
TO: INSTRUCTOR KRISTEN RADECKY
FROM: MATTHEW SMALL
SUBJECT: ARCATA WASTE WATER TREATMENT PLANT
DATE: MAY 3, 2013

Purpose

The purpose of this memo is to review the trip that was taken to the Arcata Waste Water Treatment Plant (AWWTP) on April 26, 2013. This memo will contain the steps of the treatment process, what time of systems the plant uses, and some water qualities the plant must shoot for.

Discussion

The AWWTP uses two Archimedes screw pumps that per day pump eighteen million gallons. From there the waste water goes through what is called the head works which takes the big and gritty material, because some of that material is sent to one of two anaerobic digesters which produce energy. From the head works the waste water is sent to the primary clarifier which cleans off the oil and further reduces the solid materials which forms something known as sludge that also goes to the digesters. The AWWTP is known for being the first plant that uses oxidation ponds instead of activated sludge. After the clarifier the water is gravity fed to the oxidation ponds where and from there the water flows to the treatment wetlands, which have lost some of their productivity over time but they are working on finding a way to slow down the flow of the water. From there the water is sent to be chlorinated and then to the enhancement wetlands. These wetlands further reduce the BOD and suspended solids and act like tertiary treatment. A small draw back from the enhancement wetlands is they tend to create algae which increase the suspended solids and there are some animals that live on the pond which also dirties the pond. After the wetlands the water is sent back to be chlorinated to clean any possible pathogens from the water. Then the water is about to be sent out, but before it is sent to the ocean it must have the chlorination removed. While they aren't required to have a tertiary treatment they still reach their goals of 30 BOD and 30 Phosphorus. Not only does the plant produce below it is goals, the AWWTP produces something else that is class A. their digesters produce a class A bio solid from the digesters that is a far cry from the low quality hazardous bio solid from the big towns of down south.

Conclusion

People come from all over to see that AWWTP design to figure out how to design their own. This is due to the fact that most of is gravity fed and the digesters produce a rich bio solid as well as useful energy. While the idea is unconventional they do fall below the 30/30 goal set by the government.