

February 3, 2009

Sandy Blick  
NJDEP  
Division of Water Quality  
PO Box 029  
Trenton, NJ 08625-029  
609-633-7021

RE: Email Requesting Maintenance Information 1/28/09

Dear Sandy,

The BayFilter system requires periodic maintenance to continue operating at the design efficiency. The maintenance process consists of the removal and replacement of each BayFilter cartridge and the cleaning of the vault or manhole with a vacuum truck. BayFilter maintenance should be performed by a BaySaver Technologies, Inc. (BTI) certified maintenance contractor.

The BayFilter cartridges are provided on an exchange basis and are refilled by BTI and reused. Certain components are replaced such as the filter fabric, media and any part that would not fully function for the next life cycle. The media and any non-recyclable components are disposed of by BTI as part of the exchange.

The maintenance cycle of the BayFilter system will be driven mostly by the actual solids load on the BayFilter system. The system should be checked periodically to be certain it is operating correctly. Since stormwater solids loads can be variable, it is possible that the maintenance cycle could be more or less than the projected duration.

BTI recommends the BayFilter system be inspected every six (6) months after its initial installation and inspected annually after the first year of installation. The BayFilter system has two indicators that maintenance is required. The two indicators are sediment storage capacity and flow capacity.

***Sediment Storage Capacity:***

Since the majority of the sediments are ultimately collected on the vault floor (some are contained within the media and fabric) and the flow enters the cartridge through the bottom, there is a limit to the practical storage capacity of sediments between the vault floor and the bottom of the cartridge. At the point that the sediments cover the 4" outlet manifold pipes, there is only about 1.5" of capacity remaining until the sediments will be at a level that the water will no longer flow into the filter. During maintenance the cartridges should be exchanged and the vault cleaned. Upon inspection sediment levels can easily be measured with a measuring stick. The maintenance

personnel will need to take a proper length measuring stick and measure the sediment depth from the vault floor. If the vault floor has 4” of sediment accumulated the system must be maintained.

***Flow Capacity:***

Each BayFilter system is designed to operate at a specific minimum flow. A simple check of the system after any storm event will indicate if it is operating properly. For flow-based systems, they should be checked within twenty four (24) hours of the end of the inflow to make certain there is no standing water above the bottom of the cartridges. For a detention/water quality volume-based system, this inspection should occur around 40 hours after the cessation of inflow. In either case, upon inspection if the water level is not below the bottom of the filter cartridge the system must be maintained.

Maintenance on a BayFilter system is easy and requires no special training. There is no need for special or additional tools and equipment. When maintenance is being performed on a BayFilter system there are several steps which should be executed properly:

1. Remove the manhole covers and open all access hatches.
2. Before entering the system make sure the air is safe per OSHA standards or use a breathing apparatus. Use low O<sub>2</sub> , high CO<sub>2</sub>, or other applicable warning devices per regulatory requirements. The stormwater maintenance technician must be certified for confined space entry.
3. Using a vacuum truck remove any liquid and sediments that can be removed prior to entry.
4. A chain and trolley system is installed with each project. The chain and trolley system are used to lift the cartridges off the manifold system and move them towards the opening of the vault. The chain and trolley system connect to the eyelet of the filter cartridge. Once the cartridge has been lifted, it can be moved with ease towards the vault opening and lifted out by a vacuum truck.
5. Use the small lift or boom of the vacuum truck to remove the used cartridges by lifting them out of the vault.
  - a. Any cartridges that cannot be lifted, can be slid along the floor to a location where they can be lifted via a small lift or boom.
  - b. A BayFilter system in a manhole configuration will not require a trolley. The vacuum truck will be able to lift out the cartridges from the manhole opening.

6. When all filter cartridges are removed, vacuum out the remainder of the solids and water; then loosen the stainless steel clamps on the Fernco couplings for the manifold and remove the drain pipes as well. Carefully cap the manifold and Fernco's then rinse the floor and remove the remainder of the collected solids.
7. Clean the manifold pipes, inspect and reinstall. After all the sediment has been sucked out by the vacuum truck, the outlet manifold system needs to be reassembled.
8. The new BayFilter cartridges can be lowered down into the vault and the trolley system used to lift and lower the cartridges on top of the outlet manifold system. After all the filter cartridges are replaced, close all covers.
9. The used cartridges must be sent back to BaySaver Technologies, Inc. for exchange/recycling and credit on undamaged units.

NJDEP recommends that all stormwater treatment systems be inspected quarterly and after storms exceeding one (1) inch of rainfall. Maintenance requirements as recommended in the Best Management Practices (BMP) Manual, suggest that the BayFilter system should be inspected and maintained in accordance with both the NJDEP's and the manufacturer's instructions.

Sincerely

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