

FACILITY: FILTERS - SURFACE SAND FILTER (F-1)*



GENERAL MAINTENANCE CARD

Stormwater Coalition of Albany County
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PURPOSE AND FUNCTION

A filtering practice that treats stormwater by settling out larger particles in a sediment chamber, then filtering stormwater through a sand matrix.

SHORT-TERM MEASURES (FREQUENCY: AT LEAST ONCE A MONTH)

Drainage Issues:

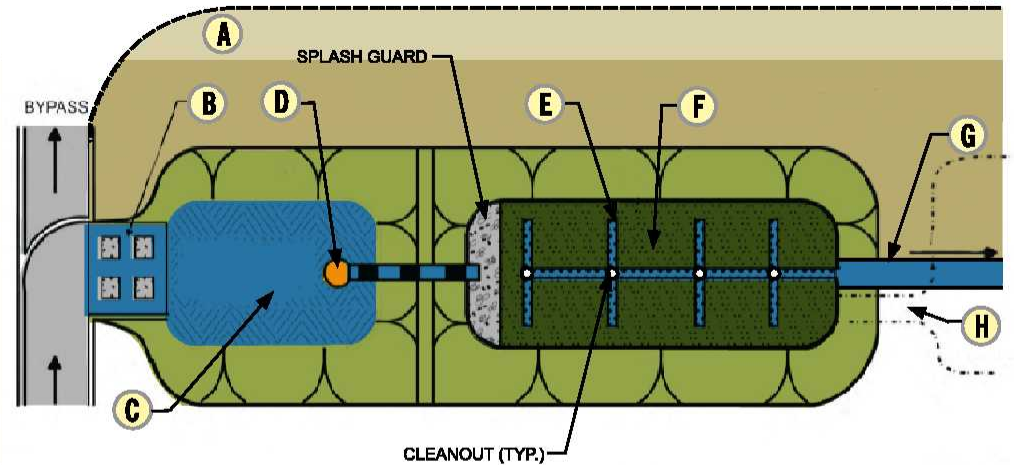
- Maintain contributing drainage area.**
 - Remove trash and debris and dispose off-site, as required.
 - Stabilize and mow area as required. Remove clippings.
 - Ensure that activities in the drainage area minimize oil/grease and sediment entry to the system.
- Inspect flow diversion structure (Location B) and pretreatment sedimentation chamber (Location C).**
 - Remove debris manually from chamber, flow diversion structure, and perforated standpipe (or other outlet device) and dispose off-site, as required.
 - Note dewatering time. The facility should drain completely within 36 hours of a storm event. If clogging occurs, clean/repair perforated standpipe (Location D). Refer to Item 1 of Medium-Term Measures.
 - Note any cracks/damage in chamber, flow diversion structure, and perforated standpipe (or other outlet device).
- Inspect filter bed (Location F) and splash guard.**
 - Remove debris manually and dispose off-site, as required.
 - Note dewatering time. The facility should drain completely within 48 hours of a storm event. If clogging occurs, remove sediment and cleanout underdrains (refer to Item 2 of Long-Term Measures).
- Inspect emergency spillway (Location H) and outlet pipe (Location G).**
 - Vegetated emergency spillway channels should be mowed and should not be cut to less than 6 to 8 inches in height.
 - The emergency spillway approach and discharge channels should be cleared of brush and other woody growth.
 - After any flow has passed through the emergency spillway, the spillway crest (control section) and exit channel should be inspected for erosion. Note location of any eroded areas.
 - Note any cracks/damage in outlet pipe. Remove debris/sediment manually and dispose off-site, as required.

Landscaping:

- Inspect overall condition of vegetation onsite.**
 - Remove vegetative invasives manually, ensuring root removal, to the extent possible. Refer to Appendix 1: New York State Invasive Plants for key species. Note any significant establishment for future removal/maintenance.
 - Relocate rodents and/or provide exclusion devices, as required.
 - Trim shrubs and cut grass along street frontages, as required. Dispose of clippings off-site.

SIDE A

PLAN



MAJOR AREAS OF PRACTICE

- | | | |
|---------------------------------------|---|-----------------------|
| A. Maintenance Accessway | D. Perforated Standpipe Detention Structure | G. Outlet Pipe |
| B. Flow Diversion Structure | E. Underdrain Collection System | H. Emergency Spillway |
| C. Pretreatment Sedimentation Chamber | F. Filter Bed | |

- Prune vegetation within the pretreatment sedimentation chamber (Location C), as required. Vegetation shall be limited to a height of 18 inches.
- Mow grass cover of filter bed (Location F), as required. Mow only when surface is dry to prevent rutting. Maximum grass height is 12 inches. Dispose of clippings off-site.

Perimeter Treatment (perimeter boundaries not shown on figures):

- Inspect overall condition of the perimeter treatment items.**
 - Remove accumulated litter/debris by hand; dispose off-site.
 - Secure gates, guiderails, signs, and boulders, as required.

MEDIUM-TERM MEASURES (FREQUENCY: ONCE EVERY SIX MONTHS)

Drainage Issues:

- Inspect flow diversion structure (Location B) and pretreatment sedimentation chamber (Location C).**
 - Measure sediment depth in chamber.
 - Repair cracks/damage to chamber or flow diversion structure, as required.
 - Clean/repair perforated standpipe (Location D), or other outlet device, when drawdown times exceed 36 hours.
- Inspect filter bed (Location F) and splash guard.**
 - Measure sediment accumulation on bed surface. If accumulation exceeds one inch, remove sediment and cleanout underdrains (refer to Item 2 of Long-Term Measures).
 - Repair cracks/damage or eroded areas in splash guard, as required.
- Inspect emergency spillway (Location H) and outlet pipe (Location G).**
 - Repair and stabilize eroded areas in the exit channel, as required.
 - Repair cracks/damage to outlet pipe, as required.

Albany County	City of Albany	Town of Bethlehem	City of Cohoes	Town of Colonie	Village of Colonie	Village of Green Island	Town of Guilderland	Village of Menands	Town of New Scotland	Village of Voorheesville	City of Watervliet	SUNY Albany
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* Facility abbreviations refer to 2003 NYSDEC Stormwater Design Manual practice labels

Perimeter Treatment (perimeter boundaries not shown on figures):

4. Inspect overall condition of the perimeter treatment items.
 - Lubricate locks and hinges on gates and access grates, as required.
 - Refurbish or mow accessway, as required.
 - Inspect and repair damaged locks, gates, guiderails and signs, as required.

LONG-TERM MEASURES (FREQUENCY: ONCE EVERY YEAR)

Drainage Issues:

1. Remove sediment from pretreatment sedimentation chamber; "vactoring" recommended. Sediment removal should be completed when the chamber is either 50% or six inches full, whichever is less.
2. Remove sediment from filter bed and cleanout underdrains when accumulation exceeds one inch:
 - Refer to steps 1-5 of restoration procedure.
 - Remove sediment manually and dispose off-site.
 - Rake bed to restore uniform surface.
 - Seed or sod to restore ground cover, as required.
3. Inspect facility for evidence of structural damage. Repair as necessary.
4. Stabilize any eroded areas.
5. Ensure that flow is not bypassing the facility.

LONG-TERM MEASURES (FREQUENCY: ONCE EVERY THREE TO FIVE YEARS)

Drainage Issues:

1. Perform restoration procedure at filter bed chamber for low sediment applications. This maintenance should be done more often for areas of high sediment yield or high oil and grease.

DEWATERING PROCEDURE AT PRETREATMENT SEDIMENTATION CHAMBER

The pretreatment sedimentation chamber must be dewatered before proceeding with "vactoring" operations.

Methodology:

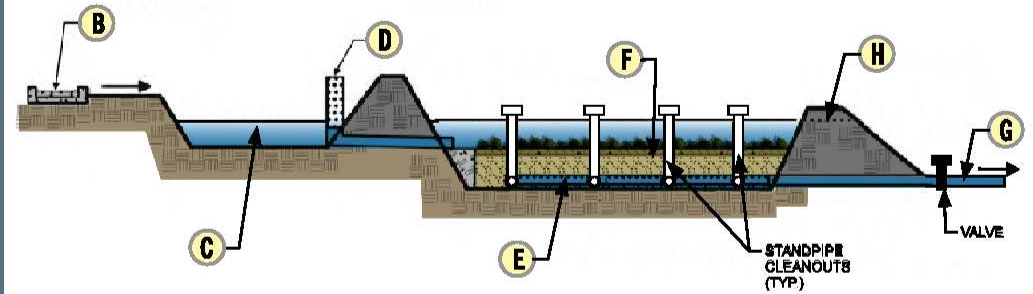
1. Park the "vector" truck along the maintenance accessway near the pretreatment sedimentation chamber (Location A on Plan Figure). The boom should be extended in the direction of the access grate for the chamber.
2. Ensure clear access for a two-person crew down the slope near the sedimentation chamber (Location C).
3. Pump out the water from the chamber to the filter bed (Location F) downstream.
4. Proceed with "vactoring" operations.

"VACTORING" PROCEDURE AT PRETREATMENT SEDIMENTATION CHAMBER

Methodology:

1. Connect the "vector" truck to an approved nearby source of clean water for "vactoring" purposes.
2. Unwind the water jet hose reel and place it down the slope of the sedimentation chamber (Location C). Use hose to loosen accumulated sediment.
3. Place flexible suction hose into the sedimentation chamber (Location C).
4. Perform "vactoring" operations by simultaneously using the suction arm and water jet hose to remove slurry until the base of the chamber is reached.
5. Continue slurry removal until capacity of "vector" truck is reached.
6. Stop "vactoring" work. Dispose of slurry off-site.
7. Repeat steps 1-6 until all the sediment has been removed.
8. Proceed with restoration of filter bed, as required.
9. After "vactoring" work is complete, carefully remove hoses and transport them back to the truck.
10. Inspect the accessway and adjacent area for damage, such as dislodged field stone, wood chips, etc., and refurbish as required.

Note: Secure locks on gates as necessary prior to exiting site.

**MAJOR AREAS OF PRACTICE**

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|---|---------------------------------|-----------------------|
| B. Flow Diversion Structure | E. Underdrain Collection System | H. Emergency Spillway |
| C. Pretreatment Sedimentation Chamber | F. Filter Bed | |
| D. Perforated Standpipe Detention Structure | G. Outlet Pipe | |

RESTORATION PROCEDURE AT FILTER BED

Methodology:

1. Extend flexible suction hose from the "vector" truck to the filter bed.
2. Use suction arm to pump down the water level until the filter bed is visible.
3. Close valve at end of underdrain pipe, near outlet (see Profile Figure).
4. Attach a standard compressor and fitting to first cleanout (see Profile Figure) and run compressed air through pipe. Repeat for all remaining connections.
5. Perform a visual inspection of the filter bed (Location F) to determine that it is sufficiently broken up. Repeat step 4 as necessary.
6. Remove compressor hose and fitting. Restore valve to original setting.
7. Remove top layers of the filter media (topsoil, filter fabric, and 2-5 inches of sand).
8. Roto-till or otherwise cultivate the surface.
9. Replace media according to original specifications or to approved, revised specifications.
10. Perform steps 9-10 of the "vactoring" procedure.

Paperwork and Reporting

- 1) Refer to site specific SWPPP and regulated MS4 for reporting requirements related to maintenance
- 2) Report practice failures to owner-operator and relevant regulated MS4

Maintenance Considerations During Design

- Erosion and Sediment Control
 - Inlet/Outlet Protection
 - Sediment Removal
- Pretreatment Devices
- Underdrains
- Landscaping
- Maintenance Access
- Cold Climate Considerations