

MEMORANDUM

TO: PROFESSOR ARCHIBALD
FROM: VERONICA DOMINGO-LERMAN
SUBJECT: ARCATA WASTEWATER TREATMENT PLANT
DATE: OCTOBER 8, 2019

Purpose:

The purpose of this memorandum is review/summarize information learned about the Arcata Wastewater Treatment Plant during our field trip on the fourth of October 2019.

Discussion :

Our field trip consisted of touring the Arcata Wastewater Treatment Plant, and learning it's history and systems.

The Arcata Wastewater Treatment Plant was one of the first wastewater treatment systems to utilize wetlands as a method of processing wastewater. When the plant's current system was originally being designed, the idea of using marsh as tertiary treatment was controversial.

The Arcata Wastewater Treatment Plant has two corkscrews that push the water through pre-treatment. There are corkscrews because the area gets such drastic changes in the amount of water coming in, and the corkscrews only take as much as they can handle, rather than pumping all the water, and damaging the pump in the process. Often only one screw is in use, but both are needed for sudden increases in flow due to seasonal variation such as HSU students and rainwater seeping in through pipes.

The primary and secondary treatments are pretty standard (settling tanks and oxidation ponds). Where things really get funky is in tertiary treatment when secondary effluent is put into artificial marshes where it is filtered by bacteria, plants, and other microorganisms. When there is especially high flow of wastewater, water can be diverted straight to tertiary treatment.

The final stages of disinfection are also fairly standard (chlorine).

Conclusion :

Our field trip gave insight into Arcata's unique wastewater treatment system. The system seems to do a good job of dealing with the area's unusual fluctuations in flow (although it would be more ideal to have greater capacity to avoid diverting water straight to tertiary treatment).