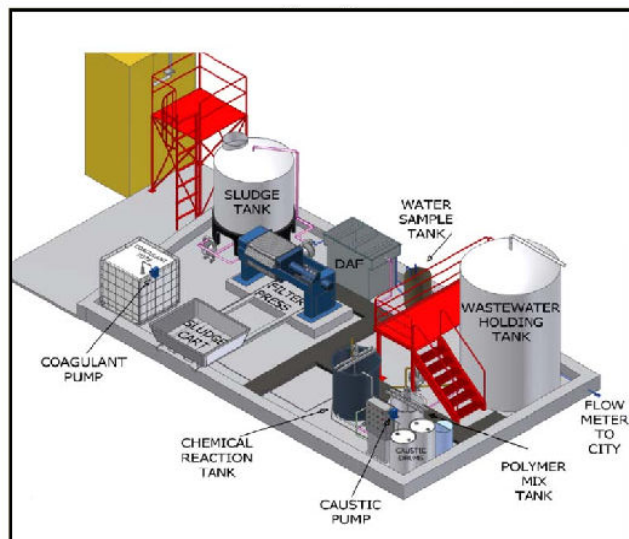


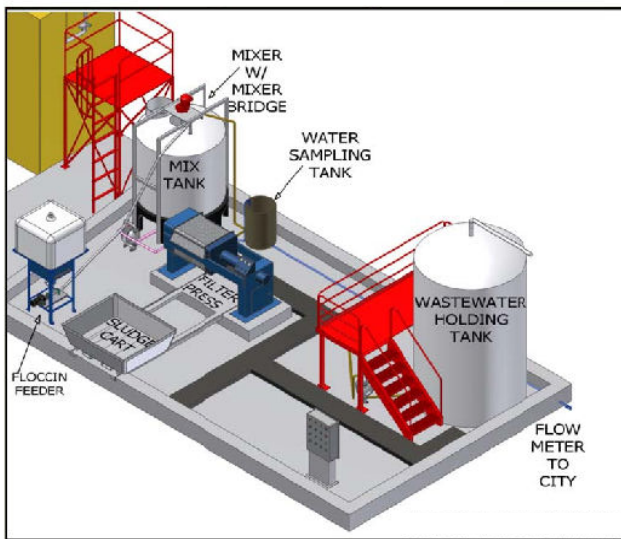
CORRUGATING FACILITY

Integrated Engineers, Inc. modified a corrugating facility in Southern California that required a design build solution to improve their existing wastewater treatment process.

Previous System



New System



Their previous treatment process involved using Sodium Hydroxide to raise the pH, coagulant in the form of aluminum chloride, and an anionic polyacrylamide polymer. This company would blend polymer daily with water to create a 1% solution. Coagulant is combined with the wastewater, where sodium hydroxide is added to increase the pH to a level of 6.5. The anionic flocculant is mixed in the reaction tank just prior to being pumped to the DAF (Dissolved Air Flotation) unit, where sludge is skimmed off and dewatered through a Filter Press. The facility had to retreat their filtrate water of 1,000 gallons per day due to solids in the filtrate.

Integrated Engineers, Inc. proposed the Floccin Process to generate their wastewater through a pretreatment system with optimal efficiency.

The Floccin replaced their conventional chemistry, all three chemicals (one of which is hazardous), to treat the wastewater; minimizing costs for labor, maintenance, permit and hazardous waste fees, and produces filter cakes with a 40-50% solids consistency, and sludge reclassified as non-hazardous waste, for local landfill disposal.



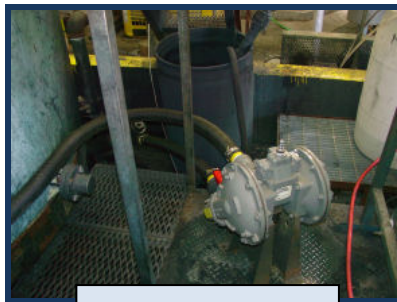
Mix Tank



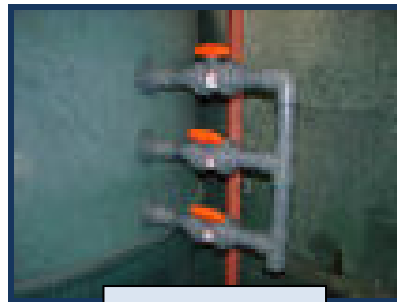
Mixer

The new process is simplified and required 50% less horsepower to run. The Floccin Process uses a mixer and a reaction tank to treat the influent water. The solids are allowed to settle and the clear water is decanted through the Filter Press. The settled solids are dewatered and the filtrate is clean enough to discharge without being retreated.

Changes to the system include installation of the Floccin Feeder, a mixing bridge and mixer for the mix tank. The facility was able to remove the Chemical Reaction Tank, the DAF, the sodium hydroxide, coagulant, and polymer containers as these were no longer needed. The result increased the system capacity by 40% by not having to retreat the filtrate water, 40% savings on chemicals and six man hours a day in labor savings.



Filter Press Pump



Decant Valves

Lab Analysis confirmed the sludge passed the TCLP/STLC (reclassification of the sludge from hazardous to non-hazardous, but regulated), thereby reducing the sludge haul off costs and any environmental liability for the facility in regards to landfill disposal. Operator time and monitoring is greatly reduced saving hours of labor.