



# Hydrodynamic Separation



# The experts you need to solve your stormwater challenges



**Contech is the leader in stormwater solutions, helping engineers, contractors and owners with infrastructure and land development projects throughout North America.**

With our responsive team of stormwater experts, local regulatory expertise and flexible solutions, Contech is the trusted partner you can count on for stormwater management solutions.

## Your Contech Team



### **STORMWATER CONSULTANT**

*It's my job to recommend the best solution to meet permitting requirements.*



### **STORMWATER DESIGN ENGINEER**

*I work with consultants to design the best approved solution to meet your project's needs.*



### **REGULATORY MANAGER**

*I understand the local stormwater regulations and what solutions will be approved.*



### **SALES ENGINEER**

*I make sure our solutions meet the needs of the contractor during construction.*

**Contech is your partner in stormwater management solutions**



## Removing Pollutants using Hydrodynamic Separation

HDS systems play a vital role in protecting our waterways by removing high levels of sediment, trash, debris, and hydrocarbons from stormwater runoff.

Frequently used as end-of-pipe solutions, they are also used to provide stormwater quality treatment in places where space is limited.

HDS systems capture and retain a variety of stormwater pollutants and are very easy to maintain. These two key benefits have resulted in new uses for HDS technologies, such as pretreating detention, Low Impact Development, and green infrastructure practices, as well as other land-based stormwater treatment systems.

*Utilize high-performance hydrodynamic separation to effectively remove finer sediment, oil and grease, and floating and sinking debris.*

CASCADE  
separator™

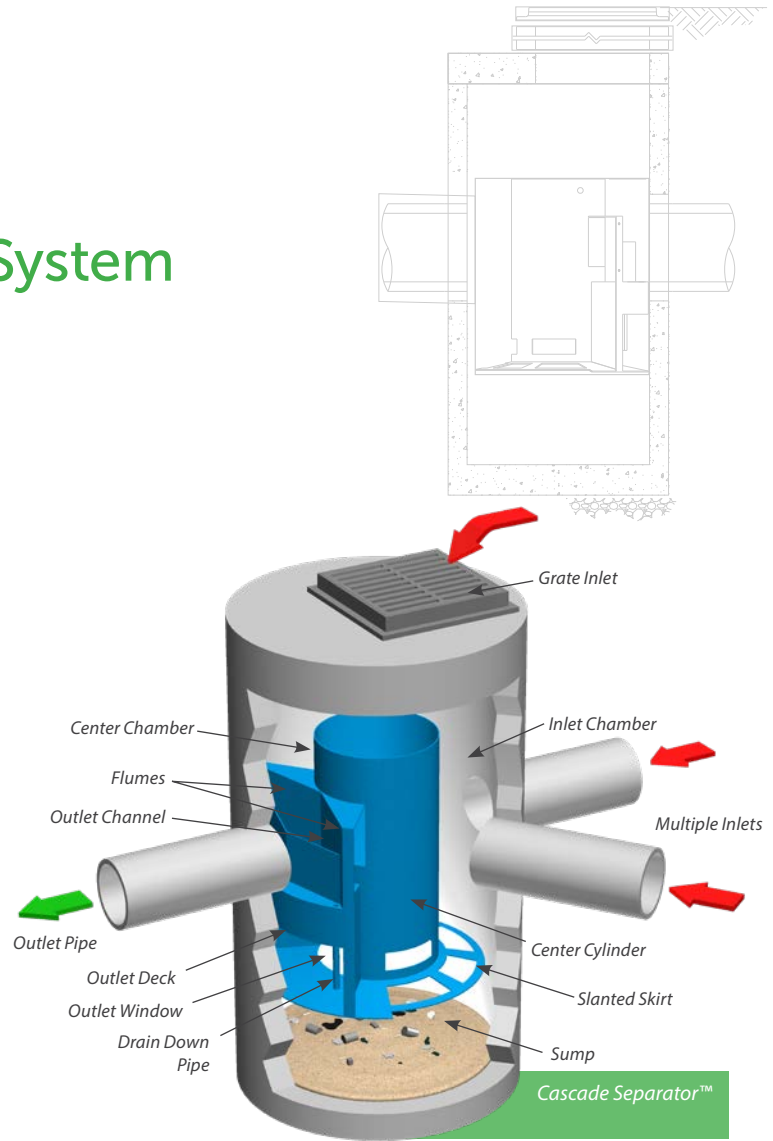


# The Cascade Separator™ System

## Advanced Sediment Capture Technology ...

The Cascade Separator™ is the newest innovation in stormwater treatment from Contech. The Cascade Separator was developed by Contech’s stormwater experts using advanced modeling tools and Contech’s industry leading stormwater laboratory.

This innovative hydrodynamic separator excels at sediment capture and retention while also removing hydrocarbons, trash, and debris from stormwater runoff. What makes the Cascade Separator unique is the use of opposing vortices that enhance particle settling and a unique skirt design that allows for sediment transport into the sump while reducing turbulence and resuspension of previously captured material. These two factors allow the Cascade Separator to treat high flow rates in a small footprint, resulting in an efficient and economical solution for any site.



| FEATURE  | BENEFIT  |
|--|--|
| Unique skirt design & opposing vortices            | Superior TSS removal; reduced system size and costs      |
| Inlet area accepts wide range of inlet pipe angles | Design and installation flexibility                      |
| Accepts multiple inlet pipes                       | Eliminates the need for separate junction structure      |
| Grate inlet option                                 | Eliminates the need for a separate grate inlet structure |
| Internal bypass                                    | Eliminates the need for a separate bypass structure      |
| Clear access to sump and stored pollutants         | Fast, easy maintenance                                   |

Learn More:  
[www.ContechES.com/cascade](http://www.ContechES.com/cascade)

### CASCADE MAINTENANCE

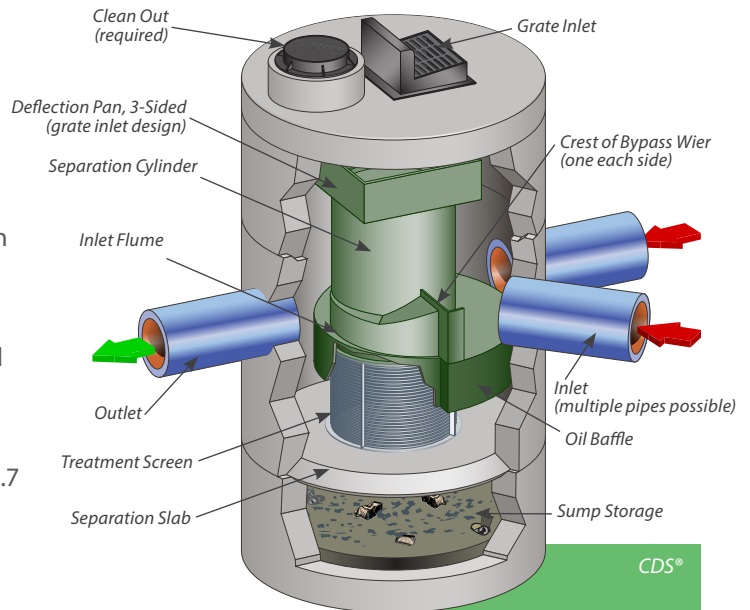
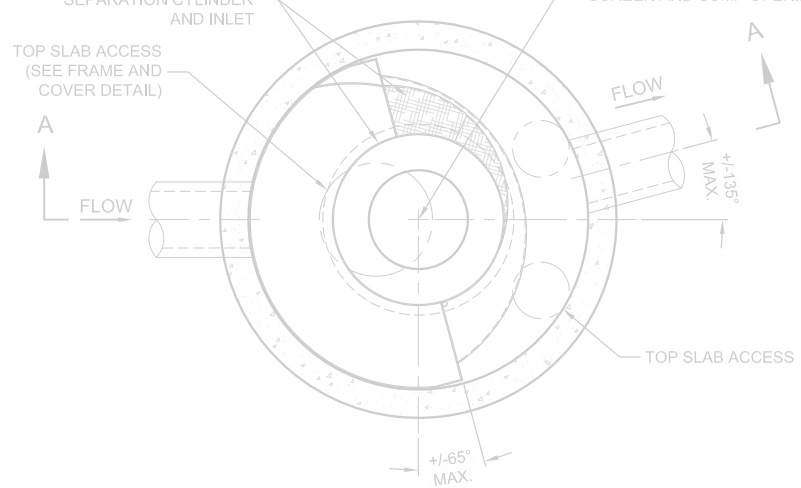
Cascade provides unobstructed access to stored pollutants, making it easy to maintain using a vacuum truck, with no requirement to enter the unit.

# The CDS® System

## Superior Trash Removal ...

The CDS is a hybrid technology that uses a combination of swirl concentration and indirect screening to separate and trap trash, debris, sediment, and hydrocarbons from stormwater runoff.

At the heart of the CDS system is a unique screening technology used to capture and retain trash and debris. The screen face is louvered so that it is smooth in the downstream direction. The effect created is called "Continuous Deflective Separation." The power of the incoming flow is harnessed to continually shear debris off the screen and to direct trash and sediment toward the center of the separation cylinder. This results in a screen that is self-cleaning and provides 100% removal of floatables and neutrally buoyant material debris 4.7 mm or larger, without blinding.



| FEATURE   | BENEFIT                                       |
|---|---|
| Captures and retains 100% of floatables and neutrally buoyant debris 4.7 mm or larger | Superior trash removal                        |
| Self-cleaning screen  | Ease of maintenance                           |
| Isolated storage sump eliminates scour potential                                      | Excellent pollutant retention                 |
| Internal bypass   | Eliminates the need for additional structures |
| Multiple pipe inlets and 90-180° angles   | Design flexibility                            |
| Clear access to sump and stored pollutants  | Fast, easy maintenance                        |

Learn More:  
[www.ContechES.com/cds](http://www.ContechES.com/cds)

### SELECT CDS APPROVALS

- Washington Department of Ecology (GULD) – Pretreatment
- New Jersey Department of Environmental Protection Certification (NJ DEP)
- Canadian Environmental Technology Verification (ETV)
- California Statewide Trash Amendments Full Capture System Certified\*

\* The CDS System has been certified by the California State Water Resources Control Board as a Full Capture System provided that it is sized to treat the peak flow rate from the region specific 1-year, 1-hour design storm, or the peak flow capacity of the corresponding storm drain, whichever is less.

# The Vortechs® System

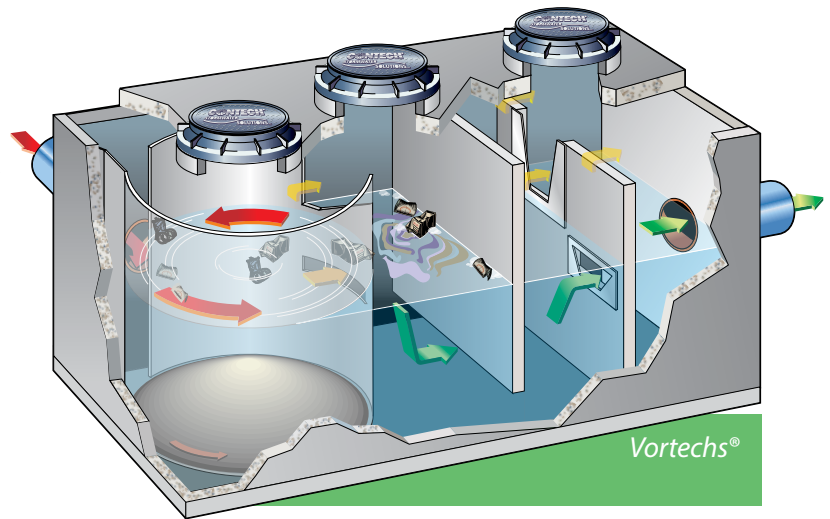
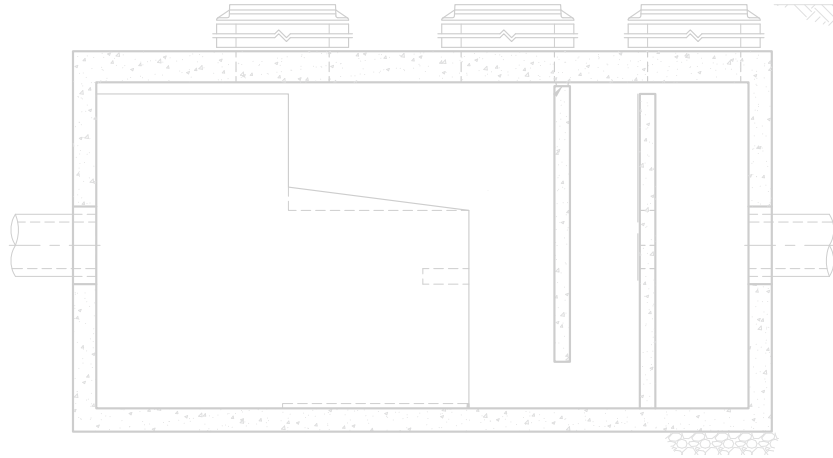
## Stormwater Treatment in a Shallow Footprint ...

Vortechs combines swirl concentration and flow controls into a single treatment unit that captures and retains trash, debris, sediment, and hydrocarbons from stormwater runoff.

The Vortechs system's large swirl chamber and flow controls work together to create a low energy environment, ideal for capturing and retaining particles down to 50 microns.

Vortechs is the ideal solution for sites with high groundwater, bedrock, utility conflicts, or sites with a large volume runoff.

The Vortechs System is approved by the Washington Department of Ecology (GULD) - Pretreatment.



Learn More:  
[www.ContechES.com/vortechs](http://www.ContechES.com/vortechs)

| FEATURE   | BENEFIT   |
|---|---|
| Large swirl chamber   | Fine particle removal down to 50 microns                                  |
| Shallow profile – Typical depth below pipe invert is only 3 feet. | Can be used on sites with high groundwater, bedrock, or utility conflicts |
| Unobstructed access to stored pollutants                          | Fast, easy maintenance  |

The ideal solution for sites with high groundwater

# HDS Product Design Worksheet



## APPLICATION TIPS

- HDS systems with internal peak bypass weirs can provide cost savings by eliminating the need for additional structures.
- Pretreating detention, infiltration, and green infrastructure practices with HDS can protect downstream structures and provide for easy maintenance.
- HDS systems are often an ideal solution for retrofit applications due to their compact footprint and configuration flexibility.

**Project Design Worksheet - Stormwater Treatment**

After submitting your worksheet a Stormwater Design Engineer will review and contact you shortly regarding your request.

**Project Information** (Fill out as much as possible)

Project Name: \* [ ] Site Plan Available: [ ]

Project Location: \* [ ] Regulatory Agency: [ ] Online or Offline?: [ ]

Deliverable Request: \*  
 Design Assistance  Sizing  Drawing  Quote  Rush Request  LEED Cert.

**Design Specifications** (Fill out as much as possible)

Treatment Flow (Water Quality Flow)(cfs or L/s): \* [ ] Drainage Area (ac or ha): \* [ ] Storm Frequency Design (yr): [ ]

Peak Flow (cfs or L/s): [ ] % Impervious or 'c' value: \* [ ]

Upstream Detention: [ ] PSD specified or d50 (microns): [ ] Oil Storage / Removal Req'd: [ ]

TSS EMC Influent (mg/L): [ ] TP EMC Influent (mg/L): [ ]

**Inlet Invert Elev.** [ ] **Treatment** [ ] **Outlet Invert Elev.** [ ]

Upstream Structure: [ ] Treatment Structure: [ ] Downstream Structure: [ ]

Learn More:

[www.ContechES.com/pdw-treatment](http://www.ContechES.com/pdw-treatment)

Our in-house team of engineers can support you through the entire permitting process - and the first step is sending us your project information by filling out one of the Project Design Worksheets. We will forward your information to an in-house engineer who will contact you with specific recommendations for your project.

**The free tool is available at [www.ContechES.com/pdw-treatment](http://www.ContechES.com/pdw-treatment)**

# A partner you can rely on



STORMWATER  
SOLUTIONS



PIPE  
SOLUTIONS



STRUCTURES  
SOLUTIONS

Few companies offer the wide range of high-quality stormwater resources you can find with us — state-of-the-art products, decades of expertise, and all the maintenance support you need to operate your system cost-effectively.

#### THE CONTECH WAY

Contech® Engineered Solutions provides innovative, cost-effective site solutions to engineers, contractors, and developers on projects across North America. Our portfolio includes bridges, drainage, erosion control, retaining wall, sanitary sewer and stormwater management products.

#### TAKE THE NEXT STEP

For more information: [www.ContechES.com](http://www.ContechES.com)

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