	8.2	8.3	9.4	10.4	11.4	11.2	11.4	11.2	10.4	8.5	7.6	7.6	7.5	24	11.4
3	7.3	7.3	8.1	8.7	8.7	9.2	10.1	9.8	9.3	9.0	9.8	9.7	9.5	9.1	8.3	9.5	9.0	8.2	7.7	7.8	8.0	11.3	16.6	11.3	24	16.6
4	10.7	11.0	9.5	9.2	9.2	10.1	10.4	11.1	12.8	12.1	10.8	10.4	11.5	12.1	11.8	9.6	6.9	7.0	7.5	6.7	23.0	40.7	57.0	52.5	24	57.0
5	57.5	38.4	42.0	31.9	28.6	25.4	21.9	24.6	18.7	6.8	6.1	5.1	5.2	5.5	6.2	6.3	6.4	6.8	7.1	6.4	6.9	7.4	8.6	7.7	24	57.5
6	7.0	7.7	7.8	9.0	8.2	8.2	7.8	7.1	8.1	8.6	AZ	8.8	8.9	12.9	6.5	5.6	5.3	6.6	6.8	5.6	5.1	5.3	5.4	5.6	23	12.9
7	5.7	6.1	6.3	6.7	7.6	7.4	8.4	8.5	7.0	7.0	7.7	8.3	7.4	7.1	7.0	6.8	7.1	6.3	6.8	8.0	8.8	8.2	8.6	9.2	24	9.2
8	9.9	11.0	11.5	10.5	10.4	10.8	11.3	11.2	10.6	10.3	10.6	9.3	9.9	9.8	9.3	9.1	9.0	9.8	6.1	5.6	5.1	5.7	5.9	5.8	24	11.5
9	4.6	4.5	5.8	5.2	4.7	4.9	4.3	4.7	4.9	4.6	4.6	4.5	3.6	6.7	5.5	5.4	5.6	5.2	5.0	4.7	4.5	4.7	4.8	5.3	24	6.7
10	5.4	6.1	5.6	5.3	5.5	5.7	6.3	6.0	6.0	6.2	5.9	6.0	5.7	5.7	5.7	5.5	4.7	4.6	4.7	5.2	5.4	7.5	5.9	6.1	24	7.5
11	6.9	6.6	6.5	7.1	7.7	9.7	10.3	8.0	8.4	9.1	10.7	8.3	8.7	8.0	8.6	8.6	9.3	9.0	11.1	12.3	10.1	10.5	19.5	11.5	24	19.5
12	13.2	13.2	13.8	14.6	15.1	15.8	15.6	16.0	13.7	13.2	11.3	8.8	8.8	8.5	9.2	9.1	9.2	8.6	8.4	8.9	10.2	10.0	10.3	11.5	24	16.0
13	14.8	10.9	12.2	12.1	13.0	12.8	11.1	10.8	10.6	10.0	9.7	9.9	9.3	8.8	7.7	7.3	7.4	7.7	7.7	7.1	7.4	7.4	7.2	7.6	24	14.8
14	7.6	6.8	6.7	6.8	7.0	7.6	8.0	8.0	8.1	9.1	8.8	8.8	9.3	9.7	8.3	9.0	10.3	9.0	8.5	8.3	8.6	8.5	8.4	8.7	24	10.3
15	9.5	10.9	10.7	10.6	11.0	11.3	10.0	8.3	8.4	8.1	7.7	7.8	8.0	7.9	7.7	8.1	4.7	5.4	5.2	5.6	5.6	6.0	6.7	6.7	24	11.3
16	6.6IF	6.0IF	5.3IF	4.9IF	5.1IF	5.5IF	5.7IF	6.8IF	6.9IF	6.7IF	6.0IF	11.7IF	17.3IF	23.8IF	26.9IF	27.2IF	28.1IF	32.5IF	35.4IF	37.0IF	43.5IF	44.2IF	43.4IF	42.7IF	24	44.2
17	41.0IF	42.0IF	41.3IF	42.8IF	43.0IF	45.4IF	43.2IF	43.5IF	43.5IF	47.0IF	51.5IF	59.1IF	61.8IF	59.1IF	57.8IF	56.5IF	55.0IF	56.3IF	55.8IF	57.0IF	57.5IF	57.5IF	56.4IF	55.9IF	24	61.8
18	55.2IF	55.1IF	56.5IF	57.1IF	57.2IF	58.9IF	58.1IF	56.1IF	42.9IF	46.0IF	55.1IF	50.5IF	39.9IF	31.3IF	31.4IF	25.5IF	23.8IF	24.6IF	25.8IF	24.8IF	21.0IF	9.9IF	8.5IF	6.3IF	24	58.9
19	5.5	5.1	4.3	3.5	3.4	3.9	4.8	4.5	4.6	4.5	4.0	4.3	4.7	4.4	4.7	3.9	4.6	3.6	3.0	2.9	3.1	3.6	3.8	3.5	24	5.5
20	3.8	4.1	4.0	4.8	5.0	5.2	6.1	5.4	5.5	3.7	3.4	2.9	2.9	3.2	5.1	5.8	3.3	3.7	4.1	4.0	3.5	3.3	3.3	3.5	24	6.1
21	4.2	4.8	5.2	4.7	5.2	5.7	6.9	9.4	9.5	6.8	6.3	6.9	7.6	8.2	9.8	11.3	8.9	8.5	8.5	7.8	7.0	5.5	5.5	5.7	24	11.3
22	6.5	10.1	7.5	7.5	9.5	9.8	9.6	9.6	9.6	9.9	9.5	9.5	9.3	7.4	8.7	8.9	10.7	7.7	7.3	7.4	9.2	8.4	7.9	7.5	24	10.7
23	8.4IF	9.7IF	9.5IF	8.6IF	8.1IF	8.1IF	9.7IF	9.4IF	8.2IF	7.4IF	7.3IF	6.9IF	7.0IF	7.4IF	7.2IF	7.3IF	6.8IF	7.1IF	6.9IF	7.1IF	8.9IF	14.0IF	7.8IF	7.6IF	24	14.0
24	7.9IF	9.2IF	10.5IF	9.8IF	12.6IF	10.5IF	16.2IF	13.3IF	9.0IF	9.4IF	9.8IF	10.6IF	11.4IF	12.4IF	13.8IF	13.1IF	13.0IF	13.8IF	14.7IF	14.6IF	14.9IF	15.3IF	15.6IF	16.5IF	24	16.5
25	17.8IF	16.5IF	16.5IF	17.0IF	17.4IF	17.2IF	15.8IF	14.8IF	14.7IF	14.6IF	14.8IF	14.3IF	14.4IF	15.0IF	14.7IF	9.9IF	7.8IF	9.0IF	9.1IF	8.0IF	7.8IF	8.4IF	8.2IF	8.5IF	24	17.8
26	8.5IF	8.3IF	8.7IF	10.7IF	9.5IF	10.2IF	12.1IF	11.8IF	11.7IF	12.3IF	13.7IF	16.3IF	18.4IF	16.8IF	16.9IF	17.6IF	17.4IF	17.0IF	17.2IF	17.2IF	18.0IF	18.4IF	18.2IF	17.5IF	24	18.4
27	16.7IF	16.2IF	15.0IF	16.0IF	16.2IF	15.5IF	14.5IF	14.8IF	15.1IF	15.8IF	17.8IF	17.2IF	16.3IF	14.9IF	14.0IF	14.7IF	14.8IF	13.8IF	13.0IF	13.2IF	13.4IF	14.4IF	16.3IF	16.0IF	24	17.8
28	17.1IF	16.3IF	15.8IF	16.6IF	17.1IF	17.2IF	16.9IF	17.0IF	17.7IF	16.2IF	15.3IF	14.8IF	15.9IF	15.3IF	16.2IF	15.7IF	16.3IF	15.3IF	14.7IF	15.0IF	15.5IF	13.8IF	12.6IF	11.1IF	24	17.7
29	10.3IF	9.6IF	9.0IF	9.2IF	10.1IF	10.1IF	10.7IF	10.9IF	11.4IF	11.9IF	13.1IF	14.4IF	15.3IF	16.0IF	17.9IF	16.5IF	9.2IF	7.8IF	7.9IF	4.1IF	5.1IF	5.4IF	7.4IF	5.9IF	24	17.9
30	6.5	7.2	7.1	6.4	6.8	6.4	6.7	6.1	6.5	7.0	6.7	5.4	5.3	5.4	6.2	6.0	5.6	4.8	4.7	5.5	5.8	5.1	5.0	4.7	24	7.2
31	4.9	5.7	5.1	5.4	5.7	6.5	7.5	6.6	6.1	6.3	6.5	6.7	6.4	7.0	7.3	7.5	7.2	7.2	7.0	7.1	7.6	7.3	7.3	7.4	24	7.6
NO.:	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	
MAX:	57.5	55.1	56.5	57.1	57.2	58.9	58.1	56.1	43.5	47.0	55.1	59.1	61.8	59.1	57.8	56.5	55.0	56.3	55.8	57.0	57.5	57.5	57.0	55.9		
AVG:	13.00	12.56	12.56	12.46	12.63	12.82	12.92	12.68	11.91	11.58	12.14	12.22	12.35	12.36	12.41	11.99	11.34	11.77	11.07	10.97	11.76	12.31	13.12	12.39		

MONTHLY OBSERVATIONS: 743 MONTHLY MEAN: 12.22 MONTHLY MAX: 61.8

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("\*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 AIR QUALITY SYSTEM  
 RAW DATA REPORT

Dec. 23, 2024

(88101) PM2.5 - Local Conditions

SITE ID: 47-093-1017 POC: 3  
 COUNTY: (093) Knox  
 CITY: (40000) Knoxville  
 SITE ADDRESS: 1613 VERMONT AVENUE  
 SITE COMMENTS: SLAMS, TSP SITE ON RULE HIGH SCHOOL  
 MONITOR COMMENTS:

STATE: (47) Tennessee  
 AQCR: (207) EASTERN TENNESSEE-SOUTHWESTERN VIR  
 URBANIZED AREA: (3840) KNOXVILLE, TN  
 LAND USE: RESIDENTIAL  
 LOCATION SETTING: URBAN AND CENTER CITY

CAS NUMBER:  
 LATITUDE: 35.9780740009  
 LONGITUDE: -83.950666  
 UTM ZONE:  
 UTM NORTHING:  
 UTM EASTING:  
 ELEVATION-MSL: 317  
 PROBE HEIGHT: 2.49

SUPPORT AGENCY: (0581) Knox County Department Of Air Pollution Control  
 MONITOR TYPE: SPM  
 COLLECTION AND ANALYSIS METHOD: (236) Teledyne T640 at 5.0 LPM Broadband  
 PQAQ: (0581) Knox County Department Of Air Pollution Control

REPORT FOR: JUNE 2023

DURATION: 1 HOUR  
 UNITS: Micrograms/cubic meter (LC)  
 MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MAXIMUM
1	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	0	
2	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	0	
3	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	0	
4	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	0	
5	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	BJ	AZ	BA	AZ	BK	BK	BK	BK	BK	BK	BK	BK	BK	BK	BK	BK	0	
6	BK	BK	BK	BK	BK	BK	BK	BK	19.9IF	19.1IF	19.1IF	20.5IF	21.0IF	21.7IF	22.6IF	21.7IF	28.0IF	37.9IF	39.5IF	42.5IF	39.2IF	37.3IF	40.4IF	40.4IF	15	42.5
7	39.0IF	37.0IF	36.7IF	37.0IF	38.2IF	37.2IF	34.0IF	31.1IF	32.3IF	32.7IF	33.1IF	33.8IF	33.6IF	32.5IF	30.8IF	32.0IF	31.5IF	33.0IF	33.5IF	33.8IF	29.4IF	26.3IF	24.7IF	24	39.0	
8	23.1IF	20.7IF	16.0IF	13.4IF	11.3IF	11.3IF	11.7IF	11.7IF	15.6IF	19.2IF	20.1IF	26.5IF	30.5IF	28.6IF	31.1IF	31.0IF	29.9IF	28.4IF	26.2IF	26.6IF	28.4IF	29.6IF	30.3IF	30.0IF	24	31.1
9	31.0IF	29.1IF	29.2IF	30.2IF	29.6IF	27.8IF	27.8IF	28.5IF	29.4IF	29.2IF	29.4IF	26.4IF	26.1IF	25.7IF	23.5IF	21.8IF	21.3IF	22.4IF	23.4IF	23.2IF	23.4IF	24.4IF	25.1IF	26.5IF	24	31.0
10	28.4IF	28.7IF	27.8IF	28.3IF	27.2IF	27.7IF	26.9IF	27.4IF	27.2IF	27.3IF	26.9IF	26.4IF	24.3IF	23.6IF	23.8IF	24.3IF	24.0IF	23.5IF	22.4IF	24.0IF	23.9IF	25.9IF	27.4IF	29.0IF	24	29.0
11	30.2IF	29.6IF	27.9IF	26.1IF	26.0IF	27.1IF	26.4IF	26.8IF	27.6IF	26.7IF	26.1IF	25.3IF	24.5IF	22.5IF	19.0IF	15.3IF	13.3IF	10.7IF	10.2IF	11.0IF	9.7IF	8.4IF	4.2IF	4.2IF	24	30.2
12	4.1	4.3	4.3	4.1	5.3	6.6	6.7	5.8	5.4	5.1	5.5	6.1	7.4	7.7	9.0	11.9	12.7	13.8	14.6	14.1	14.2	14.0	12.9	13.0	24	14.6
13	13.7	14.8	13.8	14.8	14.3	13.3	13.7	13.3	12.5	11.9	11.6	BL	10.5	10.6	11.1	11.0	11.5	11.5	11.2	10.4	10.6	10.8	11.5	11.4	23	14.8
14	13.0	13.2	14.4	15.0	15.9	16.8	17.3	15.3	14.6	14.4	13.0	12.5	12.9	13.7	14.0	13.3	13.6	12.9	7.6	5.8	5.4	5.8	6.7	7.2	24	17.3
15	7.2	7.3	6.6	6.4	6.2	6.9	8.7	10.3	9.8	9.1	9.7	10.4	10.6	10.7	10.9	10.6	9.9	10.5	8.8	7.7	7.5	7.6	8.0	8.0	24	10.9
16	7.9IF	8.0IF	7.9IF	7.9IF	8.2IF	8.1IF	8.1IF	7.8IF	8.0IF	7.8IF	8.2IF	10.3IF	11.7IF	13.7IF	16.3IF	19.6IF	16.7IF	20.3IF	21.6IF	20.3IF	19.8IF	36.9IF	44.5IF	39.7IF	24	44.5
17	35.0IF	30.1IF	27.9IF	26.4IF	24.1IF	22.7IF	22.6IF	22.5IF	22.8IF	22.2IF	22.5IF	21.8IF	23.1IF	24.6IF	26.1IF	23.6IF	22.9IF	21.8IF	22.0IF	21.9IF	22.0IF	23.9IF	26.1IF	27.1IF	24	35.0
18	27.5IF	28.7IF	30.8IF	31.4IF	31.4IF	31.9IF	31.8IF	32.5IF	32.6IF	30.1IF	29.5IF	28.8IF	28.5IF	27.3IF	25.8IF	23.7IF	21.7IF	21.9IF	22.5IF	22.3IF	25.0IF	24.3IF	23.0IF	21.3IF	24	32.6
19	21.9	24.3	25.2	26.3	26.8	22.0	18.5	11.8	8.5	9.3	8.2	8.7	8.7	6.9	4.2	4.0	4.3	5.0	4.5	3.6	4.5	5.1	5.0	6.5	24	26.8
20	8.2	8.1	7.2	5.7	6.4	6.8	6.3	5.7	5.9	5.6	5.8	5.7	6.1	6.2	6.4	5.7	2.8	3.6	4.5	4.5	3.3	3.8	6.6	7.8	24	8.2
21	9.1	9.8	9.5	8.0	7.3	7.1	6.5	6.8	6.8	6.4	5.9	5.7	6.1	6.4	6.5	5.6	5.8	5.4	5.3	4.4	4.0	4.0	3.6	3.5	24	9.8
22	3.1	2.9	2.8	2.5	2.7	3.1	3.1	3.0	2.4	2.2	2.2	2.3	2.5	2.7	2.7	3.1	3.2	3.4	4.0	3.5	5.0	4.4	4.3	4.4	24	5.0
23	4.7	5.3	5.2	4.8	5.9	6.4	6.3	5.5	4.6	2.9	3.6	4.9	6.0	6.2	5.5	5.6	5.1	4.3	4.8	5.0	5.5	5.5	5.3	6.1	24	6.4
24	7.0	6.7	6.9	6.4	6.6	6.9	6.9	7.1	8.1	8.7	9.8	9.2	8.1	8.1	8.6	9.1	7.5	6.5	6.8	7.8	9.1	10.6	12.2	16.6	24	16.6
25	14.1	14.1	14.6	14.3	14.7	15.2	13.5	14.6	15.4	16.7	17.0	18.2	17.7	14.5	13.8	13.5	10.9	9.1	6.2	5.2	5.0	5.3	5.5	5.1	24	18.2
26	7.5	7.3	3.6	3.9	3.9	5.0	4.4	4.7	4.7	4.6	5.2	7.1	7.3	8.3	9.3	9.6	9.9	10.5	10.9	13.4	16.3	18.7	14.9	14.0	24	18.7
27	12.7IF	13.6IF	13.6IF	14.5IF	15.1IF	14.5IF	15.5IF	15.2IF	16.3IF	15.5IF	14.2IF	14.7IF	18.7IF	23.1IF	23.2IF	23.3IF	23.4IF	23.4IF	25.1IF	25.6IF	26.4IF	26.6IF	27.0IF	28.5IF	24	28.5
28	26.6IF	26.9IF	27.1IF	29.5IF	28.4IF	27.9IF	27.8IF	25.9IF	24.5IF	22.6IF	27.9IF	30.6IF	31.1IF	31.3IF	38.8IF	49.4IF	50.6IF	49.1IF	46.1IF	43.6IF	45.8IF	47.4IF	49.9IF	50.3IF	24	50.6
29	52.3IF	50.2IF	51.0IF	51.7IF	52.6IF	52.9IF	52.2IF	50.1IF	48.6IF	48.4IF	49.4IF	49.9IF	52.1IF	53.2IF	52.0IF	51.8IF	54.4IF	51.5IF	47.0IF	45.2IF	45.4IF	46.3IF	47.1IF	48.2IF	24	54.4
30	46.5IF	44.4IF	40.4IF	42.5IF	40.7IF	41.1IF	42.6IF	45.4IF	44.5IF	37.8IF	25.4IF	19.5IF	15.8IF	12.2IF	11.2IF	11.6IF	11.7IF	10.7IF	10.6IF	11.0IF	11.3IF	12.9IF	14.0IF	13.4IF	24	46.5
31																									0	
NO.:	24	24	24	24	24	24	24	24	24	25	25	24	25	25	25	25	25	25	25	25	25	25	25	25	25	
MAX:	52.3	50.2	51.0	51.7	52.6	52.9	52.2	50.1	48.6	48.4	49.4	49.9	52.1	53.2	52.0	51.8	54.4	51.5	47.0	45.2	45.8	47.4	49.9	50.3		
AVG:	19.74	19.38	18.77	18.80	18.70	18.60	18.30	17.87	17.84	17.45	17.17	17.66	17.78	17.70	17.88	18.07	17.63	17.62	17.49	17.32	17.91	18.83	19.15	19.48		

MONTHLY OBSERVATIONS: 590 MONTHLY MEAN: 18.21 MONTHLY MAX: 54.4

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("\*\*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 AIR QUALITY SYSTEM  
 RAW DATA REPORT

Dec. 23, 2024

(88101) PM2.5 - Local Conditions

SITE ID: 47-093-1017 POC: 3  
 COUNTY: (093) Knox  
 CITY: (40000) Knoxville  
 SITE ADDRESS: 1613 VERMONT AVENUE  
 SITE COMMENTS: SLAMS, TSP SITE ON RULE HIGH SCHOOL  
 MONITOR COMMENTS:

STATE: (47) Tennessee  
 AQCR: (207) EASTERN TENNESSEE-SOUTHWESTERN VIR  
 URBANIZED AREA: (3840) KNOXVILLE, TN  
 LAND USE: RESIDENTIAL  
 LOCATION SETTING: URBAN AND CENTER CITY

CAS NUMBER:  
 LATITUDE: 35.9780740009  
 LONGITUDE: -83.950666  
 UTM ZONE:  
 UTM NORTHING:  
 UTM EASTING:  
 ELEVATION-MSL: 317  
 PROBE HEIGHT: 2.49

SUPPORT AGENCY: (0581) Knox County Department Of Air Pollution Control  
 MONITOR TYPE: SPM  
 COLLECTION AND ANALYSIS METHOD: (236) Teledyne T640 at 5.0 LPM Broadband  
 PQAQ: (0581) Knox County Department Of Air Pollution Control

REPORT FOR: JULY 2023

DURATION: 1 HOUR  
 UNITS: Micrograms/cubic meter (LC)  
 MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MAXIMUM
1	13.6	13.8	13.7	14.1	13.3	13.1	14.1	13.0	13.2	12.7	12.9	14.3	15.6	15.3	14.7	13.9	13.9	27.4	5.2	5.8	6.6	7.3	8.0	7.8	24	27.4
2	10.3	11.0	9.6	11.3	12.4	11.1	8.3	7.9	8.3	8.4	8.5	9.1	9.2	10.3	11.3	12.3	12.1	12.3	12.1	11.3	9.4	8.5	8.5	8.4	24	12.4
3	8.2	8.2	9.0	9.6	9.6	10.1	11.0	10.7	10.2	9.9	10.7	10.6	10.4	10.0	9.2	10.4	9.9	9.1	8.6	8.7	8.9	12.2	17.5	12.2	24	17.5
4	11.6	11.9	10.4	10.1	10.1	11.0	11.3	12.0	13.7	13.0	11.7	11.3	12.4	13.0	12.7	10.5	7.8	7.9	8.4	7.6	23.9	41.6	57.9	53.4	24	57.9
5	58.4	39.3	42.9	32.8	29.5	26.3	22.8	25.5	19.6	7.7	7.0	6.0	6.1	6.4	7.1	7.2	7.3	7.7	8.0	7.3	7.8	8.3	9.5	8.6	24	58.4
6	7.9	8.6	8.7	9.9	9.1	9.1	8.7	8.0	9.0	9.5	AZ	9.7	9.8	13.8	7.4	6.5	6.2	7.5	7.7	6.5	6.0	6.2	6.3	6.5	23	13.8
7	6.6	7.0	7.2	7.6	8.5	8.3	9.3	9.4	7.9	7.9	8.6	9.2	8.3	8.0	7.9	7.7	8.0	7.2	7.7	8.9	9.7	9.1	9.5	10.1	24	10.1
8	10.8	11.9	12.4	11.4	11.3	11.7	12.2	12.1	11.5	11.2	11.5	10.2	10.8	10.7	10.2	10.0	9.9	10.7	7.0	6.5	6.0	6.6	6.8	6.7	24	12.4
9	5.5	5.4	6.7	6.1	5.6	5.8	5.2	5.6	5.8	5.5	5.5	5.4	4.4	7.6	6.4	6.3	6.5	6.1	5.9	5.6	5.4	5.6	5.7	6.2	24	7.6
10	6.3	7.0	6.5	6.2	6.4	6.6	7.2	6.9	6.9	7.1	6.8	6.9	6.6	6.6	6.6	6.4	5.6	5.5	5.6	6.1	6.3	8.4	6.8	7.0	24	8.4
11	7.8	8.1	8.0	8.7	9.5	11.6	12.2	8.9	9.3	10.0	11.6	9.2	9.6	8.9	9.5	10.2	9.9	12.0	13.2	11.0	11.4	20.4	12.4	24	20.4	
12	14.1	14.1	15.7	16.5	17.0	17.7	16.5	16.9	14.6	14.1	12.2	9.7	9.7	9.4	10.1	10.0	10.1	9.5	9.3	9.8	11.1	10.9	11.2	12.4	24	17.7
13	15.7	11.8	13.1	13.0	13.9	13.7	12.0	11.7	11.5	10.9	10.6	10.8	10.2	9.7	8.6	8.2	8.3	8.6	8.6	8.0	8.3	8.3	8.1	8.5	24	15.7
14	8.5	7.7	7.6	7.7	7.9	8.5	8.9	8.9	9.0	10.0	9.7	9.7	10.2	10.6	9.2	9.9	11.2	9.9	9.4	9.2	9.5	9.4	9.3	9.6	24	11.2
15	10.4	11.8	11.6	11.5	11.9	12.2	10.9	9.2	9.3	9.0	8.6	8.7	8.9	8.8	8.6	9.0	5.6	6.3	6.1	6.5	6.5	6.9	7.6	7.6	24	12.2
16	7.5IF	6.9IF	6.2IF	5.8IF	6.0IF	6.4IF	6.6IF	7.7IF	7.8IF	7.6IF	6.9IF	12.6IF	18.2IF	24.7IF	27.8IF	28.1IF	29.0IF	33.4IF	36.3IF	37.9IF	44.4IF	45.1IF	44.3IF	43.6IF	24	45.1
17	41.9IF	42.9IF	42.2IF	43.7IF	44.9IF	47.3IF	45.1IF	44.4IF	44.4IF	47.9IF	52.4IF	60.0IF	62.7IF	60.0IF	58.7IF	57.4IF	55.9IF	57.2IF	56.7IF	57.9IF	58.4IF	58.4IF	57.3IF	56.8IF	24	62.7
18	56.1IF	56.0IF	57.4IF	58.0IF	58.1IF	59.8IF	59.0IF	57.0IF	43.8IF	46.9IF	56.0IF	51.4IF	40.8IF	32.2IF	32.3IF	26.4IF	24.7IF	25.5IF	26.7IF	25.7IF	21.9IF	10.8IF	9.4IF	7.2IF	24	59.8
19	6.4	6.0	5.2	4.3	4.2	4.8	5.7	5.4	5.5	5.4	4.9	5.2	5.6	5.3	5.6	4.8	5.5	4.4	3.7	3.6	3.8	4.4	4.7	4.3	24	6.4
20	4.7	5.0	4.9	5.7	5.9	6.1	7.0	6.3	6.4	4.6	4.2	3.6	3.6	3.9	6.0	6.7	4.1	4.6	5.0	4.9	4.3	4.1	4.1	4.3	24	7.0
21	5.1	5.7	6.1	5.6	6.1	6.6	7.8	10.3	10.4	7.7	7.2	7.8	8.5	9.1	10.7	12.2	9.8	9.4	9.4	8.7	7.9	6.4	6.4	6.6	24	12.2
22	7.4	11.0	8.4	8.4	10.4	10.7	10.5	10.5	10.5	10.8	10.4	10.4	10.2	8.3	9.6	9.8	11.6	8.6	8.2	8.3	10.1	9.3	8.8	8.4	24	11.6
23	9.3IF	10.6IF	10.4IF	10.5IF	9.9IF	10.0IF	10.6IF	10.3IF	9.1IF	8.3IF	8.2IF	7.8IF	7.9IF	8.3IF	8.1IF	8.2IF	7.7IF	8.0IF	7.8IF	8.0IF	9.8IF	14.9IF	8.7IF	8.5IF	24	14.9
24	8.8IF	10.1IF	11.4IF	11.7IF	14.5IF	12.4IF	17.1IF	14.2IF	9.9IF	10.3IF	10.7IF	11.5IF	12.3IF	13.3IF	14.7IF	14.0IF	13.9IF	14.7IF	15.6IF	15.5IF	15.8IF	16.2IF	16.5IF	17.4IF	24	17.4
25	18.7IF	17.4IF	17.4IF	17.9IF	18.3IF	18.1IF	16.7IF	15.7IF	15.6IF	15.5IF	15.7IF	15.2IF	15.3IF	15.9IF	15.6IF	10.8IF	8.7IF	9.9IF	10.0IF	8.9IF	8.7IF	9.3IF	9.1IF	9.4IF	24	18.7
26	9.4IF	9.2IF	9.6IF	11.6IF	10.4IF	11.1IF	13.0IF	12.7IF	12.6IF	13.2IF	14.6IF	17.2IF	19.3IF	17.7IF	17.8IF	18.5IF	18.3IF	17.9IF	18.1IF	18.1IF	18.9IF	19.3IF	19.1IF	18.4IF	24	19.3
27	17.6IF	17.1IF	15.9IF	16.9IF	17.1IF	16.4IF	15.4IF	15.7IF	16.0IF	16.7IF	18.7IF	18.1IF	17.2IF	15.8IF	14.9IF	15.6IF	15.7IF	14.7IF	13.9IF	14.1IF	14.3IF	15.3IF	17.2IF	16.9IF	24	18.7
28	18.0IF	17.2IF	16.7IF	17.5IF	18.0IF	18.1IF	17.8IF	17.9IF	18.6IF	17.1IF	16.2IF	15.7IF	16.8IF	16.2IF	17.1IF	16.6IF	17.2IF	16.2IF	15.6IF	15.9IF	16.4IF	14.7IF	13.5IF	12.0IF	24	18.6
29	11.2IF	10.5IF	9.9IF	10.1IF	11.0IF	11.0IF	11.6IF	11.8IF	12.3IF	12.8IF	14.0IF	15.3IF	16.2IF	16.9IF	18.8IF	17.4IF	10.1IF	8.7IF	8.8IF	5.0IF	6.0IF	6.3IF	8.3IF	6.8IF	24	18.8
30	7.4	8.1	8.0	7.3	7.7	7.3	7.6	7.0	7.4	7.9	7.6	6.3	6.2	6.3	7.1	6.9	6.5	5.7	5.6	6.4	6.7	6.0	5.9	5.6	24	8.1
31	5.8	6.6	6.0	6.3	6.6	7.4	8.4	7.5	7.0	7.2	7.4	7.6	7.3	7.9	8.2	8.4	8.1	8.1	7.9	8.0	8.5	8.2	8.2	8.3	24	8.5
NO.:	31	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31	
MAX:	58.4	56.0	57.4	58.0	58.1	59.8	59.0	57.0	44.4	47.9	56.0	60.0	62.7	60.0	58.7	57.4	55.9	57.2	56.7	57.9	58.4	58.4	57.9	56.8		
AVG:	13.90	13.48	13.51	13.48	13.71	13.88	13.89	13.58	12.81	12.48	13.03	13.11	13.24	13.25	13.31	12.89	12.24	12.66	11.96	11.87	12.65	13.21	14.02	13.29		

MONTHLY OBSERVATIONS: 743 MONTHLY MEAN: 13.14 MONTHLY MAX: 62.7

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("\*") indicates that the region has reviewed the value and does not concur with the qualifier.

QUALIFIER CODES:

Qualifier Code	Qualifier Description	Qualifier Type
AZ	Q C Audit.	NULL
BA	Maintenance/Routine Repairs.	NULL
BJ	Operator Error.	NULL
BK	Site computer/data logger down.	NULL
BL	QA Audit.	NULL
IF	Fire - Canadian.	INFORM

Note: Qualifier codes with regional concurrence are shown in upper case,  
and those without regional concurrence are shown in lower case.

User ID: AIT

RAW DATA REPORT

Report Request ID: 2248878

Report Code: AMP350

Dec. 23, 2024

GEOGRAPHIC SELECTIONS

Tribal Code	State	County	Site	Parameter	POC	City	AQCR	UAR	CBSA	CSA	EPA Region
	47	093	1017	88101							

PROTOCOL SELECTIONS

Parameter Classification	Parameter	Method	Duration
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CRITERIA

SELECTED OPTIONS

Option Type	Option Value
INCLUDE NULLS	YES
DAILY STATISTICS	MAXIMUM
UNITS	STANDARD
RAW DATA EVENTS	INCLUDE EVENTS
MERGE PDF FILES	YES
AGENCY ROLE	PQAO

SORT ORDER

Order	Column
1	STATE_CODE
2	COUNTY_CODE
3	SITE_ID
4	PARAMETER_CODE
5	POC

DATE CRITERIA

Start Date	End Date
2023 06 07	2023 07 18

APPLICABLE STANDARDS

Standard Description
CO 1-hour 1971
Lead 3-Month 2009
Lead 3-Month PM10 Surrogate 2009
NO2 Annual 1971
Ozone 1-hour 1979
PM10 24-hour 2006
PM25 Annual 2024
SO2 1-hour 2010



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 AIR QUALITY SYSTEM  
 RAW DATA REPORT

Dec. 23, 2024

(88101) PM2.5 - Local Conditions

SITE ID: 47-093-1017 POC: 1  
 COUNTY: (093) Knox  
 CITY: (40000) Knoxville  
 SITE ADDRESS: 1613 VERMONT AVENUE  
 SITE COMMENTS: SLAMS, TSP SITE ON RULE HIGH SCHOOL  
 MONITOR COMMENTS:

STATE: (47) Tennessee  
 AQCR: (207) EASTERN TENNESSEE-SOUTHWESTERN VIR  
 URBANIZED AREA: (3840) KNOXVILLE, TN  
 LAND USE: RESIDENTIAL  
 LOCATION SETTING: URBAN AND CENTER CITY

CAS NUMBER:  
 LATITUDE: 35.9780740009  
 LONGITUDE: -83.950666  
 UTM ZONE:  
 UTM NORTHING:  
 UTM EASTING:  
 ELEVATION-MSL: 317  
 PROBE HEIGHT: 3

SUPPORT AGENCY: (0581) Knox County Department Of Air Pollution Control  
 MONITOR TYPE: SLAMS  
 COLLECTION AND ANALYSIS METHOD: (145) R & P Model 2025 PM-2.5 Sequential  
 PQAO: (0581) Knox County Department Of Air Pollution Control

REPORT FOR: 2023

DURATION: 24 HOUR  
 UNITS: Micrograms/cubic meter (LC)  
 MIN DETECTABLE: 2

Day	MONTH											
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1												
2												
3												
4												
5								18.4				
6												
7												
8												
9												
10												
11						16.4 IF	10.1					
12												
13												
14												
15												
16												
17						19.7 IF	45.0 rt					
18												
19												
20												
21												
22												
23						3.9						
24												
25												
26												
27												
28												
29						43.7 rt						
30												
31												
NO.:	0	0	0	0	0	4	3	0	0	0	0	0
MAX:						43.7	45.0					
MEAN:						20.93	24.50					
ANNUAL OBSERVATIONS:	7		ANNUAL MEAN:		22.46	ANNUAL MAX:		45.0				

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk (\*\*\*) indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 AIR QUALITY SYSTEM  
 RAW DATA REPORT

Dec. 23, 2024

(88101) PM2.5 - Local Conditions

SITE ID: 47-093-1017 POC: 23  
 COUNTY: (093) Knox  
 CITY: (40000) Knoxville  
 SITE ADDRESS: 1613 VERMONT AVENUE  
 SITE COMMENTS: SLAMS, TSP SITE ON RULE HIGH SCHOOL  
 MONITOR COMMENTS:

STATE: (47) Tennessee  
 AQCR: (207) EASTERN TENNESSEE-SOUTHWESTERN VIR  
 URBANIZED AREA: (3840) KNOXVILLE, TN  
 LAND USE: RESIDENTIAL  
 LOCATION SETTING: URBAN AND CENTER CITY

CAS NUMBER:  
 LATITUDE: 35.9780740009  
 LONGITUDE: -83.950666  
 UTM ZONE:  
 UTM NORTHING:  
 UTM EASTING:  
 ELEVATION-MSL: 317  
 PROBE HEIGHT: 2.49

SUPPORT AGENCY: (0581) Knox County Department Of Air Pollution Control  
 MONITOR TYPE: SLAMS  
 COLLECTION AND ANALYSIS METHOD: (736) Teledyne T640 at 5.0 LPM (Correcte  
 PQAQ: (0581) Knox County Department Of Air Pollution Control

REPORT FOR: JUNE 2023

DURATION: 1 HOUR  
 UNITS: Micrograms/cubic meter (LC)  
 MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MAXIMUM		
1																										0		
2																											0	
3																											0	
4																											0	
5																											0	
6																											0	
7	37.1rt	35.1rt	34.8rt	35.1rt	36.3rt	35.3rt	32.1rt	29.2rt	31.4rt	31.8rt	32.2rt	31.9rt	31.7rt	31.7rt	31.6rt	29.9rt	31.1rt	30.6rt	31.1rt	31.6rt	31.9rt	27.5rt	24.4rt	22.8rt	24	37.1		
8	21.2IF	18.8IF	14.1IF	11.5IF	9.4IF	9.4IF	9.8IF	9.8IF	13.7IF	18.3IF	19.2IF	25.6IF	29.6IF	27.7IF	30.2IF	30.1IF	29.0IF	27.5IF	25.3IF	25.7IF	26.5IF	27.7IF	28.4IF	28.1IF	24	30.2		
9	29.1rt	27.2rt	27.3rt	28.3rt	27.7rt	25.9rt	25.9rt	26.6rt	27.5rt	28.3rt	28.5rt	25.5rt	25.2rt	24.8rt	22.6rt	20.9rt	20.4rt	21.5rt	22.5rt	22.3rt	22.5rt	23.5rt	23.2rt	24.6rt	24	29.1		
10	26.5IF	26.8IF	25.9IF	26.4IF	25.3IF	25.8IF	25.0IF	25.5IF	25.3IF	26.4IF	26.0IF	25.5IF	23.4IF	22.7IF	22.9IF	23.4IF	23.1IF	22.6IF	21.5IF	23.1IF	23.0IF	25.0IF	26.5IF	28.1IF	24	28.1		
11	28.3IF	27.7IF	26.0IF	24.2IF	24.1IF	25.2IF	24.5IF	24.9IF	25.7IF	24.8IF	24.2IF	24.4IF	23.6IF	21.6IF	18.1IF	14.4IF	12.4IF	9.8IF	9.3IF	10.1IF	8.8IF	6.8IF	3.4IF	3.4IF	24	28.3		
12	3.3	3.5	3.5	3.3	4.3	5.4	5.4	4.7	4.4	4.1	4.6	5.2	6.5	6.8	8.1	11.0	11.8	12.9	13.7	13.2	12.3	12.1	11.0	11.1	24	13.7		
13	11.8	12.9	11.9	12.9	12.4	11.4	11.8	11.4	11.6	11.0	10.7	BL	9.6	9.7	10.2	10.1	10.6	10.6	10.3	9.5	9.7	9.9	9.6	9.5	23	12.9		
14	11.1	11.3	12.5	13.1	14.0	14.9	15.4	14.4	13.7	13.5	12.1	11.6	12.0	12.8	13.1	12.4	12.7	12.0	6.7	4.9	4.5	4.9	5.8	6.3	24	15.4		
15	5.9	5.9	5.4	5.2	5.0	5.6	7.1	8.4	8.9	8.2	8.8	9.5	9.7	9.8	10.0	9.7	9.0	9.6	7.9	6.8	6.6	6.7	7.1	7.1	24	10.0		
16	7.0IF	7.1IF	7.0IF	6.4IF	6.7IF	6.6IF	7.2IF	6.9IF	7.1IF	6.9IF	7.3IF	9.4IF	10.8IF	12.8IF	15.4IF	18.7IF	15.8IF	19.4IF	20.7IF	19.4IF	18.9IF	36.0IF	43.6IF	38.8IF	24	43.6		
17	33.1IF	28.2IF	26.0IF	24.5IF	22.2IF	20.8IF	20.7IF	20.6IF	21.9IF	21.3IF	21.6IF	20.9IF	22.2IF	23.7IF	25.2IF	22.7IF	22.0IF	20.9IF	21.1IF	21.0IF	21.1IF	23.0IF	25.2IF	26.2IF	24	33.1		
18	25.6rt	26.8rt	28.9rt	29.5rt	29.5rt	30.0rt	29.9rt	30.6rt	31.7rt	29.2rt	28.6rt	27.9rt	27.6rt	26.4rt	24.9rt	22.8rt	20.8rt	21.0rt	21.6rt	21.4rt	24.1rt	23.4rt	22.1rt	20.4rt	24	31.7		
19	21.0	23.4	24.3	25.4	24.9	21.1	17.6	9.9	6.9	7.6	6.7	7.8	7.8	6.0	3.4	3.3	3.5	4.1	3.7	2.9	3.7	4.1	4.1	5.3	24	25.4		
20	6.7	6.6	5.9	4.6	5.2	5.5	5.4	4.8	5.0	4.7	4.9	4.8	5.2	5.3	5.5	4.8	2.3	2.9	3.7	3.7	2.7	3.1	5.7	6.9	24	6.9		
21	8.2	8.9	7.7	6.5	5.9	5.8	5.3	5.5	5.9	5.5	5.0	4.8	5.2	5.5	5.6	4.7	4.9	4.5	4.4	3.6	3.3	3.3	2.9	2.8	24	8.9		
22	2.5	2.4	2.3	2.0	2.2	2.5	2.5	2.4	2.0	1.8	1.8	1.9	2.0	2.2	2.2	2.5	2.6	2.8	3.3	2.8	4.1	3.6	3.5	3.6	24	4.1		
23	3.8	4.3	4.2	3.9	4.8	5.2	5.1	4.5	3.7	2.4	2.9	4.0	5.1	5.3	4.6	4.7	4.2	3.5	3.9	4.1	4.6	4.4	5.2	24	5.3			
24	6.1	5.8	6.0	5.5	5.4	5.6	6.0	6.2	7.2	7.8	8.9	8.3	7.2	7.2	7.7	8.2	6.6	5.6	5.9	6.9	8.2	9.6	11.3	15.7	24	15.7		
25	13.2	12.2	12.7	12.4	12.8	13.3	12.6	13.7	14.5	15.8	16.1	17.3	16.8	13.6	12.9	12.6	10.0	8.2	5.3	4.3	4.1	4.3	4.5	4.1	24	17.3		
26	6.1	5.9	2.9	3.2	3.2	4.1	3.6	3.8	3.8	3.7	4.3	6.2	6.4	7.4	8.4	8.7	9.0	9.6	10.0	12.5	15.4	17.8	14.0	13.1	24	17.8		
27	11.8IF	12.7IF	12.7IF	13.6IF	13.2IF	12.6IF	14.6IF	14.3IF	15.4IF	14.6IF	13.3IF	13.8IF	17.8IF	22.2IF	22.3IF	22.4IF	22.5IF	23.4IF	24.2IF	24.7IF	25.5IF	25.7IF	26.1IF	27.6IF	24	27.6		
28	25.7rt	26.0rt	25.2rt	27.6rt	26.5rt	26.0rt	26.9rt	25.0rt	23.6rt	21.7rt	27.0rt	29.7rt	30.2rt	30.4rt	37.9rt	48.5rt	49.7rt	48.2rt	45.2rt	42.7rt	44.9rt	46.5rt	49.0rt	49.4rt	24	49.7		
29	51.4rt	49.3rt	50.1rt	49.8rt	50.7rt	51.0rt	51.3rt	49.2rt	47.7rt	47.5rt	48.5rt	49.0rt	51.2rt	52.3rt	51.1rt	50.9rt	53.5rt	50.6rt	46.1rt	44.3rt	44.5rt	45.4rt	46.2rt	47.3rt	24	53.5		
30	45.6IF	43.5IF	39.5IF	41.6IF	39.8IF	40.2IF	41.7IF	44.5IF	43.6IF	36.9IF	23.5IF	18.6IF	14.9IF	11.3IF	10.3IF	10.7IF	10.8IF	9.8IF	9.7IF	10.1IF	10.4IF	12.0IF	13.1IF	12.5IF	24	45.6		
31																										0		
NO.:	24	24	24	24	24	24	24	24	24	24	24	23	24	24	24	24	24	24	24	24	24	24	24	24	24			
MAX:	51.4	49.3	50.1	49.8	50.7	51.0	51.3	49.2	47.7	47.5	48.5	49.0	51.2	52.3	51.1	50.9	53.5	50.6	46.1	44.3	44.9	46.5	49.0	49.4				
AVG:	18.42	18.01	17.37	17.35	17.15	17.05	16.98	16.53	16.76	16.41	16.11	16.68	16.74	16.63	16.84	17.00	16.60	16.32	15.71	15.48	15.89	16.94	17.30	17.50				

MONTHLY OBSERVATIONS: 575 MONTHLY MEAN: 16.82 MONTHLY MAX: 53.5

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("\*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 AIR QUALITY SYSTEM  
 RAW DATA REPORT

Dec. 23, 2024

(88101) PM2.5 - Local Conditions

SITE ID: 47-093-1017 POC: 23  
 COUNTY: (093) Knox  
 CITY: (40000) Knoxville  
 SITE ADDRESS: 1613 VERMONT AVENUE  
 SITE COMMENTS: SLAMS, TSP SITE ON RULE HIGH SCHOOL  
 MONITOR COMMENTS:

STATE: (47) Tennessee  
 AQCR: (207) EASTERN TENNESSEE-SOUTHWESTERN VIR  
 URBANIZED AREA: (3840) KNOXVILLE, TN  
 LAND USE: RESIDENTIAL  
 LOCATION SETTING: URBAN AND CENTER CITY

CAS NUMBER:  
 LATITUDE: 35.9780740009  
 LONGITUDE: -83.950666  
 UTM ZONE:  
 UTM NORTHING:  
 UTM EASTING:  
 ELEVATION-MSL: 317  
 PROBE HEIGHT: 2.49

SUPPORT AGENCY: (0581) Knox County Department Of Air Pollution Control  
 MONITOR TYPE: SLAMS  
 COLLECTION AND ANALYSIS METHOD: (736) Teledyne T640 at 5.0 LPM (Correcte  
 PQAQ: (0581) Knox County Department Of Air Pollution Control

REPORT FOR: JULY 2023

DURATION: 1 HOUR  
 UNITS: Micrograms/cubic meter (LC)  
 MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MAXIMUM
1	12.7	12.9	12.8	13.2	12.4	12.2	13.2	12.1	12.3	11.8	12.0	13.4	14.7	14.4	13.8	13.0	13.0	26.5	4.3	4.9	5.7	6.4	7.1	6.9	24	26.5
2	9.4	10.1	8.7	10.4	10.5	10.2	7.4	7.0	7.4	7.5	7.6	8.2	8.3	9.4	10.4	11.4	11.2	11.4	11.2	10.4	8.5	7.6	7.6	7.5	24	11.4
3	7.3	7.3	8.1	8.7	8.7	9.2	10.1	9.8	9.3	9.0	9.8	9.7	9.5	9.1	8.3	9.5	9.0	8.2	7.7	7.8	8.0	11.3	16.6	11.3	24	16.6
4	10.7	11.0	9.5	9.2	9.2	10.1	10.4	11.1	12.8	12.1	10.8	10.4	11.5	12.1	11.8	9.6	6.9	7.0	7.5	6.7	23.0	40.7	57.0	52.5	24	57.0
5	57.5	38.4	42.0	31.9	28.6	25.4	21.9	24.6	18.7	6.8	6.1	5.1	5.2	5.5	6.2	6.3	6.4	6.8	7.1	6.4	6.9	7.4	8.6	7.7	24	57.5
6	7.0	7.7	7.8	9.0	8.2	8.2	7.8	7.1	8.1	8.6	AZ	8.8	8.9	12.9	6.5	5.6	5.3	6.6	6.8	5.6	5.1	5.3	5.4	5.6	23	12.9
7	5.7	6.1	6.3	6.7	7.6	7.4	8.4	8.5	7.0	7.0	7.7	8.3	7.4	7.1	7.0	6.8	7.1	6.3	6.8	8.0	8.8	8.2	8.6	9.2	24	9.2
8	9.9	11.0	11.5	10.5	10.4	10.8	11.3	11.2	10.6	10.3	10.6	9.3	9.9	9.8	9.3	9.1	9.0	9.8	6.1	5.6	5.1	5.7	5.9	5.8	24	11.5
9	4.6	4.5	5.8	5.2	4.7	4.9	4.3	4.7	4.9	4.6	4.6	4.5	3.6	6.7	5.5	5.4	5.6	5.2	5.0	4.7	4.5	4.7	4.8	5.3	24	6.7
10	5.4	6.1	5.6	5.3	5.5	5.7	6.3	6.0	6.0	6.2	5.9	6.0	5.7	5.7	5.7	5.5	4.7	4.6	4.7	5.2	5.4	7.5	5.9	6.1	24	7.5
11	6.9	6.6	6.5	7.1	7.7	9.7	10.3	8.0	8.4	9.1	10.7	8.3	8.7	8.0	8.6	8.6	9.3	9.0	11.1	12.3	10.1	10.5	19.5	11.5	24	19.5
12	13.2	13.2	13.8	14.6	15.1	15.8	15.6	16.0	13.7	13.2	11.3	8.8	8.8	8.5	9.2	9.1	9.2	8.6	8.4	8.9	10.2	10.0	10.3	11.5	24	16.0
13	14.8	10.9	12.2	12.1	13.0	12.8	11.1	10.8	10.6	10.0	9.7	9.9	9.3	8.8	7.7	7.3	7.4	7.7	7.7	7.1	7.4	7.4	7.2	7.6	24	14.8
14	7.6	6.8	6.7	6.8	7.0	7.6	8.0	8.0	8.1	9.1	8.8	8.8	9.3	9.7	8.3	9.0	10.3	9.0	8.5	8.3	8.6	8.5	8.4	8.7	24	10.3
15	9.5	10.9	10.7	10.6	11.0	11.3	10.0	8.3	8.4	8.1	7.7	7.8	8.0	7.9	7.7	8.1	4.7	5.4	5.2	5.6	5.6	6.0	6.7	6.7	24	11.3
16	6.6IF	6.0IF	5.3IF	4.9IF	5.1IF	5.5IF	5.7IF	6.8IF	6.9IF	6.7IF	6.0IF	11.7IF	17.3IF	23.8IF	26.9IF	27.2IF	28.1IF	32.5IF	35.4IF	37.0IF	43.5IF	44.2IF	43.4IF	42.7IF	24	44.2
17	41.0rt	42.0rt	41.3rt	42.8rt	43.0rt	45.4rt	43.2rt	43.5rt	43.5rt	47.0rt	51.5rt	59.1rt	61.8rt	59.1rt	57.8rt	56.5rt	55.0rt	56.3rt	55.8rt	57.0rt	57.5rt	57.5rt	56.4rt	55.9rt	24	61.8
18	55.2rt	55.1rt	56.5rt	57.1rt	57.2rt	58.9rt	58.1rt	56.1rt	42.9rt	46.0rt	55.1rt	50.5rt	39.9rt	31.3rt	31.4rt	25.5rt	23.8rt	24.6rt	25.8rt	24.8rt	21.0rt	9.9rt	8.5rt	6.3rt	24	58.9
19																									0	
20																									0	
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	18	18	18	18	18	18	18	18	18	18	17	18	18	18	18	18	18	18	18	18	18	18	18	18	18	
MAX:	57.5	55.1	56.5	57.1	57.2	58.9	58.1	56.1	43.5	47.0	55.1	59.1	61.8	59.1	57.8	56.5	55.0	56.3	55.8	57.0	57.5	57.5	57.0	55.9		
AVG:	15.83	14.81	15.06	14.78	14.72	15.06	14.62	14.42	13.31	12.95	13.88	13.81	13.77	13.88	13.45	12.97	12.56	13.64	12.51	12.57	13.61	14.38	15.99	14.93		

MONTHLY OBSERVATIONS: 431 MONTHLY MEAN: 14.06 MONTHLY MAX: 61.8

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("\*\*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 AIR QUALITY SYSTEM  
 RAW DATA REPORT

Dec. 23, 2024

(88101) PM2.5 - Local Conditions

SITE ID: 47-093-1017 POC: 3  
 COUNTY: (093) Knox  
 CITY: (40000) Knoxville  
 SITE ADDRESS: 1613 VERMONT AVENUE  
 SITE COMMENTS: SLAMS, TSP SITE ON RULE HIGH SCHOOL  
 MONITOR COMMENTS:

STATE: (47) Tennessee  
 AQCR: (207) EASTERN TENNESSEE-SOUTHWESTERN VIR  
 URBANIZED AREA: (3840) KNOXVILLE, TN  
 LAND USE: RESIDENTIAL  
 LOCATION SETTING: URBAN AND CENTER CITY

CAS NUMBER:  
 LATITUDE: 35.9780740009  
 LONGITUDE: -83.950666  
 UTM ZONE:  
 UTM NORTHING:  
 UTM EASTING:  
 ELEVATION-MSL: 317  
 PROBE HEIGHT: 2.49

SUPPORT AGENCY: (0581) Knox County Department Of Air Pollution Control  
 MONITOR TYPE: SPM  
 COLLECTION AND ANALYSIS METHOD: (236) Teledyne T640 at 5.0 LPM Broadband  
 PQAQ: (0581) Knox County Department Of Air Pollution Control

REPORT FOR: JUNE 2023

DURATION: 1 HOUR  
 UNITS: Micrograms/cubic meter (LC)  
 MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MAXIMUM		
1																										0		
2																											0	
3																											0	
4																											0	
5																											0	
6																											0	
7	39.0rt	37.0rt	36.7rt	37.0rt	38.2rt	37.2rt	34.0rt	31.1rt	32.3rt	32.7rt	33.1rt	33.8rt	33.6rt	33.6rt	32.5rt	30.8rt	32.0rt	31.5rt	33.0rt	33.5rt	33.8rt	29.4rt	26.3rt	24.7rt	24	39.0		
8	23.1IF	20.7IF	16.0IF	13.4IF	11.3IF	11.3IF	11.7IF	11.7IF	15.6IF	19.2IF	20.1IF	26.5IF	30.5IF	28.6IF	31.1IF	31.0IF	29.9IF	28.4IF	26.2IF	26.6IF	28.4IF	29.6IF	30.3IF	30.0IF	24	31.1		
9	31.0rt	29.1rt	29.2rt	30.2rt	29.6rt	27.8rt	27.8rt	28.5rt	29.4rt	29.2rt	29.4rt	26.4rt	26.1rt	25.7rt	23.5rt	21.8rt	21.3rt	22.4rt	23.4rt	23.2rt	23.4rt	24.4rt	25.1rt	26.5rt	24	31.0		
10	28.4IF	28.7IF	27.8IF	28.3IF	27.2IF	27.7IF	26.9IF	27.4IF	27.2IF	27.3IF	26.9IF	26.4IF	24.3IF	23.6IF	23.8IF	24.3IF	24.0IF	23.5IF	22.4IF	24.0IF	23.9IF	25.9IF	27.4IF	29.0IF	24	29.0		
11	30.2IF	29.6IF	27.9IF	26.1IF	26.0IF	27.1IF	26.4IF	26.8IF	27.6IF	26.7IF	26.1IF	25.3IF	24.5IF	22.5IF	19.0IF	15.3IF	13.3IF	10.7IF	10.2IF	11.0IF	9.7IF	8.4IF	4.2IF	4.2IF	24	30.2		
12	4.1	4.3	4.3	4.1	5.3	6.6	6.7	5.8	5.4	5.1	5.5	6.1	7.4	7.7	9.0	11.9	12.7	13.8	14.6	14.1	14.2	14.0	12.9	13.0	24	14.6		
13	13.7	14.8	13.8	14.8	14.3	13.3	13.7	13.3	12.5	11.9	11.6	BL	10.5	10.6	11.1	11.0	11.5	11.5	11.2	10.4	10.6	10.8	11.5	11.4	23	14.8		
14	13.0	13.2	14.4	15.0	15.9	16.8	17.3	15.3	14.6	14.4	13.0	12.5	12.9	13.7	14.0	13.3	13.6	12.9	7.6	5.8	5.4	5.8	6.7	7.2	24	17.3		
15	7.2	7.3	6.6	6.4	6.2	6.9	8.7	10.3	9.8	9.1	9.7	10.4	10.6	10.7	10.9	10.6	9.9	10.5	8.8	7.7	7.5	7.6	8.0	8.0	24	10.9		
16	7.9IF	8.0IF	7.9IF	7.9IF	8.2IF	8.1IF	8.1IF	7.8IF	8.0IF	7.8IF	8.2IF	10.3IF	11.7IF	13.7IF	16.3IF	19.6IF	16.7IF	20.3IF	21.6IF	20.3IF	19.8IF	36.9IF	44.5IF	39.7IF	24	44.5		
17	35.0IF	30.1IF	27.9IF	26.4IF	24.1IF	22.7IF	22.6IF	22.5IF	22.8IF	22.2IF	22.5IF	21.8IF	23.1IF	24.6IF	26.1IF	23.6IF	22.9IF	21.8IF	22.0IF	21.9IF	22.0IF	23.9IF	26.1IF	27.1IF	24	35.0		
18	27.5rt	28.7rt	30.8rt	31.4rt	31.4rt	31.9rt	31.8rt	32.5rt	32.6rt	30.1rt	29.5rt	28.8rt	28.5rt	27.3rt	25.8rt	23.7rt	21.7rt	21.9rt	22.5rt	22.3rt	25.0rt	24.3rt	23.0rt	21.3rt	24	32.6		
19	21.9	24.3	25.2	26.3	26.8	22.0	18.5	11.8	8.5	9.3	8.2	8.7	8.7	6.9	4.2	4.0	4.3	5.0	4.5	3.6	4.5	5.1	5.0	6.5	24	26.8		
20	8.2	8.1	7.2	5.7	6.4	6.8	6.3	5.7	5.9	5.6	5.8	5.7	6.1	6.2	6.4	5.7	2.8	3.6	4.5	4.5	3.3	3.8	6.6	7.8	24	8.2		
21	9.1	9.8	9.5	8.0	7.3	7.1	6.5	6.8	6.8	6.4	5.9	5.7	6.1	6.4	6.5	5.6	5.8	5.4	5.3	4.4	4.0	4.0	3.6	3.5	24	9.8		
22	3.1	2.9	2.8	2.5	2.7	3.1	3.1	3.0	2.4	2.2	2.2	2.3	2.5	2.7	2.7	3.1	3.2	3.4	4.0	3.5	5.0	4.4	4.3	4.4	24	5.0		
23	4.7	5.3	5.2	4.8	5.9	6.4	6.3	5.5	4.6	2.9	3.6	4.9	6.0	6.2	5.5	5.6	5.1	4.3	4.8	5.0	5.5	5.5	5.3	6.1	24	6.4		
24	7.0	6.7	6.9	6.4	6.6	6.9	6.9	7.1	8.1	8.7	9.8	9.2	8.1	8.1	8.6	9.1	7.5	6.5	6.8	7.8	9.1	10.6	12.2	16.6	24	16.6		
25	14.1	14.1	14.6	14.3	14.7	15.2	13.5	14.6	15.4	16.7	17.0	18.2	17.7	14.5	13.8	13.5	10.9	9.1	6.2	5.2	5.0	5.3	5.5	5.1	24	18.2		
26	7.5	7.3	3.6	3.9	3.9	5.0	4.4	4.7	4.7	4.6	5.2	7.1	7.3	8.3	9.3	9.6	9.9	10.5	10.9	13.4	16.3	18.7	14.9	14.0	24	18.7		
27	12.7IF	13.6IF	13.6IF	14.5IF	15.1IF	14.5IF	15.5IF	15.2IF	16.3IF	15.5IF	14.2IF	14.7IF	18.7IF	23.1IF	23.2IF	23.3IF	23.4IF	24.3IF	25.1IF	25.6IF	26.4IF	26.6IF	27.0IF	28.5IF	24	28.5		
28	26.6rt	26.9rt	27.1rt	29.5rt	28.4rt	27.9rt	27.8rt	25.9rt	24.5rt	22.6rt	27.9rt	30.6rt	31.1rt	31.3rt	38.8rt	49.4rt	50.6rt	49.1rt	46.1rt	43.6rt	45.8rt	47.4rt	49.9rt	50.3rt	24	50.6		
29	52.3rt	50.2rt	51.0rt	51.7rt	52.6rt	52.9rt	52.2rt	50.1rt	48.6rt	48.4rt	49.4rt	49.9rt	52.1rt	53.2rt	52.0rt	51.8rt	54.4rt	51.5rt	47.0rt	45.2rt	45.4rt	46.3rt	47.1rt	48.2rt	24	54.4		
30	46.5IF	44.4IF	40.4IF	42.5IF	40.7IF	41.1IF	42.6IF	45.4IF	44.5IF	37.8IF	25.4IF	19.5IF	15.8IF	12.2IF	11.2IF	11.6IF	11.7IF	10.7IF	10.6IF	11.0IF	11.3IF	12.9IF	14.0IF	13.4IF	24	46.5		
31																										0		
NO.:	24	24	24	24	24	24	24	24	24	24	24	23	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	
MAX:	52.3	50.2	51.0	51.7	52.6	52.9	52.2	50.1	48.6	48.4	49.4	49.9	52.1	53.2	52.0	51.8	54.4	51.5	47.0	45.2	45.8	47.4	49.9	50.3				
AVG:	19.74	19.38	18.77	18.80	18.70	18.60	18.30	17.87	17.84	17.35	17.09	17.60	17.66	17.56	17.72	17.88	17.46	17.19	16.64	16.40	16.89	17.98	18.39	18.60				

MONTHLY OBSERVATIONS: 575 MONTHLY MEAN: 17.93 MONTHLY MAX: 54.4

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("\*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
 AIR QUALITY SYSTEM  
 RAW DATA REPORT

Dec. 23, 2024

(88101) PM2.5 - Local Conditions

SITE ID: 47-093-1017 POC: 3  
 COUNTY: (093) Knox  
 CITY: (40000) Knoxville  
 SITE ADDRESS: 1613 VERMONT AVENUE  
 SITE COMMENTS: SLAMS, TSP SITE ON RULE HIGH SCHOOL  
 MONITOR COMMENTS:

STATE: (47) Tennessee  
 AQCR: (207) EASTERN TENNESSEE-SOUTHWESTERN VIR  
 URBANIZED AREA: (3840) KNOXVILLE, TN  
 LAND USE: RESIDENTIAL  
 LOCATION SETTING: URBAN AND CENTER CITY

CAS NUMBER:  
 LATITUDE: 35.9780740009  
 LONGITUDE: -83.950666  
 UTM ZONE:  
 UTM NORTHING:  
 UTM EASTING:  
 ELEVATION-MSL: 317  
 PROBE HEIGHT: 2.49

SUPPORT AGENCY: (0581) Knox County Department Of Air Pollution Control  
 MONITOR TYPE: SPM  
 COLLECTION AND ANALYSIS METHOD: (236) Teledyne T640 at 5.0 LPM Broadband  
 PQAQ: (0581) Knox County Department Of Air Pollution Control

REPORT FOR: JULY 2023

DURATION: 1 HOUR  
 UNITS: Micrograms/cubic meter (LC)  
 MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MAXIMUM		
1	13.6	13.8	13.7	14.1	13.3	13.1	14.1	13.0	13.2	12.7	12.9	14.3	15.6	15.3	14.7	13.9	13.9	27.4	5.2	5.8	6.6	7.3	8.0	7.8	24	27.4		
2	10.3	11.0	9.6	11.3	12.4	11.1	8.3	7.9	8.3	8.4	8.5	9.1	9.2	10.3	11.3	12.3	12.1	12.3	12.1	11.3	9.4	8.5	8.5	8.4	24	12.4		
3	8.2	8.2	9.0	9.6	9.6	10.1	11.0	10.7	10.2	9.9	10.7	10.6	10.4	10.0	9.2	10.4	9.9	9.1	8.6	8.7	8.9	12.2	17.5	12.2	24	17.5		
4	11.6	11.9	10.4	10.1	10.1	11.0	11.3	12.0	13.7	13.0	11.7	11.3	12.4	13.0	12.7	10.5	7.8	7.9	8.4	7.6	23.9	41.6	57.9	53.4	24	57.9		
5	58.4	39.3	42.9	32.8	29.5	26.3	22.8	25.5	19.6	7.7	7.0	6.0	6.1	6.4	7.1	7.2	7.3	7.7	8.0	7.3	7.8	8.3	9.5	8.6	24	58.4		
6	7.9	8.6	8.7	9.9	9.1	9.1	8.7	8.0	9.0	9.5	AZ	9.7	9.8	13.8	7.4	6.5	6.2	7.5	7.7	6.5	6.0	6.2	6.3	6.5	23	13.8		
7	6.6	7.0	7.2	7.6	8.5	8.3	9.3	9.4	7.9	7.9	8.6	9.2	8.3	8.0	7.9	7.7	8.0	7.2	7.7	8.9	9.7	9.1	9.5	10.1	24	10.1		
8	10.8	11.9	12.4	11.4	11.3	11.7	12.2	12.1	11.5	11.2	11.5	10.2	10.8	10.7	10.2	10.0	9.9	10.7	7.0	6.5	6.0	6.6	6.8	6.7	24	12.4		
9	5.5	5.4	6.7	6.1	5.6	5.8	5.2	5.6	5.8	5.5	5.5	5.4	4.4	7.6	6.4	6.3	6.5	6.1	5.9	5.6	5.4	5.6	5.7	6.2	24	7.6		
10	6.3	7.0	6.5	6.2	6.4	6.6	7.2	6.9	6.9	7.1	6.8	6.9	6.6	6.6	6.6	6.4	5.6	5.5	5.6	6.1	6.3	8.4	6.8	7.0	24	8.4		
11	7.8	8.1	8.0	8.7	9.5	11.6	12.2	8.9	9.3	10.0	11.6	9.2	9.6	8.9	9.5	10.2	9.9	12.0	13.2	11.0	11.4	20.4	12.4	24	20.4			
12	14.1	14.1	15.7	16.5	17.0	17.7	16.5	16.9	14.6	14.1	12.2	9.7	9.7	9.4	10.1	10.0	10.1	9.5	9.3	9.8	11.1	10.9	11.2	12.4	24	17.7		
13	15.7	11.8	13.1	13.0	13.9	13.7	12.0	11.7	11.5	10.9	10.6	10.8	10.2	9.7	8.6	8.2	8.3	8.6	8.6	8.0	8.3	8.3	8.1	8.5	24	15.7		
14	8.5	7.7	7.6	7.7	7.9	8.5	8.9	8.9	9.0	10.0	9.7	9.7	10.2	10.6	9.2	9.9	11.2	9.9	9.4	9.2	9.5	9.4	9.3	9.6	24	11.2		
15	10.4	11.8	11.6	11.5	11.9	12.2	10.9	9.2	9.3	9.0	8.6	8.7	8.9	8.8	8.6	9.0	5.6	6.3	6.1	6.5	6.5	6.9	7.6	7.6	24	12.2		
16	7.5IF	6.9IF	6.2IF	5.8IF	6.0IF	6.4IF	6.6IF	7.7IF	7.8IF	7.6IF	6.9IF	12.6IF	18.2IF	24.7IF	27.8IF	28.1IF	29.0IF	33.4IF	36.3IF	37.9IF	44.4IF	45.1IF	44.3IF	43.6IF	24	45.1		
17	41.9rt	42.9rt	42.2rt	43.7rt	44.9rt	47.3rt	45.1rt	44.4rt	44.4rt	47.9rt	52.4rt	60.0rt	62.7rt	60.0rt	58.7rt	57.4rt	55.9rt	57.2rt	56.7rt	57.9rt	58.4rt	58.4rt	57.3rt	56.8rt	24	62.7		
18	56.1rt	56.0rt	57.4rt	58.0rt	58.1rt	59.8rt	59.0rt	57.0rt	43.8rt	46.9rt	56.0rt	51.4rt	40.8rt	32.2rt	32.3rt	26.4rt	24.7rt	25.5rt	26.7rt	25.7rt	21.9rt	10.8rt	9.4rt	7.2rt	24	59.8		
19																										0		
20																											0	
21																											0	
22																											0	
23																											0	
24																											0	
25																											0	
26																											0	
27																											0	
28																											0	
29																											0	
30																											0	
31																											0	
NO.:	18	18	18	18	18	18	18	18	18	18	17	18	18	18	18	18	18	18	18	18	18	18	18	18	18			
MAX:	58.4	56.0	57.4	58.0	58.1	59.8	59.0	57.0	44.4	47.9	56.0	60.0	62.7	60.0	58.7	57.4	55.9	57.2	56.7	57.9	58.4	58.4	57.9	56.8				
AVG:	16.73	15.74	16.05	15.78	15.83	16.13	15.63	15.32	14.21	13.85	14.78	14.71	14.66	14.78	14.35	13.87	13.46	14.54	13.41	13.47	14.51	15.28	16.89	15.83				

MONTHLY OBSERVATIONS: 431 MONTHLY MEAN: 14.99 MONTHLY MAX: 62.7

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("\*") indicates that the region has reviewed the value and does not concur with the qualifier.

QUALIFIER CODES:

Qualifier Code	Qualifier Description	Qualifier Type
AZ	Q C Audit.	NULL
BL	QA Audit.	NULL
IF	Fire - Canadian.	INFORM
rt	Wildfire-U. S.	REQEXC

Note: Qualifier codes with regional concurrence are shown in upper case,  
and those without regional concurrence are shown in lower case.

# *Appendix C*

Public Notice and Comments