**Manufactured Treatment Device (MTD)**

**Measure #\_\_\_ on the Location Map**

Development Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Township, County: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Location of MTD: X: \_\_\_\_\_\_; Y: \_\_\_\_\_\_ (or N: \_\_\_\_\_\_; E :\_\_\_\_\_)

Location Description: e.g., Northwest corner of the development, near County RT 531

Location Map

|  |
| --- |
| N  E  County Route 531  Grass Swale #1  **Discharge**  Basin #1  Drywell #1  Corporation Road  Building  Parking  Lot    Vegetative Filter strip #1  Drywell #2  Access  Grass Swale #2 |

Example Map: Use aerial photo, site plan, or other graphics showing the locations of BMPs.

**NOTE**

**This Field Manual is intended to be editable and adjustable in accordance with the design of stormwater management measures, the site conditions, and the special needs of responsible party. The Engineer should supplement information and best management practice to assist the responsible party to perform maintenance.**

Blue text indicates information may be deleted and or replaced as necessary.

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# MTD Overview

**Functionality**

A Manufactured Treatment Device (MTD) is a pre-fabricated stormwater treatment structure utilizing settling, filtration, absorptive/adsorptive materials, vortex separation, vegetative components, and/or other appropriate technology to remove pollutants from stormwater runoff.

Manufactured treatment devices are intended to capture sediments, metals, hydrocarbons, floatables, and/or other pollutants in stormwater runoff before being conveyed to a storm sewer system, additional stormwater quality treatment measure, or waterbody.

**Proper care and attention in the long-term maintenance of the stormwater management measure is critically important to the safety and health of the public.**

**Type of BMP – (Dry/Wet ) Stormwater Management Measure**

**This section shall be completed by the design engineer based on the information provided by the MTD manufacturer. The content of this section should include whether the MTD is designed to remain dry or wet between storm events, and whether the MTD is designed to attenuate peak flows, remove TSS and/or nutrients for water quality, or recharge groundwater, as well as other information related to its functions.**

# Basic Design Information

This section shall be filled out by the design engineer.

**Hydrology Design Targets**

1. The MTD is designed as an (online / offline) system.
2. The maximum design storm is (Water Quality Design Storm / 2 year storm / 10 year storm / 100 year storm), which corresponds to \_\_\_\_\_\_\_ inches of rain in \_\_\_\_\_ hours.
3. The design total suspended solids removal rate is \_\_\_\_\_\_\_\_ %.
4. The design drain time is \_\_\_\_\_\_\_\_\_\_ hours (if applicable).

Other hydrologic design parameters for this specific MTD, such as pretreatment requirements, the rate of inflow, the concentration of the targeted nutrients to be treated, the size of the contributing drainage area, the quantity of grease/oil to be handled, the quantity of sediment to be handled, specific particle sizes, or other special characteristics of the inflow should be included in this section.

**Hydraulic Design Targets**

1. Design parameters

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Water Quality Design Storm** | **2-year**  **storm** | **10-year**  **storm** | **100-year**  **storm** |
| **Rainfall Depth (inches)** | 1.25 inch  in 2 hours | \_\_\_ inches  in 24 hours | \_\_\_ inches  In 24 hours | \_\_\_ inches  In 24 hours |
| **Runoff Volume (cubic feet)** |  |  |  |  |
| **Peak Flow Rate**  **(cfs)** |  |  |  |  |
| **Water Surface Elevation**  **(feet)** |  |  |  |  |

Note: The design engineer shall fill out the table in accordance with the design of the MTD. If the item is not applicable, enter **N/A** in the table.

Other hydraulic design parameters, such as flow velocity, maximum or minimum hydraulic head loss between the inflow and outflow, or the surface water elevations of the inflow and outflow should be included in this section.

**Configuration Targets**

1. The name of the MTD is \_\_\_\_\_\_\_\_\_\_\_\_\_\_, Model \_\_\_\_\_\_\_\_\_\_\_, Serial No. \_\_\_\_\_\_.
2. The manufacturer of the MTD is \_\_\_\_\_\_\_\_\_\_\_\_.

This section shall be edited by the design engineer based on the information provided by the manufacturer. The information in this section may include the pipe size, the specific configuration of the piping, vegetation requirements, a brief description of the filter medium specifications, the orifice size, etc. Information included in the manufacturer’s specification sheets is not required in this section if the specification sheets are attached to this field manual.

**Critical Maintenance Features**

1. (Design engineer shall supplement the information according to MTD manufacturer’s operation and maintenance manual.)

**Attach the following Disturbance Notices, if applicable to the site:**

**Wetland Disturbance Notice**:

Maintenance of this BMP may disturb a wetland area. Contact NJDEP Division of Land Use Regulation for guidance and any required permit(s) before performing maintenance.

**Wildlife Disturbance Notice**: Maintenance of this BMP may disturb or remove vegetation in an area designated to endangered and/or threatened species. Contact NJDEP Division of Fishing and Wildlife for guidance and any required permit(s) before performing maintenance.

# Visual Aid for MTD Maintenance

Visual aids for MTD maintenance may be obtained from the manufacturer or may be included in the Operation and Maintenance Manual provided by the manufacturer.

# Reference Documents

Documents to be placed in this field manual should include the following:

* As-built Drawings with Drainage Plans
* Operation and Maintenance Manual (provided by the manufacturer)
* MTD Specification Sheet (provided by the manufacturer), if available
* Soil Boring Logs, if applicable
* Permeability Test (pre-construction) , if applicable
* Permeability Test (post-construction) , if applicable
* Groundwater Mounding Analysis, if applicable

**Attach Reference Documents Here**

# Inspection Checklist / Maintenance Actions

**MTD**

**Checklist** (circle one)**:** Quarterly / Annual / Monthly / Special Event Inspection

**Checklist No.** \_\_\_\_\_\_\_\_\_\_\_\_\_\_  **Inspection Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Date of most recent rain event: \_\_\_\_\_\_\_\_\_\_**

**Rain Condition** (circle one):

Drizzle / Shower / Downpour / Other \_\_\_\_\_\_\_\_\_\_\_\_\_

**Ground Condition** (circle one):

Dry / Moist / Ponding / Submerged / Snow accumulation

**The following inspection items and preventative/corrective maintenance actions listed below represent general requirements. The design engineer and/or responsible party shall adjust the items and actions to better meet the conditions of the site, the specific design targets, and the requirements of regulatory authorities.**

If the manufacturer’s Operation and Maintenance Manual provides a checklist, the design engineer may use the manufacturer’s checklist; otherwise, the design engineer should summarize the inspection points and the preventative/corrective maintenance actions in the checklist template below.

|  | **For Inspector** | | | **For Maintenance Crew** |
| --- | --- | --- | --- | --- |
| **Component No. Component Name** | **Inspection Item and Inspection Item No.** | | **Result** | **Preventative / Corrective Maintenance Actions** |
| A | 1 |  | Y\_\_  N\_\_ |  |
| 2 |  | Y\_\_  N\_\_ |  |
| 3 |  | Y\_\_  N\_\_ |  |
| 4 |  | Y\_\_  N\_\_ |  |
| 5 |  | Y\_\_  N\_\_ |  |
| B | 1 |  | Y\_\_  N\_\_ |  |
| 2 |  | Y\_\_  N\_\_ |  |
| 3 |  | Y\_\_  N\_\_ |  |
| 4 |  | Y\_\_  N\_\_ |  |
| 5 |  | Y\_\_  N\_\_ |  |
| Note: | | | | |

**Follow Up Items: (Component No. / Inspection Item No.):**

(e.g., B/1, C/2)

**Associated Work Orders: # \_\_\_\_\_\_, # \_\_\_\_\_\_, # \_\_\_\_\_\_, # \_\_\_\_\_\_, # \_\_\_\_\_**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Inspector Name Signature Date**

**Report issues to the local authority and mosquito commission as required by local ordinances and regulatory authorities.**

**File this checklist in the Maintenance Log after performing maintenance.**

# Preventative Maintenance Record

Corresponding Checklist No. \_\_\_\_\_\_\_\_

Component No.\_\_\_\_\_\_\_, Inspection Item No.\_\_\_\_\_\_\_\_

**Work Logs**

|  |  |  |
| --- | --- | --- |
| **Activities** | **Components** | **Date Completed** |
| **Required activities depend on the MTD** |  |  |
|  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

Debris, sediment, and trash are handled (onsite / by \_\_\_\_\_\_\_\_\_\_\_\_ (contractor name) to disposal site \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_). (See Part I: Maintenance Plan – Disposal Plan Section)

**Crew member:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_**

(name/ signature)

**Supervisor:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_**

(name/ signature)

**File this Preventative Maintenance Record in the Maintenance Log after performing maintenance.**

# Corrective Maintenance Record

1. **Work Order #** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Date Issued** \_\_\_\_\_\_\_\_\_\_\_\_\_
2. **Issue to be resolved**:
3. The issue was from **Corresponding Checklist No. \_\_\_\_\_\_\_\_, Component No.\_\_\_\_\_\_\_\_\_\_\_\_\_\_, Inspection Item No.**  (e.g., 2, 3) **.**
4. **Required Actions**

|  |  |  |
| --- | --- | --- |
| **Actions** | **Planned Date** | **Date Completed** |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. **Responsible person(s):**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. **Special requirements**
   * Time of the season or weather condition:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   * Tools/equipment:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   * Subcontractor (name or specific type):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Approved by** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Date** \_\_\_\_\_\_\_\_\_\_\_\_\_

(name/signature)

**Verification of completion by** \_\_\_\_\_\_\_\_\_\_\_\_/\_\_\_\_\_\_\_\_ **Date** \_\_\_\_\_\_\_\_\_\_\_\_\_

(name/signature)

**File this Corrective Maintenance Record in the Maintenance Log after performing maintenance.**