



Stormwater Trash Control



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



The Need for Controlling Trash in Waterways

Trash control is imperative if we wish to maintain our nation's beautiful beaches and waterways.

Our nation has some of the world's most beautiful beaches and waterways. Unfortunately, trash such as cigarette butts, food packaging, cans and bottles, and plastic waste discarded on land frequently makes its way into streams, creeks, rivers, and eventually the ocean, as rain storms wash it into gutters and storm drains.

This trash not only detracts from the aesthetics of waterways, it poses a threat to marine life and public health. It can also clog conveyance systems and outlet control structures leading to upstream flooding.

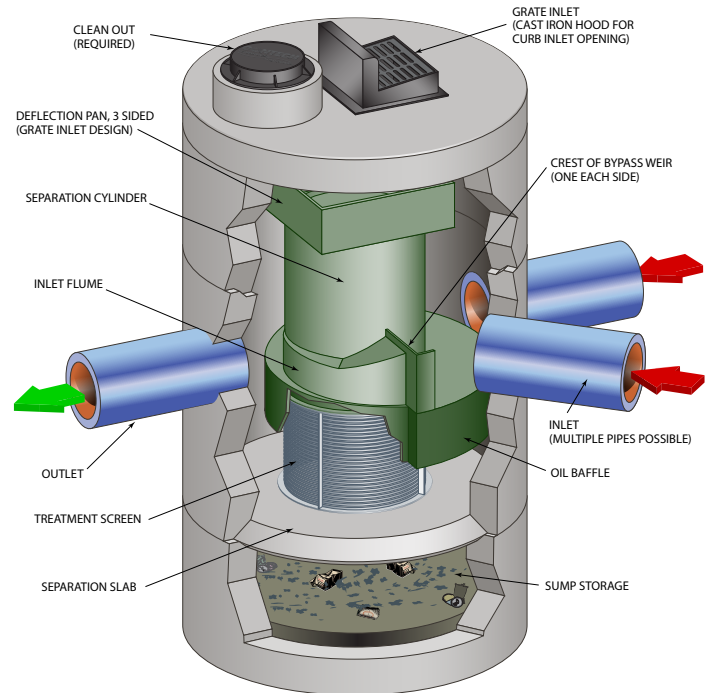
Many municipalities have enacted specific trash control strategies in response to TMDLs or municipal stormwater permit requirements. At the heart of these efforts are requirements to reduce environmental issues associated with trash in waters by installing, monitoring, and maintaining stormwater BMP's that collect and retain trash and total suspended solids (TSS) from drains serving high priority trash areas.

To address these issues, stormwater managers, municipal officials, and other stakeholders are in need of a BMP that can remove trash and TSS, is easy to maintain, can work well as stand alone or end-of-pipe treatment system, and can easily be implemented in a retrofit scenario.

Removing Trash and TSS with CDS[®]

California Statewide Trash Amendments Full Capture System Certified*

The most-effective way to eliminate trash and TSS is to use structural control measures that capture trash and TSS before it enters a waterway. The Contech Engineered Solutions CDS system is a below-ground, flow-through treatment device that uses multiple treatment processes including swirl concentration and continuous deflective separation to screen, separate and trap trash, debris, sediment, hydrocarbons and other pollutants of concern from stormwater runoff. CDS can be installed at the inlet, outlet or intermediate point of drainage system to prevent pollutants from being discharged into lakes, streams, or the ocean.



*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.

FEATURE	BENEFIT
Superior Trash Capture	<ul style="list-style-type: none"> Captures and retains 100% of floatables and neutrally buoyant debris 4.7mm or larger (2.4mm option also available) Effectively removes Total Suspended Solids (TSS) and floating oil and grease
Excellent Pollutant Retention	<ul style="list-style-type: none"> Isolated storage sump eliminates scour potential Oil baffle improves hydrocarbon removal Retention of all captured pollutants, even at high flows
Multiple Options to Meet Site-Specific Needs	<ul style="list-style-type: none"> Inline, offline, grate inlet and drop inlet configuration Accepts multiple pipe inlets and 90-180° angles – eliminating the need for junction manholes Internal and external peak bypass options available



APPLICATION TIPS

- Pretreating detention, infiltration, and green infrastructure practices with CDS can protect downstream structures and provide for easy maintenance.
- The CDS is an ideal solution for retrofit applications due to its compact footprint and configuration flexibility.

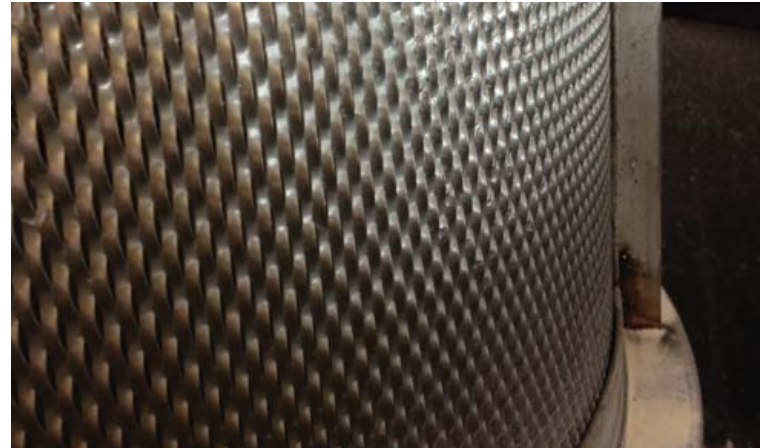
Trash captures leads to cleaner waterways



The CDS® Screen – The Only Non-Blocking Screening Technology

Traditional approaches to trash control typically involve “direct screening” that can easily become clogged, as trash is pinned to the screen as water passes through. Clogged screens can lead to flooding as water backs up.

The design of the CDS screen is fundamentally different. Flow is introduced to the screen face which 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 unique design makes CDS the only hydrodynamic separation system to utilize non-blocking screening technology.

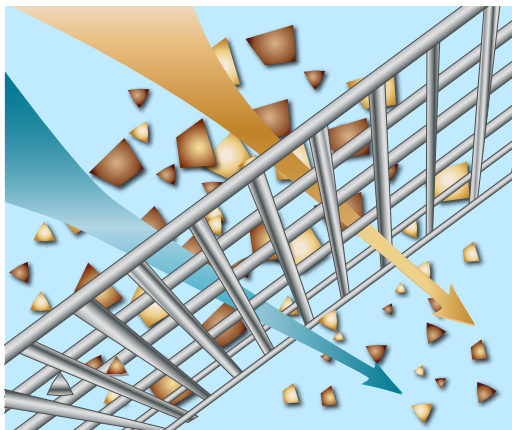


Key Features

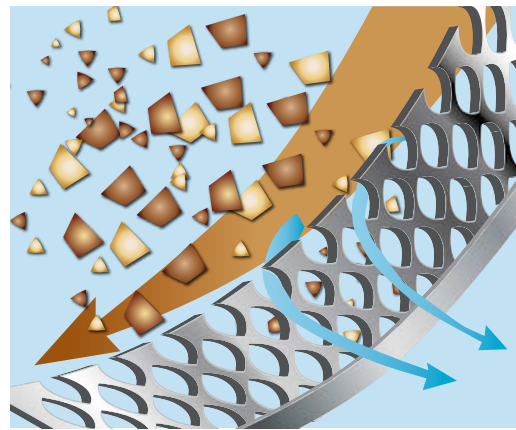
- CDS Screen captures neutrally buoyant materials missed by other separator systems.
- Screen is hydraulically designed to be self-cleaning.
- Runoff entering the separation cylinder must pass through the screen prior to discharge, eliminating potential for scouring previously captured trash at high flow rates.

CDS provides a One-of-a-Kind Screening Technology.

Learn More:
www.ContechES.com/cds



Direct Screening – particles that are larger than the aperture size of the screen can cause clogging, resulting in flooding if not maintained frequently.



Continuous Deflective Separation Indirect Screening – water velocities within the swirl chamber continually shear debris off the screen to keep it clean.

Proven Performance - CDS[®] Trash and Pollutant Removal Studies

STUDY	RESULTS
Baseline Trash Generation Report ¹ – Los Angeles Department of Public Works	CDS units captured 100% of trash and debris 5 mm and larger and provided significant sediment and oil removal.
Gross Pollutant Removal From Waterways ² – CSIRO, Australia	During 12 months of monitoring, practically all gross pollutants transported by the stormwater were trapped by the CDS device (i.e. 100% removal rate).
BMP Retrofit Pilot Program ³ – CalTrans	The CDS units were highly successful at removing gross pollutants, capturing an average of 88 percent, with bypass of this material occurring mainly when the flow capacity of the units was exceeded.
Laguna Beach Storm Drain Pollution Control Project ⁴ – City of Laguna Beach	6 CDS systems were installed, and over 18 months of monitoring the systems removed 12,000 lbs. of trash, sludge and debris.
Manasquan Savings Bank Site ⁵ – TARP Tier II Protocol Study	Significant reductions for suspended solids loads were observed between influent and effluent sampling locations: SSC (<2000µm) 98%, TSS-5M (<2000µm) 95%, TSS-EPA (<2000µm) 95%, SSC (<500µm) 97%, and SSC (<50µm) 65%. During the 11-month monitoring period the mass of materials captured and retained by the High Efficiency CDS unit was approximately 1300 kg (2860 lbs.).

References:

1. County of Los Angeles Department of Public Works Watershed Management Division. *Trash Baseline Monitoring Results, Los Angeles River and Ballona Creek Watersheds*, 2004.
2. Allison, R.A. et al. *from Roads to Rivers, Gross Pollutant Removal from Urban Waterways*. Victoria, Australia: Cooperative Research Center for Catchment Hydrology, 1998.
3. *BMP Retrofit Pilot Program Final Report*. Sacramento: Caltrans Division of Environmental Analysis, 2004.
4. Holoman, Will. *Laguna Beach Water Quality Department. Laguna Beach Storm Drain Pollution Control Project CBI Grant #86*, 2008.
5. NJCAT Technology Verification, *High Efficiency Continuous Deflective Separator (CDS)*, Contech Construction Products Inc, January 2010.



CDS[®] provides trash control



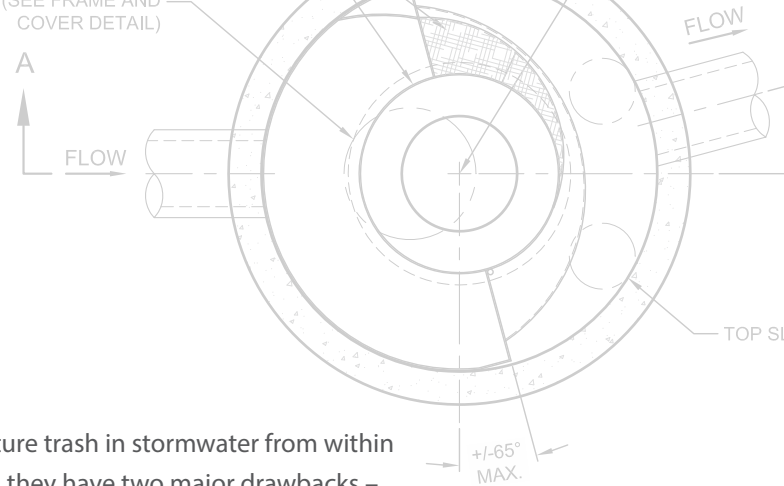
CDS[®] pretreats a bioswale

CDS captures trash, even at high flows

The Economics of Trash Capture

Catch basin inserts, trash racks, and trash nets are often used to capture trash in stormwater from within existing catch basins. While these systems are relatively inexpensive, they have two major drawbacks – they can only treat small drainage areas and they require frequent maintenance. End of pipe solutions such as the CDS can significantly lower lifecycle costs. Replacing several catch basin inserts with a single CDS system allows for easy maintenance and substantial savings in annual maintenance costs.

Reduced maintenance costs results in CDS being the most economical choice.

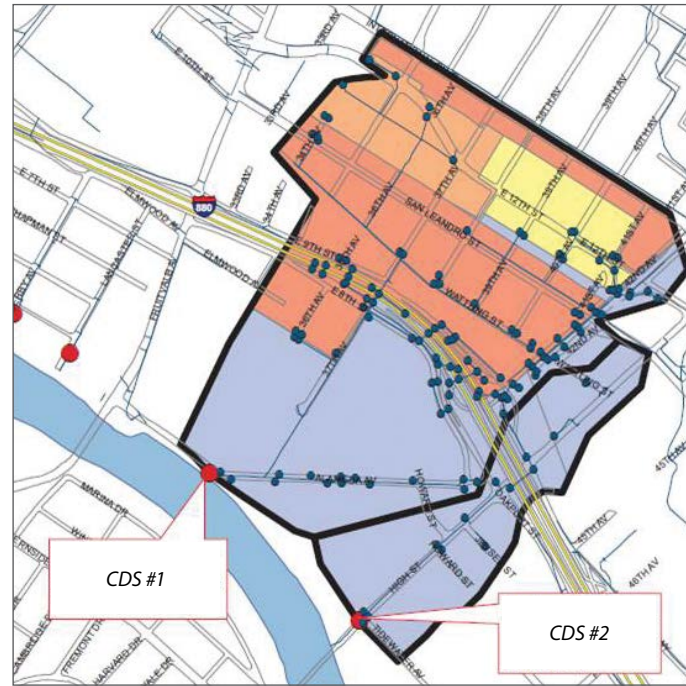


CASE STUDY

City of Oakland Trash Capture Project

Several Small Systems vs. Two Large Systems

<p>Treat 42.5 cfs with two CDS units</p> <ul style="list-style-type: none"> • \$200K (total installed cost) • \$2,400/yr. (maintenance cost) • 15 year cost = \$236K 	OR	<p>Treat 42.5 cfs with 117 Catch Basin Inserts</p> <ul style="list-style-type: none"> • \$100K (total installed cost) • \$41,067/yr. (maintenance cost) • 15 year cost = \$ 716K
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- LEGEND**
- Catch Basin Inserts
 - CDS Units

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 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

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