



COMMONWEALTH of VIRGINIA

Department of Health

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State Health Commissioner

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David Potts
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Geomatrix Systems, LLC
114 Mill Rock Rd East
Old Saybrook, CT 06475

Subject – General Approval of GeoMat Pressure and Gravity Leaching System as a Treatment Level 2 (TL-2) wastewater treatment system

Dear Mr. Potts,

A request was submitted on your behalf by Sean McGuigan, President of Three S Environmental, that the Virginia Department of Health (VDH) recognize the GeoMat Pressure and Gravity Leaching System (GeoMat) as a generally-approved Treatment Level 2 (TL-2) treatment system. Treatment Level 2 is defined as producing secondary effluent or effluent containing no greater than 30 mg/l BOD₅ and TSS. Submitted in support of that request was documentation demonstrating that GeoMat has been tested in accordance with NSF/ANSI Standard 40, that the results of that testing met the requirements for Class I effluent under Standard 40, and that the GeoMat system is currently certified and listed by NSF as a Standard 40 Class I treatment system.

GeoMat is a low profile modular wastewater treatment/infiltration system. It consists of a 6-inch sand bed placed directly on top of the receiving soil absorption area. A 1-inch thick mat – 12 or 36 inches in width – of fused, entangled plastic filaments with underlying geotextile fabric is placed on top of the sand layer. Dispersal piping (1-inch diameter for pressure distribution or 2 inch diameter for gravity dispersal) is placed on top of the mat and covered with a layer of non-woven geotextile fabric. The geotextile fabric acts as hygroscopic membrane, pulling wastewater away from the application points in the dispersal piping and into the underlying sand and soil. The GeoMat is installed in the shallow soil horizon to allow for enhanced aeration, increased microbial activity, enhanced nutrient removal, enhanced plant uptake and increased evapotranspiration. Cleanout ports are provided at the distal ends of the dispersal piping.

As an NSF/ANSI Standard 40 Class I certified treatment system, GeoMat is automatically granted TL-2 general approval by VDH. The purpose of this letter is to clarify the conditions of that general approval as follows:

- 1) Pretreatment shall be provided by a septic tank complying with the Virginia Sewage Handling and Disposal Regulations (12 VAC5-610).
- 2) A loading rate of 2 gallons per day per square foot of GeoMat dispersal mat shall not be exceeded.
- 3) A minimum depth of 6 inches of ASTM Standard C-33 sand shall be placed below the GeoMat in accordance with the "Virginia Design Manual For GeoMat™ Pressure and Gravity Leaching Systems" dated October 2016, which was reviewed in conjunction with your request and is also approved by this letter.
- 4) Trench-bottom and soil dispersal area requirements specified in the "Virginia Design Manual For GeoMat™ Pressure and Gravity Leaching Systems" shall not be exceeded.
- 5) Vertical separations to limiting features required by the Virginia Sewage Handling and Disposal Regulations (12 VAC5-610) shall be maintained and shall be measured from the bottom of the 6-inch system sand layer which constitutes the lower boundary of the GeoMat system.
- 6) No nitrogen removal credit is ascribed to the subject treatment unit by this approval other than as allowed under GMP 2013-01 for an NSF 40 certified treatment systems.

This general approval extends only to NSF/ANSI Standard 40 Class I certified systems with a rated capacity of less than or equal to 1,000 gallons per day.

If you have additional questions regarding this matter, please feel free to contact me at (804) 387-1883 or by email at Marcia.Degen@vdh.virginia.gov. A copy of this letter and the submitted manual will be posted on the VDH website.

Sincerely,



Marcia J. Degen, Ph.D., P.E.
Technical Services Administrator
Division of Onsite Sewage, Water Services
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Dwayne Roadcap, Division Director
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