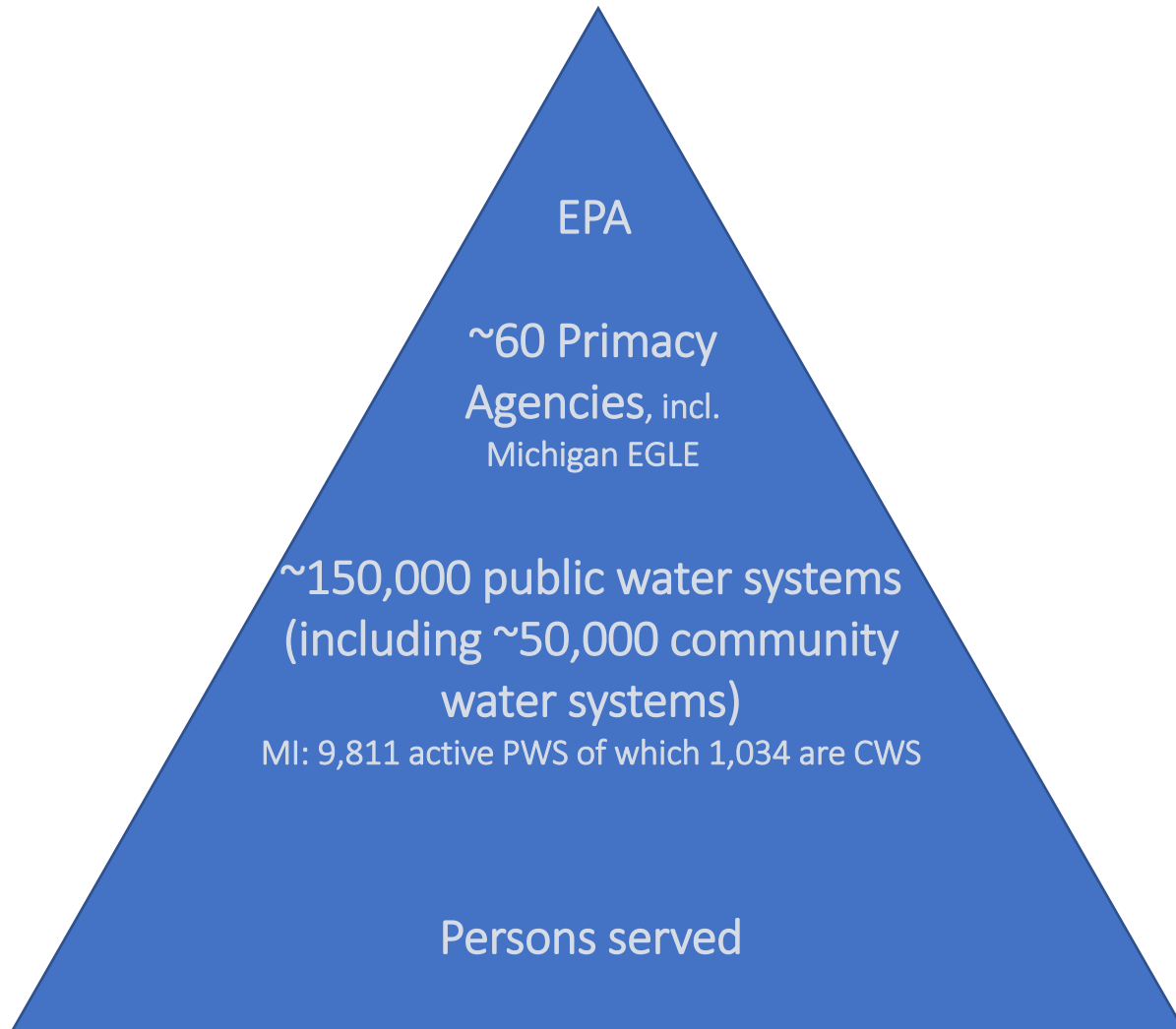


Review of Water Quality Information for Benton Harbor Public Water System – Focus on Issues Beyond Lead

June 2022 Status Update

Regulatory/Oversight Roles



EPA sets health-based drinking water standards (Microbial, Chemical, Radiological) and oversees primacy agencies.

States ('primacy' agencies) oversee water systems and enforce standards. State rules must be 'as stringent' as EPA rules.

Public water systems are the regulated entity and are required to implement/comply with the standards.

Costs of compliance are supported by consumers.

Water Quality Elements Reviewed- January 2022

Rule	Specific Rule Requirement Description
Revised Total Coliform Rule (RTCR)	Total Coliform absent at compliance locations
Surface Water Treatment Rule (SWTR) Suite "SWTR, IESWTR, LT1, LT2, and FBRR"	Chlorine Concentration-Contact Time (CT) Certification
SWTR Suite	Entry Point Chlorine levels 0.2 mg/L or higher
SWTR Suite	Filtration – Turbidity in Combined Filter Effluent (CFE) less than 0.3 NTU
SWTR Suite	Filtration – Turbidity in Individual Filter Effluent (IFE) Certification
SWTR Suite	Chlorine Residuals Detectable in Distribution System, in at least 95% of samples
Disinfection and Disinfectant Byproduct Rules (D/DBPR)	Chlorine Residuals below Maximum Residual Disinfectant Level of 4 mg/L
D/DBPR	Total Organic Carbon (TOC) Precursor Monitoring less than 2mg/L or meeting removal percentage
D/DBPR	Total Trihalomethane (TTHM) below MCL of 80 ug/L and Haloacetic acid (HAA5) below MCL of 60 ug/L, based on LRAA
Chemical Contaminant Rules	Nitrates less than MCL
Chemical Contaminant Rules	Synthetic Organic Contaminants (SOC), Volatile Organic Contaminants (VOC), and Inorganic Contaminants (IOC) less than MCL
Radionuclide Rule	Gross Alpha and Combined Radium less than MCL

Key Benton Harbor Information Reviewed

(info reviewed since March meeting in red)

- January 2021 to **April 2022** Monthly Operating Reports, with focus on January-**April 2022 MORs and revised CT calculations provided by the system for January and February**
- Total Organic Carbon – data summary from EGLE and lab reports for certain months provided by PWS to EPA ECAD
- Disinfection Byproducts (TTHM/HAA5) monitoring results – lab reports provided either by PWS to EPA ECAD or by EGLE to EPA GWDWB
- Chemical contaminants – summary table provided by EGLE to EPA GWDWB
- Chemical contaminants -- CCRs on City website

- EPA water study (Nov/Dec 2021) chlorine data

- System violation history (SDWIS-Fed), which includes the SWTR violation
- February presentations from EGLE staff on system status
- Readout from February 2022 inspections by EGLE staff
- **EPA February 2022 Inspection Report**
- **Information received on May 5th, responsive to ECAD letter dated 4/20/2022 regarding Disinfection Profiling and Benchmarking pursuant to EPA's Unilateral Administrative Order**

Repairs and Improvements to the Water Treatment Plant Since September 2021

Sedimentation Basin Repairs

- Repaired the sludge removal system on the North Sedimentation Basin
- Repaired the sludge removal system on the South Sedimentation Basin and brought the basin back into service

Filter Repairs

- Brought two filters back to full functionality, currently maintaining 6 filters for daily use
- On a schedule to repair two additional filters for a total of 8 filters
- Repaired depth sensors and flow meters on the filters

Monitoring Equipment Improvements

- Repaired Chlorine Analyzer at Point Of Entry (POE)
- Calibrated filter turbidity meters, and put them on a preventative maintenance schedule
- Repaired the chlorine analyzers and turbidity meters on the sedimentation basins
- Updated SOPs and operator training procedures
- Updated the SCADA alarm call list and enabled external alarms
- Cleanup the SCADA system to ensure functioning monitoring equipment used for compliance and operations purposes
- Upgraded equipment used for grab sample chlorine analysis

Other Improvements

- Completed an Emergency Response Plan
- Replaced screens on overflow vents
- Fixed sanitary seals on finished water storage reservoir

EPA Enforcement Update

Key Findings from the most recent EPA inspection

1. Filters

- The treatment system has 6 fully functional filters to meet the daily water demand.

2. SCADA System and Alarms

- EPA's order requires alarms on the finished water chlorine, filter turbidity, and reservoir levels. At the end of the EPA inspection, all alarms required by the EPA order were enabled.

3. Sedimentation Basin Turbidity Meters

- These meters did not appear to be connected to the computer system at the time of the inspection.
- The sedimentation basin turbidity meters are not a requirement of the EPA order or other applicable regulations.

Upcoming Deliverables for the EPA Order

- Disinfection Profile and Benchmark due approximately 12 months after the start of monitoring
- Alternative Analysis due in mid-July 2022