





WesTech **Rotary Drum Fine Screens** have been the industry's choice for applications requiring high solids removal efficiency at an economical cost. WesTech's innovation offers direct drive propulsion for drum rotation, eliminating the messy and maintenance-prone chains and sprockets. The primary advantage of drum screens is eliminating debris carryover. Debris remains inside the screen until discharge. Unlike conventional moving media screens, there are no seals with a drum screen. In addition, there is no chance for debris to bypass the screen medium.

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## Food Processing Wastewater

Copious wastewater is generated in food production. Effluent characteristics and constituents vary widely and require different processing technologies to achieve the required discharge limits. Discharge limits vary further by state and local regulations.

### Screening

Food production plant waste streams contain large chunks which require separation. The simplest and most economic process for removing these solids is screening. A number of screen designs exist and facility layout should be a basis for the selection. Models include rotary drum screens, climber screens and channel screens with shaftless conveyors.

Screened effluent is sent to an equalization sump. It may be combined with streams not requiring screening. The various waste streams are seldom continuous in either quantity or quality. Process flows may vary by shift, by product and by cleaning schedules. Stream flow equalization is almost always advantageous. Equalizing flow rates also reduces wastewater treatment equipment size and cost.

### FOG

Some plants produce high amounts of fats, oil and grease (FOG). A dissolved air flotation (DAF) unit is an effective means of reducing the FOG and solids levels. DAFs are especially effective for food solids since most food particles float. Floating FOG and solids are skimmed from the DAF unit and recovered for disposal or sale. Skimmed solids do not require thickening.

Total suspended solids (TSS), FOG, and biological oxygen demand (BOD) are all significantly reduced by screening and DAF treatment. Nevertheless,

there may still be levels of these contaminants which will require further treatment prior to discharge. Contaminant type and level determine treatment options. Waste stream volume, reuse possibilities, and available space will also influence the choice of treatment designs.

Almost all food processing facilities will require biological treatment for BOD removal. If the stream is small or BOD is low, the plant may elect to send the screened waste to a municipal treatment plant. Some wastewater will contain very high BOD (dairy, cheese, etc.) and anaerobic as well as aerobic systems will be necessary.

### BioTreater

A WesTech BioTreater™ is an aerobic treatment system that conserves real estate by combining a number of operations. BioTreater is a general term describing a variety of individual treatment processes. The basic concept is that of a tank within a tank using common wall construction. The central tank is normally a COP™ Clarifier which treats the effluent prior to discharge. The outer tank is divided into sections, each performing a separate operation.

Operations may include: equalization, aeration, sludge storage, digestion, and anoxic treatment. Common tank wall design with separated exterior tank sections effectively reduces the tank footprint. Gravity-driven flow reduces the piping and pumping required resulting in capital cost savings. BioTreater sludge is then dewatered on a filter press.