
MEMORANDUM

TO: MARGARET LANG
FROM: JOHN CHASE
SUBJECT: WASTE WATER TREATMENT
DATE: OCTOBER 6, 2016

Purpose:

The purpose of this memorandum is to inform about the process and results of the Arcata waste water treatment plant. It will touch on how the waste water enters the plant, the process that it goes through and finally the quality of the treated water.

Discussion:

Upon visiting the Arcata Waste Water Treatment Plant on Friday, September 30th, we were taken around and told how the plant operates by one of the plant managers.

The process starts out by water entering the head works; this is where large solids and grit are removed from the new coming water. After passing through the head works the water is then pumped into settling tanks. In the settling tanks the water is in an almost stagnate state; in this state two things happen: one- Larger, heavier particles settle down to the bottom; two- grease floats to the top where it is skimmed off and disposed of. All solids from previous processes are sent to the digesters. The sludge goes through anaerobic digestion and is then dried and used for compost. Next the water is moved into oxidation ponds where it is left for about a month in order for more solids to settle and for bacteria to be broken down by UV light. Then the water is moved into the treatment wetlands, in the treatment wetlands slow the rate of flow to remove solid trace contaminants, and lower BOD. Water is then sent to the enhancement wet lands. In the enhancement wet land there is an aerobic and an anaerobic zones making it ideal for helpful bacteria to further decompose bacteria. Last the water is sent to the chlorinator where it is disinfected and discharged into the bay.

When the water enters the plant it enters with a BOD of about 700 mg/L. After primary treatment the BOD is about 60mg/L and when it is discharged at 30mg/L.

Conclusion:

The Arcata treatment plant has many advantages using the natural system to clean their water, although they do not have the ability to more intensely control the output of their water. The plant itself requires much more room due to the pond but less maintenance; many tradeoffs are made in the creation of the type of plant and in this specific case this plant could not be made everywhere it is very location dependent.

