OLA | OFFICE OF THE LEGISLATIVE AUDITOR

Judy Randall, Legislative Auditor
State of Minnesota

Date: February 13, 2025

To: Requesting Legislator

From: Lucas Lockhart, Lead Special Reviews Auditor

Subject: Minnesota Pollution Control Agency's Oversight of Smith Foundry

Introduction

In November 2023, you contacted the Office of the Legislative Auditor (OLA) with concerns about the Minnesota Pollution Control Agency's (MPCA's) oversight of Smith Foundry, including MPCA's response to a U.S. Environmental Protection Agency (EPA) notice and finding of violation sent to the foundry in August 2023. You also requested information concerning MPCA's response to citizen complaints about the foundry.

OLA initiated a limited special review to examine your concerns. To conduct this limited review, we requested and reviewed information from MPCA regarding (1) EPA's May 2023 inspection of the foundry; (2) MPCA's efforts to understand and respond to EPA's findings; (3) MPCA's handling of complaints it received about the foundry; and (4) changes MPCA has made, or plans to make, to how it regulates air quality in response to the violations found at the foundry. We also reviewed media reports about MPCA's oversight of the foundry and statements the agency made to the press in response to EPA's enforcement activity. Finally, we examined relevant state and federal laws concerning air emissions limits, pollution control equipment, and objectionable odors.

Conclusion

In summary, while MPCA deferred to EPA's enforcement of emissions and pollution control equipment violations at Smith Foundry, it has taken actions to strengthen its air quality monitoring. We also found that:

- MPCA and EPA analyzed foundry emissions using different methods and data. This *initially* caused the two agencies to come to different conclusions about the foundry's compliance with air quality standards; MPCA later collected the data necessary to reproduce EPA's findings. (pp. 2-7)

- Nearly all of the 18 complaints MPCA received between 2018 and 2023 regarding Smith Foundry referenced noxious fumes from the facility. However, MPCA did not document its response to one-third of these complaints. (pp. 7-9)

- Following EPA's notice and finding of violation at Smith Foundry, MPCA increased its air quality monitoring in the area near the foundry. MPCA also conducted an onsite inspection of the foundry's pollution control equipment, which uncovered recordkeeping issues similar to those found by EPA. (pp. 9-11)

- After MPCA requested the foundry revise its air permit application to include additional information on the cumulative levels and effects of its emissions, the foundry announced it would shut down its operations. (pp. 11-12)

- In response to its experience with Smith Foundry, MPCA told us it has made several changes to how it regulates air quality, including securing funding for the procurement of a mobile trailer to conduct facility-based air quality monitoring, updating its air quality complaint tracking system, and inviting environmental justice staff from MPCA to participate in its monthly meetings with EPA. (pp. 12-13)

The remainder of this memorandum further explains these findings.

Initial Differences Between EPA's Findings and MPCA's Public Statements

EPA conducted a Clean Air Act inspection of Smith Foundry on May 26, 2023. According to a notice and finding of violation issued to the foundry on August 15, 2023, EPA discovered numerous violations of Minnesota's State Implementation Plan (SIP), Minnesota rules, and National Emission Standards for Hazardous Air Pollutants (NESHAP) for iron and steel foundries area sources.[1] EPA concluded that Smith Foundry failed to maintain good air pollution control practices, and that its violations "have caused and can cause excess emissions of [particulate matter] and Lead."[2] The noncompliance with Minnesota rules described in EPA's notice and finding of violation is described in Exhibit 1.

[1] The Clean Air Act of 1970 requires each state to submit to EPA a State Implementation Plan (SIP) that describes how it will implement, maintain, and enforce the national ambient air quality standards promulgated by EPA (42 *U.S. Code*, sec. 7410 (2022)). Minnesota's SIP includes rules promulgated by MPCA. National Emission Standards for Hazardous Air Pollutants (NESHAP) for iron and steel foundries area sources can be found in 40 *CFR*, pt. 63, subp. ZZZZZ (2023).

[2] Michael D. Harris, Division Director, Enforcement and Compliance Assurance Division, U.S. Environmental Protection Agency, Region 5, *Notice and Finding of Violation*, *EPA-5-23-MN-04*, issued August 15, 2023. According to EPA, particulate matter contains microscopic solids or liquid droplets that can get deep into the lungs and cause serious health problems, including decreased lung function, coughing, irritation of the airways, chronic bronchitis, irregular heartbeat, and premature death in people with heart or lung disease. EPA also stated that lead exposure can adversely affect child development and the nervous, reproductive, and cardiovascular systems.

Exhibit 1

EPA's May 2023 inspection of Smith Foundry uncovered violations of state emissions limits and rules concerning pollution control equipment.

Violation Summary	Violation Explanation
Failure to comply with operations, maintenance, and recordkeeping requirements for pollution control equipment	EPA's review of foundry records revealed that the foundry had failed to: • Maintain two baghouses within specified pressure-drop ranges on various dates between 2019 and 2023.[a] • Record and maintain records of baghouse pressure drops for various dates between 2018 and 2023. • Maintain baghouse inspection and maintenance records.
Failure to notify MPCA of a breakdown of pollution control equipment	During its May 2023 inspection, EPA observed, and foundry staff verified, that a baghouse had not been operational for some time. Between May 2019 and July 2023, MPCA had not received any notifications of equipment breakdowns at the foundry.
Failure to apply reasonable measures to prevent particulate matter from becoming airborne	MPCA's monitoring in October 2022 and April 2023 recorded elevated levels of airborne particulate matter. During its May 2023 inspection, EPA observed: • Airborne particulate matter throughout the interior of the facility, on surfaces throughout the facility, and escaping from open doors and windows at the facility. • Cracks and holes in ductwork. • Expected particulate-matter capture equipment was absent. • Capture equipment was failing to capture a significant portion of airborne particulate matter at several areas of the facility.
Failure to comply with particulate matter SIP emissions limits	Using air emissions data collected by the foundry and submitted annually to MPCA, EPA determined that emissions exceeded allowable rates and levels at two areas of the facility between 2018 and 2022.
Failure to notify MPCA of emissions that could endanger human health or the environment	Foundry records indicated particulate matter and/or lead emissions that could endanger human health or the environment during each year between 2018 and 2022. Between May 2019 and July 2023, MPCA received no notifications from the foundry disclosing emissions in excess of limits found in law or permit.
Failure to take all practical steps to modify operations in response to (1) the breakdown or shutdown of pollution control equipment or (2) any noncompliance with requirements found in law or permit that could endanger human health or the environment	During its May 2023 inspection, EPA did not find evidence that foundry staff took, or were taking, any practical steps to modify operations in response to noncompliance at six different areas of the facility.

Note: In addition to these violations of Minnesota rules, EPA's notice and finding of violation found that Smith Foundry violated 40 *CFR*, sec. 63.1089 (2023), due to its failure to maintain good air pollution control practices.

[a] Baghouses are industrial filtration systems designed to collect dust and other particulate matter to limit their release into the atmosphere. A pressure drop measures the difference in pressure between the dirty and clean sides of baghouse filters. Pressure drops outside of the ranges found in Minnesota law may indicate that a baghouse is malfunctioning or not running efficiently.

Source: Michael D. Harris, Division Director, Enforcement and Compliance Assurance Division, U.S. Environmental Protection Agency, Region 5, *Notice and Finding of Violation*, *EPA-5-23-MN-04*, issued August 15, 2023.

Comments MPCA made to Minnesota news media in November 2023 contradicted EPA's findings.

After EPA issued the notice and finding of violation, a *Minnesota Star Tribune* article quoted the commissioner of MPCA as stating that the emissions data MPCA had for Smith Foundry indicated "that there is not a violation of the permit, there is not an exceedance of the air standards in that neighborhood" and that the agency was "working with the EPA to understand the data that they are using to come to that conclusion."[3]

In order to determine compliance with emissions limits, EPA requested additional information from Smith Foundry beyond what the foundry had previously provided to MPCA.[4] This additional information included operational data, such as metal throughput and the foundry's hours of operation.

MPCA has the authority to request the same operational data that EPA had requested to determine compliance with applicable emissions limits.[5] However, MPCA told us it had not done so because the agency's last inspection of the foundry in December 2018 did not identify noncompliance. According to MPCA, its practice was to request this data during the permitting process and for active MPCA investigations.[6] At the time of EPA's May 2023 inspection, the permitting process for Smith Foundry was ongoing, and the foundry had not yet submitted the data MPCA needed to calculate compliance with emissions limits.[7] Further, since EPA had conducted an inspection and initiated an investigation in May 2023, MPCA believed a similar request for emissions limit data would have been duplicative.

[3] Chloe Johnson and Greg Stanley, *Minnesota Star Tribune*, "MPCA: We have no evidence Smith Foundry polluted Minneapolis neighborhood," November 21, 2023, https://www.startribune.com/minnesota-mpca-smith-foundry-polluted-east-phillips-epa-investigation-violation/600321500, accessed August 2, 2024.

[4] Minnesota law requires all "owners or operators of emission reporting facilities…[to] submit an annual emission inventory report to the agency…relating to ammonia, carbon monoxide, particulate matter, and all chargeable pollutants…. The report shall be submitted on or before April 1 of the year following the year being reported" (*Minnesota Rules*, 7019.3000, subp. 1A, https://www.revisor.mn.gov/rules/7019.3000/, accessed August 12, 2024). MPCA uses emission inventory reports to determine how much pollution each facility emits, assess health risks from air pollution, and determine where air pollutants end up in the environment, among other uses. Smith Foundry was compliant with emissions-related reporting requirements, but this data alone was not sufficient for determining compliance with emissions limits.

[5] Minnesota law requires air emissions permit holders to provide MPCA with "any information which that person may have which is relevant to pollution or the rules or provisions" related to MPCA (*Minnesota Statutes* 2024, 116.091, subd. 1). MPCA also has the authority to "examine any books, papers, records or memoranda" of permit holders and access "any property, public or private, for the purpose of obtaining information or conducting surveys or investigations" related to pollution control (*Minnesota Statutes* 2024, 116.091, subds. 2-3).

[6] MPCA told us that it lacks the staff to request and process emissions-limit data from the more than 2,200 facilities with air emissions permits in Minnesota, outside of the context of an active state investigation.

[7] Smith Foundry received its first air emissions permit in 1992, and according to a recent press report, "Smith Foundry began the process of applying for a new permit with the MPCA in 2016, but the progress was slow…. Seven years later, the permit was still undergoing its cumulative impacts analysis, according to [MPCA]" (Andrew Hazzard, "'Frustrating and disappointing': Internal emails reveal Minnesota Pollution Control scrambled to respond to Smith Foundry pollution, downplayed harm," *Sahan Journal*, December 9, 2024, https://sahanjournal.com/climate-environment/mpca-epa-smith-foundry-minneapolis-scrambled-response/, accessed December 12, 2024).

In light of the November 2023 *Minnesota Star Tribune* article suggesting that MPCA officials disagreed with EPA's findings, we asked the agency in December 2023 the extent to which it believed EPA's findings from its May 2023 inspection were inaccurate or unsubstantiated. In contrast to the tone of disagreement found in the article, MPCA responded to us one month later that it

> does not believe that EPA's findings are inaccurate or unsubstantiated. Rather, the MPCA has been unable to replicate EPA's findings…because the EPA had not shared all of the relevant information with the MPCA. That sharing of information occurred…on January 23, 2024, and the MPCA is in the process of reviewing the information and trying to replicate the EPA's analysis….[8]

In September 2024, we asked MPCA whether it was able to replicate EPA's findings based on the information it received from EPA in January 2024. MPCA said it was able to replicate EPA's calculations and described EPA's approach, although different from MPCA's approach, as a reasonable interpretation of state rules. In the next section, we discuss the differences between MPCA's and EPA's approaches to analyzing the foundry's emissions data.

Methodological Differences

MPCA and EPA initially came to different conclusions about Smith Foundry's compliance with emissions limits because the two agencies used different data and methodologies to analyze foundry emissions.

These differences centered on how the two entities considered emissions units, condensable particulate matter, alternative concentration limits, and nonregulatory pollution sensor data in their analyses.

Emissions Unit Definition

According to an MPCA official, the agency determined that MPCA and EPA "used different methodologies for calculating [Industrial Process Equipment Rule (IPER)] emissions that led the EPA and MPCA to different findings initially."[9] Specifically, EPA treated two areas of the foundry as one combined emissions unit and then compared the unit's combined emissions to IPER standards. In contrast, MPCA's practice was to treat the two areas of the foundry as separate emissions units, which were then compared against IPER standards individually. MPCA explained that when emissions units are considered individually, they may show lower emissions and therefore comply with IPER emissions limits. In contrast, MPCA indicated that when EPA combined the relevant emissions units, the combined unit's higher emissions were noncompliant with the IPER emissions limit.

[8] Douglas Wetzstein, Director, Industrial Division, Minnesota Pollution Control Agency, letter to Lucas Lockhart, Senior Special Reviews Auditor, Office of the Legislative Auditor, *RE: December 21, 2023, Information Request*, January 24, 2024.

[9] *Ibid.* Industrial process equipment often creates airborne dust or particulate matter during normal operations. MPCA's Industrial Process Equipment Rule (IPER) limits particulate matter emissions from equipment when there is no other specific limit found in state or federal regulation (*Minnesota Rules*, 7011.0700-7011.0715, https://www.revisor.mn.gov/rules/7011/, accessed August 13, 2024).

Condensable Particulate Matter

In addition to distinctions in how different areas of Smith Foundry were compared to emissions standards, MPCA also stated that there was a lack of clarity in how EPA incorporated condensable particulate matter in its emissions calculations.[10] According to MPCA, its long-standing permitting practice treats EPA's emissions factors as including condensable particulate matter whenever it considers IPER compliance.[11] As a result, MPCA did not include an additional condensable portion to its calculations of the foundry's emissions when applying EPA-developed emissions factors. In contrast, MPCA explained that EPA believes that MPCA should have added condensable particulate matter separately when calculating total particulate matter emissions.

MPCA told us it has been able to duplicate EPA's calculations that indicated the foundry was noncompliant with particulate matter emissions limits. While MPCA described EPA's approach (that is, condensables added separately to total emissions) as a reasonable interpretation of IPER emissions standards, MPCA believes its own approach (that is, to assume condensables are already included in the emissions factors and not add them separately to total emissions calculations) is also reasonable. MPCA indicated that there is still some ambiguity in terms of how condensable emissions should be calculated for comparison against the limits found in the IPER.

Alternative Concentration Limit

MPCA told us that EPA used only one of two possible emissions limits when determining that Smith Foundry's particulate matter emissions were out of compliance. Specifically, MPCA explained that Minnesota rules provide two methods for calculating particulate matter emissions limits: (1) pounds of particulate matter emitted by an industrial process per hour (called the "mass limit"); and (2) the amount of "grains" of particulate matter that can be found in the gas exhausted from industrial equipment each minute (called the "grain-loading limit"). MPCA guidance indicates that the applicable emissions limit is the method that produces the higher rate of allowable emissions.

MPCA explained that EPA considered only the mass limit and did not consider the possibility that the foundry could have been compliant with the grain-loading limit during the 2018-2022 period. According to MPCA, EPA asserted that using the grain-loading limit was not feasible for Smith Foundry; in contrast, MPCA believed that using the grain-loading limit was feasible, but at a large cost to the foundry. In response to OLA questions, MPCA stated that it did not have the information necessary to determine if the foundry would have complied with the grain-loading particulate matter emissions limit during the 2018-2022 period.

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[10] Condensable particulate matter is vaporized at the temperatures or pressures that can exist inside a piece of industrial equipment (such as a smoke stack), but becomes liquid or solid particulate matter once it exits the equipment and enters ambient temperatures and atmospheric pressures.

[11] An emissions factor is an average of emissions rates that relates to the total quantity of a pollutant released into the atmosphere due to a particular activity. According to EPA, emissions factors are usually expressed as the weight of a pollutant divided by a unit weight, volume, distance, or duration of an activity that releases the pollutant (for example, kilograms of particulate matter emitted per megagram of coal burned). Emissions factors are an essential part of calculating total emissions from an activity.

Nonregulatory Air Pollution Sensor Data

In its notice and finding of violation, EPA stated that MPCA air monitoring discovered elevated levels of particulate matter at Smith Foundry in October 2022 and April 2023. EPA then used these findings as a basis to determine that the foundry failed to prevent particulate matter from becoming airborne, a violation of Minnesota law. MPCA believes that EPA's use of this monitoring data was inappropriate for several reasons:

- The primary purpose of the data collection was to identify odorous pollution that could be targeted with additional controls, rather than to determine if emissions were compliant with regulatory limits.
- The data came from a pilot test of new, nonregulatory sensor equipment that had not been evaluated for accuracy, calibrated, or certified.[12]
- The data included visualizations of very short-term measurements that were inappropriate to compare to state or federal air quality standards or to use for enforcement purposes.
- The sensor record did not show an exceedance of particulate matter beyond the state or federal regulatory limit.

MPCA told us that it discussed EPA's use of data from nonregulatory sensor equipment with the federal agency. According to MPCA, EPA enforcement staff indicated they would not rely on data from nonregulatory sensor equipment in the future.

Complaints Related to Smith Foundry

Between 2018 and 2023, MPCA received 18 complaints related to Smith Foundry. Roughly one-half of these complaints were submitted after the EPA's inspection in May 2023. The parents of children at one or more nearby daycares made 7 of the 18 complaints about the foundry. All but 1 of the 18 complaints mentioned smells or odors coming from the foundry, and 6 of the 18 complaints mentioned negative physical effects (including coughing, gagging, and respiratory irritation) resulting from exposure to odors from the foundry. Two complaints described the discharge of black sludge or other substances from the site.

MPCA did not document its response to one-third of the complaints it received related to Smith Foundry, and, in the absence of applicable state rules concerning objectionable odors, the agency referred odor-related complaints to the City of Minneapolis.

We requested and reviewed all of MPCA's documentation related to complaints it received about Smith Foundry between 2018 and 2023. We were unable to determine how, if at all, MPCA addressed 6 of the 18 complaints it received because MPCA did not document any steps it took to address these complaints.

[12] According to MPCA, the nonregulatory sensor equipment it utilized had not been used to determine regulatory compliance in any prior situation, and the sensors had not undergone the rigorous audit and maintenance regime required for regulatory monitoring equipment. None of the sensors had approved EPA methods, and two of the sensors had not been tested for accuracy against MPCA regulatory monitors.

For 11 of the 12 complaints for which MPCA *did* document its response, we saw evidence that MPCA called or e-mailed the complainant.[13] MPCA conducted follow-up inspections in response to the two complaints of discharge or spills, and confirmed discharges in the area of Smith Foundry for one of the two discharge-related complaints. MPCA told us it referred odor complaints about the foundry to the City of Minneapolis, and complaint documentation shows that the agency told two complainants that odor complaints are handled by local authorities.

Prior to May 2023, MPCA did not have specific authority to address objectionable odors. Instead, local governments, such as the City of Minneapolis, typically addressed odor complaints. As a result, it was appropriate and in compliance with state law for MPCA to refer odor complaints to the City of Minneapolis. In May 2023, the Minnesota Legislature enacted new odor management requirements for facilities located in Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties.[14] The new law requires MPCA to:

- Conduct a site investigation of any facility against which ten or more verifiable odor complaints have been submitted to the agency or to local government officials within 48 hours.

- Inform officials in the local jurisdiction of odor complaints filed with the agency, agency investigations of odor complaints in the local jurisdiction, and any other actions the agency takes concerning the complaints.

- Require the owners of facilities emitting objectionable odors to develop and submit to the agency an odor management plan designed to mitigate odor emissions within 90 days of the agency's determination that a facility is emitting an objectionable odor.

- Adopt rules establishing an odor standard or standards for air pollution, a process for determining if an odor is objectionable, and a process for investigating and addressing odor complaints, among other issues.[15]

The complaint documentation provided by MPCA does not indicate that the agency received ten or more odor complaints about Smith Foundry within a 48-hour period following the May 2023 enactment of the new odor management requirements.

We asked MPCA if it followed up with the City of Minneapolis after referring odor complaints to city staff. MPCA stated that due to limited staff resources, it does not follow up with local units of government on every complaint referral. However, MPCA explained that the City of Minneapolis shared its findings with the agency after completing its investigation of the foundry-related complaints and provided a list of complaints the city received about the foundry.

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[13] For one complaint concerning runoff from the facility, MPCA's inspection report provided no evidence that the agency contacted the complainant. However, the same report showed that MPCA responded by conducting an industrial storm-water inspection of the foundry. According to the report, the storm-water inspector took photos of damage to a baghouse building at the facility and planned to coordinate with an air quality inspector.

[14] *Laws of Minnesota* 2023, chapter 60, art. 3, sec. 20, codified as *Minnesota Statutes* 2024, 116.064.

[15] *Minnesota Statutes* 2024, 116.064, subds. 4, 5, and 7. MPCA stated that it plans to prepare draft odor management rules in 2025, as well as a statement of need and reasonableness required by law (*Minnesota Statutes* 2024, 116.07, subd. 2(f); 14.131; and 14.23).

Prior to EPA's May 2023 inspection, Smith Foundry expressed interest in addressing odor complaints.[16] In response, MPCA used nonregulatory sensor equipment to measure air quality three times, in September 2019, October 2022, and April 2023. According to MPCA:

> In all cases, only very short-term data were collected which cannot be compared to federal or state standards. None of the monitoring demonstrated (or would be able to demonstrate) that concentrations exceeded state or federal ambient air quality standards. The type of ambient air monitoring used would not be able to demonstrate if a facility exceeded emission limits, permit conditions, registrations, or certificates.[17]

MPCA's Monitoring of Smith Foundry After EPA's Inspection

After EPA issued the notice and finding of violation in August 2023, MPCA increased its monitoring of Smith Foundry until its closure one year later in August 2024. In addition to monitoring air quality in the neighborhood around the foundry, MPCA conducted its own inspection of the facility in November 2023.

MPCA's November 2023 inspection of Smith Foundry found noncompliance with state law, but in an effort to minimize duplication of enforcement actions, MPCA deferred to EPA's ongoing enforcement action.

MPCA's November 2023 inspection focused on whether the foundry's air pollution control equipment was operating within specifications and whether foundry staff adequately documented daily equipment checks and periodic inspections of pollution control equipment. While onsite, MPCA found all five of the foundry's baghouses operating within appropriate pressure ranges. In addition, an agency inspector determined that since August 2023, the foundry had been conducting daily pressure drop and visible emissions checks to ensure the proper operation of this pollution control equipment.

However, MPCA also found that Smith Foundry had either not performed or did not document some periodic inspections of pollution control equipment according to the foundry's preventative maintenance schedule. Further, MPCA's record review revealed three different baghouses had operated outside of proper pressure ranges a total of 23 times between August 2023 and November 2023. MPCA was unable to locate any documentation of actions taken to bring these baghouses back into appropriate pressure ranges.

MPCA described these findings as a violation of Minnesota rules concerning the proper operation, maintenance, and documentation of pollution control equipment. However, MPCA did not initiate enforcement action related to this violation, and instead referred its findings to EPA for investigation. MPCA explained that it paused state enforcement action to minimize the duplication of enforcement

[16] MPCA complaint documentation indicates that the agency received eight odor-related complaints about the foundry between July 2019 and March 2021.

[17] Douglas Wetzstein, Director, Industrial Section Division, Minnesota Pollution Control Agency, letter to Lucas Lockhart, Lead Special Reviews Auditor, Office of the Legislative Auditor, *RE: December 21, 2023, Information Request*, January 23, 2024. MPCA stated that the sensor used in September 2019 only monitored for hydrogen sulfide and did not monitor for any other pollutants, such as particulate matter or lead. MPCA told us that during the October 2022 monitoring, the sensor did not function properly and did not record data during the entire monitoring period.

work and resources between it and EPA.[18] MPCA confirmed that since EPA's enforcement action included the findings from its November 2023 inspection, the agency had no plans to take enforcement action independent of EPA.[19]

During a December 2023 follow-up inspection, EPA observed that the foundry (1) was conducting additional emissions testing; (2) patched holes in ductwork that EPA had observed during its May 2023 inspection; (3) added tarps and covers to parts of the facility to help reduce uncaptured emissions; and (4) directed staff to monitor and record pressure drops at the facility's baghouses. Smith Foundry also told EPA that it made further improvements to its facility and operations, including securing and replacing doors and windows, repairing hoods and broken air lines to machines, hiring a new maintenance manager, and completing regular inspections and preventative maintenance.

As part of its investigation, EPA required Smith Foundry to conduct a "stack test" to determine the amount of specific regulated pollutants that the facility was emitting. After a third-party conducted the testing in December 2023, EPA and MPCA analyzed the results and verified that the foundry was not emitting more particulate matter than allowed by its permit and that lead levels in the emissions were low.

In response to EPA's notice and finding of violation, Smith Foundry agreed to the conditions of an administrative consent order on May 30, 2024. The consent order required Smith Foundry to take numerous corrective actions to bring its facility back into compliance with state and federal law, including permanently shutting down the foundry's furnace and several pieces of pouring and casting equipment. Further, the foundry agreed to improve monitoring and recordkeeping practices as well as implement an updated operations and maintenance plan and revised standard operating procedures. Given these changes to the foundry's operations, the consent order also required Smith Foundry to submit a revised air emissions permit application to MPCA no later than the beginning of June 2025.

In a final order issued on June 4, 2024, EPA levied an $80,000 civil penalty for the foundry's violations. EPA stated that this penalty was appropriate given the facts of the case, relevant law, the foundry's cooperation with its investigations, and the foundry's willingness to shut-down parts of its operations.

While MPCA deferred to EPA's enforcement action, MPCA took other steps to monitor Smith Foundry's compliance with air quality rules.

Citing community concerns with the foundry's emissions, MPCA requested the foundry develop an emissions monitoring plan that outlined how the foundry would test, monitor, and report its emissions. The foundry voluntarily complied with MPCA's request and submitted its plan to the agency on April 19, 2024. MPCA told us it was satisfied with the foundry's plan, and that the plan included all reasonable emissions monitoring options taking into consideration the physical limitations of different monitoring methods.

[18] MPCA clarified that despite its decision to pause its own enforcement action, it retained its authority and ability to take enforcement action at a later time if the findings from its November 2023 inspection were not included in EPA's enforcement action.

[19] We compared MPCA's findings from its November 2023 inspection to the findings in the EPA's June 2024 consent agreement and final order for Smith Foundry. Both the inspection report and the consent agreement highlight very similar violations, but do not reference identical facts or time periods in which violations occurred.

In January 2024, MPCA initiated additional regulatory monitoring of particulate matter and other pollutants on a property directly adjacent to the Smith Foundry site.[20] MPCA indicated that this monitor is used to measure pollution concentrations in the ambient air for compliance with EPA's National Ambient Air Quality standards and was not used to directly measure emissions from the foundry.[21]

Air Permit Renewal and Smith Foundry Shutdown

After MPCA requested Smith Foundry revise its air permit application to include additional information on the cumulative levels and effects of its emissions, the foundry announced it would shut down its operations.

According to MPCA, the foundry submitted an updated application for a renewed air quality permit on April 30, 2024, as requested by MPCA and before EPA issued its final administrative consent order.[22]

MPCA determined that the foundry's updated application lacked required elements. Specifically, the foundry's application did not include an analysis of "cumulative level and effects" sufficient for MPCA to determine how the foundry's pollution would impact the environment and residents in the community surrounding the foundry.[23] Further, MPCA identified the following issues, among others, with the foundry's permit application and cumulative levels and effects analysis: (1) incomplete and inconsistent emissions calculations; (2) missing pollutant and exposure modeling and risk analysis; and (3) missing or incomplete health information about the surrounding community, such as analyses of asthma-related hospital emergency department data and chronic obstructive pulmonary disease.

On July 19, 2024, MPCA informed Smith Foundry that it needed to provide (1) updated modeling that reflected three different scenarios of foundry operations by August 16, 2024; and (2) an updated permit application that included all required modeling results, data, analyses, and reports by November 1, 2024.

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[20] Since 2001, MPCA has conducted regulatory monitoring of particulate matter and other pollutants at a middle school roughly one mile west of Smith Foundry. MPCA said that monitoring data from this school site showed the area's compliance with federal particulate matter standards.

[21] In addition to regulatory monitoring, MPCA said it would use data from the site to help calculate the Air Quality Index for the area and to compare daily measurements and short-term trends from the site against measurements from nearby regulatory monitors of the same type. EPA developed the Air Quality Index to provide a simple and uniform method to report daily air quality conditions. MPCA uses Air Quality Index values to provide daily air quality forecasts. MPCA publishes data from this monitoring site online at https://public.tableau.com/app/profile/mpca.data.services /viz /EastPhillipsCommunityFineParticlesMonitoringData/EastPhllipsCommunityairmonitoringresults (accessed August 13, 2024). Since demonstrating compliance with EPA's National Ambient Air Quality Standards for particulate matter requires data from three years of monitoring, a single reading that exceeds the national standard does not necessarily indicate that a violation occurred.

[22] We did not conduct an in-depth review of MPCA's air emissions permitting process for Smith Foundry. Given the complexity of the permitting process, a program evaluation or separate special review would be the more appropriate format for determining the strengths and weaknesses of MPCA's permitting and enforcement processes, in general, or the agency's handling of Smith Foundry's permit application, in particular.

[23] Minnesota law requires that MPCA not issue air emissions permits to facilities located in certain areas of Minneapolis without analyzing and considering cumulative levels and effects of past and current environmental pollution from all sources on the environment and residents (*Minnesota Statutes* 2024, 116.07, subd. 4a(c)).

In a July 26, 2024, statement, Smith Foundry announced that it would cease all operations by August 15, 2024. According to the *Minnesota Star Tribune*, the company stated that increasingly stringent pollution regulations made it impossible to stay in business and blamed "arbitrary and opaque" requirements from MPCA, as the agency worked to update the foundry's air emissions permit.[24] In response, MPCA said that "Smith Foundry is located in an area of the state that demands additional information [to] demonstrate that the company could operate while meeting air quality standards," and that the company told the agency it planned to close, "rather than provide information necessary for an operating air permit."[25]

Process Improvements

MPCA has made—or plans to make—process changes in response to its experience with Smith Foundry.

We asked MPCA if it had changed any of its processes due to its experience with Smith Foundry. MPCA stated that it has:

- Requested and received funding from the 2024 Legislature for (1) the deployment of a mobile air monitoring trailer and five additional air-toxin monitoring sites in Hennepin, Olmstead, Ramsey, and Washington counties; and (2) 15 additional staff to prioritize permitting and inspections in environmental justice areas.
- Prioritized, since January 2024, the analysis and public reporting of pollution data collected from the ambient air monitor installed across the street from the Smith Foundry site.
- Included environmental justice staff in monthly meetings with EPA.
- Engaged in discussions with EPA leadership on how to improve information sharing about compliance and enforcement work with neighbors of facilities.
- Tracked all EPA inspections scheduled to occur in Minnesota and prioritized joining EPA during its inspections.
- Developed a process to formally incorporate the lived experience of the public as part of cumulative levels and effects analyses and the air emission permitting process for facilities located in certain parts of Minneapolis.

Further, MPCA plans to:

- Update its complaint-tracking system, including allowing complainants to submit complaints with their mobile phone as well as upload pictures and location information with their complaints.
- Request emissions and operational data as part of facility inspections.

[24] Chloe Johnson, "Under pressure to curb pollution, Minneapolis foundry announces it will shut down," *Minnesota Star Tribune*, July 26, 2024, https://www.startribune.com/under-pressure-to-curb-pollution-minneapolis-foundry-announces-it-will-shut-down/600386553, accessed August 8, 2024.

[25] *Ibid.*

In addition to these steps, we encourage MPCA to continue working with EPA to resolve any remaining ambiguity in the two agencies' approaches to measuring compliance with emissions limits. If MPCA determines it is necessary, the agency should clarify any relevant state rules concerning these calculations.

Further, as MPCA works to update its complaint-tracking system, the agency should consider ways to more consistently and thoroughly document its responses to complaints, including its (1) investigations of air quality and objectionable odor complaints; (2) referrals of objectionable odor complaints to local authorities; and (3) reviews of and responses to local authorities' investigative findings.

MINNESOTA POLLUTION CONTROL AGENCY

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Feb. 7, 2025

Judy Randall
Legislative Auditor
Office of Legislative Auditor
Room 140
Centennial Building
658 Cedar Street
St. Paul, MN 55155-1603

VIA EMAIL ONLY

RE: Office of Legislator Auditor (OLA) Limited Special Review of the Minnesota Pollution Control Agency's (MPCA's) Response to Violations of Air Emissions Laws Discovered by the U.S. Environmental Protection Agency (EPA) at the Smith Foundry

Dear Ms. Randall:

I am in receipt of your limited special review of the Minnesota Pollution Controls Agency's response to the violations of air emissions laws discovered by the U.S. Environmental Protection Agency at the Smith Foundry.

We appreciate your review and understanding of the facts of the situation. Generally, we agree with how the facts are represented and the outlined process improvements.

The memo accurately describes the MPCA's work with the Environmental Protection Agency and the East Phillips Neighborhood as it relates to Smith Foundry. The memo also reflects the changes the MPCA has made to its air permitting and compliance enforcement processes.

We remain committed to ensuring healthy and clean air to all who live in Minnesota and remain steadfastly committed to our work in and with environmental justice communities.

Thank you for your review.

Sincerely,

Katrina Kessler

Katrina Kessler, P.E.
Commissioner