

# Underground Hydrodynamic Separators

STRUCTURAL MAINTENANCE

## What are underground hydrodynamic separators?

Hydrodynamic separators remove oil, grease, trash, and sediment from stormwater runoff. These underground structures include oil and grit separators and proprietary hydrodynamic separators, such as Baysaver,<sup>®</sup> Aqua-Swirl,<sup>®</sup> and Stormceptor.<sup>®</sup> Please visit the manufacturers' websites for more information about these devices. Underground hydrodynamic separators are commonly located under parking lots at commercial sites or multi-family residential sites (condominium, apartments, etc.).

## How do they work?

During a storm, rainwater collects pollutants as it flows across impervious surfaces, such as rooftops, sidewalks, and roads. Flow splitters are often used to send a certain quantity of untreated water, known as the "first flush," to a hydrodynamic separator. The oil and grit separator captures and treats stormwater by separating oil, grease, trash, and sediment from the captured stormwater through three chambers. The clean water is then returned to the local stream or to the storm drain system.

Proprietary systems such as Baysaver,<sup>®</sup> Aqua-Swirl,<sup>®</sup> and Stormceptor,<sup>®</sup> follow similar processes to remove oil, grease, trash, and sediment from stormwater. The designs of these systems vary.

## Why are hydrodynamic separators important?

- Remove pollutants
- Improve the health of streams and rivers
- Help to make our waters fishable and swimmable
- Improve the quality of the Chesapeake Bay

## Why is it important to keep your hydrodynamic separator maintained?

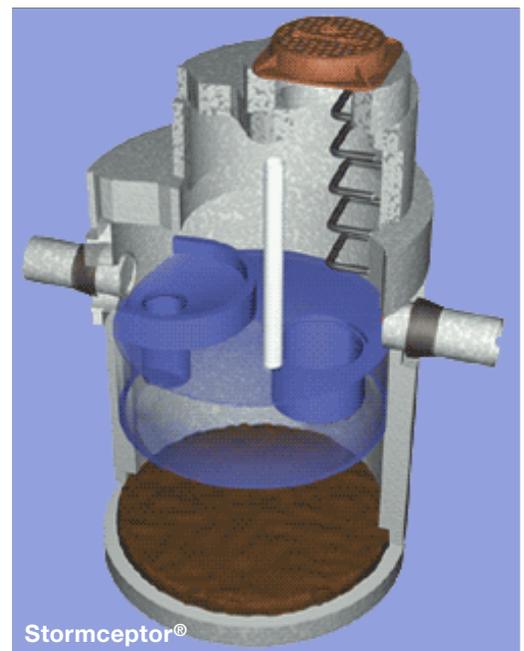
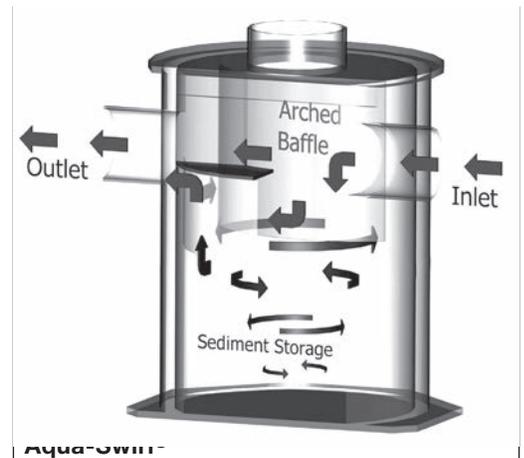
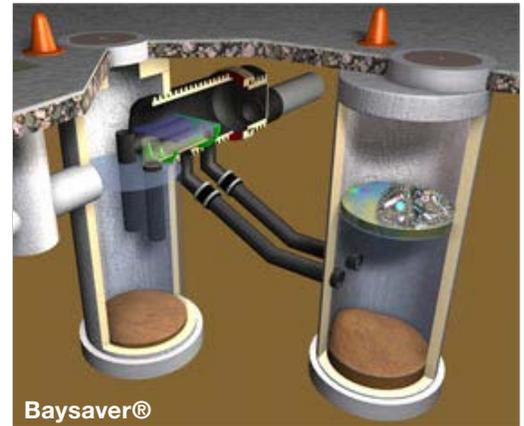
An unmaintained hydrodynamic separator may:

- Not remove pollutants as intended, sending polluted water to streams and rivers
- Become filled with sediment and debris so water cannot be treated or stored, which may lead to downstream flooding and erosion
- Cost more to fix if problems are left unchecked



Cleaning an oil grit separator

As rainwater flows over hard surfaces and lawns, it picks up pollutants such as sediment from eroded areas, trash, pesticides from lawns, nutrients from fertilizer or pet waste, and oil and grease from cars. Hydrodynamic separators remove much of this pollution.



# Maintenance 101

## Performing maintenance

Performing **preventive maintenance** regularly will prevent long-term damage and help avoid potential violations. These actions will keep your facility looking good and working correctly, which will save you money in the long term. The preventive maintenance actions listed below can be thought of as similar to preventive car maintenance (like changing the oil in your car every 3 months).

### Preventive maintenance

#### (Things you can do)

##### Frequently

- Pick up trash, debris, and leaves around your property and in front of the inlets to your hydrodynamic separator

##### As Needed

- Know the pollutant sources on your property and try to eliminate the pollutants at the source
- Sweep paved areas on your property to remove pollutants, such as sediment and sand
- Store chemicals, used oil, and pesticides in covered areas so these potential pollutants are not exposed to rainfall
- Do not stockpile sand or salt on your property unless they are in covered containment areas
- Do not wash your vehicles or mechanical equipment on paved areas and prevent wash water from entering the storm drain system
- Mark your hydrodynamic separator inlets to ensure snow plow operators do not damage the facility

**Structural maintenance** is work done on the components of the filter that allow it to control rainwater and remove pollutants. Structural maintenance problems in the table below are things you should be looking out for. When they happen, call the Department of Environmental Protection (DEP) for help (like calling your mechanic when the engine light comes on).

### Structural maintenance

#### (Only by a contractor)

Problem:	Possible Fix:
Missing or damaged manhole cover	Replace manhole cover
Trash, debris, oil and grease, or sediment accumulation	Pump-out, power wash, clean, and properly dispose of any debris
Missing steps/ladders	Repair or replace steps/ladders
Clogged pipes and trash racks	Remove and properly dispose of debris causing clogging
Corrosion on metal pipes	Repair or replace corroded metal parts
Damaged structural components (i.e., pipes, concrete, trash racks, pipe joints, proprietary unit, etc.)	Repair and/or replacement for these components to be determined by DEP

## Who is responsible for the maintenance?

As the property owner, **YOU** are responsible for all maintenance unless your hydrodynamic separator has been transferred to the DEP Stormwater Facility Maintenance Program. If you would like more information about transferring your facility into this program, please visit <http://www.montgomerycountymd.gov/stormwatertransfer>.



## How will I know what maintenance is required?

DEP recommends owners use a certified contractor to pump-out, power wash, and clean their stormwater facility annually to ensure the facility is properly functioning and passes inspection. If DEP inspects the facility and finds maintenance issues, you will receive a notice of violation with a work order showing the list of required maintenance and repairs. You will have 45 days from the date of the notice to hire a certified contractor to complete the maintenance and repairs. A civil citation may be issued if you have not complied with the maintenance and repair requirements.

Maintenance of hydrodynamic separators must be performed by **DEP-approved contractors** with confined space certification. No one should enter the structure without proper training, certification, and permits for confined space entry. Entering hydrodynamic separators without meeting these requirements is a violation of State law and could be dangerous or deadly. Please visit <http://www.montgomerycountymd.gov/stormwater> for a list of approved and certified contractors.

### What if I need help or have questions?

DEP can answer your questions and provide additional guidance about maintaining your hydrodynamic separator. Please e-mail us at [Askdep@montgomerycountymd.gov](mailto:Askdep@montgomerycountymd.gov), call the Montgomery County Customer Service Center at 3-1-1, or visit our website: <http://www.montgomerycountymd.gov/stormwater>.

