

# API OIL/WATER SEPARATORS



**Monroe Environmental®** is the leading source for API Separator design, engineering, and manufacturing services. A well designed, properly functioning API Separator is a tremendous piece of wastewater process equipment for refineries, chemical plants, power plants, and many other heavy-duty industrial facilities. Unfortunately, the API Separator has earned a bad reputation among plant personnel and operators due to common engineering and design mistakes that can be avoided. Monroe Environmental understands the shortfalls common with competitive API Separator

designs, and continues to lead the way with innovative engineering and continuous design improvements.

Monroe Environmental custom oil/water separators are designed per American Petroleum Institute standards (API) for above and below ground installations.

The Monroe API Separator is designed for the removal of free oil and solids. If the removal of soluble substances is required, Monroe can provide additional treatment equipment or will recommend other Monroe Clarifiers.

## API Separator Design

The basic components of the Monroe API Separator include an inlet section with diffusion wall, separator channel, an oil retention baffle and an outlet section. Depending on your requirements, additional options can include trash screens, a slotted pipe skimmer, surface conveyors, and a bottom drag or screw conveyor for solids handling.

Complete covers of various materials are available including the necessary environmental and safety requirements. These provisions may include a nitrogen blanketing system, carbon filtering to remove hydrocarbons from the blanket gas, exhaust flares, pressure relieving valves, and access doors.



*14 ft. x 90 ft. long 105 GPM API Separator with cover, mineral wool insulation, and aluminum cladding. The unit shipped from our factory fully assembled.*

## Applications

- Oil/water separation
- Solids/grit removal
- Refinery wastewater
- Petrochemical plants
- Terminal and barge wastewater
- Power plant operations
- Remove oil from wastewater





*Left: Circular Separator*

*Right: 525 GPM API Separator – polypropylene tank with non-metallic internals*

Above ground Separators are normally constructed from carbon steel with corrosion resistant coatings. Below ground Separators are normally fabricated from steel or concrete and may include the additional requirements for containment and leak detection.

Monroe Environmental utilizes API 421 design specifications while incorporating the latest technological improvements to maximize performance and efficiency for each oil water separation application. In many cases, we also custom design specialty oil water separators with process features and site specific configurations to suit your needs. We are clarification and separation experts, and you can count on our experience, quality of fabrication, and ongoing support to ensure you have a successful system over the long term.

## Circular Separators

Monroe Environmental also provides Circular Oil/Water Separators that can take the place of rectangular API Separators in some cases. These units are equipped with enhanced oil skimming mechanisms, high torque drives, and sludge collection rakes for handling the heaviest oil and solids loading applications.

A Monroe Environmental Applications Engineer can best advise on the pros and cons of each system design based on your project's specific requirements.

## System Retrofits

Existing API Separators can be upgraded with new internal components to improve separation, oil reclamation, or any other operational or maintenance problem. In addition, Monroe



*Left: (From left): Diffusion chamber with reaction jet baffles, screw conveyor for solids removal, and chain and flight drag conveyor. Middle: Chain and flight surface skimmer and drag conveyor in separation and settling zone. Right: (From left): Automated oil roll, adjustable pipe skimmer, underflow baffle, and adjustable overflow weir.*

parallel plate packs can be added to existing API Separators to increase the effective surface area which will provide increased oil removal and increased wastewater flow capacity.

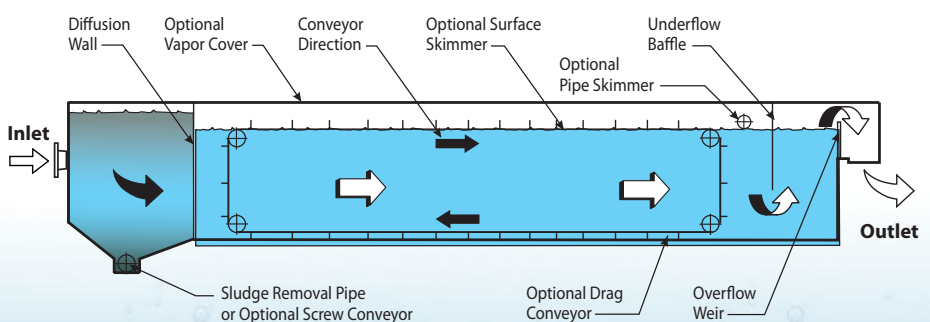
Monroe Environmental has experience retrofitting existing in ground concrete tanks as well as above ground steel separators.

## Special Features

- Inlet configuration designs to suit the application
- Mechanical surface skimmer and pipe skimmer available

- Automated oil roll available
- Belt skimmer for oil removal available
- Drag conveyor, screw auger, or pyramid hoppers for solids collection
- Optional vapor cover, including air pollution control device
- Parallel plate pack available to enhance separation

Monroe is able to provide API Separators in large shop-fabricated and assembled units to reduce installation costs.



*API Separator standard configuration*



**Michigan HQ** • sales@mon-env.com  
810 West Front St., Monroe, MI 48161 USA  
Phone: 734-242-7654 • 800-992-7707

**Texas Office** • texas@mon-env.com  
110 Cypress Station Dr., Suite 135, Houston, TX 77090  
Phone: 281-942-6700 • 844-465-6700