**EARTHJUSTICE**
**SIERRA CLUB**

March 15, 2024

*By Email to:* a-and-r-docket@epa.gov
Docket ID No. EPA–HQ–OAR–2023–0642
U.S. Environmental
Protection Agency, EPA Docket Center,
OAQPS Docket
1200 Pennsylvania Avenue NW,
Washington, DC 20460

RE: Docket ID No. EPA–HQ–OAR–2023–0642, Notice of Opportunity to Comment on Proposed Update of PM2.5 Data from T640/T640X PM Mass Monitors, 89 FR 11831 (Feb. 15, 2024).

Earthjustice and Sierra Club have the following comments on the above notice.

**1. Failure to Show Legal Authority:** EPA cites no legal authority to alter *en masse* the results of hundreds of federal equivalent PM2.5 monitors retroactively to 2017. The Teledyne monitors at issue were EPA-approved as federally equivalent monitors (FEMs) prior to 2017, an approval that was in effect during the entire period that is the subject of EPA's retroactive alteration proposal. 81 FR 45285 (07/13/2016). EPA rules require state and local monitoring agencies to certify their monitoring results for each year by May 1 of the following year. 40 C.F.R. §58.15. State and local air agencies must also submit an annual monitoring network plan that, among other things, identifies any new determination that a monitor's data is not of sufficient quality for determination of compliance with national ambient air quality standards (NAAQS). 40 C.F.R. §§58.10(a)(2), 58.11(e). EPA must approve or disapprove the annual monitoring plan within 120 days of submittal. *Id.* §59.10(a)(2). EPA does not explain how a retroactive alteration of monitoring data years after the fact is consistent with these requirements. States that have certified monitoring results for a given year are not free to alter that data years later. Nor does EPA cite authority for EPA itself to do so.

**2. Failure to adequately explain bases for finding monitor bias**: EPA cites two published studies as supporting a finding that the Teledyne monitors are biased high relative to PM2.5 Federal Reference Monitor (FRMs) but fails to adequately explain how those studies support its proposal here. One was a study in Bosnia that reported readings from a Teledyne 640 monitor that were higher than those of a co-located, different model FEM monitor. EPA does not explain how comparison of data from a Teledyne 640 monitor to data from a different FEM monitor shows bias relative to FRM monitors. Further, EPA fails to explain how evaluation of only a single Teledyne monitor's performance is sufficient evidence that all Teledyne monitors are biased. The other published study cited by EPA reported some bias only as to smoke measurement. EPA does not explain how such a study justifies altering monitor results for all types of PM2.5.

EPA further asserts that "[t]he bias on the T640 and T640X PM2.5 FEMs has been reported as relatively consistent across sites and methods with continuous FEMs reading about 20% higher than collocated FRMs." EPA-HQ-OAR-2023-0642-0002 at 2. EPA does not say how, where, or by whom such bias has been reported, nor is data supporting EPA's statement in the docket for this action. EPA cannot rationally rely on a claim of bias that is not supported by facts that are in the record. Further, EPA later in the same paragraph says that an independent audit program run by EPA and states ("PEP"), "indicates a consistent positive bias for the T640 and T640X PM2.5 FEMs compared to audit FRMs; however, this bias is not as pronounced as the bias data from FRM samplers run by the monitoring agencies." *Id.* (emphasis added). EPA does not explain why it nonetheless proposes to rely on the more pronounced bias data from samplers run by monitoring agencies rather than the less-pronounced bias it says was found in its own audit.

EPA also asserts that its proposal is justified by CASAC recommendations. CASAC, however, made no statement about Teledyne monitors, nor did it call for retroactive alteration of data from PM2.5 FEMs. CASAC noted that FEM results **can** be meaningfully different from FRMs, and that EPA needs to address bias to make results more comparable. CASAC did not find the bias was always high – but said it could be low or high. CASAC also did not suggest that EPA use data from the limited number of co-located FRMs and FEMs to establish a single calibration (or "correction") factor to be applied to all FEMs nationally. To the contrary, CASAC suggested an option of allowing states to develop correction factors **for co-located** FRMs and FEMs:

> There is an increasing trend to replace FRMs with FEMs across the country. FEMs can result in annual and 24-hour PM2.5 concentrations that are meaningfully different (higher or lower) compared to FRMs, which can potentially lead to erroneous attainment designations. The EPA should include a detailed summary of the number of FEMs and FRMs (see example in Table 1 below) as well as indicating how many FEMs are meeting the data quality requirements necessary for determining compliance with the PM2.5 NAAQS. The FEM bias needs to be addressed to make the FRMs and FEMs more comparable. One option would be to allow states to develop correction factors for co-located FRMs and FEMs. These correction factors could be used to adjust FEM concentrations downward (or upward) to be comparable to FRMs. Another option would be for the EPA to revise the "equivalency box" (EB) criteria used to judge whether the bias of a new continuous PM2.5 monitor relative to an FRM is acceptable during field testing.

Letter from Clean Air Scientific Advisory Committee to Michael Regan, March 18, 2022, re: CASAC Review of the EPA's *Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft – October 2021),* EPA–CASAC–22–001, Consensus Responses to Charge Questions at 2**.**[1] Thus, CASAC did not recommend the type of *en masse* retroactive nationwide alteration of monitoring results that EPA proposes here.

[1] Available at: https://casac.epa.gov/ords/sab/r/sab_apex/casac/0?report_id=1093&request=APPLICATION_PROCESS%3DREPORT_DOC&session=10813926997922.

**3. EPA fails to consider that FRMs underreport PM2.5 levels:** EPA's proposal fails to consider that FRMs underreport PM2.5 levels. Such FRM under-measurement has been noted by multiple sources, including the Independent PM Review Panel, as follows:

> For routine monitoring, FRM filters remain in the sampler at or somewhat above ambient temperatures for up to 6 days. FRM filters can lose up to 10% of their non-water mass over 24-96 hours if not removed from the sampler and chilled immediately. Therefore, in field comparisons of co-located FEM and FRM monitors, FEM measurements typically appear to be biased high compared to the FRM, when in reality this is an artifact of field sample handling for the FRM and not an actual limitation of the FEM. However, as a result of such comparisons, the FEM is often found (erroneously) to be deficient with respect to performance requirements for NAAQS compliance purposes.

Independent Particulate Matter Review Panel, Consensus Responses to Charge Questions on EPA's Policy Assessment for the Review of the National Ambient Air Quality Standards for Particulate Matter (External Review Draft – Sept. 2019), https://ucs-documents.s3.amazonaws.com/science-and-democracy/IPMRP-FINAL-LETTER-ON-DRAFT-PA-191022.pdf at page B-9. See also, D. Felton, Is It Time to Upgrade the PM2.5 Federal Reference Method?, AWMA Environmental Manager (2009), available at https://www.environmental-expert.com/articles/is-it-time-to-upgrade-the-pm25-federal-reference-method-44831 .

Thus, some or all of the difference between measurements of Teledyne and FRM monitors could be due to the fact that FRMs underreport PM2.5 levels. EPA fails to address or account for this important fact in its proposal. The agency plans to retroactively address only alleged upward bias in the Teledyne FEM monitors without addressing the underreporting of PM2.5 levels by the FRMs that the FEMs are being adjusted downward to match. Such an arbitrary approach endangers the health of people in communities that – as a result of EPA's one-way downward adjustment of prior monitored data– can switch from violating to meeting the PM2.5 NAAQS, without any actual air quality improvement.

**4. The proposal would arbitrarily apply a uniform downward adjustment metric without regard to site and monitor-specific variables other than temperature:** EPA does not describe the precise process and steps it will employ to alter prior Teledyne monitoring data. Based on the limited description in the docket, however, it appears that EPA will use a uniform Network Data Alignment equation that does not vary with site specific variables other than temperature. Thus, aside from temperature, EPA will apply the same downward adjustment metric at all sites, regardless of whether the specific Teledyne monitor at a specific site showed little or no bias relative to a collocated FRM or showed markedly less bias than assumed in the Network Data Alignment equation. That is arbitrary.

EPA itself has recognized that a uniform national adjustment of FEM monitor results will not always accurately reflect site-specific conditions. In the recent rulemaking on the PM 2.5 NAAQS, EPA provided for a nationally uniform methodology for modifying FEM firmware to correct for bias in future monitoring. In response to comments, EPA specifically agreed that such

adjustments should not be required where it is shown that a specific FEM at a specific location performs better without the adjustments:

> (9) **Comment:** One commenter had a concern that agencies and tribes may not be able to opt out of the firmware updates if their analyses indicate that their instruments perform better prior to the update.
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> **Response:** The EPA addressed a related question in the preamble to the final rule. While the EPA expects in most cases that monitoring agencies will produce data with improved data quality following factory calibration, **agencies that demonstrate the original method calibration provides better data quality—especially to meet the bias measurement quality objectives—they may opt out of the method update, so long as the original method designation remains valid**.

EPA, Responses to Significant Comments on the 2023 Proposed Rule for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter, EPA-HQ-OAR-2015-0072-6025 at 99 (emphasis added)**.** Here, however, EPA has made no provision for opting out of the retroactive Network Data Alignment. Teledyne monitor data will be adjusted downward retroactively without the opportunity to object that such alteration is not justified at specific monitors. If EPA is going to implement a retroactive mass downward alteration of data from Teledyne monitors (something it has not lawfully or rationally justified), the agency must at least provide public notice of the altered data for each monitor and an opportunity to comment on whether a specific monitor's record and site specific conditions justify an opt out of the downward adjustment.

**5. EPA has failed to consider the public health impacts of its proposal:** In promulgating monitoring rules, EPA "shall follow – the principle that protection of public health is the highest priority." 42 U.S.C. 7619(b)(3)(A)(i). Here, EPA has failed to consider the public health consequences of its proposal, much less give public health protection the highest priority. The agency indicates that the magnitude of the downward data adjustments it proposes will be approximately 20%. Such a substantial downward alteration of data will almost certainly mean that a number of areas will flip from nonattainment to attainment for PM2.5 without any actual improvement in their air quality. Residents of areas designated attainment do not receive the health benefits of stronger anti-pollution measures required in nonattainment areas. In the proposal at issue here, EPA did not weigh the loss of these health protections in affected communities in deciding to retroactively alter monitored data, or in using an approach that is not narrowly tailored to site specific monitor bias. Nor did EPA consider the health impacts of retroactively adjusting FEM data downward to correct alleged bias relative to FRMs while completely disregarding FRM underreporting of PM2.5 levels. Even in areas where Teledyne monitors already report PM2.5 levels that meet the NAAQS, EPA's downward adjustment of that data will make it easier for new or modified major sources to secure PSD permits and increase ambient pollution levels. For the above reasons, EPA has failed to give public health the highest priority as required by statute.