



MISSISSIPPI STATE DEPARTMENT OF HEALTH

Bureau of Public Water Supply

System Name: City of Jackson

PWS ID: MS0250008

Date: March 24, 2020

SIGNIFICANT DEFICIENCY REPORT

In accordance with requirements under the Ground Water Rule/Surface Water Rule, a sanitary survey was conducted on February 3, 2020, by Amy McLeod and EPA office. The following significant deficiencies were noted:

- 1. CATEGORY:** Water System Management/Operations
SIGNIFICANT DEFICIENCY: Water System Staffing
COMMENT: A certified Class A water operator must be onsite at all times that the treatment plant is in operation. If there are non-certified employees leading a shift, a certified operator must also be there. It was observed on February 26, 2020 at O. B. Curtis that a non-certified operator was coming on shift to relieve the previous shift's certified operator. Logbook data shows that non certified employees are often working shifts without certified operators.
- 2. CATEGORY:** Monitoring/Reporting/Data Verification
SIGNIFICANT DEFICIENCY: Monitoring Plans
COMMENT: (*O.B. Curtis*) Throughout both plants, there are online monitoring devices measuring pH, chlorine, turbidity, electrical charge (streaming current). It has been reported that some of these monitors relay signals to other dosing equipment and flow-pacing. (i.e. ammonia feed works with the chlorine feed; streaming current works with coagulant dosing.) Upon the walk through of both plants, it was discovered that a significant number of these monitors were working improperly. Operators are treating water based on grab samples taken every 4 hours. This is unacceptable and leads to instances of losing part or the entire treatment process.
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5. **CATEGORY:** Finished Water Storage
SIGNIFICANT DEFICIENCY: Condition of Storage Tanks
COMMENT: Upon inspection of two ground storage tanks on the well system, inspectors noted the condition of the tanks on TV Road and Maddox Road. Before the TV Road booster station is put back in service, a thorough inspection by a certified contractor must be made of this tank. Also, the Maddox Road tank requires site work. It was observed that there was at least 3" of standing water around the base of the tank indicating draining issues that must be corrected. By observing the gravel support beams along the outside of the tank, it appears that the ground has shifted. Some of the supports are still flush against the tank while others have significant gaps.
6. **CATEGORY:** Pumps/ Pump Facilities and Controls
SIGNIFICANT DEFICIENCY: Automatic Controls
COMMENT: The soda ash and ACH feed systems at OB Curtis are not continually operating in automatic. The soda ash system is lacking a proper dilution system, so the pH climbs to dangerously unsafe levels. The pH should not exceed 9.7 leaving either plant.
7. **CATEGORY:** Treatment
SIGNIFICANT DEFICIENCY: Significant Deficiency Not Otherwise Specified
COMMENT: Function and condition of treatment facilities: The conventional filters at both treatment facilities are overdue for rehabilitation. Filter media needs to be replaced and some underdrains and/or valving need to be repaired and/or updated.
8. **CATEGORY:** Treatment
SIGNIFICANT DEFICIENCY: Unprotected cross-connections within treatment systems
COMMENT: The chlorine and ammonia feed systems have been running on manual for portions of the time frame in documents submitted to MSDH.
9. **CATEGORY:** Treatment
SIGNIFICANT DEFICIENCY: Significant Deficiency Not Otherwise Specified
COMMENT: Function and condition of treatment facilities: The membrane system has been lacking a cover to prevent the membrane fibers from being exposed to the elements since the membrane system was installed in 2006. This missing piece of the

facility further adds to undue stress to the membrane plant and all its outdoor equipment (fibers, floc motors, crane, etc).

10. CATEGORY: Treatment

SIGNIFICANT DEFICIENCY: Significant Deficiency Not Otherwise Specified

COMMENT: Function and condition of treatment facilities: The conventional filters at both treatment facilities are overdue for rehabilitation. Filter media needs to be replaced and some underdrains and/or valving need to be repaired and/or updated. Due to filter performance records submitted, MSDH is limiting the capacity of JH Fewell to 20 MGD.

11. CATEGORY: Treatment

SIGNIFICANT DEFICIENCY: Function and Condition of Treatment Facilities

COMMENT: As the membrane system operates as direct filtration, the flocculation stage is mandatory to decrease the solids loading on the membrane fibers. At the NEIC inspection only 6 of the 12 flocculation motors were online or functional.

12. CATEGORY: Treatment

SIGNIFICANT DEFICIENCY: Significant Deficiency Not Otherwise Specified

COMMENT: Function and condition of treatment facilities: The Membrane Integrity Testing (MIT) is the GE or Suez Zeeweed Z500D system's method of proving the fibers are achieving LT2 Log Removal Values (LRV) for cryptosporidium removal. If a train fails MIT, and the LRV is not reported, then the City cannot assure their customers and MSDH that they are properly treating the water to Safe Drinking Water Act Standards. There are various reasons as to why the MIT fails, but according to the CFR, none of those matter for regulation purposes. The MIT must be functioning for all trains in order to stay online. If they cannot pass MIT, then the train must be taken offline immediately.

13. CATEGORY: Treatment

SIGNIFICANT DEFICIENCY: Function and Condition of Treatment Facilities

COMMENT: (O.B. Curtis) Sludge removal of coagulation solids is a necessary part of conventional drinking water treatment. The claritrac systems are the defined method of sludge removal for both the O. B. Curtis and J. H. Fewell WTP. In lieu of functional claritrac systems for several years, both plants have used draining basins as the standard practice for handling the sludge build-up. This was witnessed by NEIC and MSDH staff during our inspection. This disrupts the treatment process as the sludge blanket accumulates to 10+ feet and is very wasteful for treatment chemicals. Additionally, the current levels of sludge maintained in the basins significantly increases the chance of treatment process issues or complete loss of the conventional treatment process. Claritrac systems must be functioning to have optimized conventional treatment. This equipment is vital to uninterrupted treatment and production of safe drinking water.

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15. CATEGORY: Treatment

SIGNIFICANT DEFICIENCY: Capacity of Treatment Facilities

COMMENT: The O. B. Curtis microscreens have been in a state of disrepair or only partially functioning for almost a year. This equipment plays a vital role in the treatment processes of both the conventional and membrane treatment trains. Since they are inoperable, the amount of water that can be treated is limited. Reports from City personnel as to when they will be repaired and/or replaced have not been consistent. No definitive deadline for the necessary work has been set or communicated to MSDH.

16. CATEGORY: Source

SIGNIFICANT DEFICIENCY: Condition of Source Facilities

COMMENT: The walkway to the raw water pumps at JH Fewell is in a failing state due to the wooden support system.

17. CATEGORY: Source

SIGNIFICANT DEFICIENCY: Transmission of Source Water

COMMENT: From conversations with City personnel, the condition of the raw water transmission mains from the reservoir to OB Curtis impedes treatment and disallows major repairs to be made.

18. CATEGORY: Source

SIGNIFICANT DEFICIENCY: Condition of Source Facilities

COMMENT: The intake building at the reservoir is in failing condition with holes in the roof. The potassium permanganate feed system at this location is inoperable.

You must provide a written response to William F. Moody of our office within forty-five **(45) days** of receipt of this report. The report must outline your corrective actions and the timeframes by which you can correct the deficiencies. Please contact William F Moody at (601) 576-7518 if you have any questions.

Within **45 days** of your receipt of this report, the deficiencies must be corrected, or you must be in compliance with a State-approved plan for corrective actions. Please note that failure to correct the deficiencies, or failure to meet the agreed-upon timelines for correcting deficiencies, will result in a violation.