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# State Program Deficiencies and Inadequate EPA Oversight of State Enforcement Contributed to the Drinking Water Crisis in Jackson, Mississippi

August 12, 2024 | Report No. 24-E-0055



## REDACTED VERSION FOR PUBLIC RELEASE

The full version of this report contained controlled unclassified information. This is a redacted version of that report, which means the controlled unclassified information has been removed. The redactions are clearly identified in the report.



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## Abbreviations

C.F.R.	Code of Federal Regulations
DOJ	U.S. Department of Justice
ECAD	Region 4 Enforcement and Compliance Assurance Division
EPA	U.S. Environmental Protection Agency
ETT	Enforcement Targeting Tool
LCR	Lead and Copper Rule
MSDH	Mississippi State Department of Health
NEIC	National Enforcement Investigations Center
OECA	Office of Enforcement and Compliance Assurance
OIG	Office of Inspector General
PWS	Public Water System
PWSS	Public Water System Supervision Program
SDWA	Safe Drinking Water Act
SDWIS/Fed	Safe Drinking Water Information System/Federal Version
SDWIS/State	Safe Drinking Water Information System/State Version
U.S.C.	United States Code

## Cover Image

Entry signs at the J.H. Fewell and O.B. Curtis water treatment facilities. (EPA OIG image)

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# At a Glance

## State Program Deficiencies and Inadequate EPA Oversight of State Enforcement Contributed to the Drinking Water Crisis in Jackson, Mississippi

### Why We Did This Evaluation

#### To accomplish this objective:

The U.S. Environmental Protection Agency Office of Inspector General conducted this evaluation to examine the EPA's response and oversight related to drinking water contamination in Jackson, Mississippi. Specifically, our objective was to determine the circumstances of, and the EPA's response to, noncompliance with the Safe Drinking Water Act at the City of Jackson's community water system.

Mississippi, through the Mississippi State Department of Health, has primacy for the implementation and enforcement of the Safe Drinking Water Act for public water systems in the state. State applications for primacy must describe how the state will implement sanitary survey program requirements. The state is responsible for conducting sanitary surveys, which assess a water system's capability to treat and deliver drinking water. Additionally, when violations are found, they are entered quarterly into the Safe Drinking Water Information System.

#### To support these EPA mission-related efforts:

- *Ensuring clean and safe water.*
- *Compliance with the law.*

#### To address this top EPA management challenge:

- *Maximizing compliance with environmental laws and regulations.*

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### What We Found

The Mississippi State Department of Health, or MSDH, did not consistently enforce the Safe Drinking Water Act or provide adequate oversight for the Jackson public water system. The MSDH does not have implementation procedures for its compliance and enforcement program. Consequently, the MSDH did not take formal enforcement actions to compel Jackson to comply with the Safe Drinking Water Act.

The EPA was unaware of the extent of issues at Jackson until it conducted an on-site inspection of the system in February 2020. The findings of the inspection prompted the EPA to use its enforcement authorities. Although the EPA became more involved and proactive at the site, Jackson experienced a series of extreme weather events, and residents were continually placed on boil water notices, which culminated in failures of the water distribution system in February 2021 and August 2022. In August 2022, the EPA referred Jackson to the U.S. Department of Justice, which filed a civil complaint that led to the appointment of an interim third-party manager to operate, maintain, manage, and control the city's drinking water system.

**The EPA may have taken enforcement action sooner had the MSDH conveyed information timely and accurately.**

### Recommendations and Planned Agency Corrective Actions

We make seven recommendations in this report:

- Five to the regional administrator for Region 4 to assess the MSDH's sanitary survey program; develop a methodology to verify the adequacy of sanitary surveys conducted by the MSDH; verify that the MSDH has procedures to ensure water systems report compliance monitoring data to the state and that the Mississippi Public Health Laboratory has appropriate procedures; train MSDH personnel on the Safe Drinking Water Information System/State Version software; and evaluate whether the MSDH is implementing procedures for the enforcement of drinking water regulations.
- One to the assistant administrator for Water to update an EPA guidance manual and an EPA training guide to include a sanitary survey checklist and a process for states to alert the EPA of public water systems with systemic issues that individually may not rise to the level of a significant deficiency.
- One to the assistant administrators for Water and Enforcement and Compliance Assurance to develop guidance on the applicability and use of the Safe Drinking Water Act section 1442(b) grant authority to address public health in an emergency situation.

The EPA agreed with our seven recommendations. The EPA provided acceptable corrective actions for Recommendations 3 and 7, which are resolved with corrective actions pending. Corrective actions for Recommendation 2 have been completed. The EPA's proposed corrective actions for Recommendations 1, 4, 5, and 6 did not fully meet our intent, and those recommendations remain unresolved with resolution efforts in progress.



**OFFICE OF INSPECTOR GENERAL**  
U.S. ENVIRONMENTAL PROTECTION AGENCY

August 12, 2024

**MEMORANDUM**

**SUBJECT:** State Program Deficiencies and Inadequate EPA Oversight of State Enforcement Contributed to the Drinking Water Crisis in Jackson, Mississippi  
Report No. 24-E-0055

**FROM:** Sean W. O'Donnell, Inspector General *Sean W O'Donnell*

**TO:** Jeaneanne Gettle, Acting Regional Administrator  
Region 4

Bruno Pigott, Acting Assistant Administrator  
Office of Water

David Uhlmann, Assistant Administrator  
Office of Enforcement and Compliance Assurance

This is our report on the subject evaluation conducted by the U.S. Environmental Protection Agency Office of Inspector General. The project number for this evaluation was [OSRE-FY23-0033](#). This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

This version of our report has had information redacted because it contains certain privileged information.

In accordance with EPA Manual 2750, your office provided acceptable planned corrective actions and estimated milestone dates for Recommendations 2, 3 and 7. Corrective actions for Recommendation 2 have been completed, and Recommendations 3 and 7 are resolved with corrective actions pending. A final response pertaining to these recommendations is not required; however, if you submit a response, it will be posted on the OIG's website, along with our memorandum commenting on your response.

**Action Required**

Recommendations 1, 4, 5, and 6 are unresolved. EPA Manual 2750 requires that recommendations be resolved promptly. Therefore, we request that the EPA provide us within 60 days its responses concerning specific actions in process or alternative corrective actions proposed on the recommendations. Your response will be posted on the OIG's website, along with our memorandum commenting on your response. Your response should be provided as an Adobe PDF file that complies with the accessibility requirements of section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that you do not want to be released to the public; if your response contains such data, you should identify the data for redaction or removal along with corresponding justification.

We will post this version of our report to our website at [www.epaoig.gov](http://www.epaoig.gov).

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# Table of Contents

## Chapters

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
	Purpose.....	1
	Background.....	1
	Responsible Offices .....	9
	Scope and Methodology.....	10
<b>2</b>	<b>The MSDH’s Sanitary Surveys and Inspections Obscured Jackson’s Capacity Challenges and SDWA Noncompliance .....</b>	<b>11</b>
	The MSDH’s Sanitary Surveys and Annual Inspections Identified Capacity Issues .....	11
	The EPA Provided Contradictory Feedback on the MSDH’s Sanitary Survey Program .....	12
	The MSDH Did Not Consistently Identify Significant Deficiencies.....	13
	Water Line Breaks Resulting in Frequent Boil Water Notices Did Not Rise to Significant Deficiencies by the MSDH .....	15
	The MSDH Inconsistently Communicated Significant Deficiencies to Jackson .....	16
	Conclusions.....	17
	Recommendations.....	17
	Agency Response and OIG Assessment.....	17
<b>3</b>	<b>Inadequate MSDH Oversight Impeded the EPA’s Awareness of Jackson’s SDWA Violations ...</b>	<b>19</b>
	The MSDH Delayed Reporting Jackson’s Compliance Monitoring Data.....	19
	Delays in Recording Violations by the MSDH Resulted in an Uninformed Public .....	20
	Conclusions.....	22
	Recommendations.....	22
	Agency Response and OIG Assessment.....	23
<b>4</b>	<b>The EPA Did Not Uphold Its Oversight Responsibility to Require the MSDH to Implement Enforcement Procedures .....</b>	<b>24</b>
	The MSDH Has Not Implemented Enforcement Procedures .....	24
	The MSDH Did Not Take Enforcement Action When Several SDWA Violations Occurred at Jackson .....	26
	Conclusions.....	28
	Recommendation .....	28
	Agency Response and OIG Assessment.....	28

- continued -

<b>5</b>	<b>The EPA Took Several Formal Enforcement Actions Against Jackson, but Further Guidance Is Needed on How to Use the SDWA Emergency Grant Authority .....</b>	<b>30</b>
	Region 4 Requested the NEIC’s On-Site Inspection and Issued a SDWA Section 1445 Information Request .....	30
	The NEIC Inspection Findings Prompted Region 4 to Issue a Unilateral SDWA Section 1431 Emergency Administrative Order.....	31
	Conclusions.....	36
	Recommendation .....	37
	Agency Response and OIG Assessment.....	37
	<b>Status of Recommendations .....</b>	<b>38</b>

## Appendixes

A	Timeline of Events .....	39
B	Prior Reports .....	43
C	Agency Response to the Draft Report.....	46
D	Distribution .....	53

# Chapter 1

## Introduction

### Purpose

The U.S. Environmental Protection Agency Office of Inspector General [initiated](#) this evaluation to determine the circumstances of, and the EPA's response to, noncompliance with the Safe Drinking Water Act, or SDWA, at the City of Jackson's community water system.

#### Top management challenge addressed

This evaluation addresses the following top management challenge for the Agency, as identified in the OIG's *U.S. Environmental Protection Agency Fiscal Year 2024 Top Management Challenges [report](#)*, issued November 15, 2023:

- Maximizing compliance with environmental laws and regulations.

### Background

#### *Drinking Water Contamination and Infrastructure Failures in Jackson, Mississippi*

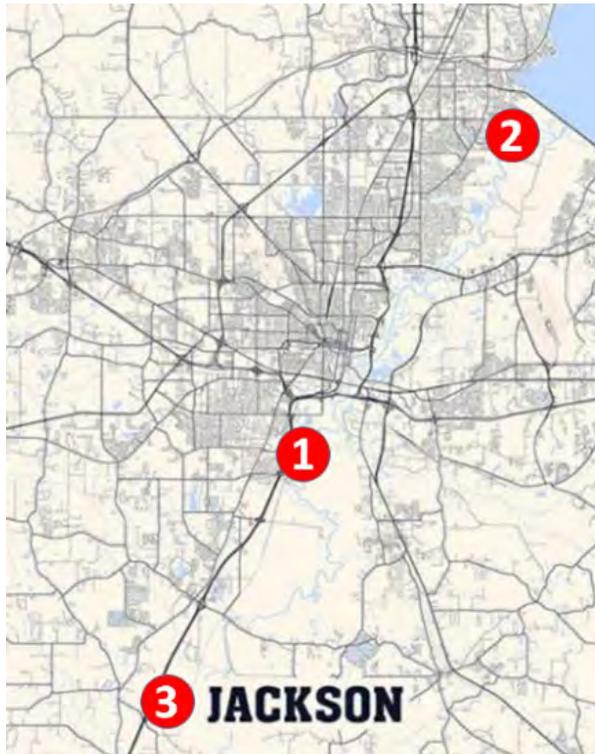
Jackson is the capital city of Mississippi. Jackson's public drinking water system consists of a surface water system; a groundwater system; and related treatment, storage, and distribution facilities. The surface water system is treated by two water treatment plants, J.H. Fewell and O.B. Curtis, which provide drinking water to approximately 143,445 people. The groundwater system, Maddox Road, consists of six active groundwater wells that serve approximately 16,555 people in the southern portion of Jackson. Jackson's system provides drinking water to approximately 160,000 people. Both the surface water system and the groundwater system are public water systems, or PWSs, and are further classified as community water systems because of the frequency of use and population size they serve.<sup>1</sup> The establishment of Jackson's system began a century ago with the construction of the J.H. Fewell water treatment plant around 1914. The Maddox Road groundwater system was constructed around 1967, and the O.B. Curtis water treatment plant was constructed around 1992. The system is owned, operated, and maintained by Jackson.<sup>2</sup> Figure 1 shows the locations of the three drinking water sources.

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<sup>1</sup> Jackson's system is a PWS, per SDWA section 1401(4) and 40 C.F.R. § 141.2. Additionally, the system regularly serves at least 25 year-round residents and is a community water system, which is a type of PWS, per SDWA section 1401(15) and 40 C.F.R. § 141.2.

<sup>2</sup> As discussed in more detail below, on November 29, 2022, a court-appointed interim third-party manager became responsible for the operation and maintenance of the system.

**Figure 1: Jackson's drinking water sources**



Notes: 1 = Pearl River, J.H. Fewell water treatment plant, 2 = Ross Barnett Reservoir, O.B. Curtis water treatment plant; 3 = Groundwater system, Maddox Road.

Source: The EPA's National Enforcement Investigations Center. (EPA image)

In August 2014, Jackson took the Maddox Road groundwater system offline. In October 2014, Jackson changed the source of its drinking water for residents served in the southern portion of Jackson from groundwater wells to surface water, anticipating this to be a long-term change.<sup>3</sup> This change in drinking water source resulted in an increase in customer complaints of low water pressure. In July 2015, due to issues in the drinking water distribution system, which included equipment malfunctions and water pressure issues, Jackson reverted to using its groundwater wells. In June 2015, Jackson collected drinking water samples to monitor levels of lead and copper. In July 2015, results from the certified laboratory for the Mississippi State Department of Health, or MSDH, indicated that the samples Jackson had collected exceeded the lead action level.<sup>4</sup> However, the MSDH did not notify Jackson of this exceedance until January 2016, which delayed public notification and education to the city's residents. Customer complaints regarding odor, discolored water, and water pressure continued. In January 2018, there was a significant increase in water pressure complaints, with 521 complaints that month.

#### **Human health effects from lead exposure**

Lead is a toxic metal, and it can accumulate in the body over time. Risk of exposure depends on the individual, water chemistry, and the amount consumed. Some populations, like children and pregnant women, are at a higher risk. Children with lead exposure may experience mental and physical developmental issues.

<sup>3</sup> Until approximately October 2014, there were two separate PWSs owned by Jackson. One was supplied only by groundwater and was listed under PWS ID No. MS0250012, and the second was supplied by surface water and was listed under PWS ID No. MS0250008. In or around October 2014, Jackson requested to remove the groundwater PWS ID because the city intended to stop using it as a primary water source. However, in February 2020, the EPA's National Enforcement Investigations Center team discovered groundwater was still being used as a primary source and requested the groundwater PWS ID be reinstated, which it was in July 2020.

<sup>4</sup> Per 40 C.F.R. § 141.80.

In February 2020, the EPA's National Enforcement Investigations Center, or NEIC, conducted an on-site inspection of the system at the request of Region 4. The NEIC on-site inspection included reviewing Jackson's compliance with the Lead and Copper Rule, or LCR, which is a collection of federal regulations at 40 C.F.R. part 141 subpart I, to control lead and copper in drinking water. The EPA discovered issues beyond compliance with the LCR. For example, the NEIC inspectors noted an exorbitant amount of line breaks throughout Jackson's system, with crews repairing five to six lines per day. Specifically, from 2017 through 2021, there were over 7,300 distribution line breaks, which occurred at an average annual rate of 55 breaks per 100 miles of line—significantly higher than the industry benchmark of no more than 15 breaks per 100 miles of line per year. According to a former interim director for Jackson's Department of Public Works, one line had been broken since 2016 and leaked four to five million gallons per day. Extrapolating this from 2016 through 2022 indicates that approximately 10 to 13 billion gallons of drinking water were lost from this single line break.

#### **The EPA's National Enforcement Investigations Center**

The NEIC supports the EPA's enforcement programs by gathering data, analyzing evidence, and providing investigation training. The EPA's regional offices can request its assistance in conducting on-site inspections that are nationally significant, technically challenging, multiregional, or politically sensitive.

Additionally, the NEIC noted that there were over 750 boil water notices issued to Jackson's system customers from 2016 through 2020. Boil water notices are typically issued when there is a loss of pressure due to line breaks or a decrease in water pressure at the entry point of the distribution system, during a planned service outage, or because of a water treatment failure. When there is low pressure or a loss of pressure, contaminants can enter the PWS, such as total coliform bacteria and other bacteria; parasites; viruses; or pathogens such as *E. coli*, *Cryptosporidium*, *Giardia*, and *Legionella*. As a result, Jackson residents were at risk of being exposed to health risks beyond lead in their drinking water.

#### **Human health effects from pathogen exposure**

Pathogens can cause diarrhea, nausea, vomiting, headaches, and other symptoms if ingested. More severe illnesses from exposure could include kidney failure. Chronic conditions, such as renal impairment and cardiovascular disease, are also possible.

In February 2021, Jackson experienced a systemwide failure due to winter weather conditions that caused pipes to freeze and lose pressure. This resulted in tens of thousands of the city's customers being without safe drinking water for several weeks. A freezing event and distribution system failure also took place in December 2022.

In August 2022, Jackson experienced record rainfall, which resulted in flooding at the Pearl River. It also increased water flow at the Ross Barnett Reservoir, which served the O.B. Curtis water treatment plant, preventing the plant from producing potable water and maintaining water pressure in the distribution system. As a result, around 150,000 of the system's users had no water. On August 30, 2022, the

Mississippi governor and the president declared an emergency, and the president ordered federal assistance for the water crisis.

## EPA Oversight and Appointment of an Interim Third-Party Manager to Oversee Jackson's System

Following the February 2020 NEIC on-site inspection, the EPA used its oversight authority discussed below and took several enforcement actions against Jackson to address compliance deficiencies. For instance, on August 30, 2022, the EPA referred Jackson to the U.S. Department of Justice, or DOJ, to file a civil litigation complaint as the city's challenges grew more significant. On November 29, 2022, the DOJ, on behalf of the EPA, filed a complaint in the U.S. District Court for the Southern District of Mississippi concerning the failure of Jackson to provide drinking water to city residents in accordance with SDWA, the federal law intended to protect public drinking water throughout the nation. On that same day, the court entered an Interim Stipulated Order agreed to by the EPA, the MSDH, and Jackson that appointed an interim third-party manager to implement actions needed to stabilize Jackson's system, remedy problems that contributed to the water crisis, and establish sustainable practices for future SDWA compliance. The Consolidated Appropriations Act, 2023, provided \$600 million in disaster supplemental funding for Jackson to support water infrastructure and to provide safe and reliable water for residents. Initially on July 31, 2023, the U.S. District Court for the Southern District of Mississippi appointed the same interim third-party manager overseeing Jackson's drinking water to operate, maintain, manage, and control the city's sewer system.<sup>5</sup> Appendix A provides a timeline of these and other events.

## SDWA Oversight and Enforcement

The EPA has ultimate authority to protect public health by setting and enforcing drinking water quality standards under SDWA.<sup>6</sup> The Act allows the EPA to grant states the authority to implement and enforce SDWA regulations in an arrangement referred to as primacy. To receive the EPA's approval for primacy, states must demonstrate that they have, among other requirements, adopted regulations that are at least as stringent as the EPA's National Primary Drinking Water Regulations, implemented adequate procedures for the enforcement of these regulations, and maintained records and made reports as the EPA may require. Additionally, to receive primacy, states are required to establish and maintain a program for the certification of laboratories conducting analytical measurements of drinking water contaminants pursuant to the requirements of the state primary drinking water regulations.<sup>7</sup> In addition, states must have procedures that provide "[a]ssurance of the availability to the State of laboratory facilities certified by the Administrator and capable of performing analytical measurements of all contaminants specified in the State primary drinking water regulations."<sup>8</sup> The EPA's January 2005

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<sup>5</sup> This matter was filed in November 2012 both by the DOJ on behalf of the EPA and by the State of Mississippi against Jackson to enforce compliance with the Clean Water Act.

<sup>6</sup> SDWA is codified at 42 U.S.C. §§ 300f-300j.

<sup>7</sup> Per 40 C.F.R. § 142.10(b)(3)(i).

<sup>8</sup> Per 40 C.F.R. § 142.10(b)(4).

*Manual for Certification of Laboratories Analyzing Drinking Water*, including supplements to the manual issued in June 2008 and November 2012, describes criteria and procedures that the EPA uses in evaluating laboratories for certification. The EPA recommends that state laboratories adopt approaches discussed in the manual to generate reliable analytical data.

While a state may be granted primacy, the EPA retains the responsibility for overseeing state implementation and enforcement of the National Primary Drinking Water Regulations. If a PWS does not meet drinking water standards, the primacy state or the EPA is responsible for taking enforcement actions to compel compliance. The EPA and states work to increase the PWS's understanding of, and compliance with, the standards through technical and compliance assistance. As provided in SDWA section 1414, if after 30 days' notice "the State has not commenced appropriate enforcement action, the [EPA] shall issue an order ... requiring the public water system to comply with such applicable requirement or the Administrator shall commence a civil action." The EPA can also revoke state primacy when states do not implement SDWA with the stringency required by federal law.

In 1977, the EPA determined that Mississippi met all SDWA requirements, including adopting and implementing enforcement procedures, and granted the state primacy. The MSDH, through its Bureau of Public Water Supply, is the state agency responsible for Mississippi's SDWA primacy responsibilities. There are over 1,000 PWSs in Mississippi. As the primacy agency, the MSDH Bureau of Public Water Supply is responsible for ensuring that PWSs test for contaminants, reviewing plans for PWS improvements, and providing training and technical assistance to PWS operators. The MSDH is responsible for providing the EPA with information regarding new violations of state regulations, new enforcement actions taken by the state, notices of any new variance or exemption granted, annual reports with information on all additions or corrections to the state's inventory of PWSs, and a summary of the status of any exemptions or variations in effect.

### ***States Must Conduct Sanitary Surveys***

States must conduct sanitary surveys on-site for all surface water systems at least once every three years, and state applications for primacy must describe how the state will implement a sanitary survey program meeting the requirements described below. These sanitary surveys assess a PWS's capability to treat and deliver drinking water and address the following eight components:<sup>9</sup>

- Source.
- Treatment, including corrosion control.
- Distribution system.
- Finished water storage.
- Pumps, pump facilities, and controls.
- Monitoring, reporting, and data verification.

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<sup>9</sup> Per 40 C.F.R. § 142.16(b)(3)(i).

- Management and operation.
- Operator compliance with state requirements.

The MSDH is responsible for conducting on-site inspections and sanitary surveys and for creating a standard system for evaluating the eight components to ensure that there is consistency when state surveyors conduct sanitary surveys. States may conduct more frequent sanitary surveys for any PWS. Sanitary surveys should be conducted by individuals with experience in and knowledge of the design, operation, maintenance, and management of the PWS that they are surveying.

A sanitary survey report documents observations, recommendations, deficiencies, and significant deficiencies that the surveyor identifies during the sanitary survey. States must have the appropriate rules or other authority to ensure that PWSs respond in writing to significant deficiencies outlined in sanitary survey reports.<sup>10</sup> Significant deficiencies identified during a sanitary survey should be documented in a written report, including a list of the deficiencies, pertinent information, and recommended actions to be taken.<sup>11</sup> The PWS is required to respond in writing to significant deficiencies identified in sanitary survey reports no later than 45 days after receiving the report, indicating when and how the system will address the significant deficiencies. The issuance of a significant deficiency report does not trigger a notice of violation. Rather, the significant deficiency report establishes a time frame of when the PWS must comply. According to the MSDH, if the system does not take corrective action within the agreed time frame, a notice of violation is issued to the system. States are required to submit quarterly reports to the EPA, including information on new drinking water regulation violations. This reporting is done through the Safe Drinking Water Information System/State Version, or SDWIS/State, which is uploaded by the state to the SDWIS/Federal Version, or SDWIS/Fed.

States must annually submit to the EPA a list of systems that have had a sanitary survey completed during the previous year.<sup>12</sup> The EPA is required to conduct an annual review of a state's approved primacy program, which includes a review of the state's sanitary survey program.<sup>13</sup> Sanitary survey reports produced by primacy agencies are not shared with the EPA unless the Agency requests this information.

According to the EPA's guidance, a "comprehensive sanitary survey" is an important element in helping PWSs protect public health and is a "proactive public health measure and an important component of the SDWA public water system supervision program."<sup>14</sup> The EPA's August 2019 training guide further provides that:

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<sup>10</sup> Per 40 C.F.R. § 142.16(b).

<sup>11</sup> Per the EPA's April 1999 *Guidance Manual for Conducting Sanitary Surveys of Public Water Systems; Surface Water and Ground Water Under the Direct Influence (GWUDI) of Surface Water*.

<sup>12</sup> Per 40 C.F.R. § 142.15(c)(5).

<sup>13</sup> Per 40 C.F.R. § 142.17(a)(1).

<sup>14</sup> The EPA's April 1999 *Guidance Manual for Conducting Sanitary Surveys of Public Water Systems; Surface Water and Ground Water Under the Direct Influence (GWUDI) of Surface Water* and the EPA's August 2019 training guide, *How to Conduct a Sanitary Survey of Drinking Water Systems*, provides guidance on how to conduct a sanitary survey.

Surveyors should temper any advice with a realistic assessment of their personal experience and knowledge of the problem. If the surveyor provides erroneous information, money, time, and credibility could be lost, while the sanitary deficiency continues. Surveyors who have limited experience should refer problems to more experienced personnel. Incorrect technical assistance that does not correct the problem can have ramifications ranging from loss of credibility to challenges to authority regarding corrective action.

The training guide also states that the surveyor “should review previous sanitary survey reports and discuss actions taken by the water system on any sanitary deficiencies identified” and “assess the adequacy of programs and procedures,” including financial management, preventative maintenance, and standard operative procedures, as well as whether staffing is adequate.

### ***Mississippi’s PWS Capacity Assessment Rating***

The MSDH evaluates the capacity of PWSs using a rating system.<sup>15</sup> The capacity rating system is a zero-to-five scoring scale applied to each of three capacity categories: technical, managerial, and financial.<sup>16</sup> A score of five indicates maximum capacity, and a score of zero indicates minimum capacity. The MSDH averages the scores to provide the overall capacity assessment rating for the PWS. The total capacity assessment rating is how the MSDH prioritizes systems in greater need of state-provided training and technical assistance to address technical, managerial, and financial capacity issues. This training and technical assistance is funded through Drinking Water State Revolving Fund set-asides. States can also use these set-asides to fund activities that help PWSs qualify for and manage a Drinking Water State Revolving Fund loan. For example, the MSDH can use set-asides to contract with third-party providers for technical assistance, develop and implement an operator certification program, and provide technical or financial assistance to PWSs for capacity development. PWSs that lack technical, managerial, and financial capacity, as indicated by low capacity assessment rating scores, are not eligible to receive financial assistance via the Drinking Water State Revolving Fund.<sup>17</sup>

From fiscal year 2015 through 2022, the EPA awarded the State of Mississippi Drinking Water State Revolving Fund over \$81 million in capitalization grants. Over that same period, the MSDH awarded a combined total of nearly \$265 million in Drinking Water State Revolving Fund loans. Jackson was awarded \$51 million in loans from 2016 through 2021.

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<sup>15</sup> The MSDH requires that a regional engineer of the Bureau of Public Water Supply perform capacity assessment ratings whenever a routine sanitary survey of a PWS is conducted. The EPA has highlighted that capacity assessment ratings in the MSDH’s sanitary survey reports provide a level of transparency for the capacity assessment program.

<sup>16</sup> Capacity assessment rating scores do not directly measure or reflect compliance with SDWA, National Primary Drinking Water Regulations, and state regulations.

<sup>17</sup> However, SDWA section 1452(a)(3)(B) provides that PWSs lacking in capacity can receive State Revolving Funds when both “the use of the assistance will ensure compliance” and the PWS agrees to make “feasible and appropriate” operations changes.

#### Water system capacity

- Technical: the physical and operational ability of a water system to meet SDWA and National Primary Drinking Water Regulations requirements.
- Managerial: the ability of a water system to conduct its affairs in a manner that allows it to achieve and maintain compliance with SDWA and National Primary Drinking Water Regulations requirements.
- Financial: the ability of a water system to acquire and manage sufficient financial resources that allows it to achieve and maintain compliance with SDWA and National Primary Drinking Water Regulations requirements.

### ***The EPA's Drinking Water Enforcement Response Policy and Enforcement Targeting Tool***

The EPA's *Drinking Water Enforcement Response Policy*, issued in December 2009, focuses enforcement attention on PWSs with the most serious or repeated violations. Per this policy, these PWSs should be prioritized for enforcement action so that they can return to compliance as quickly as possible. The policy established the Enforcement Targeting Tool, or ETT, formula, which provides an approach to prioritize PWS enforcement actions. Specifically, the tool:

[I]dentifies public water systems having the highest total noncompliance across all rules, within a designated period of time. A higher weight is placed on health-based violations (including Treatment Technique and Maximum Contaminant Level violations). The formula calculates a score for each water system based on open ended violations and violations that have occurred over the past 5 years, but does not include violations that have returned to compliance or are on the "path to compliance" through a specified enforceable action.

If a PWS scores 11 points or more on the ETT, it becomes an enforcement priority. The primacy agency is expected to lower the ETT score within six months by addressing the violations or by issuing a formal, independently enforceable action. The EPA's *Drinking Water Enforcement Response Policy* defines formal enforcement actions as "one which requires specific actions necessary for the violator to return to compliance, is based on a specific violation, and is independently enforceable without having to prove the original violation." Formal or resolving actions are recorded in the SDWIS, which is how the EPA is made aware of the system's violations.

### ***The EPA's SDWA Enforcement Discretion***

SDWA requires the EPA to establish and enforce drinking water standards that PWSs must adhere to. The EPA, states, and PWSs work together to meet these standards; however, the EPA retains national oversight responsibility for state administration and enforcement of SDWA. Under its SDWA authority, the EPA has several oversight and enforcement tools at its discretion, as seen in Table 1.

**Table 1: The EPA’s oversight, enforcement, and technical assistance tools under SDWA**

SDWA tool	Description
SDWA section 1445 request for information	The EPA may request information of any entity or person subject to a National Primary Drinking Water Regulation under section 1412 after consultation with the state.
SDWA section 1431 emergency administrative order. Option to be issued as a unilateral administrative order or as an administrative order on consent.	<p>Three conditions must be present for a SDWA section 1431 emergency administrative order to be issued: (1) a contaminant is present in or likely to enter a PWS or an underground source of drinking water, or there is a threatened or potential terrorist attack; (2) the contaminant or attack may present an imminent and substantial endangerment to public health; and (3) both the state and local authorities have not taken appropriate actions to protect public health.</p> <p>No violation of any requirement is needed for a SDWA section 1431 emergency administrative order.</p> <p>A SDWA section 1431 emergency administrative order may order injunctive-type relief.</p>
SDWA section 1414(a)(1)(A) notice of noncompliance	When a state has primary enforcement responsibility and when a PWS in that state is not complying with an applicable requirement, the EPA will (1) notify the state and PWS and (2) provide advice and technical assistance to the state and PWS to bring the system back into compliance.
SDWA section 1414(g) administrative order. Option to be issued as a unilateral administrative order or as an administrative order on consent.	Before a SDWA section 1414(g) administrative order can be issued, the conditions under SDWA section 1414(a)(1)(A) must be met, in addition to a 30-day period after the EPA’s notification to allow the state to commence action. If no state action has occurred, then the SDWA section 1414(g) administrative order may be issued.
File a civil action pursuant to SDWA section 1414(b). This may occur in place of or concurrent with a SDWA section 1431 order.	The EPA may ask the DOJ to file a civil judicial action on behalf of the EPA to require compliance with any applicable requirement.
File a civil action pursuant to SDWA section 1431 (emergency powers)	For a SDWA emergency civil action to be filed, the same conditions under a SDWA section 1431 emergency administrative order must be met.
SDWA section 1442(b) emergency grant	SDWA authorizes the EPA to provide technical assistance and make grants to states or PWSs. The purpose of a SDWA section 1442(b) emergency grant is to assist in responding to and alleviating emergency situations that impact PWSs and present substantial danger to public health.

Source: OIG analysis of SDWA and the EPA’s *Updated Guidance on Emergency Authority under Section 1431 of the Safe Drinking Water Act*, dated May 30, 2018. (EPA OIG table)

## Responsible Offices

The Office of Groundwater and Drinking Water within the EPA’s Office of Water oversees the implementation of SDWA. The EPA’s Region 4 Water Division oversees Mississippi’s implementation of the Act, and the MSDH has primary implementation and enforcement responsibility for PWSs in the state.

The EPA’s Office of Enforcement and Compliance Assurance, or OECA, oversees the enforcement of SDWA. The Region 4 Enforcement and Compliance Assurance Division, or ECAD, administers compliance inspections, case development, state oversight, and compliance data management and analysis for the states in Region 4, including Mississippi.

## Scope and Methodology

We conducted this evaluation from November 2022 to May 2024 in accordance with the *Quality Standards for Inspection and Evaluation* published in December 2020 by the Council of the Inspectors General on Integrity and Efficiency. Those standards require that we perform the evaluation to obtain sufficient and appropriate evidence to support our findings.

To identify the circumstances of Jackson's drinking water noncompliance, we established a historical timeline of events, including Jackson's noncompliance with SDWA, enforcement actions taken by the MSDH and the EPA, sanitary surveys conducted by the MSDH, turbidity level exceedances, LCR exceedances, and other events impacting public health.<sup>18</sup> To identify the EPA's response to Jackson's drinking water noncompliance, we focused on events from 2015 through July 2023, which is when the first stipulated order was entered by the court for the Clean Water Act litigation for Jackson's sewer system. We evaluated Jackson's adherence to SDWA requirements and enforcement actions taken by Region 4. Chapters 2, 3, and 4 describe findings related to the circumstances of Jackson's drinking water crisis, while Chapter 5 describes the response actions the EPA took.

We reviewed laws, regulations, policies, and guidance relevant to the EPA and state oversight of PWSs. We obtained compliance and enforcement data and reviewed documentation including emails, the EPA's enforcement actions, the state's actions, and inspection reports. We reviewed Jackson's sanitary surveys conducted by the MSDH from November 2015 through November 2021. We also reviewed prior oversight reports related to the issues addressed in this evaluation; see Appendix B for a description of these reports.

We interviewed staff and managers from Region 4, the Office of Water, OECA, and the NEIC. We also conducted an on-site visit to the O.B. Curtis and J.H. Fewell water treatment plants and held in-person interviews with the MSDH, Jackson's Department of Public Works, the Jackson mayor's office, the interim third-party manager, and an engineering firm hired by the interim third-party manager.

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<sup>18</sup> Turbidity is a measure of the cloudiness of water and is used to indicate water quality and filtration effectiveness. Higher turbidity levels are often associated with higher levels of disease-causing organisms, such as viruses, parasites, and some bacteria.

## Chapter 2

# The MSDH's Sanitary Surveys and Inspections Obscured Jackson's Capacity Challenges and SDWA Noncompliance

The MSDH's sanitary surveys and annual inspections of Jackson's system from 2015 through 2021 did not reflect the condition or the overall capacity of the system. Specifically, the state surveyors did not consistently document deficiencies, escalate frequent deficiencies, or notify Jackson of significant deficiencies. As a result, the EPA did not have a comprehensive understanding of the extent of the management and operational issues at Jackson's system. The MSDH oversight failures obscured Jackson's long-standing challenges, allowed issues to compound over time, and contributed to the system's eventual failure.

### The MSDH's Sanitary Surveys and Annual Inspections Identified Capacity Issues

From November 2015 through November 2021, sanitary surveys and inspections conducted by the MSDH included capacity assessment rating scores that identified numerous technical, managerial, and financial issues at Jackson's system. Documented technical capacity challenges spanned multiple sanitary surveys and inspections, and the same issues often resurfaced in multiple years. The state surveyors found that the system suffered from:

- Water treatment processes not functioning properly.
- The inability to provide water in the event of a power outage.
- Alkalinity levels not being properly maintained.<sup>19</sup>
- Missing or nonfunctioning equipment.
- A lack of a usable backup source of water in the event of a PWS failure.

While capacity assessment rating scores do not directly measure or reflect compliance with SDWA, the state surveyors identified managerial and financial issues in the sanitary surveys and inspections that lowered capacity ratings. Managerial and financial capacity issues included inconsistent billing to customers, lack of urgency for operations and maintenance issues, and SDWA violations.

From November 2015 through February 2020, the MSDH addressed both Jackson's surface water system and groundwater system in one inspection or sanitary survey report each year. It also provided a single capacity rating for the system, which averaged the technical, managerial, and financial ratings. In November 2021, the MSDH separated the assessment of Jackson's surface water system and groundwater system into two reports. Table 2 shows the results of the MSDH's capacity ratings for Jackson from November 2015 through November 2021.

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<sup>19</sup> Alkalinity is the measurement of the water's capacity to neutralize acids.

**Table 2: Jackson’s capacity assessment rating from 2015 through 2021**

Date of capacity assessment	Technical rating*	Managerial rating*	Financial rating*	Overall capacity rating*
November 6, 2015	3	5	5	4.3
November 18, 2016	2	4	4	3.3
November 17, 2017	3	4	4	3.7
December 10, 2018	3	4	5	4.0
November 21, 2019	2	5	4	3.7
February 4, 2020 <sup>†</sup>	1	4	4	3.0
November 9, 2020 <sup>‡</sup>	2	4	4	3.3
November 11, 2020 <sup>§</sup>	2	5	4	3.7
November 8, 2021 <sup>†</sup>	1	4	4	3.0
November 9, 2021 <sup>§</sup>	1	5	4	3.3

Source: OIG analysis of capacity assessment ratings for the system. (EPA OIG table)

\* The MSDH uses capacity assessment rating forms to evaluate technical, managerial, and financial capacity as part of sanitary surveys and annual inspections. The capacity assessment rating scores the system on a scale from zero to five for each capacity category. A score of five indicates maximum capacity, and a score of zero indicates minimum capacity.

<sup>†</sup> This capacity assessment was conducted concurrently with the EPA NEIC on-site inspection February 3–7, 2020.

<sup>‡</sup> This capacity assessment was conducted for only the surface water system.

<sup>§</sup> This capacity assessment was conducted for only the groundwater system.

## The EPA Provided Contradictory Feedback on the MSDH’s Sanitary Survey Program

Although the MSDH conducted sanitary surveys and annual inspections of Jackson’s system that identified numerous capacity challenges, many other capacity issues were often overlooked or not documented in the sanitary surveys and inspections. As part of its annual oversight responsibilities for the MSDH’s sanitary survey program, EPA Region 4 conducts an annual Public Water System Supervision, or PWSS, Program review.<sup>20</sup> In the November 2019 *Public Water System Supervision Program Review* report, or *Priority Review Report*, the Region 4 Water Division called the MSDH’s capacity assessment rating system a “model” for other primacy agencies.<sup>21</sup> The November 2019 *Priority Review Report* also commended the MSDH’s “strong field engineering presence, sanitary survey program and the well targeted deployment of technical assistance resources to the State’s water systems.” However, the *NEIC Civil Investigation Report: City of Jackson Water System*, or *NEIC Report*,<sup>22</sup> noted 14 observations regarding Jackson’s failures and inadequacies, some of which were not identified

<sup>20</sup> Per 40 C.F.R. § 142.17(a)(1).

<sup>21</sup> From April 11 to 14, 2017, Region 4 conducted an on-site Priority Review of Mississippi’s PWSS Program and identified a subset of drinking water rules from the National Primary Drinking Water Regulations for review. The report was finalized on November 15, 2019, and sent to the MSDH on January 24, 2020.

<sup>22</sup> The EPA’s *NEIC Report* was provided to Jackson by the Region 4 ECAD on March 30, 2020.

as significant deficiencies in the MSDH's November 2019 sanitary survey. The EPA's *NEIC Report* and the EPA's May 2020 notice of noncompliance identified areas of Jackson's SDWA noncompliance from 2014 through 2020 that the MSDH had not identified as significant deficiencies in its sanitary surveys.

A Region 4 ECAD employee stated that there were discrepancies between what the NEIC inspection identified versus what the MSDH's 2019 sanitary survey identified and that issues found during the NEIC inspection "did not happen overnight." The MSDH also stated that issues at Jackson were systemic.

Region 4's required annual oversight review of the MSDH's PWSS Program did not expose Jackson's sanitary survey failures because its review focuses on broad programmatic requirements of the PWSS Program, such as whether the state completed sanitary surveys within the required time frame. The MSDH's sanitary survey program, which reviews general capabilities of PWSs to supply safe drinking water, is distinct from its capacity assessment rating system, which is Mississippi's method for prioritizing systems in greater need of funding through the Drinking Water State Revolving Fund set-asides. Sanitary survey reports produced by primacy agencies are not provided to the EPA unless the Agency requests this information. Therefore, Region 4 does not receive individual sanitary surveys or see the MSDH's capacity assessment ratings for its PWSs. As a result, the region gave the state contradictory feedback and contributed to ongoing subpar sanitary surveys. In response to the *NEIC Report* and the EPA's drinking water National Enforcement and Compliance Initiative,<sup>23</sup> Region 4 is developing a revised sanitary survey checklist for regional staff to use when reviewing the adequacy of state sanitary survey programs.

## **The MSDH Did Not Consistently Identify Significant Deficiencies**

The MSDH surveyors for Jackson did not consistently document problems with the system, escalate frequent deficiencies, or notify the city of significant deficiencies. This obscured the long-standing challenges of the system, allowed issues to compound over time, and contributed to the system's failure. During sanitary surveys, state surveyors use Mississippi's implementation procedures on identifying significant deficiencies for the eight components listed in Chapter 1. However, state surveyors frequently identified deficiencies that fell short of the "significant deficiency" classification, and the MSDH had no procedures to resolve such deficiencies observed in multiple sanitary surveys.<sup>24</sup> Further, the lack of documentation of problems by state surveyors masked the true overall capacity rating. According to an ECAD employee, the MSDH may have been aware of more problems than what

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<sup>23</sup> In addition to core enforcement work, the EPA focuses its enforcement and compliance assurance resources on the most serious environmental violations by developing and implementing national program priorities, called National Enforcement and Compliance Initiatives. There were six initiatives for fiscal years 2020–2023, including one titled "Reducing Non-Compliance with Drinking Water Standards at Community Water Systems."

<sup>24</sup> Per 40 C.F.R. § 142.16(b), for surface water systems, states must have the appropriate rules or other authority to ensure that PWSs respond in writing within 45 days to significant deficiencies outlined in sanitary survey reports and that PWSs take necessary steps to address the deficiencies. Per 40 C.F.R. § 142.16(o), states must verify within 30 days after a groundwater system has reported to the state that it has completed corrective action. The state must verify either through written confirmation from the groundwater system or a site visit by the state.

was documented in the sanitary surveys. That employee speculated that there was a lack of “political will” in the MSDH to address problems identified.

Both sanitary surveys and annual inspections have the potential to reveal significant deficiencies. When new significant deficiencies are identified during an inspection, the “inspection” is generally reclassified as a “sanitary survey” by the MSDH. As shown in Table 3, sanitary surveys or annual inspections conducted by the MSDH from 2015 through 2020 noted either no significant deficiencies or one significant deficiency, except for the February 2020 sanitary survey conducted concurrently with the NEIC inspection, which identified 18 significant deficiencies.

**Table 3: Significant deficiencies identified by the MSDH and reports sent to Jackson**

Date of MSDH oversight	Type of MSDH oversight	Date significant deficiency report was sent to Jackson	Number of significant deficiencies identified
November 6, 2015*	Inspection	N/A	0
November 18, 2016*	Sanitary Survey	May 12, 2017†	1
November 17, 2017*	Inspection	N/A	0
December 10, 2018*	Inspection	N/A	0
November 21, 2019*	Sanitary Survey	No Letter Sent‡	1
February 4, 2020*§	Sanitary Survey	March 24, 2020	18
November 9, 2020	Inspection	No Letter Sent‡	1
November 11, 2020#	Sanitary Survey	No Letter Sent‡	1
November 8, 2021	Sanitary Survey	December 14, 2021	1
November 9, 2021#	Sanitary Survey	December 14, 2021	5

Source: OIG analysis of sanitary surveys and inspections for the system. (EPA OIG table)

\* One report was provided for both the surface water system and the groundwater system.

† Due to an MSDH data reporting error, this significant deficiency report for inadequate application of treatment chemicals and techniques was issued nearly six months after the sanitary survey was completed.

‡ No significant deficiency report was issued even though there was a significant deficiency identified.

§ This sanitary survey was conducted concurrently with the EPA NEIC on-site inspection February 3–7, 2020.

|| This sanitary survey or inspection was conducted for only the surface water system.

# This sanitary survey was conducted for only the groundwater system.

On November 21, 2019, the MSDH conducted a sanitary survey and noted one significant deficiency. On February 4, 2020, just 75 days later, the MSDH conducted another sanitary survey concurrently with the EPA’s NEIC on-site inspection and noted 18 significant deficiencies. For example, system staffing was a common concern noted throughout multiple sanitary surveys but only rose to the level of a significant deficiency in the February 2020 sanitary survey. In addition, membrane trains, which provide filtration, failed integrity testing in multiple sanitary surveys from 2015 through 2017 but were not deemed a significant deficiency until the February 2020 sanitary survey.

The EPA relies on the MSDH as the primacy agency to administer a state sanitary survey program that meets the requirements of 40 C.F.R. § 142.16. According to a Region 4 Water Division employee, the

Agency becomes aware of recommendations or observations that are in sanitary surveys only if the state reports significant deficiencies in SDWIS/State or if there was an EPA inspection conducted on the PWS. Because the MSDH did not consistently identify significant deficiencies in Jackson’s sanitary surveys, there were no subsequent violations of which the EPA would have been made aware.

## Water Line Breaks Resulting in Frequent Boil Water Notices Did Not Rise to Significant Deficiencies by the MSDH

Jackson had an annual average of 55 line breaks per 100 miles of line from 2017 through 2021, far above the industry benchmark of no more than 15 breaks per 100 miles of line per year. Over time, if not properly maintained, distribution lines degrade due to corrosion or from improperly treated water flowing through the lines. From 2017 through 2021, Jackson had 7,321 line breaks, as outlined in Table 4.

**Table 4: Jackson’s annual reported distribution line breaks from 2017 through 2021**

Year	Line breaks
2017	1,627
2018	2,085
2019	1,226
2020	962
2021	1,421
<b>Total</b>	<b>7,321</b>

Source: *U.S. v. The City of Jackson, Mississippi*. Complaint, Case No. 3:22-cv-686-HTW-LGI. (EPA OIG table)

The five-to-six distribution line breaks per day put additional strain on the system to make up for the volume of water being lost. Additionally, according to the MSDH, boil water notices can result from aging infrastructure and distribution line breaks. From 2014 through 2022, Jackson issued approximately 1,570 boil water notices. Given the high number of boil water notices, merchandise depicting “Welcome to Boil Water Alert Mississippi” could be found around Jackson, such as the coffee mug shown in Figure 2.

**Figure 2: Mississippi mug**



Source: EPA NEIC. (EPA image)

According to the MSDH Bureau of Public Water Supply director, Jackson is not required by law to notify the MSDH when it issues a precautionary boil water notice. Further, boil water notices are generally not reported to the EPA unless they are tied to a violation and reported in SDWIS. Additionally, the EPA does not have a mechanism to aggregate data on boil water notices. However, if state surveyors find an

exorbitant number of boil water notices during a sanitary survey, the state could report the issue to the EPA. While the MSDH's sanitary surveys did not mention the number of boil water notices or line breaks, the 2019, 2020, and 2021 sanitary surveys noted that water loss was 40 percent or greater. The MSDH only noted in the 2021 sanitary survey that the surface water system had been experiencing pressure issues in the distribution system.

#### Boil water notices

Both individual water systems and the MSDH alert the public of boil water notices, but water systems are responsible for informing their customers directly when a boil water notice is in effect. For instance:

- Water systems issue precautionary boil water notices, or self-imposed boil water notices, when water pressure is lost. They are responsible for notifying their customers directly. However, if it is notified by water system officials, the MSDH will post self-imposed boil water notices and provide public notification to the affected area.
- When the MSDH's Public Health Laboratory indicates that there are water quality problems, the MSDH immediately issues a state-issued boil water notice to the public. However, the water system is responsible for notifying their customers directly.

Per the EPA's August 2019 training guide, prior to conducting a sanitary survey, a state surveyor should review all available information on the PWS, including the handling and tracking of line breaks, repairs, and replacements that the PWS manages.<sup>25</sup> Additionally, according to the EPA's April 1999 guidance document, deficiencies may result in a boil water notice being issued to customers to protect public health.<sup>26</sup> However, the EPA's guidance documents do not describe the process for the state to notify the EPA of any PWS issues that are not deemed to be significant deficiencies, such as excessive distribution line breaks, leaks, pressure loss, or boil water notices.

## The MSDH Inconsistently Communicated Significant Deficiencies to Jackson

For the majority of the sanitary surveys and inspections from 2016 through 2020, the MSDH had inconsistent communication with Jackson. Either the MSDH sent written notification of significant deficiencies several months after conducting a sanitary survey or inspection, or it did not notify Jackson. According to the EPA's August 2019 training guide, when debriefing the PWS of possible significant deficiencies, "Undocumented verbal communication is not reliable and should not be considered sufficient." The November 18, 2016 sanitary survey included one significant deficiency; however, the MSDH did not send a significant deficiency report notifying Jackson until almost six months after completing the sanitary survey. The November 21, 2019 sanitary survey identified one significant deficiency, but no significant deficiency report was ever issued to Jackson. In addition, the November 9, 2020 inspection observed one significant deficiency, but a written notification was not sent to Jackson.

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<sup>25</sup> Per the EPA's August 2019 training guide, *How to Conduct a Sanitary Survey of Drinking Water Systems*.

<sup>26</sup> Per the EPA's April 1999 *Guidance Manual for Conducting Sanitary Surveys of Public Water Systems; Surface Water and Ground Water Under the Direct Influence (GWUDI) of Surface Water*.

## Conclusions

The sanitary surveys and annual inspections conducted by the MSDH did not reflect the conditions of Jackson's system. As a result, capacity issues were left unresolved until the eventual catastrophic failure of the system. Jackson's sanitary surveys and annual inspections were a missed opportunity for the MSDH to document, elevate, and resolve the city's persistent capacity issues. This oversight failure calls into question the adequacy of the MSDH's sanitary survey program. As the EPA works to improve its oversight of sanitary surveys, it should apply lessons learned from the Jackson drinking water crisis to strengthen national guidance for conducting sanitary surveys.

## Recommendations

We recommend that the regional administrator for Region 4:

1. Assess the Mississippi State Department of Health sanitary survey program to verify that it has appropriate rules, mechanisms, and authorities to ensure that public water systems take necessary steps to address significant deficiencies outlined in sanitary survey reports, per 40 C.F.R. § 142.16.
2. Develop a methodology to verify the adequacy of sanitary surveys conducted for public water systems within the state by the Mississippi State Department of Health.

We recommend that the assistant administrator for Water:

3. Update the EPA's *Guidance Manual for Conducting Sanitary Surveys of Public Water Systems; Surface Water and Ground Water Under the Direct Influence (GWUDI) of Surface Water* (April 1999) and the EPA's *How to Conduct a Sanitary Survey of Drinking Water Systems* (August 2019) to include a sanitary survey checklist and a process for states to alert the EPA of public water systems with systemic issues, such as excessive distribution line breaks and frequent boil water notices, that individually may not rise to the level of a significant deficiency.

## Agency Response and OIG Assessment

Region 4 provided its response, with the Office of Water and OECA's concurrence, to our draft report on June 6, 2024. Appendix C contains the Agency's response to the draft report. The EPA also provided technical comments, which we considered and incorporated as necessary.

In its response to Recommendation 1, Region 4 agreed and cited two assessments that it conducted of the MSDH's sanitary survey program. We commend Region 4 for assessing the MSDH's sanitary survey program with recent reports, such as its *Safe Drinking Water Act Sanitary Survey Evaluation Report, Mississippi State Department of Health Bureau of Public Water Supply* (May 15, 2024) and its *Mississippi State Department of Health Bureau of Public Water Supply 2023 PWSS Program File Review Report* (June 28, 2024). Collectively, these reports highlighted and further confirmed that the MSDH does not have a statewide approved sanitary survey policy or guidance document and that the MSDH lacks

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consistency in how it documents sanitary survey findings, reports deficiencies to PWSs, and tracks PWS corrections. For the *Public Water Supply 2023 PWSS Program File Review Report*, Region 4 requested that the MSDH provide, within 60 days, a written response to the region's recommendations, a description of the corrective actions, and estimated time frames for those corrective actions. While this partially addresses Recommendation 1, we remain concerned that Region 4 cannot adequately verify that the MSDH has taken all the needed steps to improve its sanitary survey program unless it obtains assurance that the MSDH is implementing the corrective actions identified in the *Safe Drinking Water Act Sanitary Survey Evaluation Report*. Therefore, Recommendation 1 remains unresolved.

In its response to Recommendation 2, Region 4 agreed and said that it has developed a sanitary survey evaluation process. Region 4 explained that its goal is to review the adequacy of each state sanitary survey enforcement program every four years. Additionally, Region 4 cited that sanitary surveys are reviewed during the PWSS Program review, which occur every four years. We consider Recommendation 2 completed. For future assessments of the MSDH's sanitary survey enforcement program, we encourage Region 4 to seek a written response from the MSDH including a description of the corrective actions and estimated time frames for completion.

In its response to Recommendation 3, the Office of Water agreed and said that it will update the EPA's *Guidance Manual for Conducting Sanitary Surveys of Public Water Systems; Surface Water and Ground Water Under the Direct Influence (GWUDI) of Surface Water* (April 1999) and the EPA's *How to Conduct a Sanitary Survey of Drinking Water Systems* (August 2019) to include a checklist and process for states to report to the EPA about PWSs with systemic issues that separately may not be identified as significant deficiencies. We agree that the Agency's proposed corrective actions meet the intent of Recommendation 3, which is resolved with corrective actions pending.

## Chapter 3

### Inadequate MSDH Oversight Impeded the EPA’s Awareness of Jackson’s SDWA Violations

The MSDH did not enter Jackson’s SDWA violations in 2016 and 2017 into SDWIS in a timely manner. Further, the MSDH did not take formal enforcement actions against Jackson from September 2018 through November 2022 because of inadequate state oversight of Jackson and a failure to report. Because no violations appeared in SDWIS from 2012 through 2017, the EPA was unaware of Jackson’s SDWA violations and did not place the city on the EPA’s enforcement priority list until late December 2018, delaying needed federal attention.

#### The MSDH Delayed Reporting Jackson’s Compliance Monitoring Data

According to the EPA’s November 2019 *Priority Review Report*, LCR samples for Jackson were collected in June 2015, and the certified state laboratory’s analysis results were available to the MSDH Bureau of Public Water Supply in July 2015. These results indicated a lead action level exceedance of 0.0286 milligrams per liter.<sup>27</sup> The lead action level is 0.015 milligrams per liter. Table 5 shows Jackson’s lead action level exceedances.

**Table 5: Jackson’s lead action level exceedances from January 2013 through December 2016**

Sampling date ranges	Lead action level exceedances
1/1/2013–12/31/2015*	0.0286 mg/L*
1/1/2016–6/30/2016	0.016 mg/L
7/1/2016–12/31/2016	0.017 mg/L

Source: OIG analysis of the MSDH Bureau of Public Water Supply’s lead and copper monitoring results from 2013 through 2016. (EPA OIG table)

\*Milligrams per liter. Jackson was on a reduced lead and copper tap monitoring schedule and collected samples on a triennial cycle.

The MSDH Bureau of Public Water Supply did not communicate the June 2015 LCR sampling results, which it received in July 2015, to Jackson until January 28, 2016. According to the EPA’s November 2019 *Priority Review Report*, “The MSDH strives to notify systems within 48 hours of determining an [action level exceedance]”; however, for approximately six months, Jackson residents were unaware that lead may have been in their drinking water. According to the *NEIC Report*, the lead action level exceedance would no longer allow Jackson to remain on the reduced monitoring schedule it had been on for lead and copper since January 2013. The report stated that Jackson would instead be “required to sample

<sup>27</sup> Per 40 C.F.R. § 141.80(c), the system’s lead action level is exceeded if the concentration of lead in more than 10 percent of tap water samples collected during any monitoring period is greater than 0.015 milligrams per liter, such as if the 90th percentile lead level is greater than 0.015 milligrams per liter.

at 100 sites every 6 months.” Lead action level exceedances additionally require consumer notices and public education materials.<sup>28</sup> As a result of the MSDH’s delayed communication, Jackson was not aware of its requirement to collect additional samples and to provide consumer notices and public education materials.

The Mississippi Public Health Laboratory is certified by the EPA and conducts routine testing of drinking water as mandated by SDWA. The MSDH Bureau of Public Water Supply director told us that the Mississippi Public Health Laboratory enters the data into its laboratory information management system and then imports what it gives the MSDH Bureau of Public Water Supply into SDWIS/State. The director added that there is little control the MSDH Bureau of Public Water Supply has if the Mississippi Public Health Laboratory is delayed or if information is “lost in translation.”

The MSDH Bureau of Public Water Supply deputy director stated that bureau staff spend a lot of time correcting data from the Mississippi Public Health Laboratory. The EPA’s *NEIC Report* reinforced this assertion and found that sample result forms had data errors, including incorrect sample collection dates, site numbers, and addresses. The NEIC observed these issues in the October 2018 sample data, and the MSDH had to issue corrections and recalculate the results for lead and copper. The EPA’s November 2019 *Priority Review Report* identified that there were several instances where the state laboratory did not report Jackson’s lead action level exceedances until weeks or even months later. According to the *Priority Review Report*, the MSDH improved coordination with the laboratory, but while the timeliness of the LCR and water quality parameter samples improved, issues remained “with ensuring that results [were] communicated quickly from the Lab to MSDH and, ultimately, to the PWS to ensure appropriate follow up actions [were] initiated.”

## Delays in Recording Violations by the MSDH Resulted in an Uninformed Public

In 2016 and 2017, water quality parameter violations occurred within the Jackson system, but the MSDH did not record them in SDWIS.<sup>29</sup> PWSs must report information related to tap water monitoring for lead and copper and water quality parameter monitoring to the state within ten days of the end of the applicable monitoring period.<sup>30</sup> The *NEIC Report* identified four monitoring periods where violations occurred but were not recorded. For instance, the MSDH did not enter a water quality parameter violation identified during the January–June 2016 monitoring period into SDWIS/Fed until

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<sup>28</sup> Pursuant to 40 C.F.R. § 141.85, when there is a lead action level exceedance, PWSs are required to provide consumer notices to households that provided the tap samples as well as public education materials providing information about the health effects of lead and steps that can be taken to reduce exposure to lead to all persons served by the PWS. If the PWSs do not provide these notices and materials, it becomes a violation of the National Primary Drinking Water Regulations for lead and copper pursuant to 40 C.F.R. § 141.80(k).

<sup>29</sup> An exceedance by itself is not considered a violation of the National Primary Drinking Water Regulations pursuant to 40 C.F.R. § 141.80(k). However, in instances where relevant EPA or MSDH documents or databases use the term “violations” to include “exceedances,” this report does so as well.

<sup>30</sup> Per 40 C.F.R. § 141.90.

November 2018. We observed that another violation from this period was reported in SDWIS/Fed in December 2018. The *NEIC Report* further stated that for three consecutive six-month monitoring periods, July–December 2016, January–June 2017, and July–December 2017, Jackson did not meet water quality parameters at the O.B. Curtis and J.H. Fewell water treatment plants. As of November 2023, the MSDH had not entered these violations into SDWIS. As a result, Jackson did not provide public notices for these violations, and Jackson customers did not know that their drinking water did not meet standards.

The ETT formula described in Chapter 1 identifies the PWSs having the highest total noncompliance across all drinking water rules, and SDWIS has formal and informal enforcement codes available to show what actions are taken to get a system back into compliance under the ETT. Multiple EPA staff told us that they use the SDWIS data to determine whether enforcement actions should be taken at the federal level, but the EPA relies on the state for this information. Had the MSDH entered the violations into SDWIS, it would have raised Jackson’s ETT score and triggered the EPA to make the system an enforcement priority sooner than the fourth quarter of 2018 when the system had an ETT score of 17.

**ETT score**

Pursuant to the EPA’s *Drinking Water Enforcement Response Policy*, if a PWS does not score an 11 or above on the ETT and is not on the health-based violation list for that quarter, it would not be listed as an enforcement priority.

According to SDWIS/Fed, since 1982, the MSDH has issued 90 violations to Jackson. Of those, 29 were issued from September 2018 through August 2023 and focused primarily on the LCR, total haloacetic acid, and surface water treatment violations. Because no violations were issued in 2017, Jackson received a “0” ETT score. Since the system first became an enforcement priority in the fourth quarter of 2018, its ETT score has never gone below 11. As of November 15, 2023, the system had a score of 69.

Pursuant to 40 C.F.R. § 142.15, states are required to submit quarterly reports to the EPA regarding, among other requirements, new drinking water regulation violations and information regarding lead action level exceedances. This reporting is done through SDWIS/Fed. The MSDH did not provide the EPA a reason why it did not record violations in SDWIS. In March 2023, the MSDH Bureau of Public Water Supply deputy director told us that, with the turnover of MSDH employees in January 2023, the MSDH wants to ensure that new staff are set up to properly use SDWIS/State, which would be advantageous for both the state and PWSs. The deputy director also stated in March 2023 that four staff do not have experience with the SDWIS/State database and need training. Additionally, the deputy director said it is difficult for MSDH staff to provide training because it pulls trainers away from their daily work.

According to the *Enforcement Response Policy*, the EPA’s expectation is that states are to bring priority systems back into compliance within two quarters or to proceed with a formal enforcement action. However, the MSDH took informal enforcement actions, such as providing technical assistance, which does not count for getting a system on a “path to compliance.” Despite the MSDH’s knowledge of Jackson’s capacity and noncompliance issues, the MSDH did not adhere to the EPA’s *Enforcement*

*Response Policy* because it never escalated its response by issuing formal enforcement actions to address Jackson's noncompliance.

**Excerpts from the EPA's *Enforcement Response Policy*  
on formal and informal enforcement actions**

A **formal enforcement** action:

- Is one that "requires specific actions necessary for the violator to return to compliance."
- "Is based on a specific violation."
- "Is independently enforceable without having to prove the original violation."
- Must:
  - Describe the "non-compliant violation," provide a citation to a "state or federal law or rule," state "what is required to return to compliance, and a compliance schedule."
  - Provide the state with authority to "impose penalties for violation of the state's enforcement document."

An **informal enforcement** action:

- "Will not count for putting the [priority] system on a path to compliance."
- Includes a state or federal technical assistance visit.

## Conclusions

The MSDH's lack of communication around the June 2015 lead action level exceedance delayed Jackson's ability to take mitigative actions by six months. As a result, customers served by Jackson's system were exposed to elevated levels of lead in their drinking water and were unaware of the risks. The MSDH was also inaccurate and untimely in reporting Jackson's violations in SDWIS. As a result, the EPA was unaware of the severity of Jackson's noncompliance issues and did not place the city on its enforcement priority list until late 2018. Had the violations been recorded, Jackson would have been considered an EPA enforcement priority sooner than late 2018 and possibly triggered federal action. The MSDH's inaction prolonged Jackson's noncompliance.

## Recommendations

We recommend that the regional administrator for Region 4:

4. Verify that the Mississippi State Department of Health has procedures in place to ensure that water systems report compliance monitoring data to the state pursuant to 40 C.F.R. § 141.90, to include verifying that the Mississippi Public Health Laboratory has appropriate procedures in place.
5. Train Mississippi State Department of Health personnel on using and entering data into the Safe Drinking Water Information System/State Version software.

## Agency Response and OIG Assessment

In its response to our draft report, Region 4 agreed with Recommendation 4 and said that in the *Public Water Supply 2023 PWSS Program File Review Report*, issued on June 28, 2024, it reviewed the MSDH's compliance monitoring data and identified the need for the state to improve management of PWS monitoring schedules, timeliness of analysis, and delivery of compliance monitoring data. In Region 4's response, it did not verify or note whether the MSDH and the Mississippi Public Health Laboratory have procedures in place.

While we commend Region 4 for identifying the areas of needed improvement in the *Public Water Supply 2023 PWSS Program File Review Report*, it is unclear which specific corrective actions the MSDH will implement to address these needs and when the MSDH is expected to complete needed actions. The EPA's proposed corrective actions did not fully meet the intent of the recommendation. Therefore, Recommendation 4 remains unresolved.

Region 4 also agreed with Recommendation 5 and said that it is working with the MSDH to develop focus areas for training and is planning to deliver or coordinate a combination of on-site and virtual trainings through 2025. However, Region 4 does not specifically state that SDWIS is the focus of the training, nor does it specify that the training will be for the MSDH personnel responsible for using or entering data into SDWIS. Therefore, Recommendation 5 remains unresolved.

## Chapter 4

# The EPA Did Not Uphold Its Oversight Responsibility to Require the MSDH to Implement Enforcement Procedures

Since 1992, the MSDH did not take enforcement action for several of Jackson's SDWA violations when they occurred. While Mississippi has statutory and regulatory authority in place for enforcing drinking water regulations, the MSDH has not had implementation procedures for its PWSS compliance and enforcement program since receiving primacy enforcement responsibility in 1977. Had the EPA upheld its oversight responsibility to require the MSDH to implement enforcement procedures and had the MSDH taken enforcement actions, Region 4 could have been alerted sooner to the extent of Jackson's SDWA noncompliance and its inability to return to compliance.

### The MSDH Has Not Implemented Enforcement Procedures

Region 4 approved the MSDH's state primacy application without verifying procedures for the enforcement of the state's primary drinking water regulations. On May 19, 1977, the Region 4 regional administrator determined that the MSDH had met all conditions of SDWA and subsequent regulations to assume primary enforcement responsibility for PWSs in Mississippi. As a condition for primacy, SDWA section 1413 requires that the state "has adopted and *is implementing* adequate procedures for the enforcement of such State [drinking water] regulations" (emphasis added).<sup>31</sup> The MSDH has statutory authority for enforcing drinking water regulations.<sup>32</sup> However, in its primacy application, Mississippi's brief description of state procedures for administrative or judicial action with respect to when PWSs do not comply with regulations referred to future plans and action to fulfill this primacy requirement. The EPA's 1977 approval of Mississippi's drinking water primacy stated that Mississippi "has adopted and *will implement* adequate procedures" (emphasis added), which differs from the SDWA section 1413 requirement. While SDWA does not require explicit *written* enforcement procedures, the MSDH has not implemented any procedures for the enforcement of drinking water regulations.

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<sup>31</sup> Similarly, per 40 C.F.R. § 142.10, the EPA must determine, before approving primacy, that the state "[h]as adopted and is implementing adequate procedures for the enforcement of such State regulations, such procedures to include ... [s]tatutory or regulatory enforcement authority adequate to compel compliance with the State primary drinking water regulations in appropriate cases."

<sup>32</sup> Per Miss. Admin. Code § 15-20-72.1.19.2, the Mississippi Primary Drinking Water Regulations provide that "[v]iolations of any requirement of this regulation shall be subject to the enforcement provisions of the Mississippi Safe Drinking Water Act of 1997."

Region 4's Safe Drinking Water Branch has annually reviewed Mississippi's PWSS Program.<sup>33</sup> The annual reviews evaluate ten elements, but the resulting reports do not reference implementation of enforcement procedures. As part of its Priority Review framework developed in 2011, Region 4 conducted an on-site Priority Review of Mississippi's PWSS program in April 2017 to assess the implementation of a subset of four drinking water rules from the National Primary Drinking Water Regulations, in addition to doing three process-based reviews. The Priority Review included examining the implementation of the LCR, the Long Term 2 Enhanced Surface Water Treatment Rule, and the compliance and enforcement program.

Region 4 finalized its *Priority Review Report* in November 2019, nearly three years after the on-site review. The report indicated that one purpose of the enforcement component of the Priority Review was to "evaluate whether MSDH had any consistent enforcement strategies or practices and if these practices were being followed consistently for all systems." In the report, Region 4 determined that the MSDH did not have a written process for managing its enforcement program or standard operating procedures for the compliance and enforcement program, stating:

[T]he absence of any clear Enforcement Management System (EMS) or SOPs has resulted in the MSDH's enforcement process being inconsistent, issues with timely and appropriate enforcement, as well as data discrepancies. The enforcement program as a whole is a key component of the primacy agency's ability to ensure public health protection. MSDH will continue to have difficulty implementing a consistent enforcement program without these written protocols in place.

The *Program Review for the Mississippi State Department of Health, Bureau of Public Water Supply*, dated May 2008 and conducted by an EPA contractor, also noted the MSDH's lack of procedures for determining compliance with the National Primary Drinking Water Regulations. In its November 2019 *Priority Review Report*, Region 4 noted that the MSDH's rule enforcement is handled on a case-by-case basis and recommended that the MSDH develop a state Enforcement Management System or standard operating procedures. Region 4 does not require the MSDH to provide responses to its recommendations unless they pertain to a health-based concern, noting that "MSDH should set its own priorities regarding these recommendations" and "We encourage MSDH to develop a plan for implementing the EPA's recommendations that you believe will best assist the State in maintaining a strong PWSS program." As of May 15, 2023, 46 years after the EPA granted the state primacy, the MSDH confirmed that it is still working to build internal procedures for the state's PWSS compliance and enforcement program.

When approving primacy for the state, the EPA did not verify that Mississippi implemented procedures for enforcing regulations. In its annual reviews and priority reviews, Region 4 has suggested that Mississippi have procedures detailing how it will implement enforcement of regulations. Without such

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<sup>33</sup> Per 40 C.F.R. § 142.17(a)(1), "At least annually the [EPA] Administrator shall review, with respect to each State determined to have primary enforcement responsibility, the compliance of the state with the requirements set forth in 40 C.F.R. part 142, subpart B and the approved State primacy program."

procedures, the MSDH did not take enforcement action when health-based violations occurred at Jackson.

## **The MSDH Did Not Take Enforcement Action When Several SDWA Violations Occurred at Jackson**

Despite the MSDH's knowledge of Jackson's capacity and noncompliance issues, the MSDH did not take enforcement action at the time several SDWA violations occurred. The EPA was, therefore, unaware of the severity of Jackson's noncompliance issues until the NEIC on-site inspection in February 2020, which identified issues and failures with the city's surface water system as far back as 1992. As a result, on March 27, 2020, the EPA issued an emergency administrative order under SDWA section 1431 because "conditions exist at the System that present an imminent and substantial endangerment to the persons served by the System."<sup>34</sup> SDWA violations, as implemented by National Primary Drinking Water Regulations and Mississippi Drinking Water Regulations, included the following:

- **Source water change:** In October 2014, as a cost-saving measure, Jackson reconfigured the distribution system by removing groundwater wells from production and constructing a booster station to provide surface water to areas formerly served by the groundwater wells. Jackson did not provide documentation to the MSDH regarding the source change from groundwater to surface water, as required.<sup>35</sup> In addition, neither Jackson nor the MSDH provided evidence that the city completed a required corrosion control treatment study or water quality evaluation prior to the source change. As a result, some of Jackson's water samples collected in June 2015 exceeded the lead action level because the mixing of surface water and groundwater changed the pH of the water, which affected the corrosion control film in the pipes. While the MSDH and Jackson entered into an informal, nonenforceable compliance plan in February 2016 to address lead action level exceedances after the source water change, the MSDH did not pursue enforcement of the SDWA violation at the time the source water violation occurred. As a result, the EPA was unaware of the source water change and its contribution to the June 2015 lead action level exceedance, and customers served by Jackson's surface water system were exposed to elevated levels of lead in their drinking water.
- **Lack of certified operators:** Since 2015, the MSDH's sanitary survey reports noted concerns about inadequate operator staffing at both the O.B. Curtis and J.H. Fewell water treatment plants. Specifically, the MSDH sanitary surveys from 2015 through 2019 reminded Jackson of the importance of having a certified Class A operator; however, the MSDH did not characterize the extent of the inadequate staffing at O.B. Curtis and J.H. Fewell water treatment plants within its reports. The Mississippi Primary Drinking Water Regulations state that a certified Class A operator shall be on-site whenever the treatment plant for a Class A PWS treating surface water

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<sup>34</sup> The effective date of the SDWA section 1431 emergency administrative order was the date on which Jackson received it, which was April 2, 2020.

<sup>35</sup> Per 40 C.F.R. § 141.90(a)(3).

is in operation.<sup>36</sup> The MSDH has never taken enforcement action against Jackson for failure to have certified operators on-site. In the absence of enforcement action by the MSDH for this ongoing violation, the EPA remained unaware of this problem for at least five years prior to the NEIC on-site inspection in February 2020.

- Health-based LCR violations: The LCR is the collection of SDWA regulations to control lead and copper in drinking water.<sup>37</sup> Lead and copper enter drinking water primarily through plumbing materials, and exposure may cause health problems. Jackson did not complete a materials evaluation to identify potential lead service lines by January 1, 1992, which was required when the LCR was promulgated.<sup>38</sup> Further, the MSDH did not implement a lead service line replacement program following the initial lead action level exceedance in June 2015. The *NEIC Report* noted that following the June 2015 action level exceedance, consumer notices were sent “for the first half of 2016” before all samples were analyzed. Additionally, “for the second half of 2017 and the second half of 2018,” Jackson did not provide the required consumer notifications related to the lead action level exceedance. Therefore, consumers were not being properly notified of the lead and copper sampling results. The MSDH did not pursue enforcement of SDWA violations for Jackson when LCR violations occurred from 1992 through 2018.
- Health-based Long Term 2 Enhanced Surface Water Treatment Rule violations: The Long Term 2 Enhanced Surface Water Treatment Rule is a collection of SDWA regulations to address health effects associated with *Cryptosporidium* in surface water used as a drinking water supply.<sup>39</sup> During the April 2017 on-site Priority Review of Mississippi’s PWSS Program, Region 4 identified issues and failures with Jackson’s implementation and compliance with the Long Term 2 Enhanced Surface Water Treatment Rule. The EPA’s November 2019 *Priority Review Report* indicated that the “Jackson system is not providing MSDH with [ultraviolet] information that is required for MSDH to determine compliance, nor has MSDH issued M/R violations for failure to do so.”<sup>40</sup> The *Priority Review Report* noted that, in the absence of routine monthly reports, it could not be determined that the system was complying with National Primary Drinking Water Regulations for delivery of ultraviolet disinfected water to the public.<sup>41</sup>

Similarly, the *NEIC Report* issued in March 2020 identified failures in operations, maintenance, and monitoring, which led to possible turbidity exceedances from 2017 through 2020 at the O.B. Curtis water treatment plant, as well as to disinfection issues from 2019 through 2020 at the J.H. Fewell water treatment plant. The MSDH should have assigned a Long Term 2 Enhanced Surface Water Treatment Rule monitoring and reporting violation for each month that Jackson

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<sup>36</sup> Miss. Admin. Code § 15-20-72.2.2.1(5).

<sup>37</sup> Per 40 C.F.R. § 141, subpart I.

<sup>38</sup> Per 40 C.F.R. § 141.86.

<sup>39</sup> Per 40 C.F.R. § 141, subpart W.

<sup>40</sup> M/R refers to monitoring and reporting violations.

<sup>41</sup> Per 40 C.F.R. § 141.720(d)(3)(ii).

failed to report the amount of “off-specification” water delivered to the public.<sup>42</sup> However, the MSDH did not assign a Long Term 2 Enhanced Surface Water Treatment Rule violation until May 2020. High levels of turbidity increase the likelihood that drinking water may contain organisms that can cause disease, such as *Cryptosporidium*, *Giardia*, *Legionella*, and *E. coli*.

## Conclusions

Layers of inadequate oversight and enforcement contributed to Jackson’s drinking water crisis, beginning at the inception of Mississippi’s primacy in 1977. Adoption and implementation of procedures to enforce SDWA regulations is a requirement for state primacy, but the MSDH does not have such enforcement procedures. Such procedures should describe a consistent strategy for when and how the MSDH’s statutory and regulatory drinking water enforcement provisions will be implemented. In the absence of procedures to enforce federal and state drinking water regulations, the MSDH did not take enforcement action in response to Jackson’s SDWA violations. Without enforcement actions by the MSDH, the EPA was unaware of the compounding violations and failures at Jackson that led to systemwide failure and emergency declarations in August 2022.

## Recommendation

We recommend that the regional administrator for Region 4:

6. Evaluate whether the Mississippi State Department of Health is implementing procedures for the enforcement of federal and state drinking water regulations. If the Mississippi State Department of Health is not implementing enforcement procedures as required by Safe Drinking Water Act section 1413, consider whether procedures for rescinding state primacy for water systems should be initiated.

## Agency Response and OIG Assessment

In its response to our draft report, Region 4 agreed with Recommendation 6, stating that it is “systematically reviewing all eight Region 4 state enforcement programs,” with the reviews to be completed by fiscal year 2027. Region 4 conducted Mississippi’s enforcement program review in coordination with the MSDH from August 22 to 24, 2023. Based on its review of records for 25 PWSs in Mississippi, Region 4 issued recommendations to the MSDH in the region’s *Safe Drinking Water Act Public Water System Supervision Enforcement Program Report, Mississippi Department of Health Bureau of Public Water Supply* (May 22, 2024) to improve the state enforcement program. Specifically, Region 4 found there was a lack of enforcement escalation by the MSDH. The EPA recommended the MSDH develop and implement a written strategy or procedure to describe the MSDH’s enforcement process to ensure standardization of enforcement activities across the state and to follow the EPA’s 2009 *Drinking Water Enforcement Response Policy*. Region 4 said that it is working with the MSDH to address the state’s enforcement program and to ensure compliance with SDWA section 1413, and rescinding state

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<sup>42</sup> Per 40 C.F.R. § 141.720(d)(3)(i) and 40 C.F.R. § 141.721(f)(15).

primacy would be “a final step” and only after the EPA determines that the enforcement program is inadequate and the state has failed to take necessary corrective measures.

While we commend Region 4 issuing the *Safe Drinking Water Act Public Water System Supervision Enforcement Program Report* and for working with the MSDH to improve its enforcement program and ensure compliance with SDWA section 1413, we remain concerned as the MSDH’s lack of enforcement procedures has been an ongoing issue observed by the EPA since 2008.<sup>43</sup> Our evaluation also noted this as an inadequacy of the state’s enforcement program. We recognize Region 4’s approach to help PWSs comply with SDWA requirements, promote regional consistency, and identify opportunities for improvement in states’ compliance and enforcement programs. Given the history of the EPA’s oversight of this issue, we are interested in learning more about what steps are planned in lieu of initiating steps for rescinding state primacy for water systems and what the threshold is for such consideration in the future by Region 4. We look forward to discussing this during the recommendation resolution process. Recommendation 6 remains unresolved.

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<sup>43</sup> The EPA’s *Safe Drinking Water Act Public Water System Supervision Enforcement Program Report*, *Mississippi Department of Health Bureau of Public Water Supply* (May 22, 2024), the *Priority Review Report* (November 2019), and the *Program Review for the Mississippi State Department of Health, Bureau of Public Water Supply* (May 2008).

## Chapter 5

### The EPA Took Several Formal Enforcement Actions Against Jackson, but Further Guidance Is Needed on How to Use the SDWA Emergency Grant Authority

After the NEIC's on-site inspection in 2020, the EPA undertook a series of formal enforcement actions against Jackson. The EPA's actions included issuing a unilateral SDWA section 1431 emergency administrative order; three SDWA section 1414(a)(1)(A) notices of noncompliance; a SDWA section 1414(g) administrative order on consent; and a referral to the DOJ to file a civil action on behalf of the EPA, which resulted in the appointment of an interim third-party manager to operate, maintain, manage, and control the system during the pending litigation. In addition, the EPA used its emergency grant authority under SDWA section 1442(b) for the first time to provide funds and technical assistance to Mississippi and Jackson. Developing guidance for SDWA section 1442(b) funds could ensure that the EPA is consistent and equitable in its application in the future. Also, while the EPA used its enforcement and emergency authorities to require Jackson to address long-term challenges and improve drinking water for residents, the EPA did not escalate the matter by referring the case to the DOJ concurrently with the SDWA section 1431 emergency administrative order.

#### Region 4 Requested the NEIC's On-Site Inspection and Issued a SDWA Section 1445 Information Request

In 2018, after learning of Jackson's LCR violations, Region 4 added the city to its Priority Review of the MSDH's PWSS Program. On June 17, 2019, Region 4 requested that the NEIC conduct a SDWA compliance investigation of Jackson's system. On November 22, 2019, Region 4 sent an information request to Jackson under SDWA section 1445. In its February 2020 on-site inspection of the Jackson system, the NEIC initially planned to review historical compliance data, including a review of compliance with the LCR. Once the NEIC inspectors were on-site, they identified issues and failures beyond LCR requirements and widened the scope of the EPA inspection. This included splitting into two inspection teams, with one team reviewing the lead and copper data and related paperwork and the second team, designated as the field team, providing a technical review of the water treatment plants.

Following the NEIC on-site inspection, on February 28, 2020, the MSDH signed a written referral for Region 4 to assist it with addressing Jackson's noncompliance. The referral was sent to Region 4 on March 2, 2020. The MSDH stated in its referral letter that it had additional concerns regarding Jackson's long-term viability. With the multiple ongoing violations issued to Jackson and its SDWA compliance challenges, the MSDH believed that the EPA should take the lead over enforcement for the city. According to the Region 4 deputy regional counsel, it is uncommon for a state with primacy to refer one of its systems to the EPA.

## The NEIC Inspection Findings Prompted Region 4 to Issue a Unilateral SDWA Section 1431 Emergency Administrative Order

On March 27, 2020, the EPA took its first formal enforcement action against Jackson by issuing a unilateral SDWA section 1431 emergency administrative order, the first time Region 4 had issued an emergency order. According to an OECA manager, Region 4 and EPA headquarters discussed the type of enforcement action that should be issued to Jackson. [REDACTED]

As noted in Table 1, per SDWA, to apply the authority granted under SDWA section 1431, the EPA administrator must have received information on three conditions, including if the state and local authorities have not taken action to protect public health. The EPA's *Updated Guidance on Emergency Authority under Section 1431 of the Safe Drinking Water Act, or Updated Guidance*, dated May 30, 2018, expands upon that requirement, explaining that there are sensitivities associated with determining whether or not a state has acted to protect the public; however, SDWA does not require the EPA to determine whether a state has "failed" to act, according to the guidance document. States may have made efforts to address emergencies, for example by issuing administrative orders with enforceable compliance deadlines, but the EPA may determine the state actions have not been effective or are no longer effective. States may choose to defer action to, or request action by, the EPA because SDWA section 1431 may be more powerful or expeditious than the state taking its own enforcement action.

The EPA's unilateral SDWA section 1431 emergency administrative order noted that the MSDH took informal enforcement actions for the LCR treatment technique violations and the Long Term 2 Enhanced Surface Water Treatment Rule violation due to turbidity exceedances. It also noted that the MSDH issued a compliance plan on February 12, 2016.<sup>44</sup> These actions were not effective at returning Jackson to compliance or protecting the health of its customers.

While the MSDH has primacy authority, it did not take formal enforcement action when several SDWA and LCR violations occurred at Jackson, nor did it use formal enforcement tools. According to an ECAD employee, there was a disagreement between the state and the EPA about which entity should assume enforcement responsibility for LCR violations, which resulted in the state not taking formal enforcement action. According to an ECAD employee, there was an unofficial verbal agreement between the state and the EPA for corrosion control whereby the MSDH would take the lead based on lessons learned

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<sup>44</sup> Under SDWA section 1431, the EPA can unilaterally issue emergency administrative orders to protect health, and orders can include the provision of alternative water supplies by anyone at fault or institute civil action to seek restraining orders or injunctive relief. In contrast, for the EPA to proceed with enforcement under SDWA section 1414, the EPA must (1) provide notice to the state and the PWS of the noncompliance, (2) provide advice and technical assistance, and (3) wait 30 days for the state to commence appropriate action prior to either issuing an order for compliance or seeking civil relief.

from the drinking water crisis in Flint, Michigan.<sup>45</sup> [REDACTED]

Specifically, the MSDH provided an initial deadline of May 31, 2019, for Jackson to complete source water treatment installation. The MSDH extended the deadline to December 29, 2019, but Jackson did not meet that date. The EPA pursued enforcement once this time frame lapsed.

*Differing Views on the EPA’s Enforcement Actions*

EPA staff had differing views on the trajectory of the enforcement actions. According to Region 4’s deputy regional counsel, when the EPA issued the SDWA section 1431 emergency administrative order, it did not know that Jackson could not comply and correct the deficiencies. The deputy regional counsel added that the EPA quickly recognized that Jackson did not have the necessary expertise or resources to comply. [REDACTED]

[REDACTED]

[REDACTED]

The former OECA assistant administrator determined during final review of the emergency administrative order that a narrower scope focused on bacterial issues should be used instead to address, as required by SDWA, the imminent and substantial endangerment to the public. [REDACTED]

[REDACTED]

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<sup>45</sup> On January 16, 2016, the president declared a federal emergency in Flint. Lead was present in the city’s water supply due to a water source switch in April 2014 and a subsequent lack of corrosion control treatment. The water was corrosive, which enabled lead to leach into the drinking water. The EPA found that the city’s water posed an imminent and substantial endangerment to public health and that the city, the Michigan Department of Environmental Quality, and the state failed to adequately protect public health.

***The EPA Issued Three SDWA Section 1414(a)(1)(A) Notices of Noncompliance and a SDWA Section 1414(g) Administrative Order on Consent***

After issuing the SDWA section 1431 emergency administrative order on March 27, 2020, the EPA held biweekly calls with Jackson to discuss its progress on the required deliverables. Jackson was not completing tasks within the time frames set in the emergency administrative order. On May 11, 2020, the EPA issued the first of three SDWA section 1414(a)(1)(A) notices of noncompliance and cited 18 violations where Jackson was not in compliance with SDWA as implemented by the National Primary Drinking Water Regulations and the Mississippi Primary Drinking Water Regulations. These violations were in addition to those cited in the March 27, 2020 emergency administrative order. According to a Region 4 briefing document, the region spent months working with Jackson on the emergency administrative order deliverables. The document further noted that Jackson delayed actions beyond those in the emergency administrative order for 12–18 months while it focused on the city’s financial operations.

ECAD submitted a draft of the SDWA section 1414(g) administrative order on consent for OECA management review on June 16, 2020. [REDACTED]

On December 4, 2020, the EPA shared what it called a “final draft” of the administrative order on consent with Jackson to negotiate a more robust list of longer-term corrective actions.

According to an OECA manager, after the winter freeze event in February 2021, there were concerns about further water system deterioration. While waiting for Jackson to sign the draft administrative order, the EPA issued the second notice of noncompliance on April 7, 2021, which cited two items, including one from the first notice of noncompliance on the optimal corrosion control treatment. The second item of noncompliance was that the system exceeded, in two quarters, the maximum contaminant level for total haloacetic acids.

In addition, the DOJ, on behalf of the EPA and in connection with the Clean Water Act litigation involving Jackson’s sewer system, filed Joint Status Reports on August 27, 2021; October 29, 2021; and February 28, 2022, associated with the consent decree entered by the court in March 2013. Each status report mentions SDWA compliance issues at Jackson.

Jackson did not sign the administrative order on consent until June 30, 2021, approximately six months after the EPA provided it to the city. The former ECAD director stated that Jackson’s fulfillment of the administrative order on consent requirements was “hit and miss.” While Jackson took some corrective actions, it could not keep up due to the system’s age, fragility, and historic lack of maintenance. On

January 25, 2022, the EPA issued a third notice of noncompliance, citing an electrical panel fire and resulting issue with out-of-service pumps needing to be restored.

Region 4 used its enforcement discretion on the types and timing of enforcement actions taken to address Jackson's longstanding noncompliance and capacity issues. A former ECAD director stated that, under SDWA, the EPA is unable to take enforcement action until a system fails. As noted in Table 1, no violations are needed to make a SDWA section 1445 information request or to issue a unilateral SDWA section 1431 emergency administrative order. The former ECAD director stated that changes to SDWA that allow for more proactive approaches to routine maintenance could potentially prevent another Jackson from occurring.

***The EPA Used Its SDWA Section 1442(b) Emergency Grant Authority and Referred Jackson to the DOJ to File Civil Action Under SDWA Section 1414(b)***

[REDACTED]

[REDACTED]

[REDACTED] Ultimately, the EPA referred the case to the DOJ on August 30, 2022, to initiate a civil action under both SDWA sections 1414 and 1431. The civil action was filed on November 29, 2022.

The EPA made an emergency determination on November 1, 2022, under section 1442(b) of SDWA, which gave the EPA authority to provide grants and technical assistance to Jackson and Mississippi. A Region 4 Water Division manager stated that this was the first time that the EPA had exercised its SDWA section 1442(b) authority. The Region 4 deputy regional administrator stated that there is no guidance on how to use SDWA section 1442(b) authority and that Region 4 worked with the EPA general counsel, who was more familiar with SDWA section 1442(b).<sup>46</sup> The Region 4 deputy regional administrator also stated that the authority had been in place to use, but it had never been funded. According to a Region 4 Water Division manager, the EPA viewed Jackson as an opportunity to use that authority because, even with the EPA's formal enforcement actions, it recognized that the system was in such a "dilapidated state" that the EPA should use all available assistance tools. Guidance could ensure that the EPA is consistent and equitable in its distribution of emergency funding pursuant to SDWA section 1442(b) in the future.

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<sup>46</sup> While the EPA does not have guidance specifically dedicated to SDWA section 1442(b) emergency grant authority, it does have general grants guidance, as well as the grant requirements in 2 C.F.R. part 200 and 2 C.F.R. part 1500 that are applicable to the use of SDWA section 1442(b).

**SDWA Section 1442(b)**

“The Administrator is authorized to provide technical assistance and to make grants to States, or publicly owned water systems to assist in responding to and alleviating any emergency situations affecting public water systems (including sources of water for such systems) which the Administrator determines to present substantial danger to the public health.”

On November 29, 2022, on behalf of the EPA, the DOJ filed a complaint in federal court against Jackson for failing to provide drinking water to its residents that was reliably compliant with SDWA requirements and for not adhering to SDWA, federal, and state regulatory requirements. The DOJ simultaneously filed a motion to enter an interim stipulated order that would appoint an interim third-party manager as part of an immediate plan for overseeing Jackson’s system. The court issued the interim stipulated order on the same day the DOJ filed the complaint and motion. The order included a Priority Project List with steps needed to stabilize Jackson’s system, remedy problems that contributed to the water crisis, and establish sustainable practices for the future. The order also appointed an interim third-party manager to operate, maintain, manage, and control Jackson’s system and implement the Priority Project List.

With an interim third-party manager appointed to operate the system, substantial funding was also needed to carry out the tasks in the interim stipulated order. On December 20, 2022, the EPA used its emergency grant authority under SDWA section 1442(b) and awarded over \$2.1 million in grants to Jackson for immediate needs. This initial funding came from the EPA’s budget, specifically from its Environmental Program and Management funds appropriated by Congress, to cover costs such as the interim third-party manager’s salary and other costs included in the approved work plan, as Jackson would not have funds to cover those costs. The Consolidated Appropriations Act, 2023, provided \$600 million in disaster supplemental funding for Jackson. On June 6, 2023, Jackson received an initial amount of \$115 million from this appropriation to support its operation, maintenance, management, and infrastructure repair. As of February 2024, the interim third-party manager was still working to address Jackson’s issues that contributed to the water crisis and restore the system to reliable operations.

***The EPA Could Have Taken an Enforcement Action or Referred the Case to the DOJ Earlier***

The EPA’s *Updated Guidance* provides examples of when an endangerment is likely to be imminent. One example is a reduction or loss of pressure in a distribution system due to, for instance, broken water mains or power outages, which increases the risk of contaminants entering drinking water. As noted in Chapter 2, Jackson had a history of boil water notices due to line breaks and pressure loss. According to a Region 4 Water Division manager, these are generally not reported to the EPA, and the system may or may not inform the state. If the state investigated the boil water notices during its sanitary surveys and assigned a violation into the SDWIS database, then the EPA would have been informed. The EPA could have taken enforcement action sooner if it had known the extent of these boil water notices. However, it did not know the extent until the NEIC inspection team saw first-hand the water leaks around the city,

amplified by T-shirts and coffee mugs, as shown in Figure 2, that said, “Welcome to Boil Water Alert Mississippi.”

The EPA’s *Updated Guidance* states that an EPA region may issue an emergency administrative order pursuant to SDWA section 1431, ask the DOJ to file a civil judicial action, or both simultaneously. In some instances, a civil referral may be more appropriate than an emergency administrative order. The *Updated Guidance* further notes that a civil action may be the preferable route if the “Region believes the responsible party will be uncooperative or recalcitrant or if the necessary relief is long-term or otherwise appropriate for supervision by a U.S. District Court.” Additionally, as noted previously, pursuant to SDWA section 1414, the EPA can also issue an administrative order or file a civil action if there are unaddressed issues.

Jackson had a history of not adhering to deadlines set by the MSDH and, [REDACTED]; however, the EPA did not refer Jackson to the DOJ until August 30, 2022. Instead, the EPA issued an emergency administrative order on March 27, 2020; notices of noncompliance on May 11, 2020, and April 27, 2021; an administrative order on consent on July 1, 2021; and another notice of noncompliance on January 25, 2022, before referring the case to the DOJ on August 30, 2022. The EPA ultimately filed a civil action resulting in an interim stipulated order and the appointment of an interim third-party manager on November 29, 2022. It took nearly three years, or 32 months, from the issuance of the initial emergency administrative order to the civil action filing and the interim stipulated order.

[REDACTED]  
[REDACTED]  
[REDACTED] The EPA’s issuance of the administrative order on consent occurred over 15 months after the emergency administrative order was issued. According to an ECAD employee, while the EPA began drafting the administrative order on consent simultaneously with the issuance of the emergency administrative order on March 27, 2020, there were extensive negotiations between the EPA’s and Jackson’s attorneys. The EPA sent Jackson the administrative order on consent on December 4, 2020, but it took the city approximately six months to sign it on June 30, 2021. All of this delayed the EPA’s decision to refer the matter to the DOJ.

On June 21, 2023, the acting assistant administrator of OECA distributed to EPA regional offices a memorandum titled *Effective Partnerships Between EPA and the States in Civil Enforcement and Compliance Assurance*. The memorandum updated the EPA’s enforcement policies to promote civil enforcement and compliance assurance work between the EPA and states. Specifically, the memorandum described joint planning, communication practices, and shared accountability, and it provided a process to elevate issues and resolve them as quickly as practicable.

## Conclusions

While the EPA used its enforcement discretion and issued two enforcement orders and multiple notices of noncompliance to Jackson, there were opportunities to take earlier enforcement action and refer the

system to the DOJ rather than negotiate further with the city. While the EPA did not know the extent of the issues at Jackson until the NEIC on-site inspection, the city's capacity issues were longstanding and could have benefitted from an earlier elevated enforcement posture. Notably, the EPA used its emergency grant authority under SDWA section 1442(b) for the first time; however, guidance could ensure that the EPA is consistent and equitable in its application in the future.

## **Recommendation**

We recommend that the assistant administrator for Water and the assistant administrator for Enforcement and Compliance Assurance:

7. Develop guidance on the applicability and use of the EPA's Safe Drinking Water Act section 1442(b) grant authority to address public health in an emergency situation.

## **Agency Response and OIG Assessment**

In the Agency's response to our draft report the Office of Water and OECA agreed with Recommendation 7. The Office of Water and OECA said that they will develop guidance on the applicability and use of SDWA section 1442(b) authority to address public health in an emergency. Recommendation 7 is resolved with corrective actions pending.

## Status of Recommendations

Rec. No.	Page No.	Recommendation	Status*	Action Official	Planned Completion Date
1	17	Assess the Mississippi State Department of Health sanitary survey program to verify that it has appropriate rules, mechanisms, and authorities to ensure that public water systems take necessary steps to address significant deficiencies outlined in sanitary survey reports, per 40 C.F.R. § 142.16.	U	Regional Administrator for Region 4	—
2	17	Develop a methodology to verify the adequacy of sanitary surveys conducted for public water systems within the state by the Mississippi State Department of Health.	C	Regional Administrator for Region 4	6/30/24
3	17	Update the EPA's <i>Guidance Manual for Conducting Sanitary Surveys of Public Water Systems: Surface Water and Ground Water Under the Direct Influence (GWUDI) of Surface Water</i> (April 1999) and the EPA's <i>How to Conduct a Sanitary Survey of Drinking Water Systems</i> (August 2019) to include a sanitary survey checklist and a process for states to alert the EPA of public water systems with systemic issues, such as excessive distribution line breaks and frequent boil water notices, that individually may not rise to the level of a significant deficiency.	R	Assistant Administrator for Water	6/30/25
4	22	Verify that the Mississippi State Department of Health has procedures in place to ensure that water systems report compliance monitoring data to the state pursuant to 40 C.F.R. § 141.90, to include verifying that the Mississippi Public Health Laboratory has appropriate procedures in place.	U	Regional Administrator for Region 4	—
5	22	Train Mississippi State Department of Health personnel on using and entering data into the Safe Drinking Water Information System/State Version software.	U	Regional Administrator for Region 4	—
6	28	Evaluate whether the Mississippi State Department of Health is implementing procedures for the enforcement of federal and state drinking water regulations. If the Mississippi State Department of Health is not implementing enforcement procedures as required by Safe Drinking Water Act section 1413, consider whether procedures for rescinding state primacy for water systems should be initiated.	U	Regional Administrator for Region 4	—
7	37	Develop guidance on the applicability and use of the EPA's Safe Drinking Water Act section 1442(b) grant authority to address public health in an emergency situation.	R	Assistant Administrators for Water and for Enforcement and Compliance Assurance	6/30/25

\* C = Corrective action completed.

R = Recommendation resolved with corrective action pending.

U = Recommendation unresolved with resolution efforts in progress.

## Timeline of Events

### Prior to 2015

Event date	Details of event
1977	The EPA granted the MSDH primacy for the implementation and enforcement of SDWA for PWSs in Mississippi.
November 2008	Mississippi's Priority Review was conducted by an EPA contractor. The EPA identified LCR sampling issues for Jackson in the review.
March 1, 2013	The U.S. District Court for the Southern District of Mississippi approved and entered a consent decree between the EPA and Jackson for the city to address repairs to the wastewater collection and treatment system to minimize health concerns associated with exposure to untreated sewage from bypassing the treatment plant and sanitary sewer overflows.
October 2014	The Jackson system removed groundwater wells from production to save money, reconfiguring the distribution system through construction of a booster station to provide surface water to areas formerly served by groundwater. Jackson did not request this source change from the state or conduct a required corrosion control treatment study.  Per 40 C.F.R. § 141.90(a)(3) on reporting requirements, Jackson failed to provide documentation regarding the change in source from groundwater to surface water.
Prior to June 2015	The MSDH did not designate optimal water quality parameters prior to the June 2015 lead action level exceedance, which was noted by the EPA's NEIC inspectors in February 2020.

### 2015–2023

Event date	Details of event
June 2015	Jackson exceeded lead levels.  Jackson collected its triannual lead and copper samples.
July 2015	Due to distribution system issues, Jackson turned its groundwater wells back on and switched from a surface water source back to groundwater.  LCR results were available in July 2015, but the MSDH did not notify Jackson until January 28, 2016.
November 6, 2015	The MSDH conducted an inspection on Jackson's water supply. The MSDH found no significant deficiencies.
January 28, 2016	The MSDH notified Jackson that it exceeded the lead action level in June 2015. The MSDH put Jackson on a six-month monitoring schedule for lead and copper.
February 12, 2016	The MSDH issued a compliance plan to Jackson to address LCR violations that occurred in June 2015.
August 2016	Jackson's lead and copper sample again exceeded lead levels.
July–December 2016	The MSDH did not assess a violation for excursion-related water quality parameter violations at Jackson during this LCR monitoring period. No violations were found in SDWIS/State or SDWIS/Fed.
July 2016–December 2017	The EPA's NEIC inspectors observed that Jackson did not meet the required water quality parameters at both the O.B. Curtis and J.H. Fewell water treatment plants for three

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Event date	Details of event
	consecutive six-month monitoring periods, July–December 2016, January–June 2017, and July–December 2017. According to the <i>NEIC Report</i> , “public notice” was not provided, nor had the MSDH entered these violations into SDWIS.
<b>November 18, 2016</b>	The MSDH conducted a sanitary survey of Jackson’s water supply. The MSDH found one significant deficiency.
<b>April 2017</b>	<p>The EPA began its Priority Review of the MSDH PWSS Program, which included an on-site review of the MSDH’s drinking water program in mid-April 2017. Region 4 Water Division staff visited the O.B. Curtis water treatment plant to meet with Jackson’s engineer for an overview of the corrosion control study being conducted resulting from the lead action level exceedance.</p> <p>Though LCR sampling issues identified in the previous 2008 review were mostly resolved by Jackson, the EPA’s reviewers found in the 2017 review that the MSDH still had issues with ensuring that all post action level exceedance requirements had been met and appropriately documented, particularly those for corrosion control treatment, source-water treatment recommendations by systems, state determinations regarding those recommendations, and water quality parameter determinations.</p> <p>Region 4 completed the report on November 15, 2019, and submitted it to the MSDH on January 24, 2020.</p>
<b>May 12, 2017</b>	The MSDH issued a significant deficiency report in response to a November 18, 2016 sanitary survey of inadequate application of treatment chemicals and techniques, noting, “The system was not achieving target hardness and alkalinity goals; pilot study underway at inspection; pilot related to lead AL exceedance.” The EPA’s NEIC inspectors were unable to verify whether these deficiencies were corrected within 120 days.
<b>November 17, 2017</b>	The MSDH conducted an inspection of Jackson’s water supply and found no significant deficiencies.
<b>June 2018</b>	Jackson requested an extension to the compliance plan from May 2019 through December 2019 because the city wanted to revert back to lime rather than using soda ash at the O.B. Curtis water treatment plant.
<b>November 2018</b>	The MSDH did not enter the water quality parameter violation that occurred during the January–June 2016 monitoring period into SDWIS until November 2018.
<b>December 10, 2018</b>	The MSDH conducted an inspection of Jackson’s water supply and found no significant deficiencies.
<b>June 27, 2019</b>	Region 4 completed its fiscal year 2017 Mississippi Annual PWSS Program Review, which was dated June 27, 2019. As noted in the report, as of fiscal year 2017, the MSDH had concerns with Jackson because it was one of four of the 11 systems originally identified to have historical lead action level exceedances from 2013 through 2015.
<b>November 21, 2019</b>	The MSDH conducted a sanitary survey on Jackson’s water supply and found one significant deficiency.
<b>November 22, 2019</b>	The EPA issued a SDWA section 1445 request for information to Jackson. The purpose was to determine Jackson’s compliance with federal drinking water regulations.
<b>December 23, 2019</b>	Jackson provided a response to the EPA’s SDWA section 1445 request for information.
<b>January 15 and 16, 2020</b>	On these dates, the EPA notified the MSDH and Jackson of its intent to inspect the system.
<b>January 24, 2020</b>	The EPA’s <i>Priority Review Report</i> for the MSDH PWSS Program was sent to the state. This was sent two months after it had been finalized on November 15, 2019, and nearly three years after the on-site inspection in April 2017.

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Event date	Details of event
<b>January 29, 2020</b>	According to the <i>NEIC Report</i> , the MSDH issued a treatment technique violation to Jackson for its failure to install corrosion control treatment, as required in the compliance plan, at the J.H. Fewell water treatment plant.
<b>February 3–7, 2020</b>	The EPA's NEIC conducted a SDWA compliance inspection of Jackson PWS. This inspection was requested by Region 4 and conducted as part of the EPA's National Compliance Initiative to Reduce Noncompliance with Drinking Water Standards at Community Water Systems.  The <i>NEIC Report</i> was issued to Jackson on March 30, 2020, which included 14 observations but noted that these observations were not final compliance determinations. The <i>NEIC Report</i> said that Region 4 would make those determinations. The <i>NEIC Report</i> summarized that the system failed to meet monitoring, treatment, and reporting requirements. The report documented that there were significant deficiencies for the surface water and groundwater distribution systems, specifically that both surface water treatment plants were in poor operating condition and not well maintained, which contributed to poor water quality and availability in the distribution system.
<b>February 4, 2020</b>	The MSDH conducted a sanitary survey of Jackson's water supply. The MSDH found 18 significant deficiencies.
<b>February 28, 2020</b>	The MSDH signed a written referral for Region 4 to assist the MSDH with addressing Jackson's noncompliance and sent the referral to Region 4 on March 2, 2020.
<b>March 24, 2020</b>	A significant deficiency report from the Bureau of Public Water Supply was sent to Jackson.
<b>March 27, 2020</b>	The EPA had determined that the actions in the SDWA section 1431 emergency administrative order were necessary to protect human health. After the EPA conducted its inspection on February 3, 2020, and reviewed the documents that Jackson provided, the EPA determined that there were conditions that presented "imminent and substantial endangerment to the persons served by the System." The EPA said, "Based on evidence of turbidity exceedances, disinfection treatment concerns, and/or the condition of the distribution system, the System has the potential to have the presence of <i>E. Coli</i> , <i>Cryptosporidium</i> , or <i>Giardia</i> in the drinking water being served to its customers."
<b>March 30, 2020</b>	The EPA transmitted a copy of the <i>NEIC Report</i> to Jackson.
<b>May 11, 2020</b>	The EPA issued the first notice of noncompliance pursuant to SDWA section 1414(a)(1)(A) and detailed 18 instances of noncompliance with federal and state regulations.
<b>June 25, 2020</b>	The MSDH and Jackson entered into a Bilateral Compliance Agreement to resolve the significant deficiencies found in the February 2020 sanitary survey.
<b>November 9, 2020</b>	The MSDH conducted an inspection of Jackson's water supply. The MSDH found one significant deficiency.
<b>February 2021</b>	Jackson experienced a systemwide failure due to extreme weather conditions that caused pipes to freeze and lose pressure. This resulted in many areas of the system being without water for several weeks. Following the winter storms, the EPA provided technical assistance to Jackson and discussed financial assistance to support impacted communities.
<b>April 27, 2021</b>	The EPA issued a second notice of noncompliance pursuant to SDWA section 1414(a)(1)(A). The second notice of noncompliance stated that the deadline, which was extended from May 2019 to December 2019, to complete source water treatment installation was not met. Jackson failed to install optimal corrosion control treatment at the J.H. Fewell water treatment plant. Jackson's results from the fourth quarter of 2020 and first quarter of 2021 showed that the system exceeded the total haloacetic acids maximum contaminant level during these time periods.
<b>July 1, 2021</b>	The EPA entered into a SDWA section 1414(g) administrative order on consent with Jackson to address long-term challenges and to make needed improvements to the system. The agreement memorializes enforceable steps and specific time frames for Jackson to comply

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Event date	Details of event
	with national and state regulations to reliably deliver safe drinking water and ensure the public's health is protected.
<b>November 8, 2021</b>	The MSDH conducted a sanitary survey of the surface water system. The MSDH found one significant deficiency.
<b>November 9, 2021</b>	The MSDH conducted a sanitary survey of the groundwater system. The MSDH found five significant deficiencies.
<b>January 25, 2022</b>	The EPA issued a third notice of noncompliance pursuant to SDWA section 1414(a)(1)(A).
<b>August 29 and August 30, 2022</b>	On August 29, 2022, Jackson proclaimed an emergency due to excessive rainfall and extreme flooding, which prevented the O.B. Curtis water treatment plant from producing potable water. With the decrease in water pressure, most of the system's customers had no water. On August 30, 2022, the Mississippi governor and the president declared a state of emergency.
<b>August 30, 2022</b>	The EPA referred the matter to the DOJ.
<b>November 29, 2022</b>	The DOJ filed a complaint on behalf of the EPA for Jackson to provide water that is compliant with SDWA and also filed a proposal for an interim stipulated order. The court issued the interim stipulated order on the same day, and an interim third-party manager was appointed to operate, maintain, manage, and control Jackson's system.
<b>December 2022</b>	A freezing event took place, which caused thousands of Jackson customers to lose water pressure and the city to issue a citywide boil water notice.
<b>July 31, 2023, as amended</b>	A stipulated order was entered by the court for the Clean Water Act litigation for Jackson's sewer system. The same interim third-party manager who was appointed to operate, maintain, manage, and control Jackson's system was also appointed to do the same for the city's sewer system.

Source: OIG analysis of events occurring in Jackson. (EPA OIG table)

## Prior Reports

EPA OIG Report No. [24-P-0038](#), *Lack of State Financial Support and Local Capacity Prolonged Jackson, Mississippi Drinking Water Issues*, issued May 13, 2024, found that the MSDH could have been more proactive in providing flexible Drinking Water State Revolving Fund loan options for disadvantaged communities like Jackson. We recommended that the Region 4 administrator provide training to the MSDH on the EPA's *DWSRF Disadvantaged Community Definitions: A Reference for States* to assist it in exploring options to refine assistance programs to better support disadvantaged communities. The Agency agreed with our recommendation and provided an acceptable proposed corrective action. The Agency estimates completion by December 30, 2024.

EPA OIG Report No. [23-P-0029](#), *The EPA Needs to Further Refine and Implement Guidance to Address Cumulative Impacts and Disproportionate Health Effects Across Environmental Programs*, issued August 22, 2023, found that EPA programs may not be addressing cumulative impacts and disproportionate health effects on overburdened communities. We recommended that the EPA develop and implement policies and guidance to increase and improve coordination between EPA programs to assess and address cumulative impacts and disproportionate health effects. We also recommended that the EPA develop and implement performance measures to monitor progress. The Agency agreed with our recommendations and provided acceptable proposed corrective actions and estimated completion dates. One recommendation is complete, and one recommendation is resolved with corrective actions pending.

EPA OIG Management Alert Report No. [23-N-0028](#), *EPA Guidance Removed States' Responsibilities for Monitoring State Revolving Fund Borrowers' Single Audit Reports*, issued August 15, 2023, found that the MSDH did not review, as required by the Single Audit Act, the single audit reports for Jackson because the EPA's incorrect September 2021 *Updated Single Audit Act Borrower Audit Collection Policy* advised states that they were not required to do so. Single audit reports are a valuable tool for ensuring that subrecipients comply with federal requirements and for protecting federal funds from fraud, waste, and abuse. They are also a way to cost-effectively monitor and protect taxpayer dollars. On July 19, 2023, the EPA issued a memorandum titled *Clarification of Single Audit Requirements Under the Clean Water and Drinking Water State Revolving Fund Programs* to the regional state revolving fund branch chiefs, which addressed the concerns we identified in this management alert.

EPA OIG Report No. [23-N-0024](#), *The EPA Should Determine What Interim Actions Can Be Taken to Immediately Notify the Public When Lead in Drinking Water Exceeds the Agency's Action Level*, issued July 20, 2023, found that there is no federal regulation or enforcement authority requiring PWSs to implement Tier 1 public notification for lead action level exceedances until the October 16, 2024 compliance date. We made one recommendation to the assistant administrator for Water to determine immediate actions the Agency can take to promptly notify the public of lead action level exceedances to reduce risks to human health pending the October 2024 compliance date for the EPA's updated drinking water regulations.

EPA OIG Report No. [23-P-0022](#), *The EPA Could Improve Its Review of Drinking Water State Revolving Fund Programs to Help States Assist Disadvantaged Communities*, issued July 11, 2023, details barriers that prevent states from awarding loan subsidies to disadvantaged communities. We recommended that the EPA update *Drinking Water State Revolving Fund Annual Review Guidance*, clarify set-aside use requirements, assess states' use of set-asides, and require states to assign executed loans to the appropriate capitalization grant to resolve database issues. The EPA agreed with all recommendations and proposed acceptable corrective actions. All recommendations are resolved.

EPA OIG Report No. [22-P-0046](#), *The EPA Needs to Fully Address the OIG's 2018 Flint Water Crisis Report Recommendations by Improving Controls, Training, and Risk Assessments*, issued May 17, 2022, stated that although the EPA certified that it completed corrective actions to address all nine recommendations issued in our 2018 Flint report, the EPA's corrective actions for three recommendations did not fully address the identified deficiencies in oversight. Our 2022 report recommended that OECA document and monitor attendance at SDWA training events to ensure that the appropriate staff members, managers, and senior leaders attend and are aware of the EPA's oversight and enforcement tools and authorities. We also recommended that OECA incorporate controls into the Report a Violation system to assess the risks associated with tips retained by the EPA and to track when and how the retained tips are resolved.

EPA OIG Report No. [18-P-0221](#), *Management Weaknesses Delayed Response to Flint Water Crisis*, issued July 19, 2018, reported that Flint did not adhere to LCR requirements to identify and maintain a pool of Tier 1 sampling sites and to install and maintain continuous corrosion control treatment throughout its water distribution system. Our report made nine recommendations, including that Region 5 implement a system for regional drinking water staff, managers, and senior leaders that incentivizes staff to elevate and managers to address important and emerging issues in accordance with the EPA's 2016 elevation policy. Beginning on December 21, 2018, the Agency issued three separate certification memorandums to the EPA chief financial officer certifying that it had completed corrective actions to address all nine recommendations.

EPA OIG Report No. [17-P-0004](#), *Management Alert: Drinking Water Contamination in Flint, Michigan, Demonstrates a Need to Clarify EPA Authority to Issue Emergency Orders to Protect the Public*, issued on October 20, 2016, recommended that OECA update the EPA's 1991 guidance on SDWA section 1431. We also recommended that all relevant EPA drinking water and water enforcement program management and staff attend training on SDWA section 1431 authority. The Agency certified in August 2018 that all corrective actions were completed.

U.S. Government Accountability Office Report No. [GAO-11-381](#), *Unreliable State Data Limit EPA's Ability to Target Enforcement Priorities and Communicate Water Systems' Performance*, published June 17, 2011, found that state-reported data to the EPA for measuring compliance with health and monitoring requirements of SDWA did not reliably reflect the number of health-based and monitoring violations at community water systems or the status of enforcement actions. As of February 7, 2024, two of the Government Accountability Office's four recommendations to the EPA remained open. The Government Accountability Office considers one open recommendation to be a Priority Recommendation, which is

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for the EPA to resume data verification audits to routinely evaluate the quality of selected drinking water data, including evaluation of enforcement actions that states and other primacy agencies have taken to correct violations. In March 2022, the EPA told the Government Accountability Office that it was not planning to resume the audits due to budgetary constraints but was taking other actions to improve its ability to oversee the quality of drinking water data that states provide to the EPA. The Government Accountability Office website noted that “it remains unclear to what extent EPA’s efforts have resulted in more accurate and complete data on water systems’ compliance with SDWA.”

## Agency Response to the Draft Report



### MEMORANDUM

**SUBJECT:** Response to Office of Inspector General Draft Report No. OSRE-FY23-0033  
*"Inadequate State Enforcement and Deficiencies in the EPA's Oversight Contributed to the Drinking Water Crisis in Jackson, Mississippi,"* dated, May 7, 2024

**FROM:** Jeaneanne M. Gettle  
Acting Regional Administrator

**JEANEANNE** Digitally signed by  
**GETTLE** JEANEANNE GETTLE  
Date: 2024.05.31  
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**TO:** Sean W. O'Donnell, Inspector General  
Office of Inspector General

Thank you for the opportunity to respond to the issues and recommendations in the subject Office of Inspector General (OIG) draft audit report. This response has been coordinated with and agreed upon by the Office of Water (OW) and the Office of Enforcement and Compliance Assurance (OECA) and includes responses from Region 4, OW and OECA. The following is a summary of the agency's overall response, along with a response on each of the report recommendations directed to Region 4, OW and OECA. The agency agrees with the Recommendations in the report. For each recommendation, we have provided high-level intended corrective actions and estimated completion dates. For your consideration, we have also included a Technical Comments Attachment to supplement this response that includes input from Region 4, OW, and OECA.

### AGENCY'S OVERALL POSITION

Region 4, OW and OECA agree with the substance of the Recommendations of the OIG report. The EPA appreciates the work of the OIG to review our direct engagement and coordination with the Mississippi State Department of Health (MSDH) state primacy agency on drinking water non-compliance at the City of Jackson. The oversight of drinking water systems is a top

priority for the Agency, and we have implemented an Agency-wide effort to assess and address the drinking water needs in the City of Jackson.

The events leading up to the water crisis included dynamic changes in management, infrastructure configuration, and financial capacity for system operation and maintenance. From the time when compliance concerns were first identified at the City of Jackson’s drinking water system, the EPA has engaged with the MSDH and directly with the City of Jackson to monitor the risks to public health and any corrective actions proposed or taken by the state or city. Throughout the Agency’s escalating response, the EPA continued to utilize its oversight authority, providing technical, regulatory, and financial resources to address water system vulnerabilities and problems. The EPA has worked with the City of Jackson to determine how federal resources and authorities could be used to further assess potential compliance concerns and expedite corrective actions. This work engaged and coordinated resources from across the Agency, including Headquarters and Region 4’s Enforcement and Compliance Assurance Division, Water Division, and the Environmental Justice program.

The EPA has been and remains committed to ensuring sustained improvements in drinking water service for the City of Jackson. We will continue to exercise our oversight responsibilities with the MSDH and collaborate with all state partners to ensure effective oversight of drinking water systems in Mississippi and across the country.

AGENCY’S RESPONSE TO REPORT RECOMMENDATIONS

Agreements

<b>No.</b>	<b>Recommendation</b>	<b>High-Level Intended Corrective Action(s)</b>	<b>Estimated Completion by Quarter and FY</b>
1	Recommendation for Region 4 Regional Administrator: Assess the Mississippi State Department of Health sanitary survey program to verify that it has appropriate rules, mechanisms, and authorities to ensure that public water systems take necessary steps to address significant deficiencies outlined in sanitary	Region 4 agrees with this recommendation. In November 2020, Region 4 created a Drinking Water Enforcement Section within the Enforcement and Compliance Assurance Division. One of the responsibilities of the Drinking Water Enforcement Section is to oversee state drinking water enforcement programs, including the review of state sanitary survey programs. The primary objective of a sanitary survey program evaluation is to determine whether a state’s sanitary surveys are in alignment with state and federal regulations and guidance. The review also verifies that the state has appropriate rules, mechanisms, and	3 <sup>rd</sup> Quarter FY 2024

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	<p>survey reports, per 40 C.F.R. § 142.16.</p>	<p>authorities to ensure public water systems take necessary steps to address significant deficiencies outlined in sanitary survey reports. This is fulfilled by selecting approximately 50% of the systems within a state that serve over 10,000 customers and evaluating the last two sanitary surveys for a PWS and a state’s follow-up to any sanitary survey. The review concludes in a report with a program analysis along with recommendations by the EPA to improve a state’s sanitary survey program. Region 4 conducted a sanitary survey review for MSDH in August 2022, with a final report issued May 15, 2024. For MSDH, Region 4 reviewed sanitary surveys for 39 PWSs (66 percent of the 59 systems in MS that serve over 10,000) and issued a final report with six recommendations ranging from developing guidance and checklists to improving reports and follow up on significant deficiencies.</p> <p>In addition to the reviews conducted by the Drinking Water Enforcement Section, the Region 4 Water Division reviews sanitary surveys as part of an in-depth PWSS program review, called a File Review, for each state every four years. In the MSDH review, conducted August 14-18, 2023, the Water Division reviewed MSDH’s sanitary survey implementation and provided initial recommendations on ways to strengthen the program on January 19, 2024. The final report will be transmitted in June 2024.</p>	
<p>#2</p>	<p>Recommendation for Region 4 Regional Administrator: Develop a methodology to verify the adequacy of sanitary surveys conducted for public water systems within the state by the</p>	<p>Region 4 agrees with this recommendation. Region 4 has developed a sanitary survey evaluation process and has completed an initial review of all eight Region 4 states. Region 4’s Drinking Water Enforcement Section in the Enforcement and Compliance Assurance Division is in the process of starting a second round of sanitary survey reviews with the goal of evaluating the</p>	<p>Completed 3<sup>rd</sup> Quarter FY 2024</p>

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	<p>Mississippi State Department of Health.</p>	<p>adequacy of each state sanitary survey enforcement program every four years. In addition to conducting sanitary survey reviews, Region 4 increased the number of credentialed drinking water inspectors from one to nine and has built inspector capacity. Since the Jackson inspection in 2020, Region 4 has conducted over 100 onsite inspections where the EPA was able to verify the adequacy of a state’s recent sanitary survey (including inspections at eight additional systems in Mississippi). The Drinking Water Enforcement Section also uses the sanitary survey reviews to target systems for inspection when the inspectors conducting the review believe there is an inconsistency or potential issue discovered during the review process. The Region 4 Water Division reviews sanitary surveys as part of an in-depth PWSS program review, called a File Review, for each state every four years. In the MSDH review, conducted in 2023, the Water Division reviewed MSDH’s sanitary survey implementation and provided recommendations on ways to strengthen the program. Region 4 has provided multiple opportunities for states to participate in past sanitary survey training, and MSDH participated in trainings in 2021 and 2023. The EPA has offered to provide additional sanitary survey training to MSDH once the department has addressed field engineer vacancies. The next training is targeted for early 2025.</p>	
<p>#3</p>	<p>Recommendation for AA for Water: Update the EPA’s <i>Guidance Manual for Conducting Sanitary Surveys of Public Water Systems: Surface Water and Ground Water Under the Direct Influence (GWUDI) of Surface</i></p>	<p>OW agrees with this recommendation to update the EPA’s <i>Guidance Manual for Conducting Sanitary Surveys of Public Water Systems; Surface Water and Ground Water Under the Direct Influence(GWUDI) of Surface Water (April 1999)</i>, and the EPA’s <i>How to conduct a Sanitary Survey of Drinking Water Systems (August 2019)</i> to include a checklist and process for states to report to EPA of public water systems with</p>	<p>3<sup>rd</sup> Quarter FY 2025</p>

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	<p><i>Water (April 1999), and the EPA's How to Conduct a Sanitary Survey of Drinking Water Systems (August 2019), to include a sanitary survey checklist and a process for states to alert the EPA of public water systems with systemic issues, such as excessive distribution line breaks and frequent boil water notices, that individually may not rise to the level of a significant deficiency.</i></p>	<p>systemic issues that separately may not be identified as significant deficiencies.</p>	
#4	<p>Recommendation for Region 4: Verify that MSDH has procedures in place to ensure that water systems report compliance monitoring data to the state pursuant to 40 CFR § 141.90, to include verifying that Mississippi Public Health Laboratory has appropriate procedures in place.</p>	<p>Region 4 agrees with this recommendation. Mississippi established a statewide Public Water System monitoring program facilitated through the Mississippi Public Health Laboratory. In Region 4's 2023 PWSS File Review, we reviewed MSDH's compliance monitoring data and identified the need for the state to improve management of water system monitoring schedules, timeliness of analysis, and delivery of compliance monitoring data associated with the state-managed monitoring program. The EPA will evaluate corrective actions implemented by the state over the course of 2024 and 2025.</p>	<p>4<sup>th</sup> Quarter FY 2025</p>
#5	<p>Recommendation for Region 4: Train Mississippi State Department of Health personnel on using and entering data into the Safe Drinking Water Information System/State version software.</p>	<p>Region 4 agrees with this recommendation. In the EPAs' 2023 PWSS File Review, MSDH identified challenges with staff turnover and requested EPA training on SDWIS data entry for anticipated new hires. Region 4 is working with MSDH to develop focus areas for training needs and plans to deliver and/or coordinate a combination of onsite and virtual trainings through 2025.</p>	<p>4<sup>th</sup> Quarter FY 2025</p>

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<p>#6</p>	<p>Recommendation for Region 4 Regional Administrator: Evaluate whether the Mississippi State Department of Health is implementing procedures for the enforcement of federal and state drinking water regulations. If the Mississippi State Department of Health is not implementing enforcement procedures as required by Safe Drinking Water Act section 1413, consider whether procedures for rescinding state primacy for water systems should be initiated.</p>	<p>Region 4 agrees with this recommendation. Region 4 is systematically reviewing all eight Region 4 state enforcement programs with reviews to be completed by Fiscal Year 2027. Inspectors from Region 4’s Drinking Water Enforcement Section in the Enforcement and Compliance Assurance Division conducted an onsite Enforcement Review in coordination with MSDH between August 22 and 24, 2023. The review included an examination of the state’s policies and their implementation of the policies for enforcing federal and state drinking water regulations. The review looked at the data files of a set of selected systems and other pertinent program documentation. As part of the Enforcement Review, the EPA evaluated MSDH’s consistency with its own enforcement processes. The Agency also looked at MSDH’s documentation and implementation of the state’s procedures, strategies to escalate enforcement actions, penalty issuance, consistency with the EPA’s 2009 Enforcement Response Policy, and the effective and timely return of PWSs to compliance. Based on the review of records for 25 PWSs, the EPA identified findings and recommendations to improve the program as outlined in our report dated May 22, 2024. Rescinding state primacy for systems would be a final step only after EPA determines that a state’s program is inadequate, and the state has failed to take necessary corrective measures. In this case, the EPA is working with MSDH to address and improve MSDH’s drinking water enforcement program and ensure compliance with SDWA 1413.</p>	<p>3<sup>rd</sup> Quarter FY 2024</p>
<p>#7</p>	<p>Recommendation for OW and OECA: Develop guidance on the applicability and use of</p>	<p>OW and OECA agree with this recommendation. OW and OECA will develop guidance on the applicability and use of SDWA section 1442(b) authority to</p>	<p>3<sup>rd</sup> Quarter FY 2025</p>

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	the EPA's Safe Drinking Water Act section 1442(b) grant authority to address public health in an emergency situation.	address public health in an emergency situation. This guidance would supplement the EPA's general grants policies and guidance as well as OMB's guidance at 2 CFR Part 200 and EPA's regulations at 2 CFR Part 1500, which apply to grants awarded under this authority.	
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CONTACT INFORMATION

If you or your staff have any questions regarding this response, please contact the Region 4 Audit Follow-Up Coordinator, Alicia Sterk, at Sterk.Alicia@epa.gov, 801-678-6168, or the OW Audit Follow-up Coordinator, Carla Hagerman at Hagerman.Carla@epa.gov, 202-564-9499, or the OECA Audit Follow-up Coordinator, Gwendolyn Spriggs at Spriggs.Gwendolyn@epa.gov, 202-570-5892.

Attachment

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## *Errata*

In the first full paragraph on page 15, we updated a sentence on September 13, 2024. We made this update to clarify the information provided. The original sentence read, “Jackson has an estimated 841 miles of drinking water distribution lines and had an annual average of 55 line breaks per 100 miles of line from 2017 through 2021, far above the industry benchmark of no more than 15 breaks per 100 miles of line per year.” This sentence could be interpreted as a formula, which it was not intended to be. To ensure clarity, we updated the sentence to read, “Jackson had an annual average of 55 line breaks per 100 miles of line from 2017 through 2021, far above the industry benchmark of no more than 15 breaks per 100 miles of line per year.”



## Whistleblower Protection

U.S. Environmental Protection Agency

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