Verification of Continued Attainment in Limited Maintenance Areas (2024)

Air Quality Program

Washington State Department of Ecology
Olympia, Washington

June 2024, Publication 24-02-018

Publication Information

This document is available on the Department of Ecology's website at:
https://apps.ecology.wa.gov/publications/summarypages/2402018.html

Related Information

2024 Ambient Air Monitoring Network Plan
Publication 24-02-018(hyperlink when published)[1]

Contact Information

Air Quality Program

P.O. Box 47600
Olympia, WA 98504-7600
Phone: 360-407-6800
Website[2]: Washington State Department of Ecology

ADA Accessibility

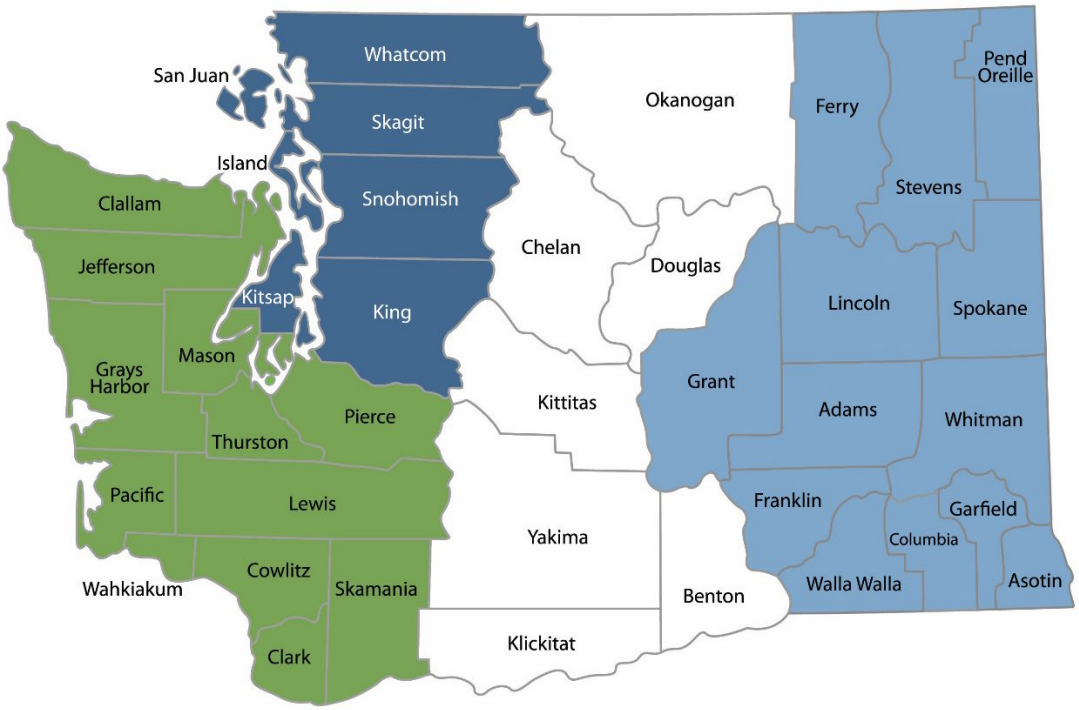
The Department of Ecology is committed to providing people with disabilities access to information and services by meeting or exceeding the requirements of the Americans with Disabilities Act (ADA), Section 504 and 508 of the Rehabilitation Act, and Washington State Policy #188.

To request an ADA accommodation, contact Ecology by phone at 360-407-6800 or email at melanie.forster@ecy.wa.gov. For Washington Relay Service or TTY call 711 or 877-833-6341. Visit Ecology's website for more information.

[1] https://fortress.wa.gov/ecy/publications/SummaryPages/2202013.html (not yet available)
[2] www.ecology.wa.gov/contact

Department of Ecology's Regional Offices

Map of Counties Served



Southwest Region 360-407-6300	Northwest Region 206-594-0000	Central Region 509-575-2490	Eastern Region 509-329-3400

Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	P.O. Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	P.O. Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 West Alder Street Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 North Monroe Spokane, WA 99205	509-329-3400
Headquarters	Statewide	P.O. Box 46700 Olympia, WA 98504	360-407-6000

Verification of Continued Attainment in Limited Maintenance Areas (2024)

Air Quality Program
Washington State Department of Ecology
Olympia, WA

June 2024 | Publication 24-02-018

Table of Contents

List of Tables

Tables

Executive Summary

This document summarizes the calculations for verification of continued attainment of National Ambient Air Quality Standards (NAAQS) in Washington's Limited Maintenance Areas.

Maintenance Areas

Washington has five maintenance areas for criteria pollutants as of July 1, 2024. Only those areas that qualified for the Limited Maintenance Plan approach must submit verification documentation. These maintenance areas are marked with an (*). Maintenance areas demonstrate continued attainment of the NAAQS either through monitoring or through EPA-approved alternate methods. These methods are summarized in Table 1.

Table 1. Current Washington maintenance areas and methods of demonstrating NAAQS attainment

Maintenance Area (Pollutant)	End of Maintenance Period	NAAQS Attainment Method
Wallula (PM_{10})	9/26/2025	Burbank-Maple St PM_{10} monitor (530710006)
Spokane (PM_{10})*	8/30/2025	Spokane-Augusta PM_{10} monitor (530630021) until March 2021; Spokane-E Broadway Ave PM_{10} monitor (530630017) as of April 1, 2021
Yakima (PM_{10})	3/10/2025	Yakima-4th Ave S PM_{10} monitor (530770009)
Tacoma ($PM_{2.5}$)	3/12/2035	Tacoma-L St $PM_{2.5}$ monitor (530530029)
Spokane (CO)*	8/30/2025	Modeled onroad, nonroad and residential wood combustion CO emissions

* indicates Limited Maintenance Areas where submission of verification documentation is required.

Spokane County PM_{10} Maintenance Area

The design values for the Spokane County Maintenance Area are based on FEM PM_{10} monitoring data from the Spokane-Augusta Ave (530630021) and Spokane Valley-E Broadway Ave (530630017) monitoring sites in Spokane, Washington. Spokane Valley-E Broadway Ave became the designated PM_{10} monitor for the Spokane County PM_{10} maintenance area on April 1, 2021. The PM_{10} data from the Spokane-Augusta Ave and Spokane Valley-E Broadway Ave sites were combined for the purpose of National Ambient Air Quality Standard (NAAQS) compliance and limited maintenance plan (LMP) eligibility in this document.

In 2020, 2021, 2022, and 2023, the western United States and Canada experienced severe wildfire seasons, resulting in significant wildfire smoke impacts that caused:

- Eight PM_{10} exceedances on September 12, 13, 14, 15, 16, and 18, 2020; and August 19 and 20, 2023. The exceedances affect the LMP design value and the NAAQS design value.
- Six elevated PM_{10} concentrations: September 17, 2020; August 2, 12, and 13, 2021; and September 12 and 13, 2022. These concentrations are eligible for exclusion from LMP design value calculations following the guidance in the EPA memorandum "Additional Methods, Determinations, and Analyses to Modify Air Quality Data Beyond Exceptional Events."[3]

Ecology placed informational flags ("i-flags") in EPA's Air Quality System (AQS) database on all hourly PM_{10} concentrations on the days listed above. Documentation supporting the exclusion of these values as exceptional events is provided in the Ecology flagging memos "2020 Informational Flagging Request for Wildfire-Affected $PM_{2.5}$, Wildfire- and High Wind-Affected PM_{10}" and "Informational Flagging Request for Ozone, PM_{10}, & $PM_{2.5}$ during 2023 fires"; and the SRCAA flagging memos dated February 2, 2022, and February 10, 2023, included in the Appendix of this document.

The LMP 5-year design value and NAAQS 3-year design value are shown with and without the Ecology i-flagged elevated PM_{10} days.

LMP Design Value

A 5-year PM_{10} design value below 98 µg/m^3 demonstrates that the Spokane County Maintenance Area continues to qualify for the LMP approach. With the wildfire smoke exceedances and high concentration data removed, Spokane's design value is eligible for the LMP option.

[3] *Additional Methods, Determinations, and Analyses to Modify Air Quality Data Beyond Exceptional Events* [Memorandum]. Research Triangle Park, NC: Environmental Protection Agency. Retrieved from https://www.epa.gov/sites/production/files/2019-04/documents/clarification_memo_on_data_modification_methods.pdf.

Table 2. Spokane County Maintenance Area LMP Design Values

	2019-2023 LMP Design Value (DV)
DV with i-flagged data	212 µg/m^3
DV without i-flagged data	87 µg/m^3

NAAQS Design Value

A 3-year PM_{10} design value at or below 1.0 expected exceedances demonstrates compliance with the PM_{10} NAAQS. The design value is the expected number of annual 24-hour exceedances of 150 µg/m^3, averaged over 3 years. The NAAQS design value is shown with and without the eight Ecology i-flagged PM_{10} exceedances.

Table 3. Spokane County Maintenance Area NAAQS Design Values

	2021-2023 NAAQS Design Value (DV)
DV with i-flagged data	0.7 expected exceedances
DV without i-flagged data	0.0 expected exceedances

The 2023 wildfire smoke impacts generated at total of two PM_{10} exceedances. There were no PM_{10} exceedances associated with wildfire smoke events in 2021 or 2022. The Spokane County PM_{10} contingency measures in the LMP are for road dust, windblown dust, and solid fuel burning devices. The contingency measures do not address wildfire air quality impacts; therefore they have not been implemented.

Spokane County CO Maintenance Area

EPA approved an alternate method of verification of attainment of the CO NAAQS and qualification for the limited maintenance plan option under 40 CFR 58.14(C) (Federal Register # 81 FR 45417; July 14, 2016). Under this alternative, EPA considers the limited maintenance plan criteria met and continued verification of attainment of the CO NAAQS if the total of the three predominant CO emission source categories calculated as part of the triennial emissions inventory (onroad mobile, nonroad, and residential wood combustion) remain below the corresponding total of the 2002 emission inventory source categories approved at the time the Spokane-area was redesignated to attainment. SRCAA and Ecology will compare future year 2017, 2020 and 2023 triennial emission analysis results to the baseline 2002.

Verification of Attainment

Total emissions for the 2020 evaluation year were compared to the 2002 attainment year emissions. The 2020 evaluation year was lower than the attainment year; therefore, the Spokane CO maintenance area continues to qualify for the limited maintenance plan option and continued verification of attainment of the CO NAAQS. SRCAA and Ecology's final analysis will be with the 2023 triennial emissions inventory.

Table 4. Spokane CO maintenance area total emissions (tons per year)

	Onroad	Nonroad	Residential Wood Combustion	Total
2002	48,878	23,795	7,199	80,872
2017	18,678	12,586	8,260	39,524
2020	23,123	14,554	9,030	46,708

Wallula PM_{10} Maintenance Area

The Wallula Maintenance Plan is not a Limited Maintenance Plan. Ecology submitted the Second Ten-Year Maintenance Plan for Particulate Matter (PM_{10}) for Wallula to EPA November 22, 2019, which was approved on June 1, 2020. Continued attainment of the PM_{10} standard is demonstrated by the Burbank-Maple Street monitor as of January 2018. Please see the 2024 Ambient Air Monitoring Network Plan for the Wallula Maintenance Area compliance status.

Appendix A. Maintenance Plan and Flagging Correspondence

SRCAA 2024 Design Value memo

Spokane Regional Clean Air Agency

1610 S. Technology Blvd., Suite 101
Spokane, WA 99224
SpokaneCleanAir.org

Date: March 5, 2024

To: Jill Schulte, Beth Friedman, Sean Lundblad

CC: Cooper Garbe, Caitlin Cannon, Scott Windsor, Mark Rowe

From: Margee Chambers

Subject: Spokane County PM_{10} and CO Design Values for the Ecology State Air Monitoring Network Report

---

PM_{10} Design Values

Included in this memo are the 5-year and 3-year design values for the PM_{10} Spokane County Maintenance Area, in Spokane, Washington. The design values are based on FRM and FEM 24-hour PM_{10} monitoring data from the Augusta Avenue site (530630021) and the Broadway Avenue site (530630017), which became the regulatory site in April 2021, replacing the August site, in Spokane, Washington. The PM_{10} data for Augusta and Broadway will be merged and treated as a single site for the purpose of National Ambient Air Quality Standard (NAAQS) compliance and limited maintenance plan (LMP) eligibility.

The Western United States and Canada has been experiencing severe wildfire seasons, resulting in significant wildfire smoke impacts.

- Eight PM_{10} exceedances on: September 12, 13, 14, 15, 16, and 18, 2020; and August 19 and 20, 2023. The exceedances affect the LMP design value and the NAAQS design value.
- Six PM_{10} elevated concentrations: September 17, 2020; August 2, 12, and 13, 2021, and September 12 and 13, 2022, that are eligible for exclusion because they have regulatory significance for the area to meet the LMP design value.

LMP Critical Design Value

A 5-year PM_{10} critical design value below 98 $\mu g/m^3$ demonstrates that the Spokane County Maintenance Area continues to qualify for the LMP approach. The LMP critical design value is shown with and without the eight Ecology i-flagged PM_{10} exceedance data and six PM_{10} high concentration data from 2019-2023. With the wildfire smoke exceedances and high concentration data removed, Spokane's design value is eligible for the LMP option.

	2019-2023 LMP Design Value (DV)
DV with i-flagged data	212 $\mu g/m^3$
DV without i-flagged data	87 $\mu g/m^3$

NAAQS Design Value

A 3-year PM_{10} design value at or below 1.0 demonstrates compliance with the PM_{10} NAAQS. The design value is the number of 24-hour exceedances of 150 $\mu g/m^3$, averaged over three years. The NAAQS design value is shown

with and without the two Ecology i-flagged PM_{10} exceedance data from 2021-2023. Spokane's design value is in-compliance.

	2021-2023 NAAQS Design Value (DV)
DV with i-flagged data	0.7
DV without i-flagged data	0.0

Please note that wildfire smoke impacts contributed to all of the PM_{10} exceedances. The Spokane County PM_{10} LMP contingency measures are for road dust, windblown dust, and solid fuel burning devices. The contingency measures do not address wildfire air quality impacts; therefore, the PM_{10} contingency measures have not been implemented.

CO Design Value

EPA approved an alternate method of verification of attainment of the CO NAAQS and qualification for the limited maintenance plan option under 40 CFR 58.14(C) (Federal Register # 81 FR 45417; July 14, 2016). Under this alternative, EPA considers the limited maintenance plan criteria met and continued verification of attainment of the CO NAAQS if the total of the three predominate CO emission source categories calculated as part of the triennial emissions inventory (onroad mobile, nonroad, and residential wood combustion) remain below the corresponding total of the 2002 emission inventory source categories approved at the time the Spokane-area was redesignated to attainment. SRCAA and Ecology will compare future year 2017, 2020 and 2023 triennial emission analysis results to the baseline 2002.

Verification of Attainment

Total emissions for the 2020 evaluation year were compared to the 2002 attainment year emissions. The 2020 evaluation year was lower than the attainment year; therefore, the Spokane CO maintenance area continues to qualify for the limited maintenance plan option and continued verification of attainment of the CO NAAQS. SRCAA and Ecology's final analysis will be with the 2023 triennial emissions inventory. As soon as the updated NEI is available, the comparison will be calculated and included in the annual design value memo.

Spokane County CO Emissions in Tons per Year				
Year	Onroad	Nonroad	Residential Wood Combustion	Total
2002	49,878 tons/yr	23,795 tons/yr	7,199 tons/yr	80,872 tons/yr
2017	18,678 tons/yr	12,586 tons/yr	8,260 tons/yr	39,524 tons/yr
2020	23,124 tons/yr	14,554 tons/yr	9,030 tons/yr	47,030 tons/yr

Ecology 2024 flagging memo

DEPARTMENT OF ECOLOGY
Air Quality Program
Flagging Memo

April 2024

TO: Scott Dubble, SWRO & Air Quality Operations Unit Supervisor
FROM: Caitlin Cannon, Farren Thorpe, Sam Fox
CC: Ecology: Martha Hankins, Jill Schulte, Melanie Forster, Sean Lundblad, Chris Atherly
Northwest Clean Air Agency: Mark Buford
Puget Sound Clean Air Agency: Kathy Strange
Southwest Clean Air Agency: Uri Papish
Spokane Regional Clean Air Agency: Scott Windsor, Margee Chambers
Yakima Regional Clean Air Agency: Hasan Tahat
Benton Clean Air Agency: Rob Rodger

SUBJECT: Informational Flagging Request for Ozone, PM10, & PM2.5 during 2023 fires.

The Exceptional Events Rule (EER) provides two data qualifier codes:

- Request Exclusion flags (R).
- Informational Only Flags (I).

Agencies use I-flags for informational data and R flags for data points intended for an Air Quality System (AQS) exclusion request. I-flags are initially used to identify values believed to have been affected by an event yet may not be ready for exceptional events demonstration or exclusion request.

The 2023 wildfire smoke season in Washington started early, due to a heat wave in May that affected the Pacific Northwest. Large multi-day wildfires didn't occur in Washington until July, but Canada had many large fires that started in May and burned for several months. The 2023 wildfire season had the most area burned in Canada's recorded history with more than 45 million acres burned, sending smoke to many parts of the USA. Although wildfire smoke was transported from Canada to Washington intermittently in the spring and early summer, most of the smoke was transported east of our state. It wasn't until mid-August that significant Canadian smoke influenced Washington State, which coincided with significant smoke impacts from Washington wildfires in the Cascades. Considerable wildfire smoke impacted most parts of the state from August 17 to August 22, followed by moderate smoke for several more days. A frontal system in late August produced rain and cooler weather, which mostly put an end to the wildfire season. There was also an industrial fire in Longview that sent smoke to Vancouver on July 18 and 19. See Table 1 for a list of 2023 wildfires that caused significant smoke impacts in Washington.

Table 1: Wildfires in 2023 that contributed to smoke events at Washington compliance monitors.

Name	Location	Discovery Date	Total Acres
Kookipi Creek Fire	Lytton, BC	July 8	44,590
Casper Creek Fire	Anderson Lake, BC	July 11	27,180
Adams Lake Complex	Adams Lake, BC	July 12	64,225
Downton Lake Fire	Mt. Penrose, BC	July 13	20,880
Ross Moore lake Fire	Ross Moore Lake, BC	July 21	23,304
Crater Creek Fire	Cathedral Provincial Park, BC	July 23	100,000+
Eagle Bluff Fire	Oroville, WA / Osoyoos, BC	July 29	16,428
McDougall Creek Fire	Kelowna, BC	August 15	33,883
Upper Park Rill Creek Fire	NE of Keremeos, BC	August 18	5,048
Flat Fire	Curry County, OR	July 15	34,242
Bedrock Fire	Lane County, OR	July 22	31,590
Lookout Fire	Lane County, OR	August 8	25,754
Camp Creek Fire	Clackamas County, OR	August 24	2,055
Airplane Lake Fire	Chelan County, WA	July 26	6,956
Sourdough Fire	Whatcom County, WA	August 1	7,377
Dome Peak Fire	Snohomish County, WA	August 9	1,477
Blue Lake Fire	Chelan County, WA	August 14	1,074
Gray Fire	Spokane County, WA	August 18	10,085
Oregon Road Fire	Spokane County, WA	August 18	10,817

Sites, Dates, and Pollutants for 2023 I-Flags

To meet the EER requirements, Ecology's Air Quality Program Policy and Planning Section requests to place an I-flag on all data in AQS associated with the wildfire affected ozone, PM10, and PM2.5 exceedances during 2023. The requested locations and dates are provided as a separate attachment "Flag_List.xlsx", with criteria of having occurred between May 19 and September 18 with daily average concentrations of 15.0 $\mu g/m^3$ or greater for PM2.5, 98.0 $\mu g/m^3$ or greater for PM10, and 65 ppb for ozone. All data flagged show influence from USA wildfires (IT flag), Canadian wildfires (IF flag), or Industrial Accident (IC flag). Additional supporting information are included below, including satellite images, Washington Smoke Blog links, and media posts.

SRCAA 2023 flagging memo

Spokane Regional Clean Air Agency

Date:	February 10, 2023
To:	Caitlin Cannon, Jill Schulte, Beth Friedman
From:	Margee Chambers Margee Chambers
CC:	Ecology: Cooper Garbe Spokane Clean Air: Scott Windsor, Mark Rowe
Re:	Request for Exceptional Event Informational Flagging for: $PM_{2.5}$ exceedances, September 9 – 13, 2022 & October 19, 2022 (6 days) PM_{10} elevated concentrations, September 12 – 13, 2022 (2 days)

The U.S. Environmental Protection Agency's (EPA) Exceptional Event Rule (EER) provides a process for excluding qualifying exceedances from calculations when determining compliance with National Ambient Air Quality Standards (NAAQS). The first step in the process is informational flagging of the data in the monitoring record and entering an event description.

The 2022 wildfire season impacted air quality throughout the western United States. The Spokane Regional Clean Air Agency (Spokane Clean Air) requests that the Washington State Department of Ecology (Ecology) place an informational flag on six $PM_{2.5}$ exceedances and two PM_{10} elevated concentrations recorded at the Spokane - Broadway Avenue monitoring site as exceptional events and enter a description into the EPA Air Quality System (AQS). EPAs Harnett memo states agencies can exclude PM_{10} concentrations between 98-155 µg/m3 threshold in determining eligibility for the PM_{10} LMP option.

Exceedances of the 24-hour $PM_{2.5}$ standard:

Spokane – Broadway Avenue Site (AQS# 530630017)

Flagging description: The September exceedances occurred during a period of severe wildfire smoke impacts, where winds transported smoke from wildfires in California, Oregon and Washington into Spokane County's airshed building PM2.5 and PM10 concentrations and then winds shifted bringing smoke from Idaho and Montana, combined with poor ventilation and nightly inversions trapped the wildfire smoke in the airshed. The October exceedance occurred when smoke from wildfires in Montana and Idaho drifted into the Spokane airshed and poor ventilation and nightly inversions combined with wildfire smoke increased PM2.5 levels in the region.

- 9/9/2022: 41.3 µg/m^3
- 9/10/2022: 44.0 µg/m^3
- 9/11/2022: 68.8 µg/m^3
- 9/12/2022: 103.5 µg/m^3
- 9/13/2022: 63.2 µg/m^3
- 10/19/2022: 37.9 µg/m^3

1

Elevated 24-hour PM_{10} concentrations:

Spokane – Broadway Avenue Site (AQS# 530630017)

Flagging description: Preliminary data shows that the September exceedances occurred during a period of severe wildfire smoke impacts, where initially winds transported smoke from wildfires in California, Oregon and Washington into Spokane County's airshed, then winds shifted and brought smoke from Idaho and Montana wildfires, and a high pressure system trapped the smoke in the region, affecting PM2.5 and PM10 concentrations.

- 09/12/2022: 141.5 $\mu g/m^3$
- 09/13/2022: 99.7 $\mu g/m^3$

Supporting information:

Spokane Clean Air pulled together supporting information (Attachment A) about the wildfire smoke events.

- Spokane Regional Clean Air Agency Augusta air quality monitor graphs and communication / outreach
- Air Quality Alerts and National Weather Service forecasts
- AirNow AQI map and smoke map
- GOES West and NASA World View satellite images
- Cliff Mass Wx and WA Smoke Blogs

SRCAA 2022 flagging memo

Spokane Regional Clean Air Agency

Date: February 2, 2022

To: Jacob Berkey, Jill Schulte, Beth Friedman

From: Margee Chambers

CC: Ecology: Jason Albrecht
Spokane Clean Air: Scott Windsor, Mark Rowe

Re: Request for Exceptional Event informational flagging for:
$PM_{2.5}$ exceedances July 31 and August 1, 2, 3, 12, 13, and 14, 2021 (7 days)
Ozone exceedances July 13, 14 and 31, 2021 (3 days)
Elevated PM_{10} concentrations August 2, 12, and 13, 2021 (3 days)

EPA's Exceptional Event Rule (EER) provides a process for excluding qualifying exceedances from calculations when determining compliance with National Ambient Air Quality Standards (NAAQS). The first step in the process is informational flagging of the data in the monitoring record and entering an event description.

Spokane Regional Clean Air Agency (Spokane Clean Air) requests that the Washington State Department of Ecology (Ecology) place an informational flag on elevated $PM_{2.5}$, PM_{10} and Ozone concentrations recorded at the Spokane - Broadway Avenue, Greenbluff, and Turnbull monitoring sites as exceptional events and enter a description into the U.S. Environmental Protection Agency's (EPA) Air Quality System (AQS).

The elevated concentrations occurred during a period of severe wildfire smoke impacts, where winds transported smoke from regional wildfires in California, Oregon, and Washington.

Exceedances of the 24-hour $PM_{2.5}$ standard:
Spokane – Broadway Avenue Site (AQS# 530630017) Please note that Broadway became a regulatory monitoring site for $PM_{2.5}$ on January 1, 2021. The Augusta site is no longer the regulatory monitoring site.

- 7/31/2021: 53.6 µg m-3
- 8/1/2021: 57.6 µg m-3
- 8/2/2021: 96.4 µg m-3
- 8/3/2021: 72.7 µg m-3
- 8/12/2021: 78.9 µg m-3
- 8/13/2021: 117.7 µg m-3
- 8/14/2021: 67.7 µg m-3

Exceedances of the 8-hour Ozone standard:
Spokane – Greenbluff Site (AQS# 530630046)

- 7/13/2021: 76 ppb
- 7/14/2021: 73 ppb

Spokane – Turnbull Site (AQS# 530630001)

- 7/31/21: 71 ppb

Spokane Clean Air requests that Ecology i-flag concentration data believed to have been significantly affected by the 2021 wildfire smoke exceptional events, but not exceeding the standard. EPAs Harnett memo states agencies can exclude PM_{10} concentrations between 98-155 µg/m3 threshold in determining eligibility for the PM_{10} LMP option.

Elevated 24-hour PM_{10} concentrations:
Spokane – Broadway Avenue Site (AQS# 530630017) Please note that Broadway became a regulatory monitoring site for PM10 on April 1, 2021. The Augusta site is no longer the regulatory monitoring site.

- 8/2/2021: 112.7 µg m-3
- 8/12/2021: 100.6 µg m-3
- 8/13/2021: 144.6 µg m-3

Flagging Request: Please place exceptional event informational flags on July 31, August 1, 2, 3, 12, 13,14, 2021 at the Spokane - Broadway Avenue $PM_{2.5}$ site (AQS site ID #530630017); on July 13, 14, 2021 at the Spokane-Greenbluff site, (AQS site ID #530630046); on July 31, 2021 at the Spokane – Turnbull site (AQS site ID #530630001); and on August 2, 12, 13, 2021 for the Spokane – Broadway PM_{10} site (AQS site ID #530630017). Please use the code "I-Informational" and enter the event description shown below:

> Preliminary review of data suggests that regional wildfires in CA, OR, and WA, winds transporting smoke into Spokane County air shed, contributed to elevated levels of $PM_{2.5}$, PM_{10}, and ozone concentrations in Spokane County.

Spokane Clean Air pulled together supporting information (Attachment A) about the wildfire smoke events that is available upon request.

- Air Quality Alerts and National Weather Service forecasts
- Spokane Regional Clean Air Agency Augusta air quality monitor graphs and communication / outreach
- Airnow AQI map and smoke map
- GOES West and NASA World View satellite images
- Cliff Mass Wx Blogs

Ecology 2021 flagging memo

DEPARTMENT OF ECOLOGY
Air Quality Program

May 7, 2021

TO: Beth Friedman

FROM: Jacob Berkey
CC: Ecology: Martha Hankins, Jason Alberich, Laurie Hulse-Moyer, Farren Herron-Thorpe, Jill Schulte and Melanie Forster
Benton Clean Air Agency: Robin Priddy
Northwest Clean Air Agency: Agata McIntyre, Lyn Tober
Olympic Regional Clean Air Agency: Allie Feldt
Puget Sound Clean Air Agency: Kathy Strange, Betsy Wheelock
Southwest Clean Air Agency: Crystal Moore
Spokane Clean Air Agency: Margee Chambers
Yakima Clean Air Agency: Keith Hurley and Hasan Tahat

SUBJECT: 2020 Informational flagging request for Wildfire affected PM2.5, Wildfire and high wind affected PM 10.

The Exceptional Event Rule (EER) provides two data qualifier codes:

- Request Exclusion flags (R).
- Informational Only Flags (I).

Agencies use I flags for informational data and R flags for data points intended for an Air Quality System (AQS) exclusion request. I flags are initially used to identify values believed to have been affected by an event, yet may not be ready for exceptional events demonstration or exclusion request.

During September 7 through 19 2020, the State of Washington experienced significant wildfire smoke events, which blanketed the state and resulted in exceedances of PM2.5 and PM10. The contributing wildfires were in California, and Oregon, with additional wildfires burning here in Washington. Yakima County experienced additional wildfire smoke impact from September 2 through September 4.

For more information about these events, see the Washington State Smoke Blog:
https://wasmoke.blogspot.com/2020/09/smoky-siege-look-back-at-smoke-storm-of.html

Kennewick experienced three days in October related to high-wind dust. These occurred on October 16, 18, and 30, 2020. Our monitoring data at Kennewick shows these events. Here are the recorded maximum wind speeds for those dates:
10/16/2020: 32.1 mph
10/18/2020: 36.9 mph
10/30/2020: 31.1 mph

- This link from Department of Ecology shows our outreach efforts in regards to the wind event: https://twitter.com/ecyspokane/status/1322295179928170496
- This link is outreach from the National Weather Service regarding the event: https://twitter.com/NWSPendleton/status/1322124202246361090
- To track daily conditions during the time of the wind event check here: http://mesonet.agron.iastate.edu/wx/afos/list.phtml?source=OTX&year=2020&month=10&day=7&drange=yes&year2=2020&month2=10&day2=23&view=prod&order=asc
    - October 16: http://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDOTX&e=202010162318
    - October 18: http://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDOTX&e=202010180505
    - October 30: http://mesonet.agron.iastate.edu/wx/afos/p.php?pil=AFDOTX&e=202010301805

To meet the EER requirements, Ecology's Air Quality Program Policy and Planning Section requests you to place an I flag on all data in AQS associated with the wildfire and high wind affected PM2.5 and PM10 data during 2020.