MINNESOTA POLLUTION CONTROL AGENCY

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January 1, 2025

Daniel Westrich, Manager of Regulatory Affairs
BioMicrobics, Inc.
16002 West 110th Street
Lenexa, KS 66219

RE: **Product Registration Renewal – Notice of Conditional Proprietary Treatment Product Listing**

Description:	Sewage Treatment System, Tertiary Nitrification and Denitrification
Manufacturer:	BioMicrobics, Inc.
Product Name:	NitriFAST® and ABC®-N
Model Number:	NitriFAST 0.5, NitriFAST 0.75, NitriFAST 0.9, NitriFAST 1.5, NitriFAST 3.0, NitriFAST 4.5, and NitriFAST 9.0 ABC-N 0.5, ABC-N 1.0, ABC-N 2.0, ABC-N 3.0, ABC-N 4.5, and ABC-N 9.0
Product Listing:	Category A and B (residential-strength and high-strength sewage)

Dear Daniel Westrich:

Thank you for your application for product renewal for BioMicrobics' NitriFAST and ABC-N tertiary treatment system for nitrogen removal. NitriFAST and ABC-N is a biological wastewater treatment system used specifically to remove nitrogen. These are treatment products used in series as a component of a treatment train, using other registered BioMicrobics treatment products.

In accordance with Minn. R. 7080 to 7083, the MPCA has reviewed BioMicrobics's submitted materials requesting registration for Category A (residential) and Category B (high-strength) treatment product listing of the NitriFAST and ABC-N Treatment System in this application. Based on the submitted documentation, the MPCA finds that the BioMicrobics Treatment System is eligible to be registered per Minn. R. 7083.4030 as meeting the following treatment levels:

- **Total Nitrogen** (TN of less than or equal to 10 mg/L)

The NitriFAST and ABC-N treatment products are registered in Minnesota, when used in series following other registered BioMicrobics treatment products (MicroFAST and HighStrengthFAST) for systems with a design rated capacity of up to 10,000 gallons per day as shown in Table 1.

Subject to this determination, the BioMicrobics NitriFAST followed by the ABC-N, will be placed on the List of Registered Subsurface Sewage Treatment System (SSTS) Products as a component of the treatment train to reduce total nitrogen to less than 10 mg/L. 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 or any other person without permission by the MPCA.

Table 1. BioMicrobics NitriFAST and ABC-N Treatment* Components

NitriFAST Model	Maximum Treatment Capacity (gal)	ABC-N Model	Minimum Tank Volume (gal)
NitriFAST 0.5	500	ABC-N 0.5	450
NitriFAST 0.75	750	--	--
NitriFAST 0.9	900	ABC-N 1.0	750
NitriFAST 1.5	1,500	ABC-N 2.0	1,125
NitriFAST 3.0	3,000	ABC-N 3.0	2,250
NitriFAST 4.5	4,500	ABC-N 4.5	4,219
NitriFAST 9.0	9,000	ABC-N 9.0	8,438

* NitriFAST models must be used prior to ABC-N models to achieve effluent total nitrogen concentrations of 10 mg/L or less.

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 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. 7083.4040(H).

3. The manufacturer's designated representative(s) is required to review all designs provided by Advance Designers for treatment systems proposed to use the NitriFAST and/or ABC-N Series. Advanced Designers need to work directly with the manufacturer to ensure the wastewater is properly characterized and that the NitriFAST and/or ABC-N products, and other related components used in the treatment train are properly sized and compatible to meet designed performance requirements.

4. All tanks used in the treatment process shall be approved by the manufacturer. Each sewage tank shall be designed to withstand the pressures to which it will be subjected. 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. Each component must be installed in accordance with the manufacturer's installation manual.

6. BioMicrobics, along with the Advanced Designer and Installer, are responsible to ensure that proper flow splitting devices are used to split flows when flow splitting is needed. Flow splitting devices must meet the following criteria: a) designed specifically and reliably to split wastewater flows; b) accessible for on-going operation and maintenance; c) monitored to determine flow rates; d) adjustable after construction should settlement occur; and e) have infinite or continuous adjustment features.

7. All systems shall be designed and operated with (a) suitable alarm device(s) that monitors each of the system components should any of the components malfunction.

8. The treatment products contained in this notice of product registration are considered a Minnesota-registered product for Type IV systems. The effluent, following treatment in the wastewater treatment system, is required to be uniformly distributed to the soil for final treatment and dispersal.

9. When BioMicrobics Wastewater Treatment Systems are used, effluent loading rates to the soil, method of distribution, and vertical separation requirements shall meet the minimum requirements contained in Minn. R. 7080.2350 for flows less than 5,000 GPD. For flows greater than 5,000 GPD, final treatment and dispersal must also meet 7081.0270, which include groundwater mounding.

10. Systems may only be designated as Type IV systems when designed and installed per the drawings submitted as part of the Application for Registration, dated June 18, 2012, and any other subsequent documents submitted prior to this registration.

11. As a Type IV system, the system must be constructed and operated under the required local permits.

12. The level of maintenance required for the BioMicrobics treatment systems shall be as specified in the products Operation and Maintenance Manual and reflected in the local operating permit. At a minimum, weekly visits are needed for system monitoring, inspection and maintenance activities; monthly sampling (one time per month) is needed to document that the required total nitrogen effluent limit is achieved.

13. 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.

14. Training shall be provided to MPCA-licensed Subsurface Sewage Treatment System practitioners before designing, installing, or providing service to BioMicrobic's Wastewater Treatment System registered for use in Minnesota.

15. At the time of product renewal during the year 2027 and according to the "Proprietary treatment technology registration guidance – high strength waste," manufacturers must submit data in accordance with the HSW verification protocol for each system installed under this protocol. If product manufacturers fail to submit data as outlined in the HSW verification protocol for each system installed their registration will be discontinued until submission of the required data. Renewal requirements as stated in this guidance will be communicated to manufacturers in a letter from the MPCA prior to their expiration deadline. Product manufacturers must submit renewal materials as specified in their renewal letters.

HSW verification protocol

An established set of requirements to verify product performance is necessary to set a consistent standard among all registered HSW treatment technologies. This protocol (Table 1) requires quarterly sampling on every system installed after registration, in perpetuity, until such time that the TAP modifies, expands, alters, or cancels the protocol requirements.

Table 1. HSW verification protocol

Item	Description
Sample identification	Third-party sample reports must clearly indicate from which system/facility the samples were derived. Reports must also contain sample dates and times, sample location information, name of sampler, chain of custody information, sample collection method, and sample transportation information (time/container/temperature).
Sampling intervals	Four (4) sampling events (for both influent and effluent analysis as described below) must be taken quarterly each calendar year. The TAP will consider alternate intervals on seasonal use facilities to ensure required sampling events align with peak usage. Example: Q1: Jan – Mar, Q2: Apr – Jun, Q3: Jul – Sep, and Q4: Oct – Dec.
Influent Sampling	Influent BOD_5, TSS, and O&G composite/grab samples must be taken at the first location of sewage collection within the system and be representative of the waste being discharged from the facility. Each of these three constituents must be sampled at each sampling event per facility.
Influent waste characterization	For each set of influent data provided, the waste must be characterized as HSW in accordance with Minn. R. 7080.1550, subp. 2(B)(1). Raw sewage must exceed 300 mg/L BOD_5, 200 mg/L TSS, and/or 50 mg/L O&G in order be considered high strength waste.
Effluent sampling	Effluent $cBOD_5$ (or BOD_5), TSS, and O&G composite/grab samples must be taken after the treatment device and before discharge to the soil dispersal area. Each of these constituents must be sampled for each sampling event per facility.
Effluent waste results	In all cases, the effluent waste concentrations must meet, at a minimum, the outlined parameters for Treatment Level C: BOD_5 of 170mg/L (or $cBOD_5$ of 125mg/L), TSS of 60mg/L, and O&G of 25mg/L.
Flow measurements	Daily flow for thirty (30) days prior to each sampling event must be provided.
Third-party testing	All sampling results must be submitted on original reports from third-party entities (e.g. certified laboratories).
O&M summary	Create an O&M summary specifying the maintenance performed throughout the test period, such as pumping events or adjustments made, and include a list of tasks necessary for the product to adequately perform within the specified parameters in all configurations. Tasks should be given a specific frequency for when each shall occur (e.g. every 6 months).

16. 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, 2027. Manufacturers desiring to continue product registration beyond this date must obtain MPCA renewal according to the requirements in Minn. R. 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.

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 Wendy Chirpich at 507-344-5248 or by email at wendy.chirpich@state.mn.us.

Sincerely,

Wendy Chirpich

This document has been electronically signed.

Wendy Chirpich
Environmental Specialist
Municipal Division

WC:lm