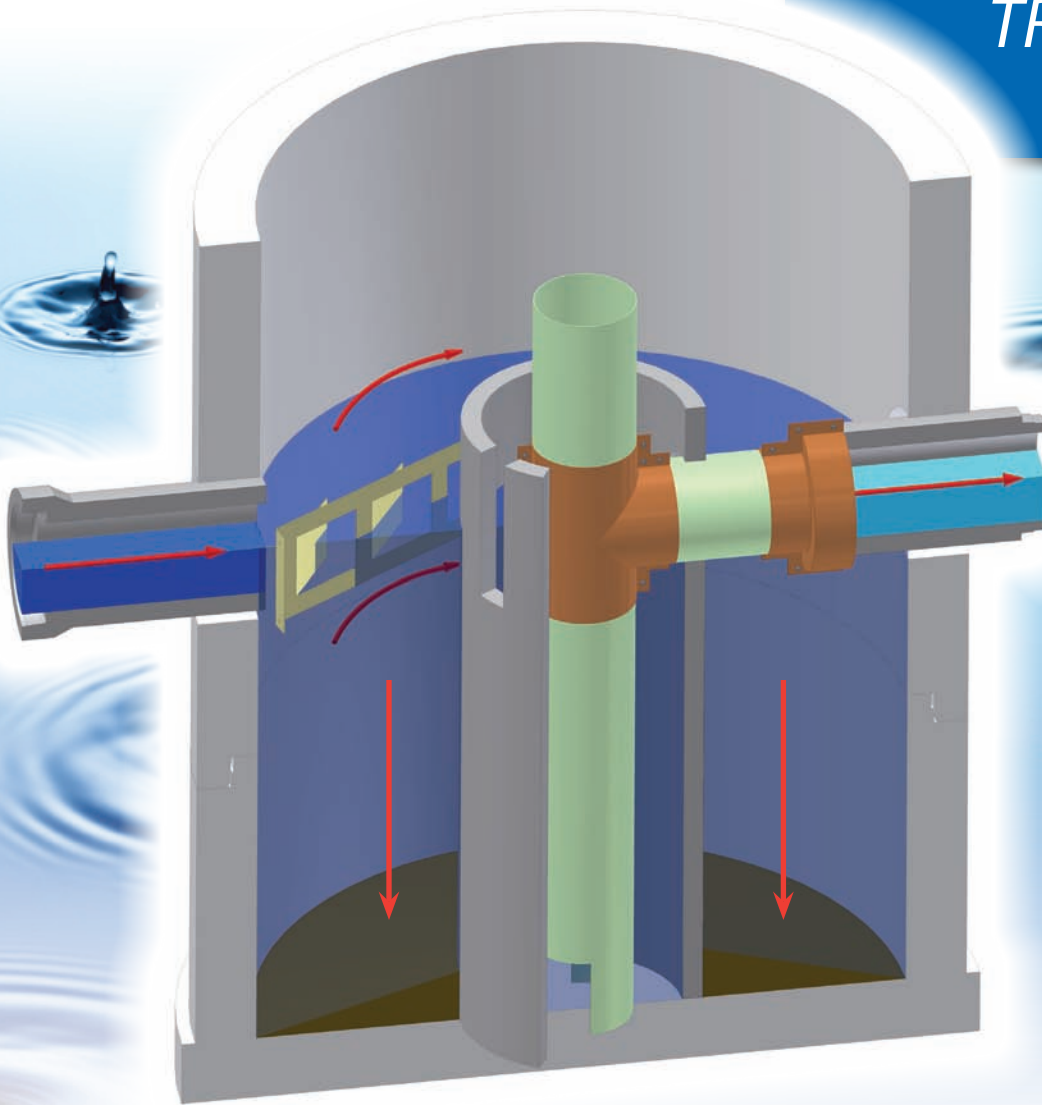


ecoStorm[®]

*HYDRODYNAMIC
TREATMENT
SYSTEM*

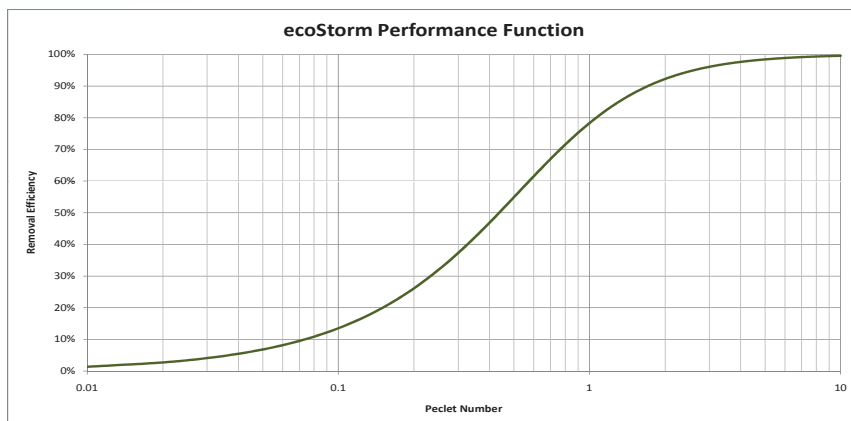


protect **TODAY** by
building for **TOMORROW**


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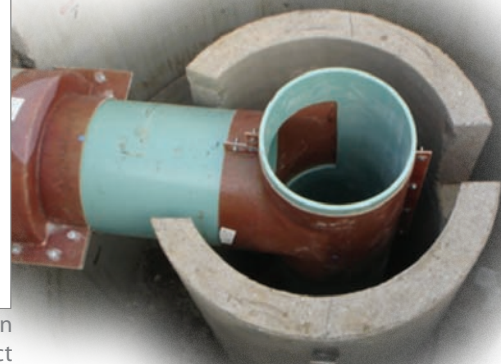
ecoStorm[®]

ecoStorm[®] is an affordable solution for managing non-point source pollutants in stormwater.



Design based on third party full scale laboratory testing utilizing Peclet normalization theory. Through this normalization, we can scale these results to accurately predict project specific performance for all ecoStorm[®] sizes with any particle size distribution.

Internal components allow for almost any inlet and outlet pipe materials.



ecoStorm[®] design allows for tight angles between the inlet and outlet pipe. This is especially beneficial for minimizing the footprint in offline systems.

ecoStorm[®] is ideal for new construction or retrofit applications including:

Parking Lots • Industrial Manufacturing Facilities
Commercial Developments • Transportation/Maintenance Facilities
Municipal/Residential Drainage Improvements

ecoStorm[®]—The most cost effective BMP for meeting stormwater regulatory requirements

- *Cost competitive—single structure design reduces footprint and excavation costs*
- *Low maintenance costs—quick and easy access for inspection and contaminant removal*
- *Easy installation—encompassed design easily assembled on construction site*
- *Standard precast units with capacity to manage typical treatment flows*
- *Engineered solution—individual units are custom designed for each specific project*
- *Design flexibility, allowing for variability of removal efficiency (typically 80%), particle size distribution, flows, and annualized or event based designs*
- *Ideal for new construction or retrofit applications*

ecoStorm® Phase Operation

Dry Weather Level

ecoStorm® utilizes two concentric circular structures of varying diameters (D1 & D2). Water levels within the inner and outer cylinders are equalized through a vertical weir opening. The outer cylinder separates contaminated particulate from the influent.

A deflection plate promotes a swirling motion in the structure, increasing the travel path of pollutants between the inlet and outlet, thereby providing more time for gravity separation of settleable solids.

Floating pollutants such as petroleum and litter are retained in the structure via the skimming outlet pipe.

Routine Storm Event

Rainfall generates enough energy to transport non-point source pollutants to storm drain inlets where they are then delivered to the inlet of the ecoStorm®. A properly sized-system will, on average, introduce stormwater at a flow rate that allows ample detention time to achieve separation of both floating and settling contaminants.

Intensifying Storm Event

As rainfall intensity increases, the increased energy allows stormwater runoff to transport larger, heavier materials having settling velocities which allow separation time to decrease as flow rate increases.

Typically any smaller and lighter floating pollutants and debris were conveyed during previous routine storm flow. The captured floating pollutants and debris rise with the internal liquid level.

Design Storm Event

The "design storm" is a rainfall event that when achieved, has already flushed or delivered the pollutant load to the ecoStorm®. Therefore the majority of target pollutants have already been separated and are retained in the structure. Rainwater through the apparatus now carries little or no target pollutants.

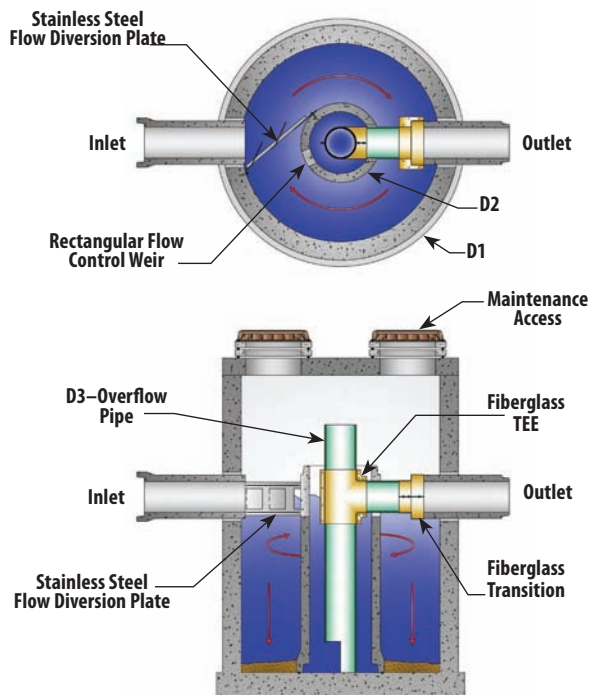
Peak Storm Event

Peak storms deliver the maximum flow rate or stormwater volume for which each system has been hydraulically calibrated to handle. Individual project site and hydraulic sizing allow for an accurate prediction of maximum liquid levels within the system. Target pollutants separated at lower storm flows are maintained within the system. Internal flow controls and flow patterns prevent pollutant re-suspension and discharge.

Dry Weather Pump-Out

Pump-out frequency is based on site loading and periodic monitoring of captured pollutant levels in the easily accessed storage chambers.

ecoStorm®



Site-specific engineering maximizes ecoStorm's treatment of non-point source pollutants. Our design engineers are available to offer free technical support to solve your stormwater management concerns.

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ROYAL ENTERPRISES AMERICA

Royal Environmental Systems, Inc.

"Innovative technological products revolutionizing stormwater pollution control"

Royal Concrete Pipe, Inc.

"Providing quality concrete products since 1990"

Royal Erosion Control Systems, LLC

"Concrete block mat system for the prevention of soil erosion"



ecoStorm®

Gravity separation stormwater treatment system



ecoStorm^{plus}

Gravity separation *plus* upflow adsorptive stormwater filtration



ecoStop®

Catastrophic hydrocarbon spill control system



ecoSep®

Below-grade, high efficiency oil/water separators



ecoLine™-b



ecoTop™

Above-grade, high efficiency oil/water separators



ecoLine™-a



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