



Title 22 effluent filter backwashing way too often? . . .

Then have a look at ***Suspended Air Flotation (SAF™)*** by Heron Innovators.

That's what ***Graton Community Services District*** did at their Wastewater Treatment Plant.

Graton CSD operates a 140,000 gpd ADWF (850,000 gpd AWWF) wastewater treatment plant in Sonoma County, California. Their discharge permit was recently revised to require California Title 22 treatment to unrestricted reuse specifications. Lescure Engineers of Santa Rosa selected a compressible media filter (CMF) as the preferred Title 22 final filter, but bench scale testing with final pond effluent containing mostly algae yielded unacceptably short filter runs on the order of one half hour before backwashing was required. Lescure Engineers recognized Heron's SAF™ technology as the probable solution allowing longer filter runs and meeting the Title 22 requirement of less than 10 NTU turbidity in the CMF influent.

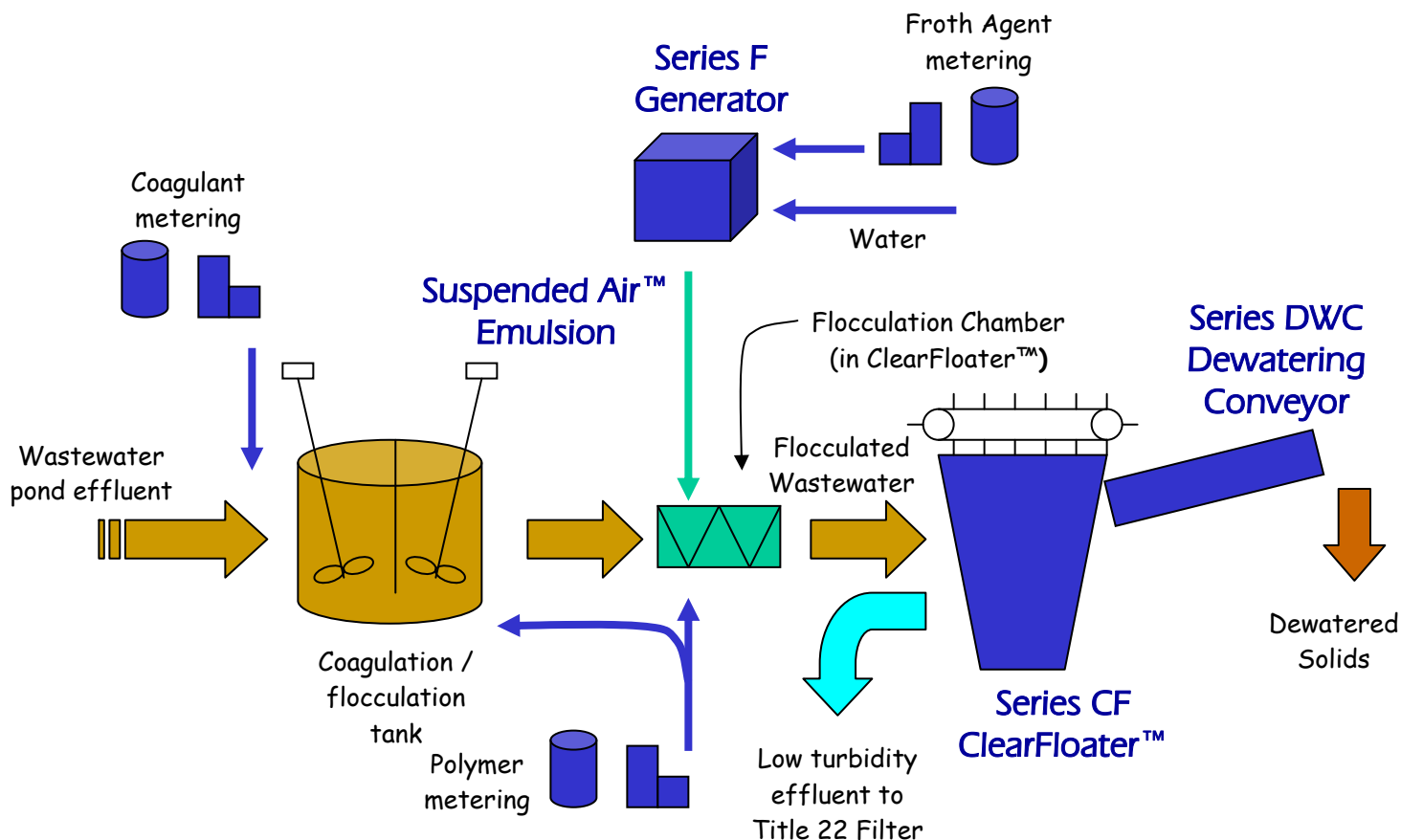


Heron Innovators provided a 200 gpm capacity SAF™ pilot plant trailer in June 2006. Treatment pond secondary effluent pumped to the flotation process was coagulated with a starch-based coagulant, and flocculated with an anionic polymer. Treatment was provided for final settling pond effluent, with TSS concentrations of 6 to 18 mg/L, and second oxidation pond effluent (with and without the CMF backwash added) with TSS concentrations of 75 to 92 mg/L. Treatment rates ranged from 124 to 232 gpm, with hydraulic loading rates up to 13.3 gpm per square foot.

SAF™ effluent turbidity was consistently less than 10 NTU, often as low as 4 and 5 NTU, permitting filter runs longer than six hours. The SAF™ process was remarkably successful in removing algae from wastewater pond effluent, and the solids content of the floated algae was measured at 3.7 – 4.6%.

Graton CSD is purchasing a 250 gpm capacity ***Model SAF250™ Suspended Air™ Flotation Treatment System***, including a 3,500-gallon dual compartment conditioning tank with turbine agitators, a Model CF250 ClearFloater™, a Model DWC210 Dewatering Conveyor, and two Model F50 Suspended Air™ Emulsion Generators (one as an installed spare). The system is scheduled for installation in the third quarter of 2008, and will treat all of the plant's effluent.

A reference can be provided on request.



Typical Wastewater Treatment Schematic

TYPICAL APPLICATIONS (partial list)

Food, Dairy, and Animal Products Processing: Removal of suspended solids from screened raw wastewaters, with thickening of recovered solids.

Municipal Wastewater: Waste activated sludge thickening, primary clarification with grit removal, secondary clarification with solids thickening.

Wastewater Effluent Ponds: Removal of algae and other suspended solids for direct discharge or as a polishing step prior to tertiary filtration.

Water Treatment: Removal of suspended solids as a polishing step prior to filtration. Increases filter run time between backwashes.

Oily Wastes: Removal of emulsified oil from water (air compressor condensate, vehicle wash water, oilfield produced water, etc.).

OPERATIONAL ADVANTAGES

SAF™ is re-writing the book on flotation technology, replacing DAF as the method of choice for removal of suspended solids from wastewater.

SAF™ flotation tanks are less than 20% as large as DAF tanks for the same treatment rate. Because of the high air content of Suspended Air™ Emulsion, a SAF™ system can be just as effective as a DAF using only 2% of the power for air generation. Floated solids are gelatinous and can be dewatered by simple gravity drainage. The SAF™ System can successfully treat wastewaters containing as much as 15,000 mg/L of suspended solids with removal rates greater than 90%. In many cases effluent suspended solids are less than 5 mg/L.

SYSTEM FEATURES AND OPTIONS

Standard Features: Systems are supplied complete, pre-engineered and ready for on-site assembly, including a dual compartment conditioning tank, coagulant metering pump, polymer activation system, Series F Suspended Air™ Emulsion Generator, Series CF ClearFloater™ Flotation Separator, Series DWC Dewatering Conveyor, and NEMA 4X electrical control panel containing all controls, displays, and motor drives.

Series DWC Dewatering Conveyor: Conveyor belt is a polypropylene chain belt with wedge cross section openings approximately 0.038" x 0.25", driven at approximately 5 feet per minute by a variable speed garmotor.

Optional solids pump: Peristaltic hose pump for conveyance of dewatered solids to disposal or further processing.

***Don't be fooled by imitators - always ask for:
Suspended Air™ Flotation - by Heron Innovators, Inc.***