

March 20, 2023

Leslie Barber, Customer Service Representative
Norweco, Inc.
220 Republic Street
Norwalk, OH 44857

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

Listing Description: Sewage Treatment System, Suspended Growth with Filtration

Manufacturer: Norweco, Inc.

Product Name: Hydro-Kinetic (with and without disinfection)

Model Number: 600 FEU (Design Flow of 500 and 600 GPD per unit) Product Listing:
Category A (residential sewage)

Product File No: 2013-007

Dear Leslie Barber:

Thank you for your application for product renewal for the Norweco Hydro-Kinetic Model 600 FEU, with and without UV Light Disinfection.

In accordance with Minn. R. ch. 7080 through 7083, the Minnesota Pollution Control Agency (MPCA) has reviewed your submitted materials for Category A (residential) treatment product listing. Our review of the Hydro-Kinetic Model 600 FEU in this application (design rated capacity of 500 and 600 gallons per day) indicate it meets the requirements for proprietary treatment product registration.

The Hydro-Kinetic Model 600 FEU is considered a Category A (designed to treat residential sewage) treatment product in the state of Minnesota that meet the following treatment levels:

- **Treatment Level A** (cBOD₅ of 15 mg/L, TSS of 15 mg/L, and fecal coliform of 1,000 colonies per 100 ml) with UV disinfection
- **Treatment Level B** (cBOD₅ of 25 mg/L, TSS of 30 mg/L, and fecal coliform of 10,000 colonies per 100 ml) with UV disinfection
- **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 25 mg/L)
- **Total Nitrogen** (TN of 10 mg/L)

The Hydro-Kinetic Model 600 FEU is registered with a design rated capacity of 500 and 600 gallons per day per unit, as shown in Table 1.

Subject to this determination, the Hydro-Kinetic Model 600 FEU, with and without UV Light Disinfection, 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 or misrepresented by the manufacturer or any other person without permission by the MPCA.

Table 1. Hydro-Kinetic Wastewater Treatment System, Model 600 FEU, with and without AT 1500 UV Disinfection.

Product Name Model	Treatment Process	Design Flow (gpd)	BOD ₅ Removed (lbs/day)	Highest Treatment Level	Nutrient Removal*	Product Information
Hydro-Kinetic Model 600 FEU	Suspended Growth with Filtration	500 and 600	0.78	A2	TN	<ul style="list-style-type: none"> • Notice of Product Listing <ul style="list-style-type: none"> ○ MPCA Letter Conditions of Registration with expiration date • Hydro-Kinetic Manual <ul style="list-style-type: none"> ○ Drawings ○ Known Limitations ○ Installation ○ Operation & Maintenance ○ Owner Information ○ Regulator Checklist ○ Service Contract
Hydro-Kinetic Model 600 FEU With one (1) AT 1500 UV Disinfection Unit	Suspended Growth with Filtration and UV Disinfection	500	0.78	A	TN	
Hydro-Kinetic Model 600 FEU With two (2) AT 1500 UV Disinfection Units	Suspended Growth with Filtration and UV Disinfection	600	0.78	A	TN	

*Third-party testing showed Hydro-Kinetic Model 600 FEU effluent achieved a Total Nitrogen (TN) of 8 mg/L [mean TN=8 mg/L and median TN=7mg/L with 77% TN removed]; CBOD5 was 2 mg/L; TSS was 2 mg/L. Total nitrogen removal is highly dependent upon BOD and TKN loading, adequate alkalinity, temperature and toxicity; site specific alkalinity levels in the source water should be evaluated and homeowners should be well educated in order to achieve optimal total nitrogen reduction.

The registration of 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, installers, regulators, systems owners, and service providers for the following items: a) product manual, b) design instructions, c) installation instructions, d) operation and maintenance requirements, e) homeowner instructions, and f) list of manufacturer-certified service providers, if any, as required by Minn. R. ch. 7083.4040(H).

3. The design flows for the registered Hydro-Kinetic Model 600 FEU are 500 and 600 gallons per day. Septic/trash tank capacity for dwellings shall meet the manufacturer's minimum and maximum size requirements as specified in the Application for Registration. The tank(s) shall be designed to withstand the pressures to which the tank will be subject to. The tanks and all pipe penetrations, risers, and other connections to the tank shall be watertight as specified in Application for Registration.
4. Each system must be delivered with an installation manual and owner's manual for the Hydro-Kinetic Model 600 FEU and for the AT 1500 UV disinfection unit. Each component must be installed in accordance with the manufacturer's installation manual.
5. The Hydro-Kinetic Model 600 FEU shall be equipped with: 1) one AT 1500 UV disinfection unit to achieve Treatment Level A for design flows at 500 gallons per day and 2) two AT 1500 UV disinfection units to achieve Treatment Level A for design flows at 600 gallons per day. Flow to the UV disinfection unit shall not exceed the rated capacity to ensure adequate disinfection prior to soil dispersal. As specified in the "Model AT 1500 UV Disinfection System Installation and Operation Manual," a dedicated circuit of the proper size is needed in the main electrical panel for the UV disinfection system.
6. All systems shall be designed and operated with (a) suitable alarm devices(s) should either, or both, the Hydro-Kinetic Model 600 FEU or the disinfection unit(s) malfunctions.
7. The Hydro-Kinetic Model 600 FEU is a Minnesota-registered product for Type IV systems. For Treatment Levels A, A2, B, 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 Hydro-Kinetic Model 600 FEU, is required to be uniformly distributed to the soil for final treatment and dispersal.
8. Systems may only be designated as Type IV systems if designed and installed per the drawings submitted with the Application for Product Registration, initially submitted December 4, 2013, with additional documents submitted on February 11, 2014, and March 31, 2014, and any other 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 Hydro-Kinetic Model 600 FEU and the AT 1500 UV disinfection components shall be as specified in the products Operation and Maintenance Manual. This includes, but is not limited to, maintenance every six (6) months on the Hydro-Kinetic Model 600 FEU and every six (6) months on the AT 1500 UV disinfection unit. Each UV lamp shall be replaced at least once every two (2) years to ensure proper disinfection or more often as needed, to achieve the required fecal coliform bacteria treatment level.
11. For systems registered as meeting the requirements for Treatment Level A and B, testing for fecal coliform bacteria is required per the local operating permit when reduced vertical soil separation is employed.

12. As specified in the Owner's Manual, limitations of the product are identified, including the backwash from water softeners and other unsuitable wastes, must not be discharged into the system. The manufacturer is responsible to provide a listing of other known limitations, made available on the company's website or other means.
13. Training shall be provided to MPCA-licensed Subsurface Sewage Treatment System practitioners before designing, installing, or providing service to the Hydro-Kinetic Model 600 FEU and the AT 1500 UV disinfection device registered for use in Minnesota.
14. 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.

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 Cody Robinson 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