
INTEROFFICE MEMORANDUM

TO: KYLE SIPES
FROM: ERIK KENTFIELD
SUBJECT: ARCATA WASTEWATER TREATMENT PLANT TRIP MEMORANDUM
DATE: OCTOBER 7, 2016
CC: EILEEN CASHMAN

Purpose

The purpose of this memorandum is to discuss the class trip to the Arcata Wastewater Treatment Plant on Friday, September 30, 2016. There was a guided tour with Thea around most of the facility and the treatment process of Arcata's wastewater was discussed in detail.

Discussion

The primary treatment at the AWWTP consists of the headworks, clarifier, and digesters. Wastewater flows into the plant with about 200 mg/L of BOD and TSS. The headworks removes sediment and other inorganic material with bar screens and grit separators. The wastewater flows to the clarifier which is used to settle out suspended solids. Solids are sent to the digesters which produce compost and methane. The grade A compost is used as fertilizer and the methane is used to produce heat for the digestion process. After the clarifier, the wastewater flows to oxidation ponds through underground pipes.

The secondary treatment at the AWWTP is composed of 2 oxidation ponds and 6 treatment wetlands. Microorganisms in the oxidation ponds remove up to 50% of the BOD from the wastewater and the slow flow allows additional solids to settle. After the oxidation ponds, there are 6 treatment wetlands that continue to reduce BOD and TSS as well as breakdown settled algae. Blue Frogs have recently been added to the wetland 3 as an experiment to reduce excess sludge buildup. The wastewater then moves to the enhancement marshes.

The tertiary treatment at the AWWTP consists solely of the enhancement marshes. The enhancement marshes are open to the public, but was not part of the tour. The purpose of the marshes is to continue removal of BOD from the wastewater and to reduce nitrogen and phosphorous content. This area provides natural habitats for wildlife and is a recreational attraction. Finally, the wastewater flows through disinfection before discharge.

The disinfection process at the AWWTP is composed of chlorinating and dechlorinating multiple times before discharge into Humboldt Bay. The targeted levels of BOD and TSS at the AWWTP before discharge is below an average of 30 mg/L a month. They strive to have consistent measurements all month to meet the standard monthly average.

Conclusion

The trip allowed a firsthand experience of onsite wastewater treatment and put into perspective the acreage needed for the complete process. Thea provided an excellent explanation of wastewater treatment from an operator's perspective and knowledge base.