

Rennaker, Joanne (DEQ)

From: Prysby, Mike (DEQ)
Sent: Tuesday, December 16, 2014 11:08 AM
To: Busch, Stephen (DEQ)
Subject: Flint
Attachments: TTHM Reduction measures.doc

Steve,

I spoke with WTP staff (Brent and Mike) and the WSC (Robert Binscik) to confirm the proactive measures taken by the city; thus far, towards reducing TTHM levels. Attached is a brief summary.

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**TTHM Reduction
Action taken by City
December 16, 2014**

Flint's 3rd quarter of TTHM monitoring (Nov 20th, 2014) shows a reduction in TTHM levels at all of the sampling locations. The reduced TTHMs are the combined result of seasonal variation of total organic carbon (TTHM precursors) in the raw water and action taken by the city towards reducing TTHM levels. The amount of reduction contributed by each factor cannot be determined; however, the following is a list of proactive measures taken by the city in their effort to reduce TTHM levels.

1. Removed the 20 MGAL Dort Reservoir from service.

The reservoir allowed treated water from the WTP to re-circulate back to high service thus adding up to one week of retention time.

2. Softening 100% of the WTP flow during normal plant operation.

Softening the complete flow reduces the chlorine demand. During high water demands (large main breaks, filling reservoirs), split treatment must be utilized due to VFD control problems with the 20 MGD low service pump; however, split treatment is no longer the WTP's main mode of operation.

3. Improved turn-over of water in distribution system reservoirs.

The operating range of the Cedar Street and Westside reservoirs was increased from 1-2 ft. (summer) to approximately 10 feet. The increased drawdown has reduced residence time and improved chlorine residuals.

4. Established a more proactive flushing program.

Increased flushing reduced residence time in the distribution system especially at dead-ends.

5. Optimizing Transmission System Operation w. repair of major valves and confirming proper valve position.

Several critical valves were replaced on one of Flint's four major transmission mains and several other valves (found to be closed) were opened. This eliminated stagnation problems in areas near this main, improved chlorine residuals and allows the main to operate in a looped configuration.