Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
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GENERAL USE CERTIFICATION
Pursuant to Title 5, 310 CMR 15.00

Name and Address of Applicant:

Geomatrix Systems, LLC
114 Mill Rock Road East
Old Saybrook, CT 06475

Trade name of technology and models: **GST™ Leaching Models 37 and 62 series** (hereinafter called the "System"). The Installation Instructions including schematic drawings of typical Systems, an inspection checklist, and a System Installation Form are part of this Certification.

Transmittal Number: X280163
Date of Issuance: December 4, 2018

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental, Protection hereby issues this Certification for General Use to: Geomatrix Systems, LLC, 114 Mill Rock Road East, Old Saybrook, CT 06475 (hereinafter "the Company"), certifying the System described herein for General Use in the Commonwealth of Massachusetts. The sale, design, installation, and use of the System are conditioned on compliance by the Company, the Designer, the Installer and the System Owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Certification constitutes a violation of 310 CMR 15.000.

/Signed/
Marybeth Chubb, Section Chief
Wastewater Program
Bureau of Water Resources

December 4, 2018
Date

I. Technology Description

The GST Leaching System (GST) is an adaptation of the stone leaching trench. This traditional leaching system has a removable form to accurately shape and construct leaching fingers along the sides of a central distribution channel. GST has direct stone to soil contact for enhanced long-term performance.

The GST leaching System can be installed in 37" and 62" widths and at 6", 12", 18", 24", 30" and 36" depths. The GST leaching system is placed on at least 2-inch deep bed of sand. Effluent is distributed into the System via at least 3-inch perforated distribution pipe (for gravity systems) set along the top of the system extending the entire GST length. Stone is placed around the distribution pipe, and filter fabric is placed over the system and distribution pipe.

GST may be used for disposal of wastewater effluent from a Title 5 septic tank or secondary treatment unit. GST replaces and provides alternatives to a conventional leaching system and alternatives to some of the design requirements of Title 5. The GST system can be installed in trench and bed configurations and function in a gravity and pressure distribution system configuration. In a pressure distribution configuration diffusers are installed over orifices.

II. Design Standards

1. The System can be installed in bed/field (310 CMR 15.252) or trench configuration (310 CMR 15.251). When the System is installed in bed or field configuration no sidewall area shall be considered in the total effective leaching area. The effective leaching area shall be the bottom area only (length times width) of the sand bed for the bed/field configuration. Sidewall area should be considered in the effective leaching area for trench configuration. The total effective leaching area for the trench configuration then becomes the bottom area plus twice the area of one of the sides.

Table 1: GST Effective Leaching Area for Trench Configuration for New Construction

Model	Dimensions W X H Inches	Effective Leaching Area (SF/LF) (W +(2 x H)) x 1.67 in Square Feet	Edge to Edge Spacing (Inches)
GST 3706	**37" x 6"**	**6.68**	**6**
GST 3712	**37" x 12"**	**8.35**	**6**
GST 3718	**37" x 18"**	**10**	**12**
GST 3724	**37" x 24"**	**11.69**	**12**
GST 3730	**37" x 30"**	**11.69**	**24**
GST 3736	**37" x 36"**	**11.69**	**24**
GST 6206	**62" x 6"**	**6.68**	**6**
GST 6212	**62" x 12"**	**8.35**	**6**
GST 6218	**62" x 18"**	**10**	**12**
GST 6224	**62" x 24"**	**11.69**	**12**
GST 6230	**62" x 30"**	**11.69**	**24**

GST 6236	**62" x 36"**	**11.69**	**24**

a. The 1.67 factor represents the 40% size reduction allowed under the *Standard Conditions for Alternative Soil Absorption Systems with General Use Certification and/or Approved for Remedial Use*.

TABLE 2: GST Effective Leaching Area for Bed or Field Configuration for New construction

MODEL	DIMENSIONS Width Inches	Effective Leaching Area (SF/LF)
GST 3706	**37"**	5.71
GST 3712	**37"**	5.71
GST 3718	**37"**	5.71
GST 3724	**37"**	5.71
GST 3730	**37"**	5.71
GST 3736	**37"**	5.71
GST 6206	**62"**	9.19
GST 6212	**62"**	9.19
GST 6218	**62"**	9.19
GST 6224	**62"**	9.19
GST 6230	**62"**	9.19
GST 6236	**62"**	9.19

b. Effective Leaching area is Equal to 1.67 times bottom width
c. For Bed or Field configuration includes the 2" ASTM C-33 sand by on each side of bed

III. Conditions of Approval

1. The term "Approval" refers to the technology-specific *Special Conditions*, the *Standard Conditions for General Use Certification and/or Approved for Remedial Use* ('Standard Conditions'), the General Conditions of 310 CMR 15.287, and any Attachments. GST System installations shall meet the Standard Conditions specified for 'Disposal-Only' technologies and specifically Section II, paragraph 11, items (a) through (d).

2. For Alternative Soil Absorption Systems that have been issued General Use Certification for the installation of Systems to serve facilities where the site meets the requirements for new construction, the Department authorizes reductions in the effective leaching area (310 CMR 15.242), subject to the Standard Conditions that apply to all Alternative Soil Absorption Systems with General Use Certification and subject to the Special Conditions below applicable to this Technology.

IV. Special Conditions

1. The System is an approved technology for use as a Disposal–Only Alternative Soil Absorption System. In addition to the Special Conditions contained in this Approval, the System shall comply with the *Standard Conditions for SAS with General Use Certification and/or Approved for Remedial Use (*the 'Standard Conditions') except where stated otherwise in these Special Conditions.

2. The System is approved for new construction where a conventional system with a reserve area exists or can be built on-site in full compliance with the new construction requirements of 310 CMR 15.000 and has been approved by the local approving authority.
3. This Certification shall not be used for the installation of a System to upgrade or replace an existing failed or nonconforming system, unless the facility meets the siting requirements for new construction, including a reserve area.
4. The separation distance to the estimated seasonal high groundwater elevation shall be measured from the bottom of the System sand below the GST Wastewater Treatment System.
5. Systems shall be installed with an inspection Port. Geomatrix Inspection port – Part # IPGST15 MUST be installed in every system. A Geomatrix GST System Identification Label is incorporated into a cap for the inspection port. This cap has the GST Model #, total length of system, address, licensed installer and month and year of installation engraved for convenience during final inspection.
6. System component material specifications for the pipe, plastic components, fabric and sand shall comply with the specifications identified in the initial I/A technology approval. Prior approval from the Department for any change from these specifications shall be requested in writing.
7. If the GST is to be installed under an area where vehicle traffic is likely, a minimum of 12" of cover is required. A geogrid such as Tensar BX1100 or equal can be utilized. Venting must be provided for the installation.
8. The System can be installed in soils with percolation rate of up to 60 minutes per inch (MPI) in Class I, II, III, or IV soils, subject to the restrictions of the Approval. The System shall only be installed in in class IV soils, as defined in 310 CMR 15.243, when the design has been reviewed and certified by the Company.
9. Effluent loading rates shall be as specified in 310 CMR 15.242(1) (a) and (b) with the exception of Class IV soils.
10. If the Company requires trained or certified Designers, Installers, or Service Contractors, the Company or its authorized agent shall make available programs of training and continuing education as necessary. The Company or its authorized agent shall maintain, annually update, and make available by February 15th of each year, lists of trained or certified Designers, Installers, and Service Contractors. If training or certification is required, the Company shall not sell the Technology to an Installer unless the Installer is trained or certified to install the System by the Company. Similarly, if training is required, the Company shall ensure distributors and resellers of the Technology shall not sell the Technology to an Installer unless the Installer is trained or certified to install the System by the Company.
11. The System Owner and the Service Contractor shall provide written notification to the local Approving Authority within seven days of any cancellation, expiration or other change in the terms of and /or conditions of a required O&M Agreement with a Service Contractor. The Service Contractor shall provide written notification to the Company within seven days of any cancellation, expiration or other change in the terms and/or conditions of a required O&M Agreement.
12. By February 15th of each year, the Service Contractor shall be responsible for submitting to the local Approving Authority all O&M reports and inspections checklists completed by the Service Contractor during the previous 12 months.

13. For Systems constructed in fill and installed without aggregate, the System shall be installed as specified in 310 CMR 15.255: *Construction in Fill*, except the minimum 15 foot horizontal separation distance to be provided between the soil absorption area and the adjacent side slope shall be measured horizontally from the top of System (top of GST System).
14. Any changes to the approved plans must receive prior Local Approving Authority (LAA) approval. Before a Certificate of Compliance can be issued by the LAA the System Designer must include any changes to the approved plan into the as-built plans.

VIII. Appeal Rights

1. In accordance with 310 CMR 15.422. Appeals of Departmental Determinations, Any applicant who is aggrieved by a shared system, recirculating sand filter or equivalent alternative technology, a remedial use, a certification for general use, or variance determination by the Department may request an adjudicatory hearing on that determination in accordance with 310 CMR 1.00 and M.G.L. c. 30A.,

VIIII. Rights of the Department

1. The Department may suspend, modify or revoke this Certification for cause, including, but not limited to, non-compliance with the terms of this Certification, non-payment of any annual compliance assurance fee, for obtaining the Certification by misrepresentation or failure to disclose fully all relevant facts or any change in or discovery of conditions that would constitute grounds for discontinuance of the Certification, or as necessary for the protection of public health, safety, welfare, or the environment, and as authorized by applicable law. The Department reserves its rights to take any enforcement action authorized by law with respect to this Certification and/or the System against the Owner or operator of the System and and/or the Company.