

# Continuous Deflective Separation Unit (Models 20-15)



The CDS unit has a filter screen that can be sized by the vendor to accommodate a range of particle sizes.

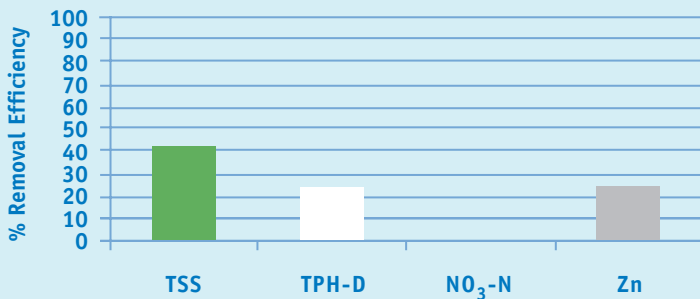
The Continuous Deflective Separation (CDS) units are mainly used to manage stormwater, but they also have wastewater, water supply, and industrial applications. The compact design is well suited for space constrained and urban sites, where the installation of a larger stormwater treatment is impractical. Depending on state regulations, these devices are either used by themselves, or as a pretreatment system in conjunction with other stormwater treatments.

The CDS unit is a hydrodynamic separator that uses vortex settling to remove sediment, trap debris and trash, and separate floatables such as oil and grease.

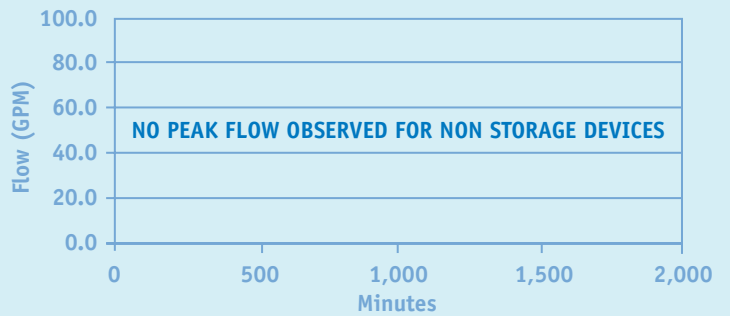
A CDS unit can be made from precast or *in situ* cast concrete, stainless steel, or fiberglass. It is composed of a sophisticated insert with a filter screen with openings that can be sized during manufacture. The insert is mounted internally in a four-foot diameter concrete manhole. This prefabricated system is on-line with an internal bypass.

This treatment's insert can obstruct cleaning. Maintenance requirements are similar to other hydrodynamic separators, and include periodic removal of solids by a vacuum truck.

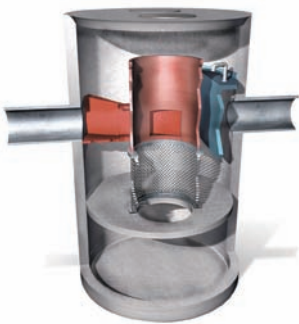
## WATER QUALITY PERFORMANCE



## PEAK FLOW REDUCTION



## Water Quality Treatment Process



The CDS unit has a cylindrical fine screen that separates solids by indirect filtration. Strong tangential velocity around the screen keeps it free of debris, while a small secondary hydraulic head across the screen surface promotes a weak flow through it. Buoyant solids float to the surface. Suspended particles deflect from the screen, move to the stagnant core of the screen chamber, and settle into the sump. The sump has a narrow opening to separate trapped solids from flow and prevent re-suspension. The baffle captures oil and grease in a storage chamber between the inlet invert and baffle bottom.

The primary contaminant addressed by hydrodynamic separators is sediment. However, comparable reductions are observed for zinc and total petroleum hydrocarbons-diesel, presumably as a result of binding to trapped sediments. This treatment does not have a storage volume and therefore no peak flow or volume reduction. Influent and effluent hydrographs are the same. These devices need frequent inspection and cleaning to maintain effectiveness.

### Category Type

Manhole Retrofit and Filtration

### BMP Type

Manufactured Device

### Design Source

CDS Technologies

### Basic Dimensions

Diameter: 6 ft, Height: 9 ft

### Specifications

Catchment Area: 1/3 acre

Peak Flow: 1/3 cfs

Volume: 327 cf

### Treatment Function

Physical: Settling and Filtration

### Cost Per Acre

\$20,000

### Maintenance Data

Maintenance Sensitivity: High

Inspections: High

Sediment Removal: High