



Steel  
Tank  
Institute

# AquaSweep™

## Gravity Oil Water Separator

### UL 2215 Listed



## Who Needs an Oil Water Separator?

Virtually any industrial user who controls or collects storm water and discharges it through a pipe, drain or other outlet, into a storm sewer system or navigable waterway must comply with the National Pollutant Discharge Elimination System (NPDES). Mandated by Congress under Section 402 of the Clean Water Act, the NPDES storm water program is a two-phased approach to eliminating or reducing accidental and chronic low-level releases of oil-polluted water. A working oil water separator is an important part of a storm water drainage system designed for facility compliance with the NPDES storm water program.

NPDES Phase I and Phase II requires permits for storm water discharges associated with industrial activity, including construction sites. Whether a new installation or existing facility, many public and private facilities are affected. Those most likely to have oily storm water discharge include:

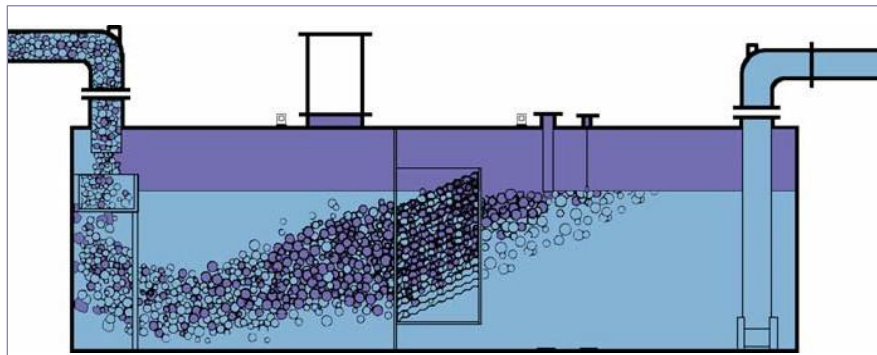
Petroleum marketing - specifically service stations and convenience stores  
Bulk oil terminals and loading racks  
Automobile/truck/fleet repair and maintenance shops  
Airports, bus terminals and railroad yards  
Parking lots at shopping areas or municipal centers  
Refineries and petrochemical plants  
Utilities  
Material handling facilities

To meet water runoff compliance regulations, the storm water drainage systems must be capable of removing the petroleum hydrocarbons from the natural water runoff down to at least 15 parts per million (ppm), or even lower in some jurisdictions. This requires the removal of all free oil droplets equal to or greater than 20 microns in size. EPA has picked the "oil sheen" test as a determining factor in establishing if storm water discharges are "contained" and therefore, need a permit.

Helps you meet EPA Phase II Storm Water Program discharge limits

## How does the AquaSweep™ Oil Water Separator Work?

AquaSweep™ Gravity Oil Water Separators are designed for gravity-induced separation of oil from water. This system is passive, meaning that the attributes of the incoming oily water will directly determine the characteristics of treated outgoing water. The separators are designed for gravity removal of non-emulsified hydrocarbons, i.e., motor oils, lightweight oils, and related petroleum products with a specific gravity of less than 1.0. Depending upon the AquaSweep™ model, the contaminated oily water follows a path through various pre-selected coalescer materials. The AquaSweep™ Gravity Oil Water Separator construction slows the flow and turbulence of the incoming water. The interplay of this motion, coupled with buoyant forces and contact with the coalescer material(s) cause droplets of oil to rise and combine into larger oil globules. The globules rise to the surface and float on top of the water. Sludge and other matter settle and accumulate at the bottom of the tank compartment. The resultant storm water, having been cleaned of these contaminants, exits the separator, below the oil level for further treatment or is directed back into the environment. Accumulation of oil and sludge within the separator are contained until they can be removed and disposed of properly.



## AquaSweep™ Oil Water Separator Operation and Maintenance

The STI AquaSweep™ Gravity Oil Water Separator has no moving or mechanical parts. Liquid level sensors and control boxes, which are required for UL 2215 listing, sense the oil level within the tank, and alert the operator when the oil needs to be pumped out. The separator will not function properly, and oil-contaminated water may flow out if accumulated oil depth within the separator is allowed to exceed maximum capacity. Sludge buildup in front of the primary coalescer also needs to be

removed periodically. Both the primary and secondary coalescer (if provided) can be removed or cleaned in place with a standard water hose.

Complete, detailed installation, start-up, operating and maintenance instructions are provided with each separator system.

## What makes AquaSweep™ different from other oil water separators

- UL 2215 Listed and STI Engineered and Labeled
  - Available in a range of capacities, flow rates and effluent discharge efficiency levels rated as low as 5 ppm
  - Optional double-wall designs offer integral secondary containment
  - Level sensors and safeguard controls available
  - Corrosion protected tank built to nationally recognized STI standards with strict third-party quality control inspection program
  - Various coalescer materials are available that meet UL requirements

# AquaSweep™ Oil Water Separator Specifications



- Qualified and tested per Underwriters Laboratory UL 2215
- Meets ULC-S656 standards for oil water separators
- Used to process storm water and wastewater runoff for compliance with US EPA Clean Water Act criteria
- Available with tank capacities from 300 to 50,000 gallons (1,100 to 190,000 liters)
- Handles flow rates from 45 to 10,000 gallons per minute (170 to 37,800 liters per minute)
- Rated effluent efficiency of less than 10 ppm on most models, and less than 5 ppm on select models
- Optional double-wall and jacketed designs offer integral secondary containment which can be tested for tightness or continuously monitored for leaks
- Primary storage tank and secondary containment compatible with a wide range of oils
- Corrosion protection of exterior tank constructed to nationally-recognized UL and STI standards with strict third-party quality control inspection program
- Customized manways can be provided for cost effective maintenance access
- Liquid level sensors and control panels available to sense the oil level within the tank, and alert the operator when the oil needs to be removed
- Several models available in compliance with STI specifications
- Available from a large network of STI licensed manufacturers



AquaSweep™ Installation at Chicago's O'Hare International

## Disclaimer

AquaSweep™ Gravity Oil Water Separators are designed to give you years of effective service. Observing some basic precautions will allow for maximum performance.

1. Never intentionally drain vehicle crankcase waste oil into the separator because some of the oil's components may dissolve in the water and pass through the separator. Waste oil should be deposited into an appropriate tank for proper disposal.
2. Maximum design separation is achieved when influent liquid temperatures are between 40° F (4°C) and 140° F (60°C), the ambient air temperatures between 0° F (-18°C) and 100° F (38°C), and the specific gravity of the oil to be separated is between 0.70 to 0.95. The maximum oil concentration is 200,000 mg/l (20%) at the maximum flow rates specified by the manufacturer. The design of the separator requires that the fluid inside always be kept above 32° F.
3. The unit is designed to remove free oils that are gravity fed into the unit only. Refer to Operating and Design Guidelines for additional design criteria.
4. The performance of the unit will be decreased if maximum flows are exceeded, inlet oil concentration is greater than 20% or if the specific gravity of the oil is greater than 0.95.
5. The gravity separator will not remove chemical emulsions or dissolved hydrocarbons and their presence impedes oil recovery. Do not direct detergents, solvents, or highly dissolved solids concentrations (such as untreated sanitary sewage) into the separator. These elements have emulsifying tendencies.
6. Do not use soaps, solvents or detergents when cleaning the separator.
7. The oil water separator must be filled with water to the design operating level at all times.
8. Equipment supplied by others that are attached to the AquaSweep™ (for example, automatic pump out systems, control packages, skimmer pumps and make-up water systems) may adversely affect the operation of the unit. The manufacturer is not responsible for problems caused by these systems which degrade separator performance.

