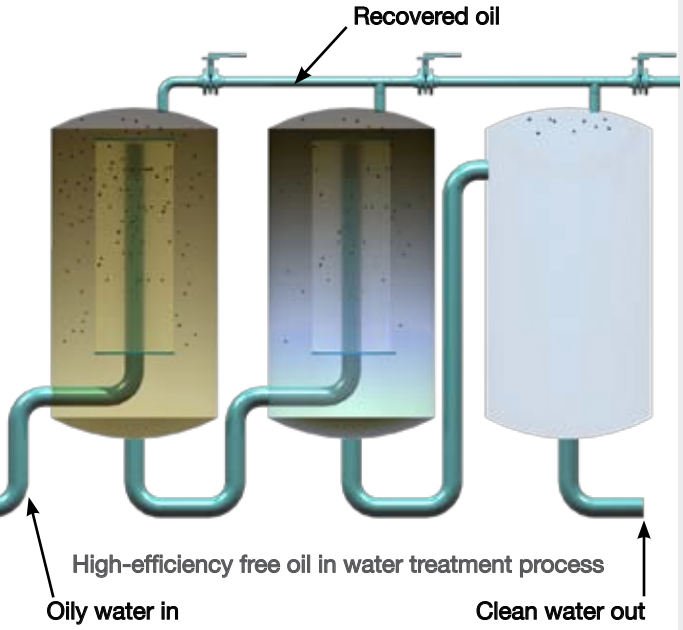
Hi-Flow® A Patented Oil Removal System

Hi-Flow is a patented process that is used for both removing oils (free and partially soluble oils) from wastewater and high rates of produced water.



Our Hi-Flow Oil Removal System consists of the following:

- Hi-Flow Elements
  - 7” x 20” columns containing patented Hi-Flow media
  - Flow rate of 7.5 gpm per element, per vessel
  - Can be stacked vertically for larger flows
  - Life based on characteristics of specific stream, typically between 3-6 months
  - Option to pack with different densities of the Hi-Flow media to allow for different types of oil removal. For example, some will remove only free oils leaving the soluble oils (great for recycling cleaners and coolants), while some will remove all oils both free and soluble (great for pre or post treatment of a wastewater stream)
- Hi-Flow Vessels
  - OCX 12” diameter vessels in varying lengths
  - Holds between 1-3 Hi-Flow elements depending on flow rate
  - Larger diameters available up to 30” and 90 gpm
- Sand Filter
  - Used to remove solids before passing through Hi-Flow vessels
  - >10 micron solids will greater reduce the Hi-Flow element life
  - Other filtration options available
- Post-Treatment Options
  - Organoclays, including CrudeSorb®, our proprietary adsorption media: used to remove large molecular weight organics
  - GAC (Granular Activated Carbon): used to remove smaller molecular weight organics
  - Zeolite: used to remove ammonia

Hi-Flow Oil Removal Systems have achieved FOG <5 ppm consistently while removing:

- Oils >10 microns from a wastewater stream
- Gasoline from water
- Incoming oil & grease levels ranging from 50 ppm to thousands of ppm

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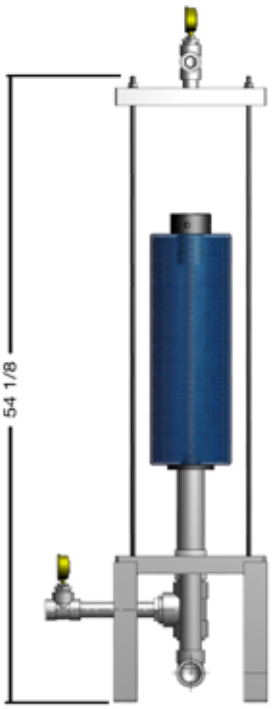

Hi-Flow Oil Removal Systems can be used to:

- Remove oil & grease from ground water for remediation applications
- Recycle rinse tanks
- Remove tramp oil from coolants
- Remove free oils from cleaners for longer bath life
- Remove soluble oils to achieve FOG limit
- Remove oils before or after waste treatment

General Usage Guidelines

- To treat 7.5 gpm use a single element. To treat 15 gpm, use 2 elements stacked vertically. Increasing the number of elements stacked vertically increases the vertical length of the system.
- Each canister of Crudesorb®, GAC, or Zeolite can flow 3 gpm in an 11”x11” canister. For example, a 15 gpm system would be 5 canisters high and equal 900 gallons per hour=18,000 gallons per 20 hour day=5,000,000 gallons per year (a 280 day year).

Demo Units

Because the Hi-Flow Oil Removal System has both chemical and mechanical/ physical mechanisms operating simultaneously it is very difficult to replicate results in a one gallon lab sample. The most effective method for determining Hi-Flow success is either renting a demo unit and testing on-site or sending a large (greater than 300 gallons) sample to our testing facilities. The rental fee will be discounted from the purchase price of the equipment or refunded based on testing success/failure criteria determined prior to testing.

Example Project: Recycling Rinse Water

By using the Hi-Flow Oil Removal System a customer can eliminate 10 gpm of rinse water going down the drain using recycled water to rinse parts. That’s a savings of over one million gallons of water per rinse tank, and with just the savings in water and sewer costs, the equipment will pay for itself in less than a year.

Post-Treatment Options

Hi-Flow can be used with other CETCO canisters to remove smaller organics and even some surfactants. The Hi-Flow elements flow liquid from the inside out allowing the oils to rise to the top where they can be collected and recycled while forcing the clean effluent out of the bottom. By reversing the flow a Hi-Flow vessel can hold different types of media for specific applications. Some media commercially available through CETCO are CrudeSorb, GAC, a combination of the two, and Zeolite. Other ion specific media can be packed into canisters such as Mercury, Arsenic, etc.