Authority Times

News and Information for Customers
of the Borough of Conshohocken Authority

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Authority Freezes Rates for 3 years

As every homeowner and resident of Conshohocken knows, the costs for everything from food and beverages to vehicle fuel, clothing and homes go up year after year, if not month after month. In fact, nearly everything has at least a modest cost of living increase each year.

Fortunately for the ratepayers of the Borough of Conshohocken Authority, there is an exception to this rule. The Board of Directors of the Borough of Conshohocken Authority has recently decided to freeze sewer rates for the next three years. The Board unanimously approved the rate freeze at its August 27th meeting.

Under the rate freeze, Conshohocken Borough customers will not see a rate increase until at least the year 2023. After five years of keeping rates flat, the Authority Board, in January 2018, passed a resolution to increase the consumption portion from $3.07 per thousand gallons to $3.30 per thousand gallons.

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A Summer Not 'Wasted'

Authority Intern Writes About Her Experiences

By Eugenia Warnock

My summer was spent working as an intern in a wastewater treatment plant. How often do you hear someone say that?

I arrived at the Borough of Conshohocken Authority gates at 6 a.m. on a very hot June morning with the first semester of Wastewater Operations under my belt. As is often the case, "book learning" can mean little regarding day-to-day "real work" at a job. During my internship I was given hands-on access to just about every facet of plant operations. My learning experience was top notch.

The term wastewater refers to everything people put down the community's sanitary sewers. This includes what is flushed down your toilet. But the significant amount comes from clothes washers, dishwashers and sinks from residential homes, restaurants, commercial businesses and manufacturing. There is also what is referred to as "grey water" – water that has been used in the cooling of large office buildings or in the process of manufacturing.

Sanitary sewer wastewater contains visible substances - rags, plastics, fat/grease and dirt etc., and invisible substances can be multiple chemicals and heavy metals. All this needs to be removed to a low level so that after treatment water is safe for release to streams and rivers. The level of pollutants allowed to remain in wastewater is determined by a permit specific to each treatment plant. Permits are issued by the National Pollution Discharge Elimination System, which establishes limits and conditions for discharges from treatment facilities into all U.S. waters.

Plant Operations

When the sanitary sewer waters of Conshohocken arrive at the Plant (Influent), the first step of treatment forces the waters through screens which catch larger debris such as rags.

Then a Grinder chews up wood and plastics – all items that will clog pumps and piping – into grit. The screening occurs in a two-story Wet Well. In Conshohocken Influent flow (the floor of the Wet Well) is covered by steel plates to reduce potential odor issues. In the last several years, the BCA has gone to great lengths to control odor issues. Several times I assisted with daily jobs of removing captured debris and Wet Well inspection.

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MEETINGS

October 22
November 26
December 24
January 28
February 25
March 24

Meetings are held in the Authority office:
601 East Elm St.
Conshohocken

Meeting time 6:30 pm

Summer Intern Writes of Experiences

Influent is next pumped into long tanks, the Primary Clarifiers, sometimes referred to as settling tanks. These tanks are designed to remove all the solids that settle at the bottom. Sludge is sent to Digester tanks for temporary holding while the waters are aerated via a series of weirs and an aeration tank then sent to Rotating Biological Contractors for further treatment. While in the Primary Clarifiers grease/fats and small rags that have escaped the screens (face/body and diapers wipes are prime culprits) are skimmed off the top and returned to the beginning of the process.

Tanks require frequent attention during the workday. Sludge is measured and inspected for consistency, the detention time of water in the tanks is monitored, skimming occurs several times a day, samples are taken to determine the level of dissolved oxygen, and thorough hosing removes algae growth or pesky wipes. In my internship I collected samples, measured the sludge level with a clear acrylic pipe aptly called a "Sludge Judge," skimmed the tanks via a stationary half pipe with a long handle to skim scum from the surface of the waters, and I repeatedly hosed the tanks. There is something satisfying about testing for and removing potentially dangerous impurities from the waters. Many an hour I spent on both the Primary and Secondary Clarifiers with an industrial hose washing the tank interiors and weirs and blasting especially tenacious wipes stuck on weirs! One thing I learned my first day was not to point the hose directly below where you are standing. The most basic of fluid dynamics teaches us that water in a hose pointed directly down into more water will splash right back up in our face!

While the sludge is moved to one of two Digesters elsewhere in the plant, the waters are next sent to the RBCs. Three main processes remove pollutants from water: chemical, physical and biological. Conshohocken uses a biological process called "Fixed Film" to treat the waters. The RBC process allows the wastewater to meet a biological medium, removing more pollutants from the water. It consists of a series of closely spaced, parallel discs mounted on a rotating shaft of which about 40% of each disc is immersed in wastewater. Microorganisms grow on the surface of the discs and form a slime layer which allows for biological degradation of the water's pollutants. In lay terms, controlled microorganisms (bugs) literally eat pollutants.

RBCs are often used in treatment plants with limited land availability as is the case in Conshohocken. My role included testing the waters for dissolved oxygen before flowing past the first RBC and after the last RBC (waters go through a train of nine RBCs), checking the level/color of the slime on the discs, and assisting with the weighing of rotating discs. Weighing the RBCs involves very slightly raising the rotating shaft with a hand pump to determine the weight of the microorganisms (slime) on the discs. If the slime builds/becomes too heavy, it can damage the equipment. If the weight is excessive, increased air blown on the discs will literally blow off the excess. This material will then show up in the next cleansing process – Secondary Clarifiers.

Once through the RBCs waters move to Secondary Clarifiers, like Primary Clarifiers. They too need to be skimmed, measured for sludge, tested for dissolved oxygen and hosed every day. The sludge again goes to the Digester tanks, but the waters leave these Secondary Clarifiers and flow directly to a Chlorine Building where chlorine is added to kill any remaining pathogens. The final step is to add sodium bisulfate, thereby ensuring chlorine is removed before the Effluent is sent into its Receiving Waters, in this case the Schuylkill River. Chlorine levels are tested daily, often more than once to confirm the Plant is meeting levels as required by its permit. The underground chlorine tanks, a series of "S" shaped rooms, are cleaned every week. This requires staff donning protective gear, safety harness and a gas meter and climbing down into the drained tanks to pressure wash every surface. While I did not have the opportunity to do this myself, I assisted with the somewhat laborious set up and learned much about the process.

Wrapping up the steps of plant Operations, the sludge that has been resting in two huge round Digester tanks eventually ends up on the Press. This two-story piece of equipment runs the sludge – mixed with polymers - through multiple layers/sequences of matting, removing much of the water, leaving what is referred to as "Sludge Cake," to go to landfills. I watched the process on several occasions, but it is not an area in which an intern can be of much assistance. The management of the Press requires significant experience to get the "recipe" just right.

Finally, every morning approximately 15 meters/gauges through the Plant are read and documented. This includes Influent and Effluent flows, kilowatt usage for blowers, screens, grit grinders and numerous aeration equipment throughout the Plant. I was given the opportunity multiple times to take these readings, all of which aided in my understanding of the treatment plant workings.

I thank Mike Fondots and Pat Palermo for teaching me so much and for their patience.

Collections

I spent about six weeks in Collections, which is the monitoring/maintenance of all sanitary sewer pipes in Conshohocken and West Conshohocken. The Collection Departments ensures equipment is maintained and identifies/removes debris which clogs the lines or harms Plant facilities. Every week a number of the 575 manholes are inspected, sewer lines are jet cleaned, a camera is lowered into sewers to look for damage, and streets are marked to identify where sewer lines run for the purposes of impending construction. I learned a tremendous amount through hands-on experience. I spray painted street location marks, assisted with jetting lines and was included in the training for the new camera truck – a sophisticated and fascinating camera that crawls through lines photographing. Additionally, I was instructed in all aspects of inspecting manholes.

Along with the physical work of Collections, being out in the community allowed me to meet and speak with many people of Conshohocken. There was much curiosity about our activities, and everyone was friendly. This was an added benefit to my summer internship.

Thank you to the Collections team of Vinnie Colon, Ed Mongan and Marty Higgins for teaching me a great deal, doing so with patience - and much good humor!

My internship was the best learning experience I have encountered, both in wastewater management and other fields in which I have worked. I feel fortunate to have spent the summer with the Authority. Each day when the alarm went off at 4:30 a.m. I looked forward to going to work.

Thank you especially to Executive Director Steve Clark who gave a non-traditional intern a chance! Steve and his team run a well-maintained and safe facility. I learned a great deal and had wonderful colleagues. They have my assurances that I will put to good use what I learned.

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Eugenia Warnock is completing the DEP certified Wastewater Certification Program this Fall and will sit for the national tests. She also plans to complete her Master of Environmental Studies program at the University of Pennsylvania.

Authority Rate Freeze in Effect Until 2023

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"The Board knows that the residents of Conshohocken Borough are concerned about rates, especially as we have seen rates in nearby Townships and Boroughs go up year after year, so the Board wanted to make it official that there would be no rate increases until at least 2023," said Carol Smith, Chairwoman of the Authority's Board of Directors. She added that the Authority's staff and professionals agree that the rate freeze will not affect the Authority's ability to serve its customers.

An article in the May 9, 2019 edition of the Philadelphia Inquirer noted the Public Utility Commission had recently approved a sewer rate increase of 34.6% for those customers served by Aqua Pennsylvania.