Manufactured Treatment Device (MTD) Registration

1. **Manufactured Treatment Device Name:** V2B1

2. **Company Name:** Environment 21, LLC
   Mailing Address: 8713 Read Road
   City: East Pembroke
   State: NY Zip: 14056

3. **Contact Name (**to whom questions should be addressed)**:** Dino Pezzimenti
   Mailing Address: 8713 Read Road P.O. Box 55
   City: East Pembroke
   State: NY Zip: 14056-0055
   Phone number: 585-815-4714
   Fax number: 585-815-4715
   E-mail address: dino.pezzimenti@env21.com
   Web address: www.env21.com

4. **Technology**
   Specific size/capacity of MTD assessed (include units): Please see attached chart
   Range of drainage areas served by MTD (acres): Please see attached chart
   Include sizing chart or describe sizing criteria: Please see attached chart
   Intended application: on-line or offline: Both online and offline as applicable
   Media used (if applicable): NA

5. **Warranty Information** (describe, or provide web address)**:**
   The product warranty is provided by the precaster (usually 20 years). The product performance is warranted by Environment 21 for the life of the product provided regular maintenance is performed as outlined in the V2B1 System Maintenance (http://www.env21.com/media/docs/v2b1/drawings/V2B1%20System%20Maintenance%20130305.pdf).

6. **Treatment Type**

   X Hydrodynamic Structure
   ☐ Filtering Structure
   ☐ Manufactured Bioretention System
   Provide Infiltration Rate (in/hr):
   ☐ Other (describe):

7. Water Quality Treatment Mechanisms (check all that apply)

X Sedimentation/settling
☐ Infiltration
☐ Filtration (specify filter media)
☐ Adsorption/cation exchange
☐ Chelating/precipitation
☐ Chemical treatment
☐ Biological uptake
☐ Other (describe):

8. Performance Testing and Certification (check all that apply):

Performance Claim (include removal efficiencies for treated pollutants, flow criteria, drainage area): The V2B1 is sized for each project to have an 80% net annual removal efficiency for a Particle Size Distribution having a d_{50} of 110 microns.

Specific size/Capacity of MTD assessed: The V2B1 Model 4 was assessed by The University of Minnesota, St. Anthony Falls Laboratory
Has the MTD been "approved" by an established granting agency, e.g. New Jersey Department of Environmental Protection (NJDEP) , Washington State Department of Ecology, etc.
☐ **No**
X **Yes**; For each approval, indicate (1) the granting agency, (2) use level if awarded (3) the protocol version under which performance testing occurred (if applicable), and (4) the date of award, and attach award letter. 1) The V2B1 Model 4 verified by NJCAT, 2) MTD – HDS, 3) 2009, 4) November 13, 2009.

Was an established testing protocol followed?
☐ **No**
X **Yes**, (1) Provide name of testing protocol followed, (2) list any protocol deviations: 1) Protocol for Manufactured Hydrodynamic Sedimentation Devices for Total Suspended Solids Based on Laboratory Analysis, 2) No deviations.

Provide the information below and provide a performance report (attach report):

For lab tests:

i. Summarize the specific settings for each test run (flow rates, run times, loading rates) and performance for each run: 25%, 50%, 75%, 100%, and 125% of the Manufacturer's Treatment Flow Rate of 0.8 cfs. Average removal efficiencies of 46.1% (125% MTFR), 56.8% (100% MTFR), 62.4% (75% MTFR), 69.9% (50% MTFR), and 68.9% (25% MTFR) with a PSD test media having a d_{50} of 60 microns.
ii. If a synthetic sediment product was used, include information about the particle

size distribution of the test material: NA

iii. If less than full-scale setup was tested, describe the ratio of that tested to the full-scale MTD: NA

For field tests:

i. Provide the address, average annual rainfall and characterized rainfall pattern, and the average annual number of storms for the field-test location:

ii. Provide the total contributing drainage area for the test site, percent of impervious area in the drainage area, and percentages of land uses within the drainage area (acres):

iii. Describe pretreatment, bypass conditions, or other special circumstances at the test site:

iv. Provide the number of storms monitored and describe the monitored storm events (amount of precipitation, duration, etc.):

v. Describe whether or not monitoring examined seasonal variation in MTD performance:

vi. If particle size distribution was determined for monitored runoff and/or sediment collected by the MTD, provide this information:

9. MTD History:

How long has this specific model/design been on the market? 15 years

List no more than three locations where the assessed model size(s) has/have been installed in Virginia. If applicable, provide permitting authority. If known, provide latitude & longitude: Highland Pediatrics – Abingdon, VA, two at MH60S Hangar and Airfield – Norfolk, VA

List no more than three locations where the assessed model size(s) has/have been installed outside of Virginia. If applicable, provide permitting authority. If known, provide latitude & longitude: Dairy Maid – Frederick, MD, Walmart – Kalispell, MT, MNDOT Nobles County – Worthington, MN

10. Maintenance:

What is the generic inspection and maintenance plan/procedure? (attach necessary documents): Please see the attached document.

Is there a maintenance track record/history that can be documented?

X No, no track record.

☐ Yes, track record exists; (provide maintenance track record, location, and sizing of three to five MTDs installed in Virginia [preferred] or elsewhere):

Recognizing that maintenance is an integral function of the MTD, provide the following: amount of runoff treated, the water quality of the runoff, and what is the expected maintenance frequency for this MTD in Virginia, per year?

Total life expectancy of MTD when properly operated in Virginia and, if relevant, life expectancy of media: 20+ years

For media or amendments functioning based on cation exchange or adsorption, how long will the media last before breakthrough (indicator capacity is nearly reached) occurs?

For media or amendments functioning based on cation exchange or adsorption, how has the longevity of the media or amendments been quantified prior to breakthrough (attach necessary performance data or documents)?

Is the maintenance procedure and/or are materials/components proprietary?
X Yes, proprietary – Proprietary components.
☐ No, not proprietary

Maintenance complexity (check all that apply):
☐ Confined space training required for maintenance
X Liquid pumping and transportation
Specify method:Standard Pumper Truck
X Solids removal and disposal
Specify method: Landfill for sediment approved facility for oils
Other noteworthy maintenance parameter (describe):

11. Comments

Include any additional explanations or comments:

12. Certification

Signed by the company president or responsible officer of the organization:

"I certify that all information submitted is to the best of my knowledge and belief true, accurate, and complete."

Signature: _____

Name: Paul J. Rowe, P.E.

Title: Director of Environment 21, LLC

Date: May 29, 2014

NOTE: All information submitted to the department will be made publically accessible to all interested parties. This MTD registration form will be posted on the Virginia Stormwater BMP Clearinghouse website.