

MAINTAINING STORMWATER CONTROL MEASURES

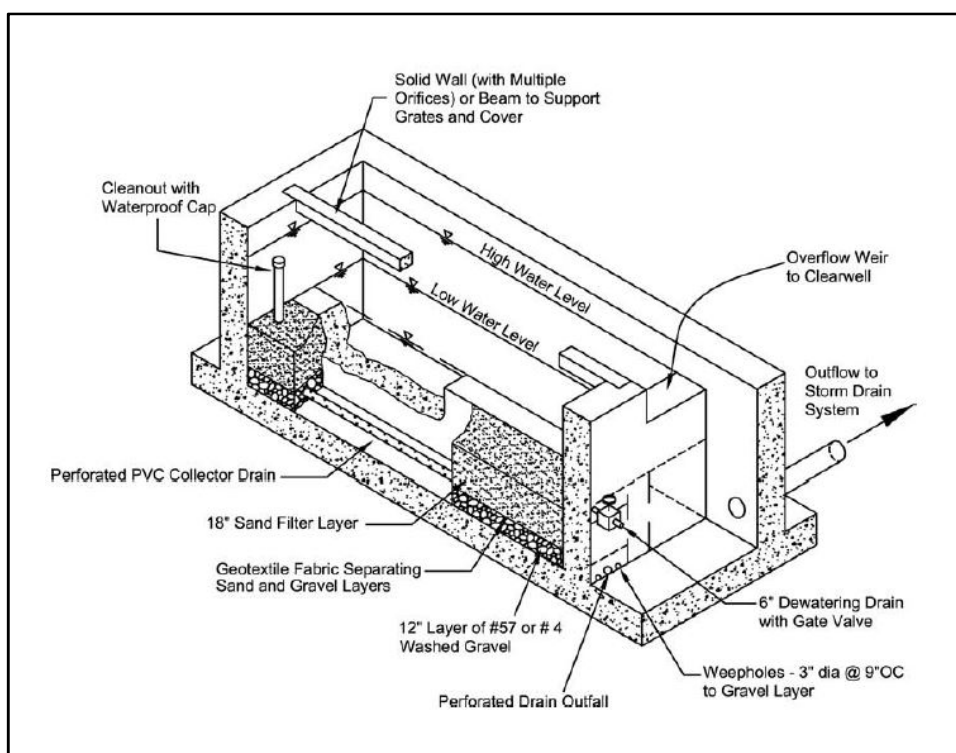
Guidance for Private Owners & Operators

STORMWATER CONTROL MEASURES

Sand Filter System

Sand filtration systems are used to treat runoff from highly impervious settings (commercial/office complexes and high density residential areas). To save space, sand filters are usually constructed inside a concrete shell and placed underground.

Sand filters consist of a series of chambers that remove sediment, floatable debris, and oil before slowly filtering stormwater through layers of sand or a sand/peat mix where additional pollutants are removed when they become trapped between sand particles and other filter media. In some sand filter systems, microbes help remove heavy metals and excess nutrients such as phosphorus and nitrogen through biochemical conversion.



Example sand filter, the Delaware Sand Filter, showing filtering and draining components. Credit: Ohio Rainwater & Land Development Manual

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Sand filter installed to capture stormwater runoff from **commercial parking lot**. Credit: Ohio Department of Natural Resources Division of Soil & Water Resources.



Sand filter chamber showing **sand filter bed** prior to installation. Credit: Ohio Department of Natural Resources Division of Soil & Water Resources.

MAINTENANCE REQUIRED WHEN:

- Standing water is noticeable in the sediment and/or filter chambers.
- The facility has reached its capacity for sediment accumulation. Reference the manufacturer's inspection and maintenance manual for specific sediment accumulation thresholds within the chambers.
- Excessive amounts of oil and trash are visible on the surface of the collection chambers.
- Sand surface layer has formed a hardened crust.
- Manufacturer's regular maintenance time interval has passed.

* *Do not enter sand filter chambers to inspect system unless Occupational Safety & Health Administration (OSHA) regulations for confined space entry are followed.*

* *Follow inspection and maintenance instructions and schedules provided by system manufacturer and installer.*

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ROUTINE AND NON-ROUTINE MAINTENANCE

- Specialized Soil Replacement: Clogging of the specialized soil by fine sediments may require complete replacement of the specialized soil, mulch and plant materials.

Sand Filter System

Routine Maintenance:

- Sediment and Debris: Remove accumulated sediment, debris, trash and oil/grease from sand filter bed and collection chambers per manufacturer's specifications.
- Outlet and Inlet Structures: Keep outlets and inlets of sand filter free from blockage by sediment, debris and trash.
- Erosion and Scour: Repair soil erosion or scouring at the outlet(s) of the sand filter.

Non-Routine Maintenance:

- Filter Media Replacement: Replace entirety of sand or other filter media if clogged.
 - Leaks or Damage: Inspect system components for leaks and damage based on manufacturer's specifications.
- * *Do not enter sand filter chambers to inspect system unless Occupational Safety & Health Administration (OSHA) regulations for confined space entry are followed.*
- * *Follow inspection and maintenance instructions and schedules provided by system manufacturer and installer.*
- * *Properly dispose of all wastes removed from the sand filter system.*

Underground Detention

Routine Maintenance:

- Sediment and Debris: Remove accumulated sediment, debris and trash from inlets, detention chambers and outlets per manufacturer's specifications.
- Erosion and Scour: Repair soil erosion or scouring at the outlet(s) of the underground detention if overflow is discharged onto ground surfaces.

Sand Filter System Inspection and Maintenance Checklist

Facility:			
Location/Address:			
Date:	Time:	Weather Conditions:	Date of Last Inspection:
Inspector:		Title:	
Rain in Last 48 Hours <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, list amount and timing:			
Pretreatment: <input type="checkbox"/> vegetated filter strip <input type="checkbox"/> swale <input type="checkbox"/> turf grass <input type="checkbox"/> forebay <input type="checkbox"/> other, specify: _____ <input type="checkbox"/> none			
Site Plan or As-Built Plan Available: <input type="checkbox"/> Yes <input type="checkbox"/> No			

*Do not enter sand filter chambers to inspect system unless Occupational Safety & Health Administration (OSHA) regulations for confined space entry are followed.

*Follow inspection and maintenance instructions and schedules provided by system manufacturer and installer.

*Properly dispose of all wastes.

Inspection Item	Comment	Action Needed
1. PRETREATMENT		
Sediment has accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Trash and debris have accumulated.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. INLETS		
Inlets are in poor structural condition.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sediment, trash or debris have accumulated and/or is blocking the inlets.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
3. SAND OR SAND/PEAT FILTER LAYER		
Sediment accumulation threshold has been reached.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Surface is hardened/crusted.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
5. COLLECTION CHAMBERS		
Trash and debris have accumulated in chambers.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Oil is visible at surface.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
6. OTHER SYSTEM COMPONENTS		
Structural deterioration is evident.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
7. OUTLETS		
Outlets in poor structural condition.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sediment, trash or debris are blocking outlets.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Erosion is occurring around outlets.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
8. OTHER		
Evidence of ponding water on area draining to system.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Evidence that water is not being conveyed through the system.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	<input type="checkbox"/> Yes <input type="checkbox"/> No
Additional Notes		
Wet weather inspection needed <input type="checkbox"/> Yes <input type="checkbox"/> No		

Site Sketch: