

## **Summary of City of Flint (City) Actions In Response to the EPA Emergency Administrative Order Updated: August 5, 2016**

Chapters 52, 57, 59a & 59b: Weekly Conference Call Regarding Flint Water Plant Operations August 5, 2016.

EPA Order Due Date: Weekly

MDEQ and the Flint Water Treatment Plant staff held the weekly call on August 5<sup>th</sup> to review and discuss the summary of water quality and corrosion control parameters reported on the City's July and August operation reports completed to date, a summary of water quality parameters collected on July 31<sup>st</sup> in the distribution system, and some other matters pertaining to operation of the City's water supply.

The following observations were noted:

- The supplemental phosphate dosage was consistent and ranged between 2.23 and 2.26 milligrams per liter (mg/l). The phosphate residuals measured at the plant tap ranged from 3.31 to 3.71 mg/l entering the distribution system.
- Three of the weekly distribution system sites (#5, #6, & #7) reported a residual below 3.1 mg/l, at 2.94, 2.93 and 3.01 mg/l, respectively. The remaining weekly sites ranged between 3.18 and 3.48 mg/l of phosphate.
- We discussed the need for appropriate response activities when water quality parameters are not within acceptable ranges, such as low pH values or low phosphate residuals. The City is concerned with simply flushing hydrants in the vicinity and returning to resample to determine if water quality improved. They want formal guidance from both regulatory agencies (EPA and DEQ). We agreed to pursue input from all involved parties in developing response protocols.
- All pH measurements were greater than 7.0 at the Enhanced Water Quality Monitoring (EWQM) sites and the Point of Entry (Control Station #2) to the system. The pH levels ranged from 7.41 to 7.50 in the water received from Great Lakes Water Authority (GLWA) and from 7.28 to 7.40 at the 10 distribution system sites.
- Iron levels at EWQM sites ranged from 0.01 to 0.06 mg/l. Plant tap iron concentrations ranged from 0.01 to 0.03 mg/l in the last week.
- All lead results reported from the EWQM sites on this week's report were not detected.
- The chlorine feed at Control Station #2 was consistent at 1.11 to 1.12 mg/l with a goal of maintaining a free, chlorine residual at the WTP tap of 1.5 mg/l (levels ranged from 1.3 to 1.7 mg/l). The free chlorine residuals at the 10 EWQM sites in the distribution system ranged from 0.43 to 1.53 mg/l.
- A combined, single spreadsheet has been developed for the inclusion of all chlorination information. The spreadsheet is installed on the operations center computer.
- The City continues to work with Bob London to prepare an up-to-date Disinfection Byproducts Monitoring Plan.
- The Flint WTP is assessing the laboratory equipment and staff training necessary to initiate additional corrosion control monitoring as recommended by DEQ staff.
- The possibility of a sulfate monitoring system is still being pursued/developed.

- WTP staff continues to work with DEQ staff to modify bench sheets with the goal of improving data evaluation.

The following information was provided through daily operation summary reports prepared by DEQ staff during the week of August 1<sup>st</sup>.

- The pH levels seem to be improving system-wide, but the City will need to continue efforts to obtain equipment to allow for pH adjustment at CS #2 should it become necessary. The chlorine residuals are also improving with the boost in chlorine dose to 1.1 mg/l at CS #2. Starting August 5<sup>th</sup>, the dose at CS #2 will be adjusted manually by WTP staff to reach a target free chlorine residual of 1.5 mg/l at plant tap.
- Sodium hypochlorite feeders at CS2 are performing better since the diaphragms are now installed according to the manufacturer's specifications. The installation stud was cleaned to allow the diaphragm to be tightened to the designated set point. This allows the pumps to operate at their design capacity. Discussions have started on replacing pumps with new units that have higher capacity, but it may have to wait until a more permanent chemical feed system is installed.
- Plant employees are working to obtain a NPDES permit for discharge of 19.2 MGD in preparation for the WTP's test run.
- 6 totes of phosphoric acid were ordered and will be delivered before 8/12. 10 totes of sodium hypochlorite were ordered and will be delivered on Tuesday, 8/9.
- On the night of August 4<sup>th</sup>, a sodium hypochlorite feed pump at CS2 malfunctioned. The operational staff made the proper adjustments to resolve the problem. This incident is pointing to the need to pursue the replacement of this emergency, temporary chemical feed system with a more stable system similar to the one designed and already permitted by DEQ. The present system is being pushed to the capacity and reliability limits, especially the sodium hypochlorite pumps, and is too labor intensive.
- The free and total residuals in the Dort Reservoir were 3.1 and 3.2 mg/l at 8:30 AM on Friday, August 5<sup>th</sup>.
- The operations supervisor placed an emergency order for a transfer pump, which the operators had been using to transfer phosphate from a full, fresh tote to the tote sitting on top of the secondary containment vessel in CS2. The tote sitting on the secondary containment is only periodically exchanged due to the difficulty of resetting it through the low clearance of the garage door.
- The City had to constantly adjust its chlorine feed rate at CS2 to maintain a constant residual on the morning of August 5<sup>th</sup> because the residual received from GLWA gradually increased from 06:45 to 13:00, with levels varying from 0.68 to 0.82 mg/l (at 4 AM – 0.87 mg/l). The changes coming from GLWA may be partially due to a slight uptick in Flint's incoming flow to 15.2 MGD. At 15:15, the free chlorine residual at the plant tap was 1.52 mg/l.

- The pumps pulling from Cedar Street were operated from about 10:30 AM to 12:30 PM on Friday, August 5<sup>th</sup>, with the free chlorine residual leaving the station between 1.42 and 1.44 mg/l.