NEW JERSEY TIER II STORMWATER TEST REQUIREMENTS – AMENDMENTS TO TARP TIER II PROTOCOL

The purpose of the Technology Acceptance and Reciprocity Partnership (TARP) Tier II Stormwater Protocol is to provide a uniform method for 1) demonstrating stormwater treatment technologies, and 2) developing field test quality assurance plans for verification and certification of performance claims in accordance with individual state regulatory standards. The protocol reduces the requirements for a stormwater Best Management Practice (BMP) demonstration to a common set of standard criteria, acceptable to all participating states. However, the protocol also recommends that state-specific requirements must be considered when a technology vendor is pursuing certification or verification of a stormwater BMP in that state. In addition, the protocol does not completely eliminate all state review or approval of construction projects proposing to use the stormwater technology, nor does it require any state to "rubber stamp" the approval or permit of another state or regulator (TARP Tier II Protocol, p.4).

The main focus of the TARP states' technology verification and certification programs is the independent validation of data supporting specific technology performance claims. An advisory work group, comprising the technology vendors active in the NJ verification program and representatives from the New Jersey Corporation for Advanced Technology (NJCAT) and the New Jersey Department of Environmental Protection (NJDEP), determined that certain requirements of the TARP Tier II Stormwater Protocol were potentially very difficult to achieve and recommended revisions to these requirements. While other criteria described in the TARP Tier II Stormwater Protocol remain in effect, the **Site Selection** and **Stormwater Data Collection** sections have been revised as follows:

Site Selection

1. TSS influent characteristics such as influent loading and particle size distribution will be the determining factors for site selection as follows:

    i. The **mean influent concentration** of the sediments must be in the range of 100-300 mg/L.

    ii. The **mean particle size** must not exceed 100 μm.

    Since published studies conclude that contaminants such as heavy metals and nutrients partition against very small particles, the NJDEP final certification of the performance claims for the manufactured treatment devices will be strongly influenced by PSD. This decision by the NJDEP results from the fact that permitting of manufactured treatment devices is not based on soil types or PSD, and, consequently, permitted devices must be able to operate at the certified performance level anywhere in New Jersey. Therefore, the final certification of the Total Suspended Solids (TSS) removal efficiency claim would be based to a

significant extent on the size of particles that the device is capable of removing from stormwater runoff. To effectively demonstrate the efficient removal of the targeted PSD, the NJDEP strongly recommends that soil types at the chosen sites (verified through influent sampling) should be similar to the PSD characteristics described in the NJDEP Laboratory Protocol, which is 55% sand, 40% silt and 5% clay.

iii. At least three (3) influent samples from the overall 15 to 20 storms (as described in the **Stormwater Data Collection** section) must be tested to establish the particle size distribution for the site. Also, for the same reason described above regarding future NJDEP policy changes, it is recommended that the effluent from the same three (3) influent samples be tested to establish the PSD of the sediments exiting the manufactured treatment device. It is recommended that the test method used be one of the following; any other proposed method must be approved by NJCAT:

- Laser Diffraction
- Visual Accumulator
- Pipette Method
- Coulter Counter
- Wet Sieve
- Serial Filtration

iv. Only one of the recommended analytical methods described above must be used for all influent and effluent samples tested for PSD characterization.

2. Selected sites can be within or outside New Jersey providing that the influent concentrations and particle size distribution criteria are satisfied.

Stormwater Data Collection

1. A qualifying storm event must exceed 0.1 inch of total rainfall.

2. The minimum inter-event period must be 6 hours.

3. Sampling one hundred percent (100%) of the storm flow should be the goal. However, flow-weighted composite samples covering a minimum of 60% of the total storm flow will be accepted.

4. A minimum of 6 water quality samples (i.e., 6 influent and 6 effluent samples) must be collected for each storm event. However, the goal should be an average of 10 samples per storm event.

5. The number of water quality sampling events must be representative of the storm events in the respective climatic regions, with the following criteria:
   - The total sampled rainfall must be a minimum of 15 inches of precipitation.

- At least 15 storms, but preferably 20 storms, must be sampled.

6. The Tier II Stormwater Protocol sampling requirement during adverse weather conditions is not applicable.

7. At least two storms must exceed 75% of the design treatment capacity.

8. Scouring tests must be completed (either in the laboratory or field) for the manufactured treatment devices at 125% of the treatment flow rate. These tests should be operated with initial sediment loading of 50% and 100% of the unit's capture capacity.

9. Both Total Suspended Solids (TSS) (EPA Method 160.2 or APHA et al. Standard Method 2540 D) and Suspended-Sediment Concentration (SSC) (ASTM Method D3977) test methods must be used to establish the TSS removal efficiency of the manufactured treatment devices.

Since the NJDEP requirements described above differ from the standard TARP Tier II Stormwater Protocol, there is a possibility that reciprocity of certified manufactured treatment devices may not be achievable in the other TARP states. However, the NJDEP will attempt to defend the basis for the amendments and work with the other TARP states to have these requirements replace those in the present TARP Tier II document.