

Technical Support Documentation
MT DEQ flagging demonstration
2007 wildfire season

MT DEQ submitted a request for exclusion of 2007 Wildfire PM data under the Exceptional Events Rule on December 7, 2007. The submission met the CFR required deadline for submittal, in this case, December 18, 2007, as detailed in 40 CFR 50.14(c)(3)(i) “12 months prior to the date that a regulatory decision must be made.” The package was reviewed against the Exceptional Events Rule as well as the Region 8 developed internal Exceptional Events Checklist. For 2007, Montana DEQ flagged nearly 14,000 PM₁₀ and PM_{2.5} data points from 12 counties in MT. Many of these were information only flags on hourly PM₁₀ and PM_{2.5} data which did not contribute to NAAQS exceedances or violations. EPA Region 8 was able to concur on a total of 107 flags (both hourly and 24-hour data) on PM₁₀ and PM_{2.5} data showing exceedances or violations in AQS which were subject to the Exceptional Events Rule. These flags affected 10 monitoring sites in 8 counties on 12 calendar days of 2007.

1. Public Notification: EPA review concluded that the CFR requirements for public notification were met through the following:
 - a. The demonstration was made available for 30 days of public comment. MT DEQ notified EPA that no comments were received.
 - b. Demonstration package included copies of MT DEQ Daily Forest Fire Smoke Advisories detailing the current situation.
 - c. Demonstration package included copies of MT DEQ Notice of Public Hearing
 - d. Individual notice was made to each person on the MT DEQ’s interested party list.
 - e. Real time particulate information is available on MT DEQ website (MT DEQ monitors, NWS ASOS visibility monitors and USFS remote access nephelometers and BAMS).
 - f. The demonstration included forest fire smoke reports detailing locations and severity.

2. Flagging of Data:
 - a. MT DEQ met the schedule for submission of data with an exceptional event flag as detailed in 40 CFR 58.16. Forest fire flags were placed on all data affected by the wildfires with the understanding that EPA would only concur on exceeding or violating data, the remaining flags would be informational only.

EPA reviewed the demonstration and placed concurrence flags on data based on the MT DEQ package which met the following rule requirements:

Basic Table Information: The values listed in the following table caused an exceedance or violation and were concurred upon based on the technical analysis of the demonstration package. EPA’s technical analysis focused on only the values that caused an exceedance or violation.

1. MT DEQ submitted PM₁₀ and PM_{2.5} data that were affected.

- a. A spreadsheet was submitted with all values flagged, date, parameter code, POC number, AQS site ID and site name and city.
- b. A spreadsheet comparison of flagged values to historical mean and max data indicating the flagged value was higher than a typical day at that monitor. EPA reviewed and concurs that the flagged values were outside of the typical air quality concentrations.

Site Name	Site ID	Date	Value	Parameter	POC
Butte Greeley School	30-093-0005	8/1/2007	35.4	88101	1
Butte Greeley School	30-093-0005	8/7/2007	38.4	88101	1
Butte Greeley School	30-093-0005	8/13/2007	86.6	88101	1
Butte Greeley School	30-093-0005	8/16/2007	43.3	88101	1
Butte Greeley School	30-093-0005	8/19/2007	50.3	88101	1
Butte Greeley School	30-093-0005	8/31/2007	47.5	88101	1
Butte Greeley School	30-093-0005	9/12/2007	35.4	88101	1
Butte Greeley School	30-093-0005	8/13/2007	195.3	81102	4
Butte Greeley School	30-093-0005	8/14/2007	160.8	81102	4
Butte Greeley School	30-093-0005	8/15/2007	158.7	81102	4
Great Falls High School	30-013-1026	7/29/2007	37.0	88101	1
Great Falls High School	30-013-1026	8/4/2007	51.2	88101	1
Great Falls High School	30-013-1026	8/13/2007	35.3	88101	1
Great Falls High School	30-013-1026	8/19/2007	35.3	88101	1
Great Falls High School	30-013-1026	8/31/2007	48.0	88101	1
White Fish Dead End	30-029-0009	8/4/2007	40.5	88101	1
White Fish Dead End	30-029-0009	8/13/2007	65.9	88101	1
White Fish Dead End	30-029-0009	8/16/2007	49.4	88101	1
Kalispell Flathead Electric	30-029-0047	8/4/2007	35.7	88101	1
Kalispell Flathead Electric	30-029-0047	8/13/2007	50.2	88101	1
Kalispell Flathead Electric	30-029-0047	8/16/2007	67.1	88101	1
Bozeman WWTP	30-031-0006	8/13/2007	85.3	88101	1
Bozeman WWTP	30-031-0006	8/19/2007	35.8	88101	1
Belgrade Conagra	30-031-0008	8/13/2007	71.5	88101	1
Belgrade Conagra	30-031-0008	8/19/2007	37.6	88101	1
Helena Lincoln School	30-049-0018	8/7/2007	45.6	88101	1
Helena Lincoln School	30-049-0018	8/19/2007	57.8	88101	1
Helena Lincoln School	30-049-0018	8/31/2007	56.9	88101	1
Missoula Health Department	30-063-0031	8/16/2007	70.8	88101	1
Missoula Health Department	30-063-0031	8/16/2007	70.1	88101	2
Missoula Health Department	30-063-0031	8/19/2007	49.5	88101	1
Missoula Health Department	30-063-0031	8/31/2007	45.4	88101	1
Missoula Health Department	30-063-0031	9/12/2007	35.4	88101	1
Hamilton PS #46	30-081-0007	8/4/2007	49.7	88101	1
Hamilton PS #46	30-081-0007	8/7/2007	42.2	88101	1
Hamilton PS #46	30-081-0007	8/16/2007	131.9	88101	1
Hamilton PS #46	30-081-0007	9/15/2007	51.4	88101	1
Thompson Falls High School	30-089-0007	8/16/2007	75.1	88101	1

Detailed Description of the Event:

1. Event Description
 - a. The events, wildfires, meet the CFR definition in 40 CFR 50.1 to qualify under the rule because they affected air quality, are not reasonable controllable or preventable, are natural events and were determined by EPA to be Exceptional Events. From July through September 2007, wildfires burned several thousand acres in Montana and Idaho.

2. Clear Causal Relationship:

The demonstration package included:

 - a. Satellite imagery, which EPA reviewed and concurs that on the days in question, a plume was present in the monitored area.
 - b. Photos of fire plumes depicting the magnitude of the smoke from the fires, which EPA concurs was significant.
 - c. Forest fire smoke reports detailing locations and severity of the smoke on the days in question, which EPA reviewed and concurs that the information corresponds with the exceedance or violation data.
 - d. Smoke impact forecasts from the state meteorologist predicting impacts on specific local areas. EPA reviewed these forecasts and determined that they were fairly reliable in predicting the areas of impact.

3. Concentration higher than typical air quality, including background and no exceedance or violation “but for” the event:

The demonstration package included:

 - a. MT DEQ statement of no evidence implicating any other agent or event, other than wildfires, contributing PM on the noted dates.
 - b. Spreadsheet comparison of flagged value to historical mean and max data indicating recorded value was higher than a typical day at that monitor. For all PM_{2.5} monitors upon which EPA provided concurrence, the summertime monthly historical means for 2004-2006 were less than 9 µg/m³, and the highest value not historically impacted by wildfire smoke was 22 µg/m³, both well below the exceedance level data on which EPA provided concurrence. Therefore, “but for” the fires, there would have been no exceedances.
 - c. MT DEQ knowledge of local air quality indicates that exceedances never occur in the summer unless there are wildfires present. EPA concurs based on previously stated analysis as well as working with the state and their data over the years gaining an understanding of the air quality issues and trends in the state.

For additional supporting documentation, please see (Letter dated December 14, 2007 to Callie Videtich, Director Air and Radiation Program EPA Region VIII, from Charles Homer, Air Resources Management Bureau of the Montana Department of Environmental Quality, providing exceptional events data and demonstrations impacting Montana's air monitoring data for designating areas attaining and not attaining the 2006 24-hour PM2.5 NAAQS) placed in the docket for this rulemaking