

January 31, 2023

E. Craig Jowett, Ph.D., P.Eng., President
Waterloo Biofilter Systems, Inc.
143 Dennis Street
P.O. Box 400
Rockwood, Ontario
Canada NOB 2K0

RE: Product Renewal #3 – Notice of Proprietary Treatment Product Listing

Description: Absorbent Fixed Film Sewage Treatment System
Manufacturer: Waterloo Biofilter, Inc.
Product Name: Waterloo Biofilter® (Without Disinfection)
Model Number: *Wire Mesh Basket*: Model 440 (Max Design Flow 440 GPD per unit)
Product Listing: Category A (Residential Sewage)
Product File No: 2014-001

Dear E. Craig Jowett, Ph.D., P.Eng:

Thank you for your application for product renewal for the Waterloo Biofilter wastewater treatment products, which includes the following model: 1) *Wire Mesh Basket*: Model 440 (without disinfection).

In accordance with Minn. R. ch. 7080 through 7083, the Minnesota Pollution Control Agency (MPCA) has reviewed Waterloo Biofilter's submitted materials requesting registration for Category A (residential) treatment product listing of the Waterloo Biofilter Model Series in this application. Based on the submitted documentation, the MPCA finds that the Waterloo Biofilter System is eligible to be registered per Minn. R. ch. 7083.4030 as meeting the following treatment levels:

- **Treatment Level A2 (cBOD5 of 15 mg/L, TSS of 15 mg/L)**
- **Treatment Level B2 (cBOD5 of 25 mg/L, TSS of 30 mg/L)**
- **Treatment Level C (cBOD5 of 125 mg/L, TSS of 60 mg/L and Oil & Grease of 25 mg/L)**
- **Total Nitrogen (TN of less than or equal to 20 mg/L)**

The Waterloo Biofilter Model System is registered with a design rated capacity of 440 gallons per day (gpd) per unit, as shown in Table 1.

Table 1. Waterloo Biofilter Model Series – Wire Mesh Basket System - Buried Tank.

Product Model	Design Flow (gpd)	Filter Medium (minimum ft³)	BOD₅ Removed (lbs/day)	Highest Treatment Level	Nutrient Removal*
440	440	95.4	0.68	A2	TN

* Third-party testing showed Waterloo Biofilter effluent achieved the Total Nitrogen [TN] level of 20 mg/L [mean TN = 14 mg/L TN; median TN = 13 mg/L with 62 percent removed over 13 months]; CBOD₅ was 10 mg/L; TSS was 5 mg/L. Fecal coliform bacteria are expected to be greater than 10,000 cfu/100mL. Total nitrogen removal is highly dependent upon BOD and TKN loading, adequate alkalinity, temperature and toxicity; site specific alkalinity levels in the source water supply should be evaluated and homeowners should be well educated in order to achieve optimal total nitrogen reduction.

Subject to this determination, the Waterloo Biofilter Model Series, including the model listed in this product registration letter will be placed on the List of Registered Subsurface Sewage Treatment System (SSTS) Products. The product information listed in this Notice of Proprietary Product Listing will be maintained on the MPCA website and may not be altered by the manufacturer without permission by the MPCA.

The registration of the treatment products in Minnesota is contingent upon compliance with the following conditions:

1. Products must be used in compliance with the MPCA rules and the plans and design specifications provided. Any deviation from the plans and specifications shall not be permitted unless authorized by the National Sanitation Foundation (NSF) and, in writing, by the MPCA for registered use.
2. The manufacturer shall have readily accessible information, specific to a product's registered use in Minnesota, for designers, regulators, installers, system owners, service providers and other interested parties for the following items: a) product manual; b) design instructions; c) installation instructions; d) information regarding operation and maintenance; e) homeowner instructions; and f) list of representatives and manufacturer-certified service providers, if any, as required by Minn. R. ch. 7083.4040 (H).
3. The design flow for the registered Waterloo Biofilter System is 440 gallons per day.
4. Septic tank capacity for dwellings shall meet the requirements contained in Minn. R. ch. 7080.1900 through 7080.2020 and consistent with the EPA Environmental Technology Verification Testing of the treatment product. Sewage tank(s) shall be designed to withstand the pressures to which it will be subject to. Tanks and all pipe penetrations, risers, and other connections to tanks shall be watertight.
5. Each system must be delivered with an installation manual and owner's manual for the Waterloo Biofilter Treatment System. Each component must be installed in accordance with the manufacturer's installation manual.

6. All Waterloo Biofilter systems shall be designed and operated with a suitable alarm device(s), including the effluent screen.
7. This treatment product is a Minnesota-registered product for Type IV systems. For Treatment Levels A2, B2 and C, effluent loading rates to the soil, method of distribution, and vertical separation requirements shall meet the minimum requirements contained in Minn. R. ch. 7080.2150 thru 7080.2350. The effluent, following treatment in the Waterloo Biofilter System, is required to be uniformly distributed to the soil for final treatment and dispersal.
8. Systems may only be designated as Type IV systems when designed and installed per the drawings submitted as part of the initial Application for Product Registration, dated December 6, 2013, and subsequent documents submitted prior to this registration.
9. As a Type IV system, the system must be constructed and operated under the required local permits.
10. The level of maintenance required for the Waterloo Biofilter System shall be as specified in the products Operation and Maintenance Manual. This includes, but is not limited to, annual inspections and maintenance.
11. As specified in the Owner's Manual, limitations of the product are identified. The manufacturer is responsible to provide a listing of other known limitations, made available on the company's website or other means.
12. Training shall be provided to MPCA-licensed Subsurface Sewage Treatment System practitioners before designing, installing, or providing service to Waterloo Biofilter treatment systems registered for use in Minnesota.
13. During the period of product registration and as part of the renewal process, systems using registered treatment products are subject to an audit by the MPCA.

Please be advised that this registration expires December 31, 2025. Manufacturers desiring to continue product registration beyond this date must obtain MPCA renewal according to the requirements in Minn. R. ch. 7083.4040 (E). If the product has changed or is retested according to the protocol required for registration, renewal shall be based on the most recent test results. If the MPCA finds the product has changed in any way that may affect performance, it may not be renewed and must meet the requirements for initial registration.

E. Craig Jowett, Ph.D., P.Eng.

Page 4

January 31, 2023

The MPCA is in no way endorsing these products or any advertising and is not responsible for any situation which may result from its use or misuse. The MPCA is not liable for any product failure and these statements are not intended and cannot be relied upon to establish any substantive or procedural rights with the state of Minnesota or the MPCA, either express or implied, that can be enforced in litigation or any administrative proceeding.

If you have any questions, please contact Freya Linnett at 651-757-2724 or by email at freya.linnett@state.mn.us.

Sincerely,



This document has been electronically signed.

Freya Linnett
Environmental Specialist
Municipal Division

FL:map

cc: File