



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

Bureau of Nonpoint Pollution Control

Division of Water Quality

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Governor

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Lt. Governor

BOB MARTIN
Commissioner

April 4, 2016

Lisa Lemont, CPSWQ
Business Development Manager
Hydro International
94 Hutchins Drive
Portland, ME 04102

Re: MTD Lab Certification
First Defense® HC (FDHC) Stormwater Treatment Device by Hydro International

TSS Removal Rate 50%

Dear Ms. Lemont:

The Stormwater Management rules under N.J.A.C. 7:8-5.5(b) and 5.7 (c) allow the use of manufactured treatment devices (MTDs) for compliance with the design and performance standards at N.J.A.C. 7:8-5 if the pollutant removal rates have been verified by the New Jersey Corporation for Advanced Technology (NJCAT) and have been certified by the New Jersey Department of Environmental Protection (NJDEP). Hydro International has requested an MTD Laboratory Certification for the First Defense® HC Stormwater Treatment Device.

The projects falls under the "Procedure for Obtaining Verification of a Stormwater Manufactured Treatment Device from New Jersey Corporation for Advance Technology" dated January 25, 2013. The applicable protocol is the "New Jersey Laboratory Testing Protocol to Assess Total Suspended Solids Removal by a Hydrodynamic Sedimentation Manufactured Treatment Device" dated January 25, 2013.

NJCAT verification documents submitted to the NJDEP indicate that the requirements of the aforementioned protocol have been met or exceeded. The NJCAT letter also included a recommended certification TSS removal rate and the required maintenance plan. The NJCAT Verification Report with the Verification Appendix (dated February 2016) for this device is published online at <http://www.njcat.org/verification-process/technology-verification-database.html>.

The NJDEP certifies the use of the First Defense® HC Stormwater Treatment Device by Hydro International at a TSS removal rate of 50% when designed, operated and maintained in accordance with the information provided in the Verification Appendix and the following conditions:

1. The maximum treatment flow rate (MTFR) for the manufactured treatment device (MTD) is calculated using the New Jersey Water Quality Design Storm (1.25 inches in 2 hrs) in N.J.A.C. 7:8-5.5.

2. The First Defense® HC Stormwater Treatment Device shall be installed using the same configuration reviewed by NJCAT and shall be sized in accordance with the criteria specified in item 6 below.
3. This First Defense® HC Stormwater Treatment Device cannot be used in series with another MTD or a media filter (such as a sand filter) to achieve an enhanced removal rate for total suspended solids (TSS) removal under N.J.A.C. 7:8-5.5.
4. Additional design criteria for MTDs can be found in Chapter 9.6 of the New Jersey Stormwater Best Management Practices (NJ Stormwater BMP) Manual which can be found on-line at www.njstormwater.org.
5. The maintenance plan for a site using the First Defense® HC Stormwater Treatment Device shall incorporate, at a minimum, the maintenance requirements noted in the attached document. However, it is recommended to review the maintenance website at http://www.hydro-int.com/UserFiles/downloads/FD_O%2BM_F1512.pdf for any changes to the maintenance requirements.
6. Sizing Requirements:

The example below demonstrates the sizing procedure for the First Defense® HC Stormwater Treatment Device:

Example: A 0.25 acre impervious site is to be treated to 50% TSS removal using a First Defense® HC Stormwater Treatment Device. The impervious site runoff (Q) based on the New Jersey Water Quality Design Storm was determined to be 0.79 cfs.

Maximum Treatment Flow Rate (MTFR) Evaluation:

The site runoff (Q) was based on the following:

time of concentration = 10 minutes

i=3.2 in/hr (page 5-8, Fig. 5-3 of the NJ Stormwater BMP Manual)

c=0.99 (curve number for impervious)

$Q=ciA=0.99 \times 3.2 \times 0.25 = 0.79$ cfs

Given the site runoff is 0.79 cfs and based on Table 1 below, the First Defense® HC Model 4-ft with a MTFR of 1.5 cfs would be the smallest model approved that could be used for this site that could remove 50% of the TSS from the impervious area without exceeding the MTFR.

The sizing table corresponding to the available system models is noted below. Additional specifications regarding each model can be found in the Verification Appendix under Table A-1 and Table A-2 of the NJCAT Verification Report.

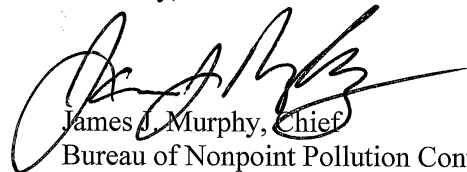
Table 1 First Defense® HC Models

First Defense® Model	Manhole Diameter (ft)	Maximum Treatment Flowrate, MTFR (cfs)
4-ft	4-ft	1.50
6-ft	6-ft	3.38
8-ft	8-ft	6.00

Be advised a detailed maintenance plan is mandatory for any project with a Stormwater BMP subject to the Stormwater Management Rules, N.J.A.C. 7:8. The plan must include all of the items identified in the 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 Practices Manual.

If you have any questions regarding the above information, please contact Mr. Titus Magnanao of my office at (609) 633-7021.

Sincerely,



James J. Murphy, Chief
Bureau of Nonpoint Pollution Control

Attachment: Maintenance Plan

C: Chron File
Richard Magee, NJCAT
Vince Mazzei, DLUR
Ravi Patraju, NJDEP
Gabriel Mahon, BNPC
Titus Magnanao, BNPC