

BCPUD PIPELINE



Summer 2017

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Irrigation Systems: Water savers or water wasters?

If you are thinking about installing an automated irrigation system to water your landscaping, please take a moment to think about some of the “downsides” of these systems. Although it may seem water-efficient to use a landscape irrigation system (and the manufacturers explicitly market their products as such), in the district’s experience, these systems often fail, resulting in large water losses when the systems are unattended. Irrigation systems also require regular and diligent maintenance in order to function properly, which can be expensive. Please do not install an automated system unless you are able to regularly inspect, maintain and repair it. Thank you!



**Water or Sewer
emergency?
Please contact our
office at
415-868-1224**

Summer 2017 Update on the BCPUD’s Chlorine Disinfection Byproduct Reduction Project

The Fall 2016 Pipeline newsletter featured an update about the district’s efforts to reduce chlorine disinfection byproducts (“DBPs”) in its treated drinking water. The State Water Resources Control Board (“SWRCB”) requires the disinfection of drinking water, but disinfectants such as chlorine react with naturally-occurring organic and inorganic matter present in raw water to form chemicals known as DBPs. The SWRCB has determined that certain DBPs are a health concern at certain levels of exposure. The standard, or maximum contaminant level (“MCL”) for TTHMs is 80 ug/L and the standard or MCL for HAA5s is 60 ug/L. A water system is in violation of the MCL if the calculated running annual average of its quarterly sample results exceeds the applicable standard.



After pilot-testing several different treatment options over the last few years, the BCPUD determined that the use of aluminum chlorohydrate (“ACH”) coagulant prior to filtration would be the best option for the district to reduce its DBPs. The BCPUD’s internal studies showed that judicious use of the ACH coagulant lowered the levels of total organic carbon (“TOC”) in the district’s raw water and lowered the resulting DBPs by more than half. In August 2016, the BCPUD applied to the SWRCB for permission to install coagulation infrastructure, which was promptly granted. (See photo above) On February 21, 2017, the SWRCB granted the BCPUD permission to operate the new treatment process, subject to a monthly reporting requirement for the next year of operation.

The first sample date following the commencement of the coagulation treatment process was March 29, 2017. As required, the BCPUD collected samples of its drinking water at the two designated sample locations — near the Lift Station on Wharf Road and on Vine Road near Poplar — and tested for DBPs. Although the levels of TTHMs and HAA5s were much lower than they had been the prior quarter (see box below), the BCPUD was still in violation of the MCL for HAA5s based on the quarterly results and in violation of the MCL for both TTHMs and HAA5s based on the calculated running annual average of its sample results:

	11/29/16		3/29/17	
	TTHM’s	HAA5’s	TTHM’s	HAA5’s
Vine Road	108.87 ug/L	94.5 ug/L	47.25 ug/L	76.3 ug/L
Lift Station	111.14 ug/L	118.6 ug/L	79.52 ug/L	77.2 ug/L

Why was the district’s drinking water still in violation of the MCL despite operating for more than a month under the new ACH coagulation treatment process? Very likely because the district still had too much uncoagulated water in its distribution system. Consumption was very low throughout the district in late March due to the extensive winter rains. Low consumption means that previously treated but uncoagulated water remained in the district’s water storage tanks on Mesa Road and in the entire distribution system for a long time. The heavy winter rains also contributed high levels of organics to the raw water which were not effectively removed until the coagulation treatment process began on February 21st; organics bond with the chlorine to form the high levels of DBPs. The BCPUD reasoned that the DBP levels would be lower in the next round of samples when the uncoagulated water had moved through the distribution system.

The next scheduled sample date was in early June 2017. The district decided to conduct an interim round of sampling to measure how the district’s water was changing as the coagulation treatment process continued and the older, uncoagulated water moved out of the system. BCPUD staff collected “unofficial” water samples from the district’s two sample sites on May 4, 2017 and the official samples were collected on June 6, 2017. The results are displayed below:

	5/4/17		6/6/17	
	TTHM’s	HAA5’s	TTHM’s	HAA5’s
Vine Road	27.39 ug/L	10.5 ug/L	13.14 ug/L	7.7 ug/L
Lift Station	28.10 ug/L	11.1 ug/L	22.45 ug/L	15.5 ug/L

As you can see, all results from the individual samples taken in May and June 2017 are well below the applicable MCLs for both TTHMs and HAA5s at both sample sites. Unfortunately, because of the poor sample results in late November 2016, the calculated running annual average for HAA5s at our Lift Station sample location *only* remains out of compliance (64.3 ug/L as of June 2017). As such, the district will notify all customers separately about this violation. Our goal is that by the time of our next scheduled samples (September 2017), the BCPUD no longer will be in violation of any of the DBP MCLs on either a quarterly or a calculated running annual average basis.



We will continue to keep you updated on the results of our operations and water quality testing throughout the year. Once again, the district would like to express its gratitude and appreciation to Lewie Likover (former BCPUD employee) and Jonathan Van Bourg (consultant) for their collaborative design and implementation of this elegant, cost-effective and innovative solution for the district’s chlorine DBP problem. Please do not hesitate to contact the BCPUD with any questions or concerns, or if you would like more information about the inline coagulation treatment process.

Enjoy the remainder of the summer, and please continue to be mindful and careful about your water use!