



JANET T. MILLS  
GOVERNOR

STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



MELANIE LOYZIM  
COMMISSIONER

February 24, 2023

CONTECH Engineered Solutions LLC  
71 US Route 1, Suite F  
Scarborough, ME 04074  
ATTN: Derek Berg

Dear Mr. Berg,

This letter is to inform you that the Department of Environmental Protection (Department) has reviewed your proposed changes to the StormFilter® (StormFilter) for stormwater treatment through the addition of PhosphoSorb® media (PhosphoSorb) and accept it as an approved alternative to the General Standards (Section 4.C.(2)) of the Stormwater Management Rules, Chapter 500). PhosphoSorb is a lightweight media built from a Perlite base that removes total phosphorus (TP) by adsorbing dissolved-P and filtering particulate-P simultaneously. This letter replaces the March 13, 2015 approval from the Department of Environmental Protection (Department) that authorized the use of StormFilter and includes a typical StormFilter configuration.

Therefore, the Department will review and approve, on a case-by-case basis, the use of the StormFilter when the system is sized, installed, and maintained in accordance with the following provisions:

1. This approval is for the StormFilter with the use of PhosphoSorb® as the filter media within StormFilter cartridges. The change to PhosphoSorb media improves the phosphorus removal of the StormFilter to approximately 75%. Structures must still be sized based on data you provided of an appropriate rainfall intensity rate that would allow for the full treatment of 90% of an average annual runoff volume.
2. Total number of cartridges required is calculated from either:
  - a. Allowable surface area specific operating rate of 1.67 gpm/ft<sup>2</sup> of media surface area and the amount of surface area/cartridges to treat the water quality flow, or
  - b. Number of cartridges required to treat the water quality volume as it drains down based on their mass capture capacity.

**Table 1** shows the estimated number of cartridges required per impervious acre for each of the standard cartridge sizes. Note that taller cartridges require more drop across the StormFilter.

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826

BANGOR  
106 HOGAN ROAD, SUITE 6  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769  
(207) 764-0477 FAX: (207) 760-3143

Cartridge Height (in)	12"	18"	27"
Media Surface Area (ft <sup>2</sup> )	5	7.5	11.25
Allowable Flow Per Cartridge (gpm)	8.35	12.53	18.79
Surface Area Specific Loading Rate (gpm/ft <sup>2</sup> )	1.67	1.67	1.67
Mass Capture Capacity (lbs/Cartridge)	18	27	41
~ Number of Cartridges Per Acre Downstream of Detention (Mass based sizing)	14	9	6
~ Number of Cartridges Per Acre Without Upstream Detention (Flow based sizing)	52	34	23

3. If water quality/channel protection volume (WQv) is required, the treated flow as well as the bypassed flow must be combined and directed to a detention measure that will store first 1.0 and 0.4 inch of runoff from contributing impervious and landscaped areas, respectively. An external outlet control structure must control the flow out of the detention measure to release WQv between 24 hours and 48 hours.

If Flooding Standard Section 4.F of Chapter 500 applies, additional downstream detention may be required to meet the flow attenuation requirements of the standard.

4. When using the StormFilter with PhosphoSorb to meet the Phosphorus Standard (Chapter 500 4.D), a treatment factor of 0.25 would be appropriate to calculate the "Post-treatment Algal Average Phosphorus Export (lbs P/year)" using the procedure provided in "Maine Stormwater Best Management Practices Manual Volume II".
5. The up-gradient pretreatment must be designed for the StormFilter, with the goal of removing at least 50% of the sediment load prior to discharging to the filter. The up-gradient system must provide access for the physical removal of accumulated sediment and debris.
6. Per the manufacturer's design, each cartridge must contain PhosphoSorb media comprising the total media volume. The system must be delivered to the site and installed under the manufacturer's representative supervision.
7. The configuration of the StormFilter with detention and pretreatment is expected to have an operational longevity of at least one year prior to cartridge replacement. Each system must be inspected at least once every six months, and the filters maintained annually per the manufacturer's guidelines, and this approval, to maintain the established efficiency for pollutant removal.
8. All structures containing the StormFilter cartridges must include sufficient maintenance access for the removal of the cartridges and accumulated sediment or debris.

9. Prior to construction, a five-year binding inspection and maintenance contract must be provided for review and approval by the Department and must be renewed before contract expiration. The contract will be with a professional with knowledge of erosion and stormwater control, including a detailed working knowledge of the proposed system. The first year's maintenance must be provided by the manufacturer to ensure that the system is operating according to the established specifications.
10. Each project must be reviewed and approved by the manufacturer for proposed use, layout, and sizing of the system and for conformance with their design specifications. The system must be installed under the manufacturer's representative supervision.
11. The overall stormwater management design must meet all Department criteria and sizing specifications and will be reviewed and approved by the Department prior to use.
12. This approval is conditional to on-the-ground experience confirming that the StormFilter cartridges' pollutant removal efficiency and sizing are appropriate. The "permit shield" provision (Section 14) of the Chapter 500 rules will apply, and the Department will not require the replacement of the system if, with proper maintenance, pollutant removals do not satisfy the General Standard Best Management Practices.

We look forward to working with you as these stormwater management structures are installed on new projects. Questions concerning this decision should be directed to myself or Jeff Dennis at (207) 215-6376.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kerem Gungor', followed by a horizontal line extending to the right.

Kerem Gungor, P.E.  
Stormwater Engineering Team Leader  
Bureau of Land Resources  
(207) 830-1002

cc: Wendy Garland, Maine DEP  
Dawn Hallowell, Maine DEP

