

City of Jackson Water Crisis 2022
Incident Command Brief
September 15, 2022

INCIDENT OVERVIEW

The City of Jackson Surface Water System was impacted by recent flooding. Both the O.B. Curtis and J.H. Fewell water treatment plants had reduced water output that created pressure problems in the system. The City lacked sufficient pressures in some areas of the City to sustain adequate access to flush toilets and maintain optimal disinfection for drinking water. Both O.B. Curtis and J.H. Fewell water treatment plants lacked sufficient Class A Operators and maintenance staff.

Dr. Daniel Edney, State Health Officer of the Mississippi State Department of Health, issued a Declaration of a Public Drinking Water Supply Emergency in the City of Jackson ordering the City including, but not limited to, employees of the Public Works Department and Emergency Management immediately cooperate with state response teams and contractors deployed to augment current staffing and to take remediation actions deemed necessary by the State Incident Commander. The Governor of Mississippi, Tate Reeves, has declared an emergency for the City of Jackson due to the effect on essential government services, medical facilities, and schools. A Unified Command has been established to combat this emergency.

Collection and laboratory analyses of two rounds of 120 samples from the distribution system were reported out by the Mississippi Public Health Laboratory. Today at 1300, the Mississippi State Department of Health lifted the state-imposed boil water notice for the City of Jackson.

O.B. Curtis remained at a steady pressure over the past 24 hours at around 85 p.s.i. All tanks are currently maintaining good margins for overhead storage. On site storage at O.B. Curtis has remained stable. Pressure should be stable throughout the city. The City has received isolated reports of discolored water and pressure issues. These reports are decreasing each day. The City reports that many of these issues

are related to routine water leaks or meter issues. Each is being assessed by the city for response.

Overall water production increased again yesterday. The membrane water treatment plant at O.B. Curtis set a new recent record of 17.5 million gallons in a day. The conventional water treatment plant at O.B. Curtis also maintained production.

Significant progress was made with restoration of the second rapid mixer on the conventional side. This is good news for creating redundancy in processing. Raw water pumps #2 and #4 arrived back on site today and the process of installing #4 has started. Additional repairs to actuators were made on various membrane trains.

A large group of EMAC (Emergency Management Assistance Compact) teams are now on-site supplementing O.B. Curtis staff in addition to assistance from the Mississippi Rural Water Association. The teams onsite are from South Carolina, Michigan, Maryland, and Ohio. These teams include operators, mechanics, instrument technicians, and maintenance. This work has expanded to J.H. Fewell Water Plant.

TREATMENT FACILITY STATUS

- **O.B. Curtis**
 - Conventional Treatment Plant:
 - Authorized for **25** million gallons
 - Capacity of **18.7** million gallons
 - Producing **10.8** million gallons
 - Membrane Treatment Plant:
 - Authorized for **25** million gallons
 - Producing **17.5** million gallons
- **J.H. Fewell**
 - Authorized for **20** million gallons
 - Potential flex to **30** million gallons
 - Producing **19.20** million gallons

- **Total:**
 - City of Jackson: **47.5** million gallons

Tank/Well Status: As of 0800 hrs., the city was operating at **88.3** psi.

NOTES: Due to the system maintaining normal pressures, tank and well statuses will be updated only when significant changes occur.

CURRENT AND PLANNED OBJECTIVES

O.B Curtis Water Treatment Facility:

- Improve safety throughout facilities
- Continue installation and testing for raw water intake pumps #2 and #4
- Establish automation and improve accuracy of electronics
- Staffing the operator shifts
- Complete sludge handling process
- Establish process control for water treatment
- Develop a distribution system monitoring plan

JH Fewell Water Treatment Facility:

- Ensure facility operations maintain capabilities of 20 MGD with adequate resiliency
- Ensure capacity to flex to 30 MGD to assist with maintenance activities at OB Curtis

PERSONNEL DEPLOYED TO O.B. CURTIS

- **MEMA: 9**
- **MSDH: 13**
- **MDEQ: 2**
- **CITY OF JACKSON: 6 in addition to O.B. Curtis personnel**
- **EPA: 4**
- **USACE: 2**
- **FEMA: 3**

PERSONNEL DEPLOYED TO J.H. FEWELL

- **MEMA: 2**
- **MSDH: 1**
- **CITY OF JACKSON: 1 in addition to J.H. Fewell personnel**
- **GCWW: 5**
- **EPA: 1**

TASKS COMPLETED: O.B. CURTIS

CITY OF JACKSON

- Raw pump 6 has been repacked; will be test running soon
- Working on overhead lights in high service pump 3; should finish 9/15/2022

MARYLAND

(ANNE ARUNDEL CO.)

- Determined chemical building ACH pumps are inoperable
 - Awaiting quote from vendor
- Determined conventional membrane polymer feed pump needed
- Assessed remote control to SCADA
 - Control pump unstable
 - Currently tracing through the circuit
- Evaluated potassium permanganate feed in chemical building
 - Determined issue is with HMI
 - System is non repairable
 - Major software update needed
- Assessed sump pump in membrane room
 - Discovered long existing minor leak
 - Must shut down flow to membrane system to repair gasket
 - Not a high priority currently

WSSC

- Continuing work in Conventional Filter Gallery
 - Patched sump pump
 - Removed pump 3
 - Unable to initiate backwash of filter 4
 - Determined filter 5 is inoperable
- Assisted with installation of raw water pump 4

MICHIGAN & MISSISSIPPI

- Membrane Building –
 - Assessed CIP pump P-97A
 - Determined pump is frozen
 - Locked out and report sent for mechanical work
 - Assessed sluice gate in membrane
 - Determined sluice gate has power
 - Tested motor; motor is inoperable
- Began repairing UV lights in conventional filter gallery
 - UV lights in filter 4 are complete
 - Isolation valve must be repaired for filter 5 to operate
 - UV lights for pump 4 are repaired

SOUTH CAROLINA

(MOUNT PLEASANT)

- Working in Membrane Room, Hopper Pumps– Air Pressure Relief Valve
 - Determined blower A is out of service
 - Possible actuator issue
 - New actuators are onsite
 - Working leaks in membrane room
 - Discovered pipe leak
 - Gasket required on the drain line
 - OB Curtis personnel have contacts with vendor to repair

SOUTH CAROLINA (SPARTANBURG)

- Centrifuge building Asco Solenoid valves feed oil coolers replaced
- Located vendor for flocculators
 - order gears and chains for basins 1-3
- Flow Meter Quotes given to MEMA
- Repaired Filter 6 transmitter in to rosemount transmitter in Conventional filter gallery
- Completed assessment of vibration in HSP 7; bad bearing in motor in need of repair; do not operate

MISSISSIPPI STATE DEPARTMENT OF HEALTH

- State imposed boil water notice lifted for the City of Jackson
- Assisted with the assessment of the J.H. Fewell

OTHER ACTIONS: O.B. CURTIS

- Raw water intake pumps 2 and 4 delivered to OB Curtis
 - Raw water pump 4 installed; being tested
- Chlorine has been ordered
- Raw water intake filter working in automatic
- EMAC operations call with National Coordinating State and members
 - Reviewed open request and anticipated needs for future EMACs
- 100 gallons of chlorine received on 9/14/2022
- 7 totes sodium hypochlorite received on 09/14/2022
 - Stored inside the Membrane plant
- 5 totes of citric acid received on 09/14/2022
- Coordinated with vendor to tighten fittings on liquid ammonia line
- Coordinated with vendor to install coupling on rapid mix 2B

TASKS COMPLETED: J.H. FEWELL

OHIO/MSDH/USEPA

- Raw Water Pump 5 & 6 back online and in service
 - Pump 6 is repacked, will have a test run and observation period and if there are no issues will be back in service
- Transfer Pump 2 (Ongoing)
 - Electrical issue – control wire; will take more time to fix than expected
- UV on Pump 3 is being repaired
- Major safety concerns that need to be addressed immediately
 - Coupling covers on the pumps in the UV building
 - Maintenance issue
- Site assessments are ongoing
- Extra Repairs
 - GCWW has repaired light fixtures and replaced bulbs
 - Small electrical repairs
 - Repaired exhaust fans

OTHER ACTIONS: JH FEWELL

- Chlorine ordered

EMAC

- Mount Pleasant, South Carolina – 2 operators and 2 mechanics – onsite 09/09/2022
- Spartanburg, South Carolina – 3 mechanics – onsite 09/12/2022
- Maryland – 3 operators, 2 mechanics, 1 instrument tech, 1 maintenance worker, 1 emergency management specialist supervisor, and 2 electricians – onsite 09/10/2022
- Michigan – 1 electrician – onsite 09/11/2022
- Ohio – 1 instrument tech, 4 maintenance crew – onsite 09/13/2022
- EMAC requests made for staffing augmentation for 09/19 – 10/03/2022

DIRECT FEDERAL ASSISTANCE

EPA

- Plan for distribution nutrient system
- Developing sampling plan for National Primary Drinking Water Regulation Standards to test for maximum contaminant levels
- Identifying trends in plant water quality sampling
- One person supporting J.H. Fewell operation
- Evaluating chemical process control for O.B. Curtis

FEMA

- Finalizing dashboard development
- Working on federal staffing schedule with federal partners

USACE

- Project Manager on-site developing resiliency playbook

UNMET NEEDS: O.B. CURTIS

- Address safety hazards throughout O.B. Curtis plant
- Mitigate risk of future chlorine leak
- Need for electrical repair and electrical panel for polymer pump and sludge clarifier
- Continue to assess lower pressure issue at Forest Hill High School
- Plan for removing sediments from clear well
- Scope repairs to anhydrous ammonia tank #1
- Adequate tools and supplies

UNMET NEEDS: J.H. FEWELL

- 6ft & 12ft ladders (fiber glass only cannot be aluminum)
- Packing for pumps

- Assess and potentially replace sensor, SCADA, and level indicator in Hwy. 18 well tank
- Need 14 additional 1-ton chlorine cylinders
- Identify chlorine needs