Minnesota Pollution Control Agency

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July 6, 2017

Mr. Scott Samuelson
Managing Member
Fuji Clean USA, LLC
41 Greenwood Rd, Unit 2
Brunswick, ME 04011

RE: Product Registration – Notice of Proprietary Treatment Product Listing
Description: Sewage Treatment System, Attached and Suspended Growth
Manufacturer: Fuji Clean USA, LLC
Product Name: CEN Model Series Treatment Systems
Model Numbers: CEN5, CEN7, CEN10 (Max Design Flow 450, 630, and 900 GPD per unit)
Product Listing: Category A (residential sewage)

Dear Mr. Samuelson:

Thank you for your application for product renewal dated February 28, 2017, for the Fuji Clean USA CEN Model Series Treatment Systems.

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

- **Treatment Level B** (cBOD5 of 25 mg/L, TSS of 30 mg/L, FC of 10,000 (#/100 mL)) with disinfection
- **Treatment Level B2** (cBOD5 of 25 mg/L, TSS of 30 mg/L) without disinfection
- **Treatment Level C** (cBOD5 of 125 mg/L, TSS of 60 mg/L and Oil & Grease of 25 mg/L) without disinfection
- **Total Nitrogen** (TN of less than or equal to 10 mg/L)

The CEN Model Series is registered with a design rated capacity of 450, 630, and 900 gallons per day per unit, as shown in Table 1 and Table 2.

Subject to this determination, the CEN Model Series, including the CEN5, CEN7, and CEN10, 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. CEN Model Series with Salcor 3G Ultraviolet (UV) Disinfection

Product Name Model	Treatment Process	Design Flow (gpd)	BOD5 Removed (lbs/day)	Highest Treatment Level	Nutrient Removal*	Important Product Use Information
CEN5 with one (1) Salcor 3G UV Disinfection Unit	Suspended and Attached Growth	450	0.52	B	TN	• Notice of Product Listing o MPCA Letter o Conditions of Registration o Expiration Date • CEN Manual o Submitted Drawings o Known Limitations o Installation o Operation & Maintenance o Owners Information o Regulators Checklist o Service Contract • Management Plan • Operating Permit Template
CEN7 with two (2) Salcor 3G UV Disinfection Units	Suspended and Attached Growth	630	0.73	B	TN	
CEN10 with two (2) Salcor 3G UV Disinfection Units	Suspended and Attached Growth	900	1.04	B	TN	

*Third-party testing showed CEN Model Series effluent achieved the Total Nitrogen [TN] level of 10 mg/L [mean TN = 10 mg/L with 74% removed]; full test average effluent sampling for CBOD5 was 11 mg/L; TSS was 13 mg/L. Fecal coliform bacteria are expected to be less than 10,000 cfu/100mL with the use of the Salcor 3G UV disinfection device(s). 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.

Table 2. CEN Model Series without disinfection

Product Name Model	Treatment Process	Design Flow (gpd)	BOD5 Removed (lbs/day)	Highest Treatment Level	Nutrient Removal*	Important Product Use Information
CEN5	Suspended and Attached Growth	450	0.52	B2	TN	• Notice of Product Listing o MPCA Letter o Conditions of Registration o Expiration Date • CEN Manual o Submitted Drawings o Known Limitations o Installation o Operation & Maintenance o Owners Information
CEN7	Suspended and Attached Growth	630	0.73	B2	TN	

CEN10	Suspended and Attached Growth	900	1.04	B2	TN	O Regulators Checklist O Service Contract • Management Plan • Operating Permit Template

*Third-party testing showed CEN Model Series effluent achieved the Total Nitrogen [TN] level of 10 mg/L [mean TN = 10 mg/L with 74% removed]; full test average effluent sampling for CBOD5 was 11 mg/L; TSS was 13 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 supply should be evaluated and homeowners should be well educated in order to achieve optimal total nitrogen reduction.

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

1. Products must be used in compliance with MPCA rules and the plans and design specifications provided. Any deviation from the plans and specifications shall not be permitted unless authorized by 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, service providers, regulators, and interested parties 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 Minnesota Rules Chapter 7083.4040 (H).

3. The design flows for the registered CEN Model Series are as follows:

   - 450 gallons per day for the CEN5
   - 630 gallons per day for the CEN7
   - 900 gallons per day for the CEN10

4. Septic/trash tank capacity for dwellings shall meet the manufacturer's size requirement consistent with National Sanitation Foundation (NSF) testing and as specified in the Application for Registration. The tank(s) shall be designed to withstand the pressures to which it will be subject to. The tank(s) and all pipe penetrations, risers, and other connections to the tank shall be watertight.

5. Each system must be delivered with an installation manual and owner's manual for the CEN Model Series (CEN5, CEN7, and CEN10) and for the Salcor 3G UV disinfection unit(s) used in the system. Each component must be installed in accordance with the manufacturer's installation manual.

6. All systems shall be designed and operated with a suitable alarm device(s) should either the CEN Model Series (CEN5, CEN7, and CEN10) or the Salcor 3G UV disinfection unit(s) malfunction.

7. For the CEN Model Series (CEN5, CEN7, and CEN10), each CEN System shall be equipped with a sufficient number of Salcor 3G UV disinfection units to achieve Treatment Level B as follows: (1) CEN5 will require the use of one Salcor 3G UV disinfection unit; (2) CEN7 will require the use of two Salcor 3G UV disinfection units in parallel; and (3) CEN10 will require the use of two Salcor 3G UV

disinfection units in parallel. Flow to each Salcor UV disinfection unit shall not exceed the rated capacity to ensure adequate disinfection prior to soil dispersal.

8. FujiClean USA, along with the Intermediate Designer/Advanced Designer and Installer, are responsible to ensure that proper flow splitting devices are used in splitting flows to Salcor 3G UV disinfection units. 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.

9. This treatment product is a Minnesota-registered product for Type IV systems. For Treatment Levels B, B2, C, and TN, effluent loading rates to the soil, method of distribution, and vertical separation requirements shall meet the minimum requirements contained in Minnesota Rules Chapter 7080.2150 thru 7080.2350. The effluent, following treatment in the CEN Model Series, is required to be uniformly distributed to the soil for final treatment and dispersal.

10. Systems may only be designated as Type IV systems when designed and installed per the drawings submitted as part of the Application for Product Registration, dated February 28, 2017, and subsequent documents submitted prior to this renewal.

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 CEN Model Series and Salcor 3G UV disinfection components shall be as specified in the products Operation and Maintenance Manuals. This includes, but is not limited to, maintenance every six months. Salcor 3G UV disinfection units shall be serviced at six-month intervals. The Salcor 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.

13. For systems registered as meeting the requirements for Treatment Levels A and B, testing for fecal coliform bacteria is required per the local operating permits when reduced vertical soil separation is employed.

14. As specified in Owner's Manual, limitations of the product are identified, including a list of unsuitable wastes that must not be discharged into the system and limitations of influent BOD_5 less than or equal to 300 mg/L, TSS less than or equal to 200 mg/L, and O&G less than 50mg/L. The manufacturer is responsible to provide a listing of other known limitations, made available on the company's website or other means.

15. Training shall be provided to MPCA-licensed Subsurface Sewage Treatment System practitioners before designing, installing, or providing service to CEN Model Series (CEN5, CEN7, and CEN10) treatment systems registered for use in Minnesota.

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, 2020. Manufacturers desiring to continue product registration beyond this date must obtain MPCA renewal according to the requirements in Minnesota Rules Chapter 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 expressed or implied, that can be enforced in litigation or any administrative proceeding.

If you have any questions, please contact Cody Robinson at 651-757-2535 or by email at Cody.Robinson@state.mn.us.

Sincerely,

Cody Robinson

This document has been electronically signed.

Cody Robinson
Soil Scientist
SSTS Policy and Planning Unit
SSTS Section
Municipal Division

CR:wgp

cc: File