



HISTORY OF PFAS IN THE PLAINFIELD TOWNSHIP WATER SYSTEM




UNREGULATED CONTAMINANT MONITORING RULE 3 (UCMR3)

- Since 1996, all large water systems have been required to test for a list of about 30 new contaminants every 5 years.
- The contaminant list is prepared by the EPA and includes both chemicals and viruses.
- The EPA uses the data from this nationwide testing to develop regulatory decisions.
- The third round of testing began in 2013 and included six PFAS chemicals.



UCMR3 TESTING TIMELINE

- June 2013 First samples of our water taken for the 30 contaminants
 - Sept 2013 Second sample set taken
 - Dec 2013 Third sample set taken
 - March 2014 Final samples taken for the 30 contaminants
 - August 2014 Results of our tests are verified and submitted to the EPA
 - January 2017 EPA releases final results of nationwide UCMR3 testing
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VERSLUIS WELL FIELD OPERATION TIMELINE

- Historically Versluis Well Field was only used during the peak summer season.
- The Versluis Well Field was in operation for the first 2 of the 4 UCMR 3 sampling events in 2013/2014.
- The Versluis Well Field was operated normally during the summers of 2014 and 2015 and was shut down on October 1, 2015.
- Based on new information regarding PFAS around the state, we decided in the winter of 2015/2016 that we would test the Versluis Wells directly.
- In March 2016 we tested the raw water at Versluis and found elevated levels. At that time we made the decision to keep the Versluis Wells shut down for the summer of 2016.

GOING FORWARD

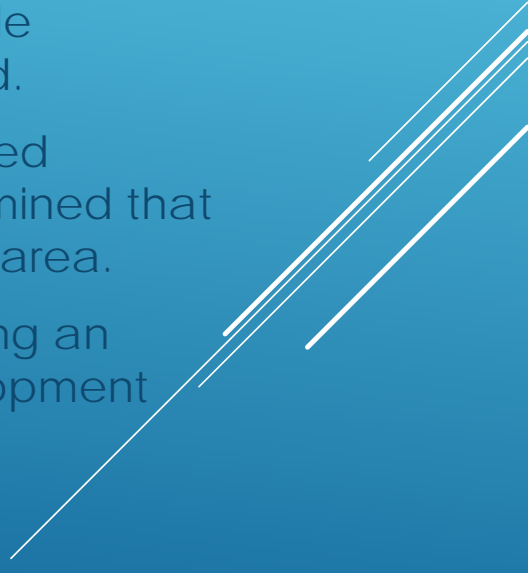
PFAS Monitoring

- Since shutting down the Versluis Well Field we have been sampling and testing for the levels of PFAS in the water that leaves our plant.
- The level of PFOS+PFOA over that period ranged from 4.9 to 10.3 ppt with an average of 8.5 ppt.
- Due to the measurement being in parts per trillion, the levels of PFOS+PFOA we have seen over time are considered to be stable.



GOING FORWARD

New Well Field

- In 2016 we began the process to find a location for a new well field to replace the capacity we lost when we closed the Versluis Well Field.
 - We began the discussions internally and quickly determined that we needed to hire an outside consultant to assist us.
 - In 2017 we appropriated funds for our engineers to investigate suitable groundwater sources and help us locate property that could be used.
 - Out of that investigation we narrowed down to an area that appeared suitable for a new well field. However, shortly thereafter it was determined that the contamination plume from the House Street site extended to this area.
 - We have since found a second site that we are in the process of doing an hydraulic analysis on and hope to have a new wellfield under development in the next 12 months.
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GOING FORWARD

Treatment for PFAS

- Our previous treatment process was not effective for removing PFAS.
- Along with our engineers, the water plant operators began researching alternative methods available to treat for PFAS.
- Discussions were had with other treatment plants that have PFAS present or are currently utilizing treatment methods that we are considering.
- Factors that were considered when looking at the alternatives included:
 1. Track record of the treatment method
 2. Effectiveness of treatment method for a wide range of contaminants
 3. Acceptability to the MDEQ for permitting purposes
 4. Ongoing cost to maintain the treatment system
 5. Initial cost to incorporate the treatment system

TODAY

Treatment for PFAS

- Thanks to a \$750,000 grant from the state to perform a pilot study, we have been able to convert over half of our maximum treatment capacity to granular activated carbon (GAC) filtration.
- As part of this pilot study we have been able to do extensive testing of our raw water, of the water at different points in the treatment process and of the water leaving the plant for the distribution system.
- Test outcomes to date include:
 1. The total PFAS in the water coming into our plant is ~ 45 ppt (9 ppt PFOA+PFOS).
 2. The total PFAS in the water leaving our plant is currently non-detect for PFAS.
 3. The anticipated life of the carbon in our filters is 3+ years.
 4. When it comes time to replace the carbon, the existing gets incinerated at around 1,800° F, which destroys the PFAS and reactivates the carbon.



QUESTIONS?

