



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

401-02B

Bureau of Nonpoint Pollution Control

Division of Water Quality

Post Office Box 420

Trenton, New Jersey 08625-0420

609-633-7021 Fax: 609-777-0432

http://www.state.nj.us/dep/dwq/bnpc_home.htm

August 31, 2011

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

Derek Berg
200 Enterprise Drive
Scarborough, ME 04074

Re: MTD Laboratory Test Certification for the High Efficiency Continuous Deflective Separator (CDS) Unit by CONTECH Construction Products, Inc.

Effective Date: September 1, 2011

Expiration Date: September 1, 2013

TSS Removal Rate: 50%

Dear Mr. Berg:

The Stormwater Management Rules at N.J.A.C. 7:8 allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards provided that the pollutant removal rates have been verified by New Jersey Corporation for Advanced Technology, NJCAT, and certified by the New Jersey Department of Environmental Protection (NJDEP).

The certification process was revised through the "Transition for Manufactured Treatment Devices," dated July 15, 2011. NJDEP has determined that High Efficiency Continuous Deflective Separator (CDS) Unit by CONTECH Construction Products, Inc. is consistent with the criteria under *A. Manufactured Treatment Devices with Interim Certifications*. Therefore, **NJDEP certifies the use of the High Efficiency Continuous Deflective Separator (CDS) Unit by CONTECH Construction Products, Inc. with a 50% TSS removal rate, provided that the project design is consistent with the following conditions:**

1. The model selected for the project design must be sized in accordance with Table 1 and based on the peak flow of the New Jersey Water Quality Design Storm as specified in N.J.A.C. 7:8-5.
2. The High Efficiency Continuous Deflective Separator (CDS) Unit can be used on-line or off-line.

3. A hydrodynamic separator, such as the High Efficiency Continuous Deflective Separator (CDS) Unit, cannot be used in series with another hydrodynamic separator to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.
4. The maintenance plan for the sites using this device shall incorporate at a minimum, the maintenance requirements for the High Efficiency Continuous Deflective Separator (CDS) Unit, attached.

Table 1

New Jersey Treatment Rates for CDS Models Based on a Surface Area Specific Loading Rate of 25.16gpm/ft ²		
CDS Model	Manhole Diameter (ft)	Treatment Flow Rate (cfs)
CDS-4	4	0.70
CDS-5	5	1.10
CDS-6	6	1.58
CDS-7	7	2.16
CDS-8	8	2.82
CDS-10	10	4.40
CDS-12	12	6.34

In addition to the attached, any project with a Stormwater BMP subject to the Stormwater Management Rules, N.J.A.C. 7:8, must include a detailed maintenance plan. The detailed maintenance plan must include all of the items identified in Stormwater Management Rules, N.J.A.C. 7:8-5.8. Such items include, but are not limited to, the list of inspection and maintenance equipment and tools, specific corrective and preventative maintenance tasks, indication of problems in the system, and training of maintenance personnel. Additional information can be found in Chapter 8: Maintenance of the New Jersey Stormwater Best Management Manual.

NJDEP anticipates proposing further adjustments to this process through the readoption of the Stormwater Management Rules. Additional information regarding the implementation of the Stormwater Management Rules N.J.A.C. 7:8 are available at www.njstormwater.org. If you have any questions regarding the above information, please contact Ms. Sandra Blick of my office at (609) 633-7021.

Sincerely,



Ed Frankel, P.P., Acting Bureau Chief
Bureau of Nonpoint Pollution Control

C: Richard S. Magee, NJCAT
Chron file

OPERATIONS AND MAINTENANCE GUIDELINES

CDS Stormwater Treatment Unit

INTRODUCTION

The CDS unit is an important and effective component of your storm water management program and proper operation and maintenance of the unit are essential to demonstrate your compliance with local, state and federal water pollution control requirements.

The CDS technology features a patented non-blocking, indirect screening technique developed in Australia to treat water runoff. The unit is highly effective in the capture of suspended solids, fine sands and larger particles. Because of its non-blocking screening capacity, the CDS unit is un-matched in its ability to capture and retain gross pollutants such as trash and debris. In short, CDS units capture a very wide range of organic and in-organic solids and pollutants that typically result in tons of captured solids each year such as: Total suspended solids (TSS) and other sedimentitious materials, oil and greases, trash, and other debris (including floatables, neutrally buoyant, and negatively buoyant debris). These pollutants will be captured even under very high flow rate conditions.

CDS units are equipped with conventional oil baffles to capture and retain oil and grease. Laboratory evaluations show that the CDS units are capable of capturing up to 70% of the free oil and grease from storm water. CDS units can also accommodate the addition of oil sorbents within their separation chambers. The addition of the oil sorbents can ensure the permanent removal of 80% to 90% of the free oil and grease from the storm water runoff.

OPERATIONS

The CDS unit is a non-mechanical self-operating system and will function any time there is flow in the storm drainage system. The unit will continue to effectively capture pollutants in flows up to the design capacity even during extreme rainfall events when the design capacity may be exceeded. Pollutants captured in the CDS unit's separation chamber and sump will be retained even when the units design capacity is exceeded.

CDS UNIT INSPECTION

Access to the CDS unit is typically achieved through two manhole access covers – one allows inspection (and clean out) of the separation chamber (screen/cylinder) & sump and another allows inspection (and cleanout) of sediment captured and retained behind the screen.

The unit should be periodically inspected to determine the amount of accumulated pollutants and to ensure that the cleanout frequency is adequate to handle the predicted pollutant load being processed by the CDS unit. The unit should be periodically inspected for indications of vector infestation, as well. The recommended cleanout of

solids within the CDS unit's sump should occur at 75% to 85% of the sump capacity. However, the sump may be completely full with no impact to the CDS unit's performance.

CONTECH Stormwater Solutions (previously CDS Technologies) recommends the following inspection guidelines: For new initial operation, check the condition of the unit after every runoff event for the first 30 days. For ongoing operations, the unit should be inspected after the first six inches of rainfall at the beginning of the rainfall season and at approximately 30-day intervals. The visual inspection should ascertain that the unit is functioning properly (no blockages or obstructions to inlet and/or separation screen), evidence of vector infestation, and to measure the amount of solid materials that have accumulated in the sump, fine sediment accumulated behind the screen, and floating trash and debris in the separation chamber. This can be done with a calibrated dipstick, tape measure or other measuring instrument so that the depth of deposition in the sump can be tracked.

CDS UNIT CLEANOUT

The frequency of cleaning the CDS unit will depend upon the generation of trash and debris and sediments in your application. Cleanout and preventive maintenance schedules will be determined based on operating experience unless precise pollutant loadings have been determined.

Access to the CDS unit is typically achieved through two manhole access covers – one allows cleanout of the separation chamber (screen/cylinder) & sump and another allows cleanout of sediment captured and retained behind the screen. For units possessing a sizable depth below grade (depth to pipe), a single manhole access point would allow both sump cleanout and access behind the screen.

CONTECH Stormwater Solutions Recommends The Following:

NEW INSTALLATIONS: Check the condition of the unit after every runoff event for the first 30 days. The visual inspection should ascertain that the unit is functioning properly (no blockages or obstructions to inlet and/or separation screen), measuring the amount of solid materials that have accumulated in the sump, the amount of fine sediment accumulated behind the screen, and determining the amount of floating trash and debris in the separation chamber. This can be done with a calibrated “dip stick” so that the depth of deposition can be tracked. Refer to the “Cleanout Schematic” (**Appendix B**) for allowable deposition depths and critical distances. Schedules for inspections and cleanout should be based on storm events and pollutant accumulation.

ONGOING OPERATION: During the rainfall season, the unit should be inspected at least once every 30 days. The floatables should be removed and the sump cleaned when the sump is 75-85% full. If floatables accumulate more rapidly than the settleable solids, the floatables should be removed using a vactor truck or dip net before the layer thickness exceeds approximately one foot.

Cleanout of the CDS unit at the end of a rainfall season is recommended because of the nature of pollutants collected and the potential for odor generation

from the decomposition of material collected and retained. This end of season cleanout will assist in preventing the discharge of pore water from the CDS[®] unit during summer months.

USE OF SORBENTS –The addition of sorbents is **not a requirement** for CDS units to effectively control oil and grease from storm water. The conventional oil baffle within a unit assures satisfactory oil and grease removal. However, the addition of sorbents is a unique enhancement capability unique to CDS units, enabling increased oil and grease capture efficiencies beyond that obtainable by conventional oil baffle systems.

Under normal operations, CDS units will provide effluent concentrations of oil and grease that are less than 15 parts per million (ppm) for all dry weather spills where the volume is less than or equal to the spill capture volume of the CDS unit. During wet weather flows, the oil baffle system can be expected to remove between 40 and 70% of the free oil and grease from the storm water runoff.

CONTECH Stormwater Solutions only recommends the addition of sorbents to the separation chamber if there are specific land use activities in the catchment watershed that could produce exceptionally large concentrations of oil and grease in the runoff, concentration levels well above typical amounts. If site evaluations merit an increased control of free oil and grease then oil sorbents can be added to the CDS unit to thoroughly address these particular pollutants of concern.

Recommended Oil Sorbents

Rubberizer[®] Particulate 8-4 mesh or OARS[™] Particulate for Filtration, HPT4100 or equal. Rubberizer is supplied by Haz-Mat Response Technologies, Inc. 4626 Santa Fe Street, San Diego, CA 92109 (800) 542-3036. OARS is supplied by AbTech Industries, 4110 N. Scottsdale Road, Suite 235, Scottsdale, AZ 85251 (800) 545-8999.

The amount of sorbent to be added to the CDS separation chamber can be determined if sufficient information is known about the concentration of oil and grease in the runoff. Frequently the actual concentrations of oil and grease are too variable and the amount to be added and frequency of cleaning will be determined by periodic observation of the sorbent. As an initial application, CDS recommends that approximately 4 to 8 pounds of sorbent material be added to the separation chamber of the CDS units per acre of parking lot or road surface per year. Typically this amount of sorbent results in a ½ inch to one (1") inch depth of sorbent material on the liquid surface of the separation chamber. The oil and grease loading of the sorbent material should be observed after major storm events. Oil Sorbent material may also be furnished in pillow or boom configurations.

The sorbent material should be replaced when it is fully discolored by skimming the sorbent from the surface. The sorbent may require disposal as a special or hazardous waste, but will depend on local and state regulatory requirements.

CLEANOUT AND DISPOSAL

A vactor truck is recommended for cleanout of the CDS unit and can be easily accomplished in less than 30-40 minutes for most installations. Standard vactor operations should be employed in the cleanout of the CDS unit. Disposal of material from the CDS unit should be in accordance with the local municipality's requirements. Disposal of the decant material to a POTW is recommended. Field decanting to the storm drainage system is not recommended. Solids can be disposed of in a similar fashion as those materials collected from street sweeping operations and catch-basin cleanouts.

MAINTENANCE

The CDS unit should be pumped down at least once a year and a thorough inspection of the separation chamber (inlet/cylinder and separation screen) and oil baffle performed. The unit's internal components should not show any signs of damage or any loosening of the bolts used to fasten the various components to the manhole structure and to each other. Ideally, the screen should be power washed for the inspection. If any of the internal components is damaged or if any fasteners appear to be damaged or missing, please contact CONTECH at 800.338.2211 to make arrangements to have the damaged items repaired or replaced.

The screen assembly is fabricated from Type 316 stainless steel and fastened with Type 316 stainless steel fasteners that are easily removed and/or replaced with conventional hand tools. The damaged screen assembly should be replaced with the new screen assembly placed in the same orientation as the one that was removed.

CONFINED SPACE

The CDS unit is a confined space environment and only properly trained personnel possessing the necessary safety equipments should enter the unit to perform particular maintenance and/or inspection activities beyond normal procedure. Inspections of the internal components can, in most cases, be accomplished by observations from the ground surface.

VECTOR CONTROL

Most CDS units do not readily facilitate vector infestation. However, for CDS units that may experience extended periods of non-operation (stagnant flow conditions for more than approximately one week) there may be the potential for vector infestation. In the event that these conditions exist, the CDS unit may be designed to minimize potential vector habitation through the use of physical barriers (such as seals, plugs and/or netting) to seal out potential vectors. The CDS unit may also be configured to allow drain-down under favorable soil conditions where infiltration of storm water runoff is permissible. For standard CDS units that show evidence of mosquito infestation, the

application of larvicide is one control strategy that is recommended. Typical larvicide applications are as follows:

SOLID B.t.i. LARVICIDE: ½ to 1 briquet (typically treats 50-100 sq. ft.) one time per month (30-days) or as directed by manufacturer.

SOLID METHOPRENE LARVICIDE (not recommended for some locations): ½ to 1 briquet (typically treats 50-100 sq. ft.) one time per month (30-days) to once every 4-½ to 5-months (150-days) or as directed by manufacturer.

RECORDS OF OPERATION AND MAINTENANCE

CONTECH Stormwater Solutions recommends that the owner maintain annual records of the operation and maintenance of the CDS unit to document the effective maintenance of this important component of your storm water management program. The attached **Annual Record of Operations and Maintenance** form (see **Appendix A**) is suggested and should be retained for a minimum period of three years.

APPENDIX A
ANNUAL RECORDS OF
OPERATIONS & MAINTENANCE
AND INSPECTION CHECKLISTS

ANNUAL RECORD OF OPERATION AND MAINTENANCE

OWNER _____
 ADDRESS _____
 OWNER REPRESENTATIVE _____ PHONE _____

INSTALLATION:
 MODEL DESIGNATION _____ DATE _____
 SITE LOCATION _____

INSPECTIONS:

DATE/ INSPECTOR	SCREEN/INLET INTEGRITY	FLOATABLES DEPTH	DEPTH TO SEDIMENT (inches)	SEDIMENT VOLUME* (CUYDS)	SORBENT DISCOLORATION

DEPTH FROM COVER TO BOTTOM OF SUMP (SUMP INVERT) _____

DEPTH FROM COVER TO SUMP @ 75% FULL _____

VOLUME OF SUMP @ 75% FULL = _____ CUYD

VOLUME/INCH DEPTH _____ CUFT/IN OF SUMP

VOLUME/FOOT DEPTH _____ CUYD/FT OF SUMP

Calculate Sediment Volume = (Depth to Sump Invert – Depth to Sediment)(Volume/inch)

OBSERVATIONS OF FUNCTION: _____

CLEANOUT:

DATE	VOLUME FLOATABLES	VOLUME SEDIMENTS	METHOD OF DISPOSAL OF FLOATABLES, SEDIMENTS, DECANT AND SORBENTS

OBSERVATIONS:

SCREEN MAINTENANCE:

DATE OF POWER WASHING, INSPECTION AND OBSERVATIONS:

CERTIFICATION: _____ TITLE: _____ DATE: _____

INSPECTION CHECKLIST

1. During the rainfall season, inspect and check condition of unit at least once every 30 days
2. Ascertain that the unit is functioning properly (no blockages or obstructions to inlet and/or separation screen)
3. Measure amount of solid materials that have accumulated in the sump (Unit should be cleaned when the sump is 75-85% full)
4. Measure amount of fine sediment accumulated behind the screen
5. Measure amount of floating trash and debris in the separation chamber

MAINTENANCE CHECKLIST

1. Cleanout unit at the end and beginning of the rainfall season
2. Pump down unit (at least once a year) and thoroughly inspect separation chamber, separation screen and oil baffle
3. No visible signs of damage or loosening of bolts to internal components observed *

*** If there is any damage to the internal components or any fasteners are damaged or missing please contact CONTECH (800.338.1122).**