



## State of New Jersey

Department of Environmental Protection

Division of Science, Research and Technology  
Bureau of Sustainable Communities & Innovative Technologies  
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Richard J. Codey  
*Acting Governor*

Bradley M. Campbell  
Commissioner

February 15, 2005

Penh Tov  
Stormceptor® Group of Companies  
12 Madison Avenue  
Toronto, ON M5R 2S1

**RE:** Interim Certification of the Stormceptor® System Model STC 900 Stormwater Treatment System by Stormceptor® Group of Companies.

Dear Ms. Tov:

In accordance with the Energy and Environmental Technology Verification (EETV) Act at N.J.S.A. 13:1D-134, the New Jersey Department of Environmental Protection (NJDEP) is pleased to issue a **Conditional Interim Certification** for the Stormceptor® System Model STC 900 that was developed by the Stormceptor® Group of Companies. This technology is a hydrodynamic separator designed to enhance gravitational separation of floating and settling materials from stormwater runoff. This conditional interim certification is being issued based on the New Jersey Corporation for Advanced Technology (NJCAT) verification report, dated September 2004.

According to NJCAT's verification report, and as indicated in the attached Conditional Interim Certification Findings, the Stormceptor® System Model STC 900 was verified by NJCAT to achieve a Total Suspended Solids (TSS) removal efficiency of 75% for laboratory simulated stormwater runoff, in compliance with all of NJCAT's testing protocols, including pre-loading the tank with sediment. In addition, the STC 900 demonstrated no scouring when tested up to 125% of the unit's operating rate with the unit loaded to 100% sediment capacity. Based on this demonstrated laboratory performance, NJDEP has a high degree of confidence that the Stormceptor® System Model STC 900 has the capability of exceeding in field applications, a TSS removal efficiency of 50%. Therefore, NJDEP certifies that the Stormceptor® System Model STC 900 is capable of achieving a minimum TSS removal efficiency of 50% from stormwater runoff, and shall be permitted accordingly. In addition, the following conditions will apply to the conditional interim certification:

1. The Stormceptor® System Model STC 900 should be the first component, if used as part of a treatment train (i.e. utilized in front of best management practices methods such as

detention, retention, and infiltration basins, as defined in the NJ Stormwater Best Management Practices Manual).

2. The Stormceptor<sup>®</sup> System Model STC 900 shall be designed in accordance with New Jersey's water quality design storm, as required in the Stormwater Management Rules (N.J.A.C. 7:8).
3. A Quality Assurance Project Plan, in accordance with the Technology Acceptance and Reciprocity Partnership (TARP) Tier II Protocol for Stormwater Best Management Practice Demonstration (July, 2003), and including any additional field testing requirements that the NJDEP shall request, shall be submitted to NJDEP and NJCAT within six (6) months from the date of this conditional interim certification letter.
4. Field evaluation data that are consistent with the Tier II Protocol and additional NJDEP field test requirements shall be submitted to NJDEP and/or NJCAT by December 31, 2006.
5. The various models listed in Table 1 of the "Conditional Interim Certification Findings" can be used for applications associated with other flow rates.

Please note that this approval letter shall expire on June 30, 2007, unless extended by NJDEP. For final certification of the Stormceptor<sup>®</sup> System Model STC 900, verified data must be generated from a full scale field demonstration utilizing the TARP Tier II Protocol and additional NJDEP field test requirements. If you have any questions about this conditional interim certification, please contact Ravi Patraju of my staff at (609) 292-0125.

Respectfully,



Martin Rosen  
Chief - Bureau of Sustainable Communities  
and Innovative Technologies

Enclosure

- c: Sam Wolfe, Assistant Commissioner, Environmental Regulation  
Lisa Jackson, Assistant Commissioner, Land Use Management  
Larry Baier, Director, Watershed Management Program  
Eileen Murphy, Director, Division of Science, Research, and Technology  
Narinder Ahuja, Director, Division of Water Quality  
Mark Mauriello, Director, Land Use Regulations  
Rhea Brekke, Executive Director, New Jersey Corporation for Advanced Technology

## CONDITIONAL INTERIM CERTIFICATION FINDINGS

### NJDEP Technology Certification Program:

Bureau of Sustainable Communities & Innovative Technologies  
Division of Science, Research & Technology  
401 E State Street, P.O. Box 409  
Trenton, NJ 08625  
(609) 292-9692

### Manufactured Treatment Device:

The Stormceptor<sup>®</sup> System Model STC 900

### Applicant Information:

Stormceptor<sup>®</sup> Group of Companies  
12 Madison Avenue  
Toronto, ON M5R 2S1  
(800) 565-4801  
[www.stormceptor.com](http://www.stormceptor.com)

### Technology Description:

According to the verification report from the New Jersey Corporation of Advanced Technology (NJCAT), the Stormceptor<sup>®</sup> Group of Companies has developed a technology for separating and retaining floating and sinking pollutants, including sediment, hydrocarbons and debris, under rapid flow conditions using a hydrodynamic separator. The Stormceptor<sup>®</sup> System is a vertically oriented cylindrical structure made of concrete and fiber reinforced plastic, designed to separate oil and sediment from stormwater. Between maintenance events, pollutants accumulate within the system and are therefore removed from the natural environment. These pollutants may otherwise become a human health hazard, an aesthetic issue, or may be cycled within the food chain or water table. Maintenance is performed from above by a vacuum truck and without interference from internal components.

### NJCAT's Verified Claim:

**The Stormceptor<sup>®</sup> System Model STC 900 provides 75% “Bulk Total Suspended Solids (TSS)” removal efficiency (as per the NJDEP treatment efficiency calculation methodology) for laboratory simulated stormwater runoff with an average influent concentration of 295 mg/L and an average d<sub>50</sub> particle size of 97 microns. TSS removal testing was conducted with sediment pre-loaded in the lower chamber to 50% sediment capacity for the STC 900.**

Technology Limitations/Concerns:

- Lack of maintenance may cause the system to operate at a reduced efficiency and eventually fill with sediment. Therefore, inspections of accumulated pollutants should be performed as recommended by the manufacturer. Inspections would need to be conducted more frequently in the winter where sanding operations may lead to rapid accumulations.

NJDEP Conditional Interim Certification:

According to the NJCAT's verification report, and as indicated in the attached Conditional Interim Certification Findings, the Stormceptor® System Model STC 900 was verified by NJCAT to achieve a Total Suspended Solids (TSS) removal efficiency of 75% for laboratory simulated stormwater runoff, in compliance with all of NJCAT's testing protocols, including pre-loading the tank with sediment. In addition, the STC 900 demonstrated no scouring when tested up to 125% of the unit's operating rate with the unit loaded to 100% sediment capacity. Based on this demonstrated laboratory performance, NJDEP has a high degree of confidence that the Stormceptor® System Model STC 900 has the capability of exceeding in field applications, a TSS removal efficiency of 50%. Therefore, NJDEP certifies that the Stormceptor® System Model STC 900 operating at a design capacity of **285 gpm (0.636 cfs)**, is capable of achieving a minimum TSS removal efficiency of 50% from stormwater runoff, and shall be permitted accordingly. In addition, the following conditions shall apply to the conditional interim certification:

1. The Stormceptor® System Model STC 900 should be the first component, if used as part of a treatment train (i.e. utilized in front of best management practices methods such as detention, retention, and infiltration basins, as defined in the NJ Stormwater Best Management Practices Manual).
2. The Stormceptor® System Model STC 900 shall be designed in accordance with New Jersey's water quality design storm, as required in the Stormwater Management Rules (N.J.A.C. 7:8).
3. A Quality Assurance Project Plan, in accordance with the Technology Acceptance and Reciprocity Partnership (TARP) Tier II Protocol for Stormwater Best Management Practice Demonstration (July, 2003), and including any additional field testing requirements that the NJDEP shall request, shall be submitted to NJDEP and NJCAT within six (6) months from the date of the Conditional Interim Certification letter.
4. Field evaluation data that are consistent with the Tier II Protocol and additional NJDEP field test requirements shall be submitted to NJDEP and/or NJCAT by December 31, 2006.
5. The various models listed in Table 1 can be used for applications associated with other flow rates.

**Table 1. Stormceptor® System Standard Sizes**

<b>Stormceptor® Models</b>					
<b>Model</b>	<b>Water Quality Flow Capacity<sup>a</sup> (cfs)</b>	<b>Sediment Capacity<sup>b</sup> (ft<sup>3</sup>)</b>	<b>Oil Capacity (US Gal.)</b>	<b>Total Holding Capacity (US Gal.)</b>	<b>Orifice Diameter (inches)</b>
450	0.283	9	86	470	4
900	0.636	19	251	952	6
1200	0.636	25	251	1234	6
1800	0.636	37	251	1833	6
2400	1.059	49	840	2462	8
3600	1.059	75	840	3715	8
4800	1.766	101	909	5059	10
6000	1.766	123	909	6136	10
7200	2.472	149	1059	7420	12
11000s	3.531	224**	2797	11194	10
13000s	3.531	268**	2797	13348	10
16000s	4.944	319**	3055	15918	12

Notes:

**a** –Water quality treatment is the intent of the Stormceptor® design, therefore the use of this design capacity for single event design storm sizing (e.g. Rational Method) is not appropriate. The Stormceptor® Corporation recommends using the Stormceptor® Sizing Program version 4.0.0 to properly select a Stormceptor® unit.

**b** – Sediment capacity prior to recommended maintenance.

**s** – These are series units which consist of two structures installed in series that are designed to operate in parallel. The sediment, oil and total holding capacity are based on both structures combined.