



# HORIZONTAL PLATE CLARIFIERS

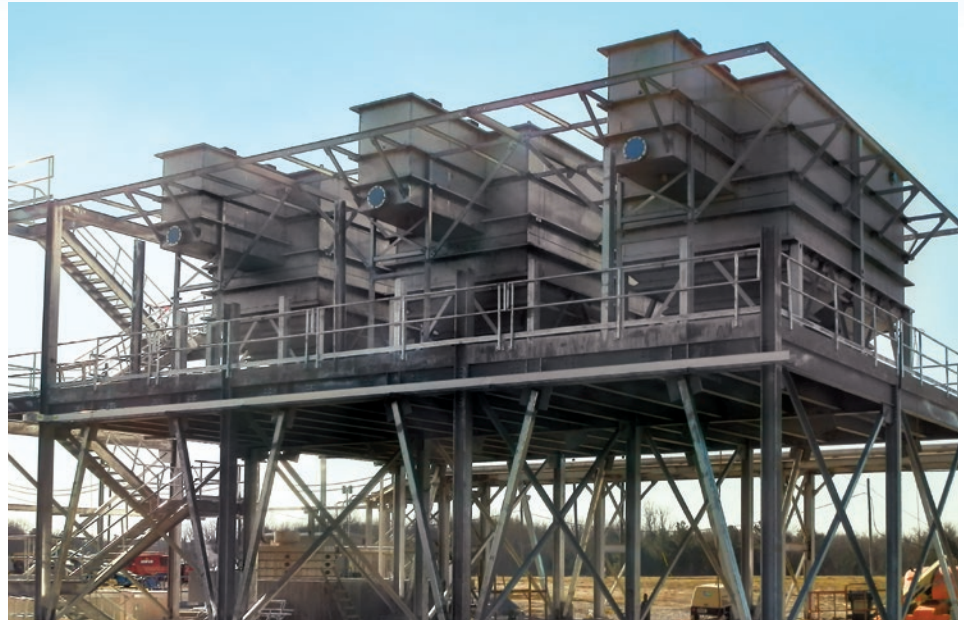
The **Monroe Environmental**® Parallel Plate Horizontal Clarifier is one of the most versatile clarifiers available on the market. Because the unique Monroe parallel separator plate design effectively separates both settleable solids and floating materials, *the Horizontal Clarifier can be used in place of a circular clarifier for nearly any application.* This allows for significant cost savings and reduced space requirements versus traditional clarifiers. These advantages have made the Horizontal Clarifier the best-selling clarifier offered by Monroe over the past 40+ years.

## Inclined Plates Removes Suspended & Floating Materials

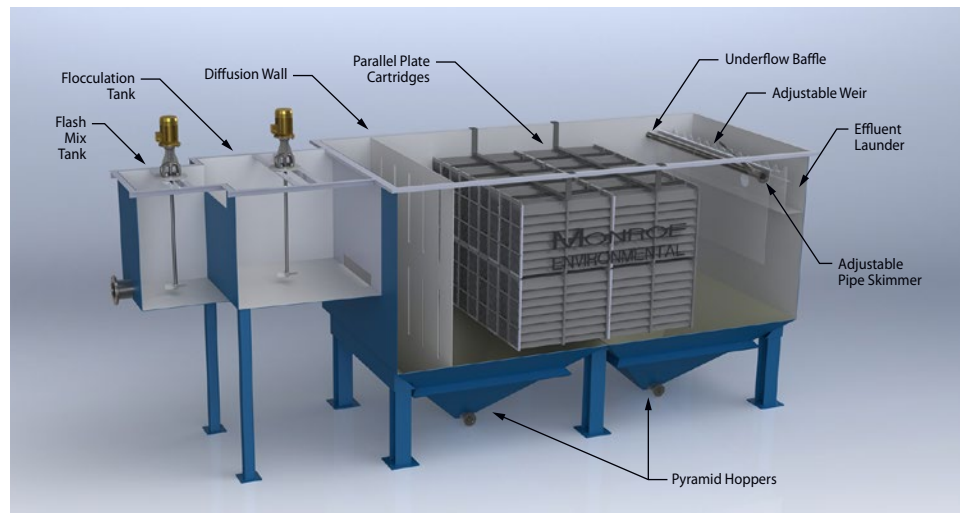
Monroe Parallel Plate Horizontal Clarifiers are specially sized for each application. Monroe Environmental will evaluate your fluid and determine design parameters for your particular installation. Monroe will then construct a clarifier to provide the most economical and efficient liquid clarification to meet your needs.

The Monroe Horizontal Plate Clarifier simultaneously removes both floatable and settleable contaminants unlike traditional inclined plate vertical clarifier designs

- Non-clogging, cross flow parallel plate design
- Mild steel, stainless steel, FRP, or polypropylene construction depending on application and pH
- More efficient than coalescing media for most applications
- Reduced capital, operating, and maintenance costs vs. other clarifiers
- Capacities from 1 to 2,000 GPM
- **Can be used in place of larger, more expensive circular clarifiers**



*Three 1,000 GPM Horizontal Plate Clarifiers, stainless steel construction during installation at a plastics production plant*



## Applications

- Chemical processing
- Coolant systems
- Filter backwash clarification
- Food processing
- Foundry operations
- Glass plant operations
- Hydraulic fracturing
- Industrial waste management
- Metal working
- Oil refining
- Oil/water separation
- Plant run-off
- Plastic manufacturing
- Plating and coating processes
- Steel processing
- Storm water systems
- Wash water
- And many others



## Horizontal Inclined Plate Clarifier Capabilities

**Oil Recovery** — Separated oils, process fluids, and other floatable materials are guided to an accumulation area for easy removal and reclamation. An adjustable overflow weir or a Monroe Oil Recovery Unit can be included to remove these elements.

**Separated Solids Removal** — Where the dirt load is heavy, a drag conveyor or screw conveyor may be included to provide continuous removal of settled solids from the bottom of the clarifier.

**Chemical Treatment** — The Monroe Horizontal Clarifier can include a pretreatment process as an integral part of the basic clarifier. This aids in the separation of dissolved solids, very fine particles, and emulsified oils that tend to remain suspended in water or process fluids. A chemical treatment tank and/or flocculation chamber can be added to allow pH control and mixing of emulsion breakers and coagulants into the influent before the laminar flow process.

### Special Features

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

**No moving parts in the clarifier section** reduces equipment cost and practically eliminates operating cost when compared with a centrifuge separator.

#### Easily removable laminar plates.

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

**Complete electrical controls** to meet customer requirements are available if required.



*Left: Stainless steel parallel plate cartridges. Right: HDPE (High-Density Polyethylene) parallel plate packs for low pH and highly corrosive applications*



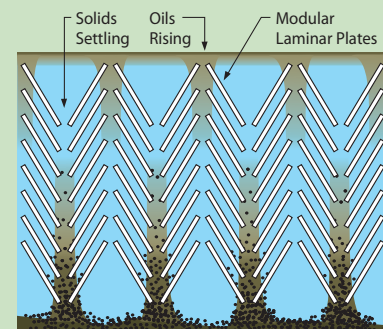
*Turnkey Horizontal Clarifier system with sludge tank, pumps, filter press, and controls*

### Laminar Flow Principle

The unique design of the Monroe Horizontal Clarifier creates laminar flow conditions and allows gravitational forces to separate the lighter and heavier elements from the fluid.

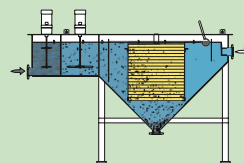
Normally, industrial laminar flow separation requires settling areas beyond practical space availability in typical manufacturing plants.

Monroe's design engineers, however, have eliminated this problem through the unique capabilities of the Horizontal Clarifier.

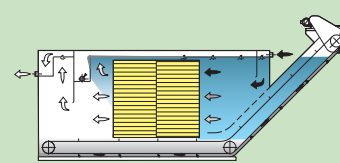


**Monroe Horizontal Clarifiers** In the Monroe Horizontal Clarifier separated particles are required to move only a few inches before reaching an uninterrupted and protected free fall or rise to collection areas.

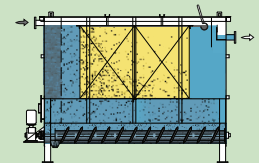
### Sludge Removal Designs



**Pyramid Hopper**



**Drag Conveyor**



**Screw Conveyor**



### 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.



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