



VERTICAL PLATE CLARIFIERS

The **Monroe Environmental**® Vertical Clarifier is designed to provide low cost, efficient solids removal from a wide range of waste and process liquids. The inclined plate design allows the total gravity settling area to be as much as ten times more than the actual floor space occupied by the clarifier. Integral chemical mixing and flocculation tanks are available, as well as options for enhanced sludge thickening.

This unit is typically used to remove solids from industrial waste and process waters. For municipal treatment plants, they are often used to clarify and remove solids from sand filter backwash water and other filtration processes.

Optional equipment includes skimmer, drag conveyors, chemical treatment, flocculator, thickener, and control panel.

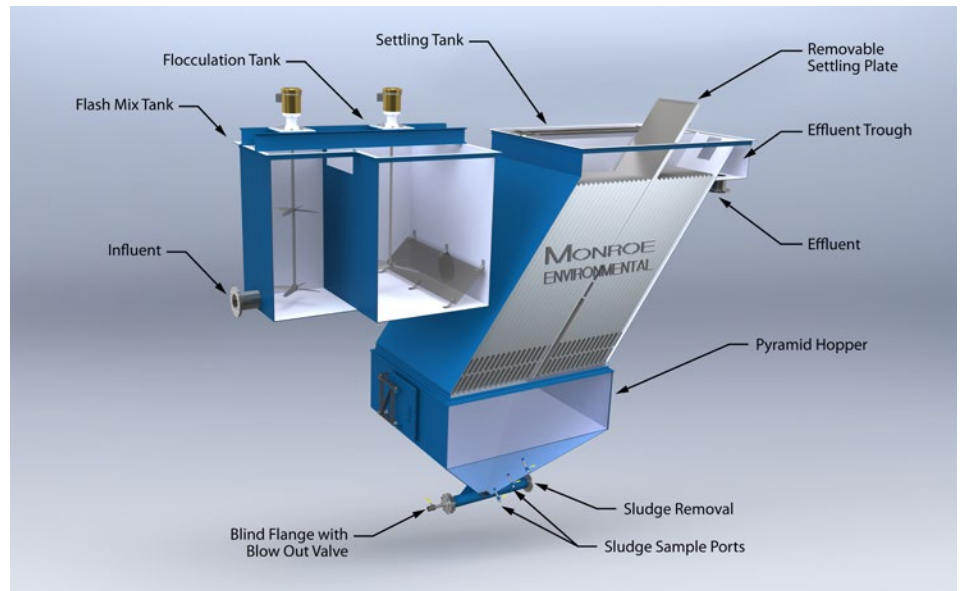
- Inclined plate separator
- Efficient removal of solids (TSS, TDS, metals, etc.) from liquids
- Extremely low space requirements
- Minimum maintenance
- Low installed costs
- No moving parts in settling area
- Capacities from 1 to 2,000 GPM

The unique, modular design of the Monroe Vertical Plate Clarifier allows for easy removal of individual laminar plate modules from the clarifier for inspection.

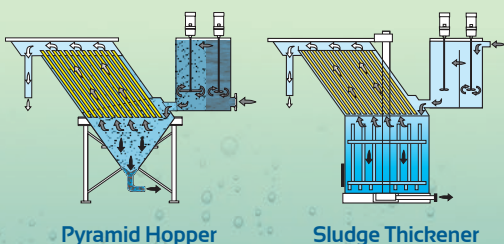
Monroe also offers versatile Horizontal Plate Clarifiers which utilize cross flow parallel plate technology capable of removing floating contaminants as well as settle-able materials.



1,000 GPM Vertical Plate Clarifier used to clarify filter backwash water



Sludge Removal Designs



Applications

- Chemical processing
- Coolant systems
- Filter backwash clarification
- Food processing
- Foundry operations
- Glass plant operations
- Industrial waste management
- Metal working
- Oil refining
- Paper making
- Plastic manufacturing
- Plating and coating processes
- Process water treatment
- Steel processing
- Storm water systems



70 GPM Vertical Clarifier with flash and flocculation tanks, thickener, and FRP cover for landfill leachate treatment



Installation of Vertical Clarifier for disc filter backwash with chemical mix tanks, access platform, ladder, and support structure



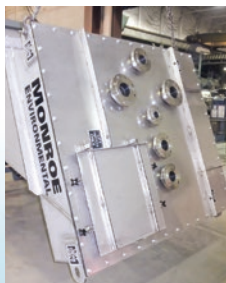
60 GPM Vertical Clarifier to treat surface/process water at chemical plant

Inclined Plate Clarifier Design

The Monroe Vertical Clarifier is designed to remove solids from wastewater and other process liquids. The flash mix and flocculation tanks (optional) allow for the addition of chemicals and polymers that will aid the settling process — adjusting pH to precipitate dissolved solids and/or enhancing the agglomeration of suspended particles into heavier, more settle-able floc. The liquid is fed from these tanks into the clarifier through the inlet chamber, which directs flow into the separation section.

The liquid then enters the lower area of the laminar plates through side slots which distribute it across the entire width of the plates. Particulate settles onto the face of the plates and slides down to the clarifier bottom. The clarified liquid exits the plate sections through launders at the top of the unit which are designed to develop and control adequate pressure drop, maintaining laminar flow through the plates.

Customized covers, access ladders, and platforms are available in a variety of materials including stainless steel, FRP, aluminum, and many others.



The clarified liquid then flows into the effluent chamber and out of the clarifier.

Settled solids collect at the bottom of the pyramid sludge hopper and are removed from the clarifier. A Sludge Thickener (optional) with rake mechanism may be utilized in place of the pyramid hopper when applicable.

The unique, modular design of the Monroe Parallel Plate Vertical Clarifier allows for easy removal of individual laminar plate modules from the clarifier for inspection.

Designed For Your Specific Clarifier Application

While many installations provide adequate solids removal without influent pre-treatment, optional mixers and flocculator tanks are available to enhance efficiency when required. Some solids must be flocculated to achieve adequate mass to be effectively removed.



Special Features

Customized covers, access ladders, and platforms are available in a variety of materials including stainless steel, FRP, aluminum, and many others.

Wide range of construction materials. Mild steel, special coatings, stainless steel, fiberglass, plastics, and other materials are available to meet specific needs.

The unique, modular design of the Monroe Vertical Clarifier allows easy removal of individual laminar plate modules from the clarifier for inspection.

A flash mixer and flocculator tank are available pretreatment options.

A rake thickener with geared drive is available for the bottom of the separator tank to increase solids concentration.

Complete electrical controls are available to meet customer requirements.

Pilot & Testing Programs

Monroe Environmental pilot systems are an excellent option for testing your application. This is a cost-effective way to evaluate an environmental solution before making a capital investment in a full scale system. Monroe has several pilot systems available for rent as well as the support services required to install, operate, and evaluate the system's performance.