



Katie Hobbs
Governor

ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY



Karen Peters
Director

Submitted online via <https://www.regulations.gov/>

August 22, 2023

U.S. Environmental Protection Agency
EPA Docket Center
Docket ID Number: EPA-HQ-OAR-2020-0430
Mail Code 28221T
1200 Pennsylvania Avenue NW
Washington, DC 20460

Re: Supplemental Notice of Proposed Rulemaking on National Emission Standards for Hazardous Air Pollutants: Primary Copper Smelting Residual Risk and Technology Review and Primary Copper Smelting Area Source Technology Review (88 FR 47415)

To Whom It May Concern:

The Arizona Department of Environmental Quality (ADEQ) appreciates the opportunity to comment on the U.S. Environmental Protection Agency's (EPA) supplemental notice of proposed rulemaking on National Emissions Standard for Hazardous Air Pollutants (NESHAP) for primary copper smelting published in the Federal Register on July 24, 2023.

Under Arizona Revised Statutes (A.R.S) § 49-402(A)(2), ADEQ has original jurisdiction over the copper smelters located in Arizona, and therefore is the permitting authority for these two sources. Additionally, ADEQ has responsibility for compliance and enforcement.

ADEQ previously submitted comments on two concerns regarding aspects of the proposed rule: 1) demonstrating compliance with the roofline limits may be impractical since the EPA's proposed methodology cannot be implemented at either the Miami or Hayden smelters; 2) EPA's roofline limits were derived from data that was not collected using an EPA test method or using a reference monitor. Also, ADEQ supports EPA's decision to not include an opacity limit in the proposed rule. ADEQ is aware that the two primary copper smelting facilities within Arizona will be submitting detailed comments on their specific concerns.

Phoenix Office

1110 W. Washington St. | Phoenix, AZ 85007
602-771-2300

Southern Regional Office

400 W. Congress St. | Suite 433 | Tucson, AZ 85701
520-628-6733

azdeq.gov

- I. **EPA's proposed performance test method cannot be implemented at the smelters.**
 - A. **EPA's proposed rule requires isokinetic sampling, which is not possible at either smelter.**

ADEQ is concerned that EPA's proposed rule presents difficulties demonstrating compliance with EPA's proposed compliance testing methods for the copper smelters located in Miami, AZ and Hayden, AZ. Specifically, EPA's proposed rule is based on EPA Method 1 for selecting sample port locations.¹ As will be discussed below, ADEQ believes that there are no locations along either facilities' rooflines that meet requirements of EPA Method 1. Therefore, ADEQ requests that EPA reconsider its compliance testing requirements in the proposed rule to permit alternatives that do not require isokinetic sampling.

EPA's proposed rule establishes a single combined filterable PM emission limit for converter operations, smelting furnaces, and anode refining operations of 6.3 lbs/hr from existing facilities' roofline for process fugitive roof vents.²

EPA's proposed rule also establishes a fugitive emission limit from the smelter roofline vents.³ In order to demonstrate compliance with the roof vent filterable particulate matter emission limits in the proposed 40 CFR § 63.1444, the facility must conduct a performance test to determine compliance with the limit.⁴ 40 CFR §§ 63.1450(e)-(f) establishes the performance test to determine compliance with the proposed 40 CFR § 63.1444. Both proposed §§ 63.1450(e)(1)(i) and 63.1450(f)(1)(i) require the use of EPA Method 1 to select sampling port locations and number of traverse points.

ADEQ is concerned that there are physical limitations for both facilities that prevent the use of Method 1. This section discusses these concerns for the smelter in Miami, AZ and then the smelter in Hayden, AZ. As described in a technical report on test method roofline lead emissions, operational influences during testing, and effect on smelter reconfiguration, prepared by Trinity Consultants and Hatch for the Freeport - McMoRan Inc (FMI) Miami smelter (Document 62), there are no locations that meet EPA Method 1's requirements.⁵

¹ Regulations.gov, Proposed Regulation Edits for 40 CFR Part 63, Subpart QQQ: Primary Copper Smelting NESHAP Risk and Technology Review Proposal, Regulatory text with proposed edits in redline/strikeout, available at <https://www.regulations.gov/document/EPA-HQ-OAR-2020-0430-0090> (Document 90) (proposed 40 CFR §§ 63.1450(e)-(f)).

² 88 FR 47415 (Jul. 24, 2023).

³ *Supra* note 1 at 40 CFR §§ 63.1444(b)(2)(iii), (d)(7).

⁴ *Supra* note 1 at 40 CFR §§ 63.1450(e)-(f).

⁵ Regulations.gov, Freeport-McMoRan Miami, Inc. - Consent Order Docket No. A-10-18 Response to Items III.C and III.D, available at <https://www.regulations.gov/document/EPA-HQ-OAR-2020-0430-0062> (Document 62).

The FMI Miami smelter's Air Quality Permit, issued by ADEQ, requires annual roofline fugitive testing for PM, PM₁₀, PM_{2.5}, and Pb, as well as a roofline monitoring system for SO₂.⁶ In order to meet the PM testing requirement for the ADEQ permit, FMI Miami conducted a feasibility study on different test methods at the roofline.⁷ This report examined several test methods (Methods 1, 14, 5 and 29, 201A and 202, 5D and 29).⁸

This report discussed the difficulties of implementing EPA Method 1, which involves the placement of a sample probe into the exhaust stream where sampling is obtained isokinetically.⁹ This report concluded that the roofline vents at the Miami smelter cannot meet the minimum methods of EPA Method 1, including either the simplified (section 1.2) procedure or alternative procedure (11.5).¹⁰

If EPA Method 1 cannot be utilized effectively at the two facilities subject to the major source rule, ADEQ is concerned the rule is not practical to implement or enforce.

B. Test methods that rely on EPA Method 1

This section discusses the impacts of the facilities rooflines on EPA's proposed methodology. As part of its compliance testing methodology, the proposed rule requires the use of additional test methods.¹¹ These methods rely on sampling obtained via EPA Method 1.

However, regarding the Miami smelter, Document 62 examined several of these methods. For example, Document 62 found that the application of EPA Method 5D for fugitive emissions at the roofline is problematic, as the FMI Miami roofline does not meet the criteria of EPA Method 1.¹² EPA Method 5D requires isokinetic sampling that is designed to sample numerous sample points (twenty- four or greater) across the entirety of a positive pressure fabric filter outlet, which meets EPA Method 1 criteria for isokinetic sampling. However, as described above, since the roofline does not meet EPA Method 1, ADEQ believes that the Miami smelter will not be able to meet this requirement. This issue appears to be the same for EPA's proposed use of Oregon 8.¹³

Additionally, EPA Method 29 for lead emissions needs a separate sample system essentially doubling the number of samples to be collected under isokinetic conditions. Because quality assurance objectives for representativeness require isokinetic conditions; this is not a feasible method for sampling rooflines, as isokinetic conditions are not possible.

⁶ Regulations.gov, Freeport-McMoRan Miami, Inc. - Consent Order Docket No. A-10-18 Response to Items III.C and III.D, available at <https://www.regulations.gov/document/EPA-HQ-OAR-2020-0430-0062> (Document 62).

⁷ *Id.*

⁸ *Id.* At 10-13.

⁹ *Id.*; see also 40 CFR Part 60, Appendix A, Method 1.

¹⁰ See *supra* note 5.

¹¹ *Supra* note 1 at 40 § CFR 63.1450(e)(1)(ii)-(iv), (f)(1)(ii)-(iv).

¹² *Id.*

¹³ *Supra* note 1 at 40 CFR § 63.1450(e)(1)(v), (f)(1)(v).

Further, determination of gas flow angles in the roofline vents is impractical due to variability in the smelting operations and ambient wind conditions.¹⁴ For example, during wind gusts, the air pressure on one side of the roofline may be greater than the air pressure under the roofline causing additional air to flow into the roofline from above. In contrast, on the opposite side of the roofline, the reverse effect could occur causing air to flow out of the roofline. Because wind gusts affect both the flow rate and direction at the roofline vents, obtaining accurate gas flow traversing angles requires consistently calm wind conditions, which is not likely to occur outside of a controlled laboratory environment. To compensate for the variability in wind conditions, the sampling protocol would require constant instantaneous adjustments to the sample probes (during test runs of 12 hours or more) to meet the isokinetic test requirements in EPA Method 5.¹⁵ Such instantaneous adjustments may not be practicable to implement during sampling.

Also, EPA Method 5 sampling protocol incorporates a requirement for adequate sample locations to account for variations in the flows along the roofline. This necessitates a large number of sampling staff to be located in a dangerous, high temperature environment for extended periods of 12 hours or more.¹⁶ Temperatures at the roofline can reach 140°F and pose a significant safety concern for the testing personnel.

After assessing several other test methods, the study conducted by FMI Miami concluded that using MiniVol portable air samplers, manufactured by Airmetrics, is the most representative sampling method for the roofline emissions application.¹⁷ The MiniVol is not a Federal Reference Method (FRM) sampler, but provides results that closely approximate data from FRM samplers to obtain representative concentrations of particulate matter without the need for isokinetic sampling. Airmetrics, in conjunction with the EPA, developed the patented low-flow technology found in the MiniVol to address the need for portable air sampling.¹⁸ The portable air samplers can be run concurrently at several locations along the roofline. This approach offers several benefits: (1) fluctuations in flows and emissions along the roofline are better managed, (2) Sampling is not dependent on linear air flow, so constant adjustments are not required, and (3) Sampling can occur for longer periods of time, which provides a more representative sample of the process operations occurring in the smelter buildings.

Use of this sampling protocol will require the collection of velocity and temperature measurements using the existing roofline monitoring system equipment. As an added benefit, the portable air samplers also are capable of speciating samples of PM, PM₁₀, and PM_{2.5}.¹⁹

During required annual compliance testing, the Miami smelter concurrently utilizes 5 samplers at the Anode Building roofline, 3 samplers at the IsaSmelt Furnace Building roofline, 2 samplers at the Converter Building roofline, and 2 samplers at the Electric Furnace Building roofline.²⁰

¹⁴ See *supra* note 5.

¹⁵ *Id.*

¹⁶ *Supra* note 1 at 40 CFR § 63.1450(e)(2), (f)(2).

¹⁷ *Supra* note 5 at 32.

¹⁸ *Id.*

¹⁹ AIRMETRICS, MINIVOL PORTABLE AIR SAMPLER, OPERATION MANUAL, 1-2 (2006), at http://www.airmetrics.com/downloads/Manual_V42d.pdf.

²⁰ *Supra* note 5 at Appendix C, at 3.

Similarly, the roofline vents at the Asarco copper smelter located in Hayden, AZ do not meet the requirements of EPA Method 1 to obtain samples isokinetically. Asarco utilized MiniVol samplers during its Fugitive Emissions Study as part of the 2015 consent decree with EPA.

Considering the test methods that rely on EPA Method 1, ADEQ is concerned about the feasibility of requiring EPA Method 1 for roofline compliance testing.

C. A standard based on data from MiniVol samplers should reflect the practical challenges meeting EPA Method 1.

In a related point, ADEQ is concerned that the proposed roofline lead limit is based on data collected using samplers that are not designated as a Federal Reference Method (FRM). Use of non-FRM sampler data could create a standard that is not achievable, if tested using a FRM. It is unclear from EPA's proposed rule how to address a potential discrepancy between a standard based on non-FRM and testing using a FRM.

As discussed above, the roofline PM data from the FMI Miami facility was obtained from MiniVol samplers.²¹ As described in Document 62, FMI utilized MiniVol samplers in May/June 2018 at the Miami Smelter. It appears that this data was utilized by EPA to develop its roofline emissions limits.²² EPA used the MiniVol data for its proposed PM roofline limit.²³ However, as discussed above, this data was collected using a method other than EPA Method 5 due to the issues surrounding the FMI Miami facility roofline. Therefore, EPA's rule is based on data that does not meet its own methodology.

EPA's proposed PM limit was established using data that was collected using a method other than EPA Method 5.²⁴ As the permitting agency, ADEQ has three concerns with EPA's rule: First, it is not clear from EPA's rule that a Method 5 test conducted at the same time would have produced the same result as the alternative method used to obtain the data the rule is based on. Second, it is unknown whether this standard is achievable, as determined by the proposed test methodology. Third, as described above, neither rooflines meet EPA Method 1 and there are no locations to obtain samples under this method.

As there are only two existing copper smelters that are major sources of HAPs in the United States, ADEQ believes that the rule should provide for an effective method of implementation at both facilities. As currently structured, the rule does not do so. This concern could potentially be addressed by reconsidering the proposed requirements for roofline compliance testing.

II. ADEQ supports EPA's decision to not set an opacity limit.

In its proposal, EPA solicited comments on whether to set an opacity limit in the NESHAPs rule.²⁵ As discussed in EPA's April 5, 2021 memorandum entitled "Opacity Standards for Major Primary Copper Smelting Facilities," EPA decided not to propose opacity limits due to variability in opacity limits in air

²¹ Regulations.gov, Memorandum: MACT Floor Analysis for the Primary Copper Smelting Source Category (Nov. 27, 2020), Section 3 available at <https://www.regulations.gov/document/EPA-HQ-OAR-2020-0430-0055> (Document 55) ("The data collected for the fugitive roofline vents was not collected using an EPA method or using reference monitors.").

²² *Id.*

²³ *See supra* note 21, 3.

²⁴ *Id.*

²⁵ 86 FR 1616, 1634 (Jan. 11, 2022).

permits and the consent decree for Asarco.²⁶ ADEQ agrees with EPA's decision to not propose an opacity limit, as it is not clear that an opacity standard represents either the maximum achievable control technology (MACT) floor or beyond-the-floor (BTF) standard. ADEQ believes that the limits established by existing operating permits, or consent decree, are sufficient.

III. Conclusion.

This issue is one of concern for ADEQ, as the department has original jurisdiction for sources that pertain to the smelting of metal ore.²⁷ ADEQ will be involved in the issuance of any title V permits, and compliance with these permits for the two copper smelters in Arizona. Therefore, ADEQ requests EPA reconsider its rule to address these concerns.

If you have any questions, please contact Kelly Mackenzie, Air Quality Improvement Planning Section, Air Quality Division, at 602-784-1603 or mackenzie.kelly@azdeq.gov.

Thank you for your consideration of ADEQ's comments.

Sincerely,

DocuSigned by:

Daniel Czecholinski

4D858E29B49B4E2...
Daniel Czecholinski, CHMM

Director, Air Quality Division

²⁶ Regulations.gov, Opacity Standards for Major Primary Copper Smelting Facilities (Apr. 5, 2021), available at <https://www.regulations.gov/document/EPA-HQ-OAR-2020-0430-0057>.

²⁷ A.R.S. § 49-402(A)(2).