



THE 2023 EXCEPTIONAL EVENT REQUEST AND EPA DECISION

Presented by: Michael Geigert
Bureau of Air Management

TIMELINE



- January 10, 2024: Initial Notification sent to EPA Region 1.
- March 4, 2023: EPA response to initial notification.
- April 9, 2024: Public Comment Period on Proposed Demonstration.
- May 10, 2024: Public comment period closes. Comments received from EPA region 1.
- June 25, 2024: Response to comments posted.
- July 1, 2024: Final Exceptional Event Request documentation sent to EPA.
- July 22, 2024: EPA letter to CT DEEP denying most Exceptional Event Requests.

DEFINITION OF EXCEPTIONAL EVENT

- *Exceptional event* means an event(s) and its resulting emissions that affect air quality in such a way that there exists a **clear causal relationship** between the specific event(s) and the monitored exceedance(s) or violation(s), is not reasonably controllable or preventable, is an event(s) caused by human activity that is unlikely to recur at a particular location or a natural event(s), and is determined by the Administrator in accordance with 40 CFR 50.14 to be an exceptional event.
- Stagnation of air masses and meteorological inversions do not directly cause pollutant emissions and are not exceptional events.
- Meteorological events involving high temperatures or lack of precipitation (i.e., severe, extreme or exceptional drought) also do not directly cause pollutant emissions and are not considered exceptional events.

CRITERIA

Under 40 CFR §50.14(c)(3)(iv), the air agency demonstration to justify exclusion of data must include:

- 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);
- 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;
- C.** Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times to support requirement (B) above;
- D.** A **demonstration** that the event was both not reasonably controllable and not reasonably preventable; and
- E.** A demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event

2023 OZONE EXCEEDANCES

Month	April		May	June							July					Aug	Sep			
Site	13	14	12	1	2	11	30	1	6	11	12	19	26	27	28	29	21	3	7	Site Exceedances
Abington	69	74	63	61	53	56	57	71	56	45	53	49	58	55	54	52	42	48	51	2
Cornwall	67	82	65	76	58	65	78	79	59	55	57	51	67	52	47	42	41	47	58	4
Danbury	68	85	60	73	58	72	85	83	68	56	64	55	75	59	50	55	47	50	70	6
East Hartford	67	84	59	73	69	41	73	82	69	48	64	47	64	61	48	53	60	48	61	4
Greenwich	72	76	66	73	81	64	81	82	77	72	89	70	82	72	75	71	66	61	87	14
Groton	76	73	70	40	49	58	70	76	62	60	81	61	59	49	69	71	50	61	64	5
Madison	82	75	75	50	66	60	78	77	61	68	81	62	64	55	64	81	74	71	69	9
Middletown	75	82	62	68	68	63	69	80	65	52	70	60	63	59	62	80	48	55	61	4
New Haven	58	66	64	50	65	66	80	72	69	54	66	66	61	52	64	82	49	60	54	3
Stafford	71	88	64	65	51	58	68	76	60	45	61	48	61	56	49	50	47	47	59	3
Stratford	77	72	69	57	75	63	81	86	76	70	89	73	70	62	72	86	74	66	77	12
Westport	79	78	70	72	80	63	79	82	71	68	89	74	75	74	74	79	69	60	76	14
Site Exceedances	7	11	1	5	3	1	8	12	3	1	5	2	3	2	3	7	2	1	3	80
# days > Federal Standard	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	

Exceptional Event Dates for Regulatory Significance

Good (0-54 ppb)
Moderate (55-70 ppb)
Unhealthy for Sensitive Groups (71-85 ppb)
Unhealthy (86-105 ppb)
Very Unhealthy (>106 ppb)

- Red boxes indicate the five dates that were requested.

REQUESTS

On July 1, 2024, CT DEEP submitted an exceptional events demonstration for exceedances or violations of the 2015 8-hour O3 NAAQS that occurred at the Cornwall, East Hartford, and Groton monitoring sites.

- *The request for 8-hour O3 data exclusion for the **Groton** monitoring site is for **April 13–14, June 30–July 1, and July 12, 2023.***
- *The submittal also requested exclusion of the 8-hour O3 data at the **East Hartford and Cornwall** monitoring sites for **July 1, 2023.***

Greater Connecticut							
Site	Site ID	2021 4 th High	2022 4 th High	Ignoring EE		Excluding Selected EE	
				Current 4 th High	Current DV	Resulting 4 th High	Resulting DV
Cornwall	90050005	68	70	76	71	67	68
East Hartford	90031003	66	74	73	71	70	70
Groton	90110124	75	71	73	73	64	70

APRIL 13-14, 2023 EPA ANALYSIS

- *Criteria Checklist*

Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 13, 2023	Section 2. (pages 19–37)	Sufficient	Yes
April 14, 2023	Section 2. (pages 19–37)	Sufficient	Yes

Documentation of Clear Causal Relationship and the Supporting Analyses

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 13, 2023	Sections 2–10	Not sufficient	No
April 14, 2023	Sections 2–10	Not sufficient	No

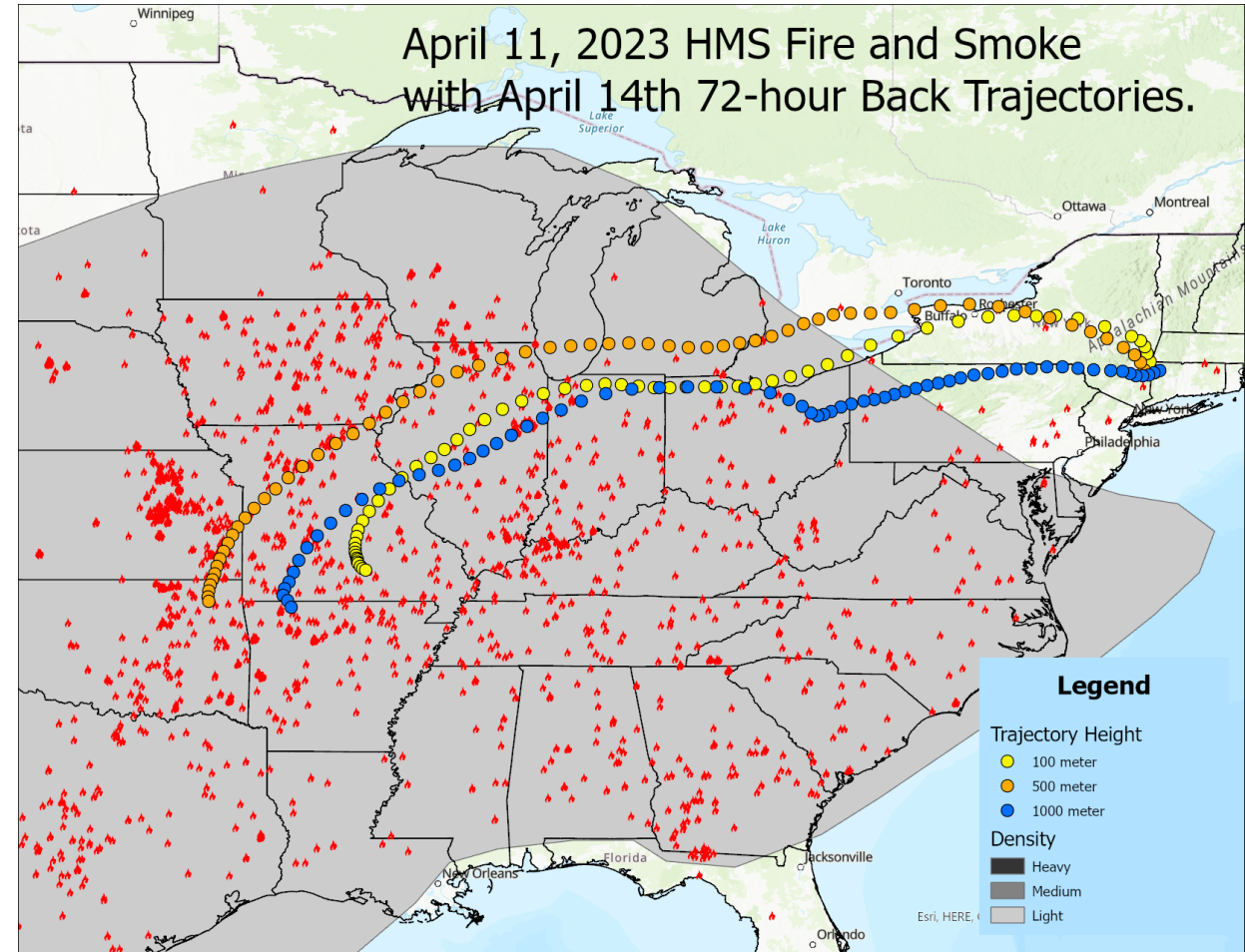
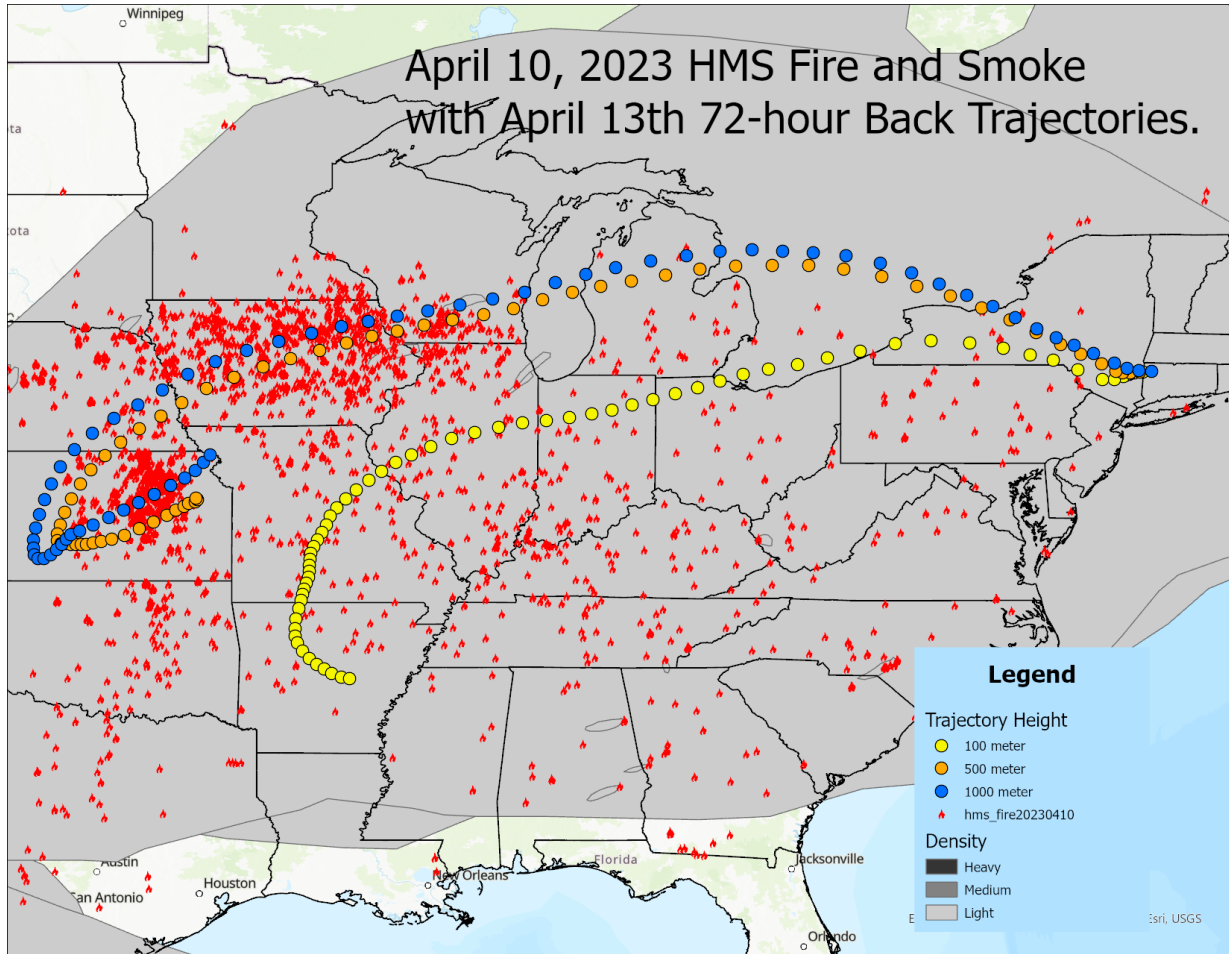
Documentation of not Reasonably Controllable or Preventable

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 13, 2023	Section 4	Sufficient	Yes
April 14, 2023	Section 4	Sufficient	Yes

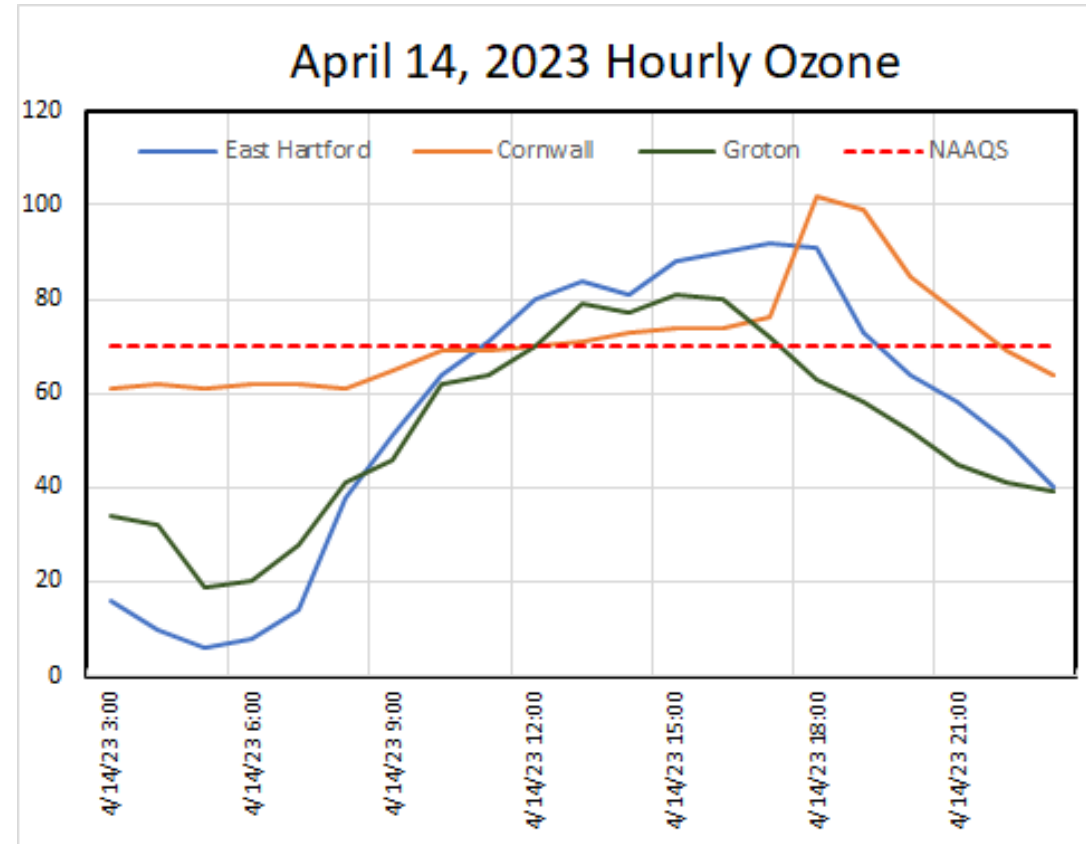
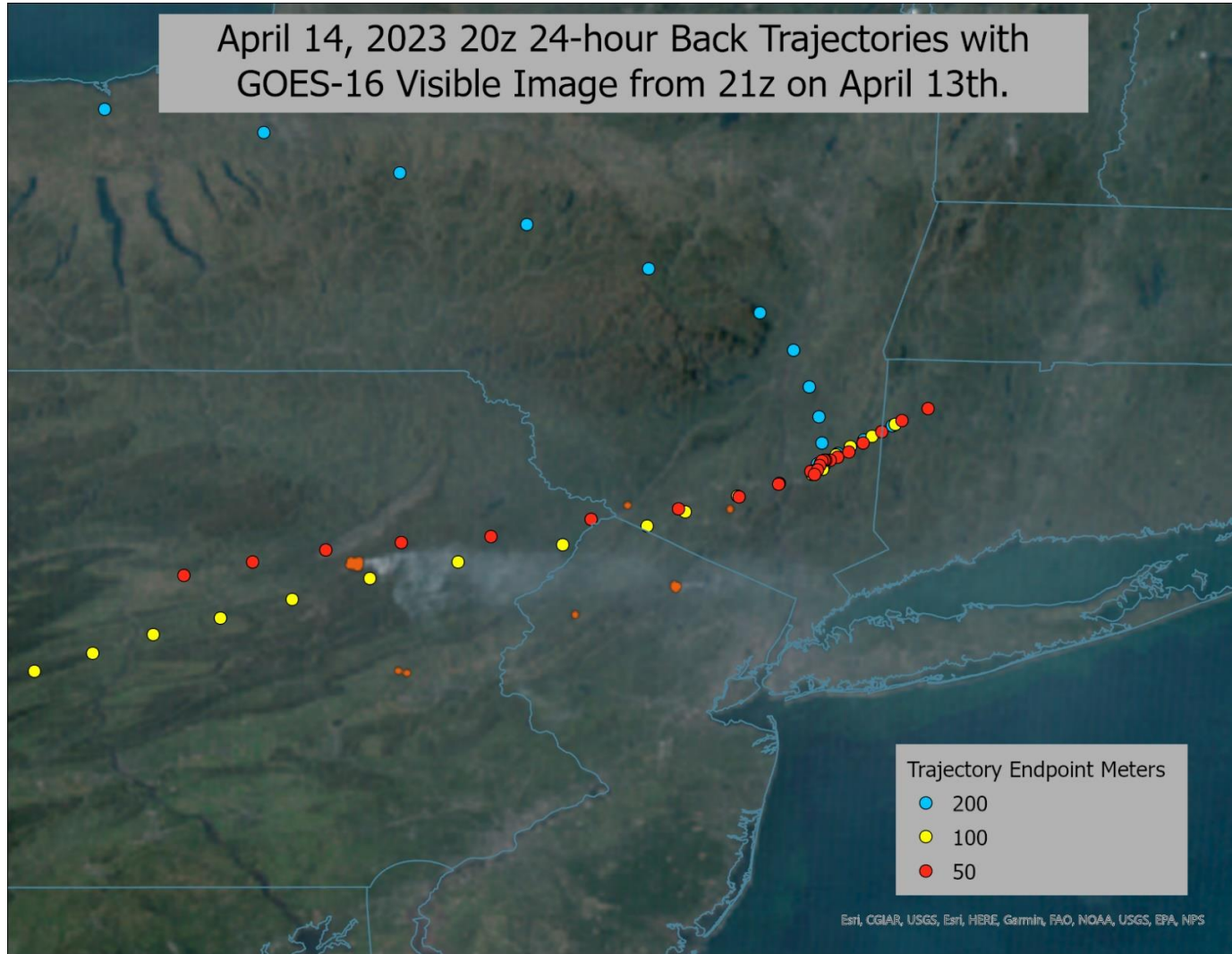
Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
April 13, 2023	Section 4	Sufficient	Yes
April 14, 2023	Section 4	Sufficient	Yes

APRIL 10-11, 2023 FLINT HILL KANSAS FIRES



APRIL 14, 2023, NEARBY FIRES



APRIL 13-14, 2023 EPA ANALYSIS

- *Based on the satellite imagery, there is smoke around the eastern U.S. during this period, but the spatial variability of the HMS fire counts makes it very difficult to determine a **clear causal relationship** between any one fire (or group of fires) to the elevated ozone concentrations.*
- *With elevated ozone upwind of the Groton monitor and the meteorological conditions present at the time of the observations, it points to an ozone episode created by many factors, and **smoke was likely only one such factor.***
- *EPA finds that although smoke was present, **CT DEEP's demonstration does not show a clear causal relationship** between the emissions generated by the Flint Hills prescribed/agricultural burns and nearby (Pennsylvania, New York, and New Jersey) wildfires and the exceedances measured at the Groton monitoring location.*

JUNE 30-JULY 1, 2023 EPA ANALYSIS

- *Criteria Checklist* ✓

Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 30, 2023	Section 2. (Pages 7 – 32)	Sufficient	Yes
July 1, 2023	Section 2. (Pages 7 – 32)	Sufficient	Yes

Documentation of Clear Causal Relationship and the Supporting Analyses

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 30, 2023	Section 2-10 (Pages 7 – 205)	Sufficient	Yes
July 1, 2023	Section 2-10 (Pages 7 – 205)	Sufficient	Yes

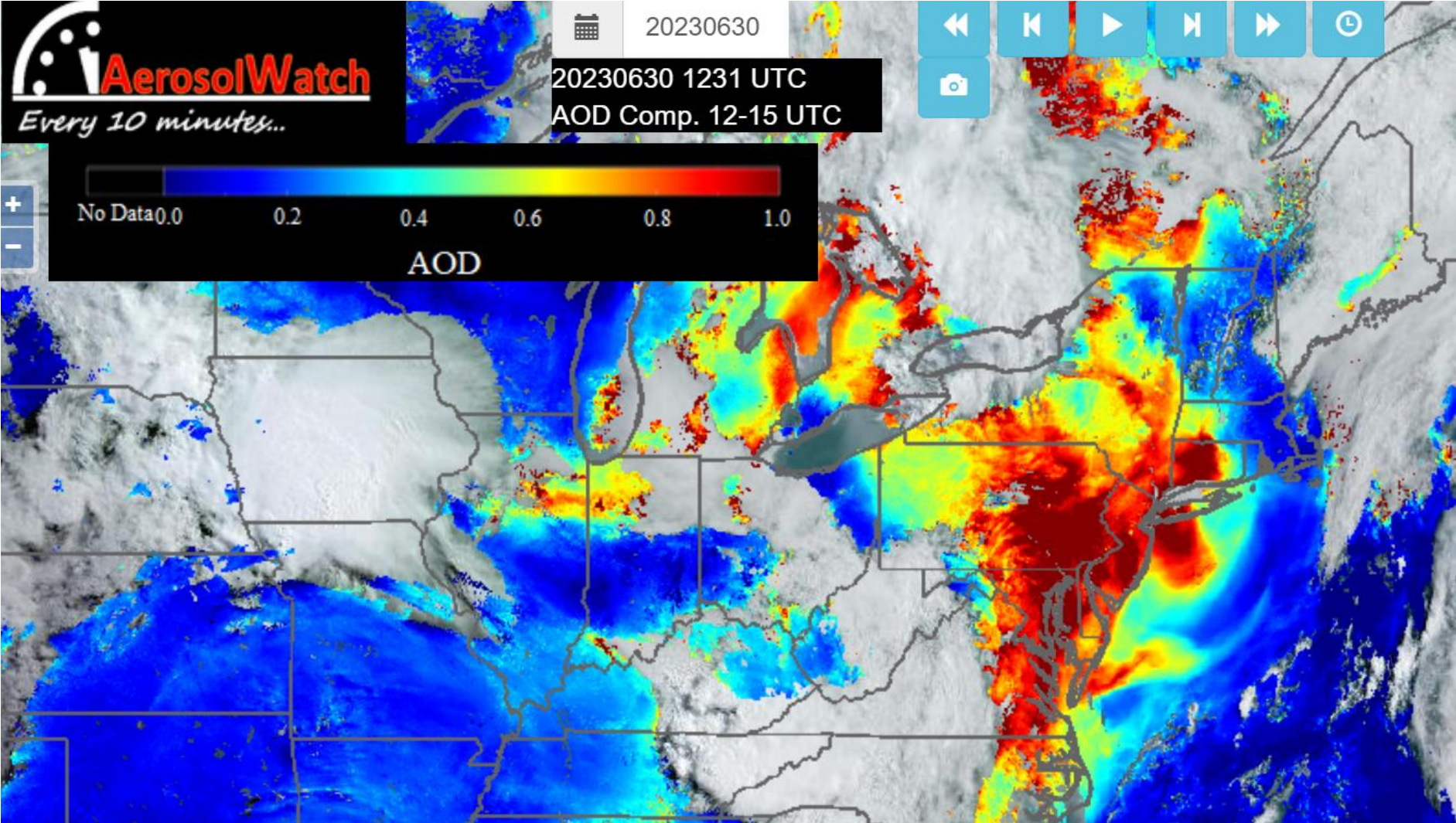
Documentation of not Reasonably Controllable or Preventable

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 30, 2023	Section 1.1 (Pages 2 – 3) Section 1.2 (Pages 9 – 10)		
July 1, 2023	Section 4.1 (Pages 60 - 62)	Sufficient	Yes
	Section 1.1 (Pages 2 – 3) Section 1.2 (Pages 9 – 10)		
	Section 4.1 (Pages 60 - 62)	Sufficient	Yes

Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
June 30, 2023	Section 1.1 (Pages 2 – 3) Section 1.2 (Pages 9 – 10)		
July 1, 2023	Section 4.1 (Pages 60 - 62)	Sufficient	Yes
	Section 1.1 (Pages 2 – 3)	Sufficient	Yes

JUNE 30, 2023 SMOKE FROM QUEBEC



JUNE 30-JULY 1, 2023 EPA ANALYSIS

- ***EPA agrees** that the analyses in the demonstration, specifically, the comparison with historical O3 8-hour daily maximum concentrations and percentile analysis, HYSPLIT analysis, satellite imagery, aerosol backscatter analysis, time series plots of hourly concentrations of O3 and other ground level pollutants associated with wildfire smoke, synoptic weather pattern analysis, comparison to non-event days with similar meteorology, sufficiently demonstrate a **clear causal relationship** between the emissions generated by the Quebec, Canada wildfire and the exceedances or violations measured at the Cornwall, East Hartford, and Groton monitoring locations.*

JULY 12, 2023 EPA ANALYSIS

- *Criteria Checklist*

Documentation of Narrative Conceptual Model

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 12, 2023	Section 2. (pages 19–37)	Sufficient	Yes

Documentation of Clear Causal Relationship and the Supporting Analyses

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 12, 2023	Sections 2–10	Not sufficient	No

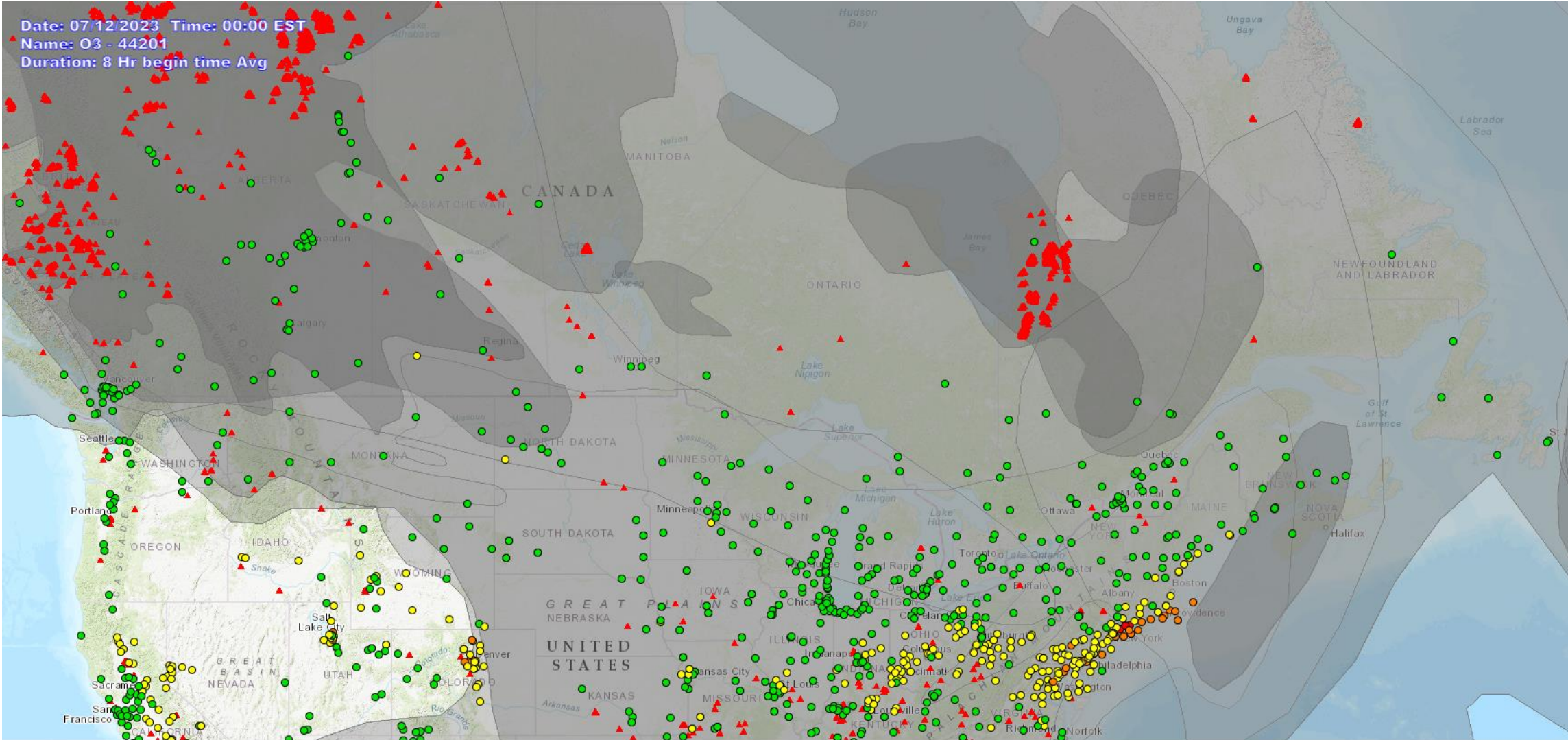
Documentation of not Reasonably Controllable or Preventable

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 12, 2023	Section 4	Sufficient	Yes

Documentation of Natural Event

Exceedance Date	Demonstration Citation	Quality of Evidence	Criterion Met?
July 12, 2023	Section 4	Sufficient	Yes

JULY 12, 2023 SMOKE FROM CANADA



JULY 12, 2023 EPA ANALYSIS

- With very high elevated ozone upwind of the Groton monitor close to the NYC metro and LIS areas, the meteorological conditions (temperature and wind) present at the time of the observations, elevated upwind ozone precursor emissions, the approaching frontal system to the north, and continued exceedances downwind of this location, it points to an ozone episode created by many factors, and **smoke was likely one of several factors**.
- However, there was **not a clear causal relationship** demonstrated between the emissions generated by the wildfires originating in western Canada, over 3500 km away, and the exceedances measured at the Groton monitoring location.

RESULTS

Greater Connecticut							
Site	Site ID	2021 4 th High	2022 4 th High	Ignoring EE		Excluding Selected EE	
				Current 4 th High	Current DV	Resulting 4 th High	Resulting DV
Cornwall	90050005	68	70	76	71	67	68
East Hartford	90031003	66	74	73	71	70	70
Groton	90110124	75	71	73	73	71	72

“...EPA also performed independent analyses to further investigate the April 13-14 and July 12, 2023, ozone data. Based on the extensive amount of information and analysis performed and the resulting weight of evidence, the EPA has found that these ozone monitoring data do not qualify as exceptional events, and the EPA does not believe that additional information could be provided that would support concurrence on these demonstrations.

As a result of EPA’s decision, we are sorry to inform you that for the 2015 Ozone NAAQS, the Greater Connecticut nonattainment area will have a violating 2023 design value and the area will not be eligible for a one-year extension or a Clean Data Determination by the August 3, 2024 attainment date. As a result, EPA will act on CT DEEP’s June 13, 2023, request for a voluntary reclassification for the Greater Connecticut area.”

QUESTIONS???

