



City of Hartford * County of Van Buren * State of Michigan

TO: Mayor Hall and the Hartford Commission

FROM: Quentin Clark, President, Certified Operator Services LLC

CC: Nicol Pulluam, City Manager

DATE: August 25, 2025

RE: **APPROVAL OF THE PURCHASE OF FIELD MONITORING EQUIPMENT**

ITEM BEFORE THE COMMISSION:

Staff recommends that the City of Hartford invest in upgraded field monitoring equipment and adopt a revised procedure to ensure regulatory compliance with state and federal standards for chlorine monitoring in the drinking water distribution system, and update the City's pH and temperature monitoring procedures.

BACKGROUND:

Historically, routine distribution system samples have been collected and returned to the Iron Removal Plant for analysis. All analytes—except pH and temperature—have been measured using the Hach DR2800 spectrophotometer. pH and temperature are currently measured using probes in the plant lab. While this has been common practice, this method does not meet current compliance requirements.

According to the Michigan Department of Environment, Great Lakes, and Energy (EGLE), as well as federal guidelines, chlorine residuals, pH, and temperature must be measured immediately at the time and location of collection. These parameters change rapidly once removed from the distribution system, rendering delayed analysis noncompliant and unreliable.

While the City has field equipment available for pH and temperature, it lacks the appropriate equipment to measure chlorine residuals on-site.

EQUIPMENT OPTIONS:

The following options were evaluated for field monitoring of chlorine residuals:

1. Hach DR900 Portable Colorimeter

- Most economical option
- Simple operation
- Uses reagents already in City inventory
- **Does not comply with EPA/EGLE standards for fluoride**

- Widely used among systems that do not feed fluoride
- 2. **Hach DR1900 Portable Spectrophotometer**
 - Higher initial cost
 - Greater accuracy than DR900
 - Compatible with existing reagents
 - **Fully compliant with EPA/EGLE standards**, including fluoride
 - Most versatile for current and future compliance needs

It provides:

- Rugged construction for field monitoring capabilities with lab-quality accuracy
- Compatibility with current reagent inventory
- Long-term cost savings on consumables
- Full compliance with state and federal fluoride monitoring requirements

This purchase will allow the city to ensure field measurements for chlorine residuals are conducted in full compliance with regulatory standards. Staff strongly recommends that the city invest in the higher upfront cost.

- 3. **Hach SL250 Portable Parallel Analyzer**
 - Highest cost
 - Fastest and easiest to use
 - Simultaneous pH monitoring
 - Requires proprietary **ChemKey®** reagents (more expensive reagents)

Cannot measure manganese (Mn) below 0.1 mg/L, which is above the *AWWA suggested range of 0.01 – 0.05 mg/L*

NEXT STEPS:

Upon the Commission's approval, Certified Operator Services will develop a standard operating procedure (SOP) for field testing of drinking water parameters and provide staff training on the use of the new equipment.

SUPPORTING DOCUMENTS

USA Bluebook Quote

RECOMMENDATION:

The City of Hartford City Commission approves the purchase of the Hach DR1900 for \$5,408.09, including freight.