COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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THE OFFICE OF APPEALS AND DISPUTE RESOLUTION

January 10, 2020

In the Matter of
Geomatrix Systems, LLC

OADR Docket No. 2018-029
Transmittal # X280163
General Use Certification – Title 5

RECOMMENDED FINAL DECISION

I. INTRODUCTION

In this appeal, Geomatrix Systems, LLC ("the Petitioner") challenges a General Use Certification ("the Certification") issued by the Boston Office of the Department of Environmental Protection ("MassDEP" or the Department") on December 4, 2018. The Certification was issued pursuant to M.G.L. c. 21A, § 13 and Title 5, 310 CMR 15.00, of the State Environmental Code. MassDEP certified the Petitioner's GST Leaching System ("GST") for general use in Massachusetts subject to certain standards and conditions. The Petitioner had proposed the GST for approval as an alternative system for general use pursuant to 310 CMR 15.288 with an effective leaching area ("ELA") based on the total side wall surface area of the GST's innovative contoured side walls. MassDEP determined that the Petitioner had not demonstrated that the GST provided a level of environmental protection at least equivalent to that of a standard on-site sewage disposal system designed and constructed in accordance with

Title 5 at the design parameters proposed. MassDEP certified GST for general use but with a lower ELA than proposed for most of the GST systems.

I conducted an evidentiary adjudicatory hearing ("Hearing") to resolve the Petitioner's appeal of the Certification at which the Petitioner and MassDEP presented testimonial and documentary evidence in support of their respective positions in the case. After considering the evidence at the Hearing as set forth in the administrative record of this appeal, I recommend that the Department's Commissioner issue a Final Decision affirming the Certification and finding that: (1) the Petitioner failed to demonstrate that GST should have been approved as an alternative system at the design specifications proposed; (2) MassDEP properly interpreted the provision of 310 CMR 15.251(1)(e) for calculating the ELA; (3) MassDEP correctly applied the provisions of 310 CMR 15.251 regarding the ELA when it issued the Certification.

II. WITNESSES[1]

At the Hearing the following witnesses offered testimony:[2]

For the Petitioner

Jason Henderson. Mr. Henderson is General Counsel of Geomatrix, LLC. In this position, he handles government approval of the company's products. Henderson PFT at ¶¶ 2-3.

David Potts. Mr. Potts is the President of Geomatrix, LLC. He is an environmental scientist with over 20 years of experience in the on-site wastewater industry. He holds over 23 patents related to on-site wastewater technology. Potts. PFT at ¶¶ 2-4.

[1] The witnesses filed written pre-filed testimony before the hearing. This testimony is referenced throughout this Recommended Final Decision ("RFD") as "[Witness] PFT at ¶ [ ]"; Pre-filed rebuttal testimony is referred to as "[Witness] PFRT at ¶ [ ]." The hearing was digitally recorded and live testimony at the hearing is referenced as "HR at [time]."

[2] MassDEP opted not to cross-examine any of the Petitioner's witnesses at the Hearing.

Timothy Santos, PE. Mr. Santos is a Licensed Professional Engineer and Senior Vice President of Engineering with Holmes & McGrath, Inc. in Falmouth, Massachusetts. He has been designing on-site wastewater treatment systems in Massachusetts for over 20 years, including systems that incorporate stone trench leach fields. Santos PFT at ¶¶ 2-5.

For the Department

Marybeth Chubb. Ms. Chubb is the Section Chief for the Groundwater Discharge Permit Program, Reclaimed Water Program, Title 5 and Title 5 Innovative/Alternative (IA) Program. She has been employed by MassDEP since 1991 and has served in her current position for approximately two and one-half years. She holds a bachelor's degree in biology and has completed courses related to her job in the wastewater program. Chubb PFT at ¶¶ 1-5.

Olusegun Onatunde. Mr. Onatunde is an Environmental Engineer with responsibility for reviewing Title 5 innovative technology applications, which he has been doing for approximately 13 years. He has been employed by MassDEP since 1988. He previously was employed as a Process Design Engineer in the private sector. He holds bachelor of science and master of science degrees in chemical engineering and a bachelor of science degree in industrial engineering. Onatunde PFT at ¶¶ 1-5.

III. STATUTORY AND REGULATORY FRAMEWORK

This case concerns the interpretation and application of Title 5, 310 CMR 15.000, the State Environmental Code, promulgated pursuant to the authority of M.G.L. c. 21A, § 13. Title 5 is intended "to provide for the protection of public health, safety, welfare and the environment by requiring the proper siting, construction, upgrade, and maintenance of on-site sewage disposal systems and appropriate means for the transport and disposal of septage." 310 CMR 15.001(1). Title 5 provides comprehensive regulatory guidelines for proper design, siting, construction,

upgrade, and maintenance of on-site sewage disposal systems. Chubb PFT at ¶ 12. The provisions of Subpart B of Title 5, 310 CMR 15.100 through 310 CMR 15.107 pertain to the siting of septic systems. They require that "[e]very location proposed for the construction, upgrade, or expansion of an on-site subsurface sewage disposal system shall be evaluated based on an analysis of all site characteristics which may affect system function and performance in accordance with the evaluation criteria specified in 310 CMR 15.100 through 310 CMR 15.107."

Title 5 does not establish performance standards for septic systems; it prescribes design parameters that septic systems must meet in order to provide the required level of protection Matter of Eljen Corporation, Final Decision, 4 DEPR 69, 1997 MA ENV LEXIS 95, (May 2, 1997), Motion for Reconsideration Denied, 1997 MA ENV LEXIS 59 (June 9, 1997). That level of protection is provided when the soil absorption system ("SAS")[3] meets the objectives of the soil treatment process detailed in 310 CMR 15.240(3), which are required of all SASs. Those objectives are:

> (a) maximum stabilization of organic wastes in the effluent;
>
> (b) removal of pathogenic organisms, nutrients, and particulates;
>
> (c) recharge of the ground-water table with adequately treated effluent with minimal attendant pollution of the groundwater; and
>
> (d) disposal of the effluent without discharge to the ground surface or the creation of any nuisance.

310 CMR 15.240(3). At subpart C, 310 CMR 15.201 through 310 CMR 15.292, Title 5 prescribes specific design parameters, including certain limitations, for conventional SASs.

[3] A "soil absorption system" is defined in 310 CMR 15.002 as "a system of trenches, galleries, chambers, pits, field(s) or bed(s) together with effluent distribution lines and aggregate [usually gravel or crushed stone] which receives effluent from a septic tank or treatment system."

Chubb PFT at ¶ 13. The design parameters for sizing conventional and alternative SASs include the amount of effluent the system is intended to treat;[4] site-specific characteristics related to soil and groundwater,[5] which may affect system performance; and the configuration of the SAS, such as a trench, bed, field, chamber, pit or gallery. Onatunde PFT at ¶ 16; 310 CMR 15.251(1); 310 CMR 15.252(2); 310 CMR 15.253(1). 310 CMR 251(1), prescribing design parameters for trenches, provides as follows:

> (1) Trench Design Specifications:
>
> (a) Length (each trench) 100 feet maximum
>
> (b) Width (each trench) 2 feet minimum, 3 feet maximum
>
> (c) Effective Depth: shall be equal to the depth of the trench below the invert of the distribution pipe with a minimum of six inches up to a maximum of two feet.
>
> (d) The minimum separation distance between any two trenches shall be two times the effective width or depth of each trench, whichever is greater, or where the area between trenches is designated as reserve area, three times the effective width or depth of each trench, whichever is greater.
>
> (e) The effective leaching area shall be calculated using the bottom area and a maximum of two feet (per side) of side wall area for each trench.

MassDEP has determined that SASs which are designed in conformance with the design parameters in Subpart C meet the requirements for SASs established in 310 CMR 15.240(3). Chubb PFT at ¶ 14.

A proposed system which is designed or constructed in any other manner than as prescribed in 310 CMR 15.100 through 310 CMR 15.255 and which does not obtain a

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[4] This parameter is the System Sewage Flow Design Criteria, detailed at 310 CMR 15.203. It is generally expressed in gallons/day and is the amount of wastewater entering the SAS for treatment. Onantunde PFT at ¶ 16.a.

[5] This parameter is the Effluent Loading Rate, detailed at 310 CMR 15.242. It is expressed in gallons/day/square foot and is a function of the soil type in which the SAS is placed. Onantunde PFT at ¶ 16.b.

groundwater discharge permit is considered to be an alternative system. Chubb PFT at ¶ 15.

"Alternative systems" are defined as

> Systems designed to provide or enhance on site sewage disposal which either do not contain all of the components of an on site disposal system constructed in accordance with 310 CMR 15.100 through 15.255 or which contain components in addition to those specified in 310 CMR 15.100 through 15.255 and which are proposed to the Local Approving Authority and/or the Department, or an agent authorized by the Department, for remedial, pilot, provisional, or general use approval pursuant to 310 CMR 15.280 through 15.289.

310 CMR 15.002 (Definitions). Alternative systems may contain substitutes or alternatives for one or more components of a conventional system; they may be fundamentally different approaches intended to eliminate the need for a conventional system, such as a composting toilet unit. Chubb PFT at ¶ 16.

"Alternative systems, when properly designed, constructed, operated and maintained, may provide enhanced protection of public health, safety, welfare and the environment." 310 CMR 15.281(1). The regulations pertaining to Alternative Systems at 310 CMR 15.281 through 310 CMR 15.288 are intended to "provide an orderly system to facilitate review of proposed alternative systems; to encourage development of alternative systems with performance superior to conventional systems; and to ensure that alternative systems are approved with appropriate conditions to protect public health, safety, welfare and the environment." 310 CMR 15.281(1). The sequence of steps for approval of alternative systems consists of piloting, 310 CMR 15.285;[6] provisional approval, 310 CMR 15.286;[7] and certification for general use, 310 CMR 15.288.[8]

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[6] 310 CMR 15.285(1) provides that [a]pproval for piloting is intended to provide field testing and technical demonstration that a particular alternative system can or cannot function effectively under relevant physical and climatological conditions at one or more pilot facilities."

[7] 310 CMR 15.286(1) provides that "[p]rovisional approval is intended to evaluate alternative systems that appear technically capable of providing levels of protection at least equivalent to those of standard on-site disposal systems,

The regulations provide alternatives to provisional approval, one of which enables an applicant to demonstrate the required levels of environmental protection through "comparable use in one or more states where relevant physical and climatological conditions are similar to those in Massachusetts." 310 CMR 15.288(2). This regulation further states that

> The required demonstration of comparable use in one or more states shall include, at a minimum, system use and system monitoring, and operation and maintenance information at least as comprehensive as the in-state protocols outlined in 310 CMR 15.280 through 310 CMR 15.288. When relying on system performance in other states, all available information including but not limited to a copy of the other state's written approval, testing and performance data shall be provided. The applicant shall be considered to have demonstrated effective performance of the out of state systems when the applicant has demonstrated to the Department's satisfaction that at least 90% of the systems have performed at a level at least equivalent to that of a conventional on-site system.

Id.

IV. BACKGROUND

A. The GST System.

The GST "is an adaptation of the time proven stone leaching trench…improved with the use of a removable form to accurately shape and construct leaching 'fingers' along the sides of a central distribution channel." Application at p. 2, section 4, MassDEP Basic Documents; Henderson PFT, Ex. 1. The Petitioner alleges that the GST incorporates shaped sidewalls that allow additional sidewall surface area for increased soil interface and enhanced aeration. Potts PFT at ¶ **7.** The "fingers" are made of three-quarter-inch washed stone and are surrounded by

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to determine whether, under actual field conditions in Massachusetts with broader usage than a controlled pilot setting, general use of the alternative system will provide such protection, and to determine whether any additional conditions addressing long term operation, maintenance and monitoring considerations are necessary to ensure that such protection will be provided."

[8] 310 CMR 15.288(1) provides that "[c]ertification for general use is intended to facilitate the use, under appropriate conditions, of alternative systems that have been demonstrated to provide levels of environmental protection at least equivalent to those of conventional on-site systems."

ASTM C33[9] sand. The Petitioner alleges that the use of the "fingers" increases the sidewall surface area by more than six times that of a traditional stone leaching trench. Application at p. 2, section 4, MassDEP Basic Documents; Henderson PFT, Ex. 1. The GST can be installed in trench and bed configurations. Id. at p. 3, section 5. The GST has been approved for use in Connecticut and Maine, and New York and New Jersey have allowed installation of the GST without general use approval. Henderson PFT, Ex. 3. Over 3000 GST systems are currently in operation. Potts PFT at ¶ 9. The GST was invented by Mr. Potts, and he holds patents covering its technology. The sidewall surface area is a primary feature of the GST. Potts PFT at ¶ 17. Plan view examples of the GST's 62 and 37 series systems are attached to this RFD as Appendix A.

B. Procedural History

1. The Application

The Petitioner submitted its application to MassDEP on April 9, 2018. The Petitioner sought approval for a certification for general use for the GST as an alternative SAS. Application, MassDEP Basic Documents; Chubb PFT at ¶ 6. Henderson PFT, Ex. 1. The Petitioner proposed alternative design standards for loading rates and leach field sizing. The loading rates were based on those in 310 CMR 15.242 and the GST would be sized based on "sidewall and bottom surface area." Application, Section 5, Addendum, Henderson Ex. 1. The Petitioner sought the following alternative design standards from a conventional SAS: (1) increasing the ELA over that allowed for a conventional system of similar footprint dimensions, i.e. adding more effluent to a smaller area of the SAS; (2) replacing some of the stone of a conventional SAS with sand to create discrete leaching fingers; (3) increasing the overall width

[9] ASTM International develops and distributes voluntary consensus standards for a variety of industries and technologies around the world. See generally https://www.astm.org/

beyond the three feet allowed by the regulations for trench configurations, to either 37 inches or 62 inches; (4) moving the distribution line of the 37-inch systems from the center of the trench to the side; and (5) installing the alternative stone leaching fingers over a minimum of two-inch depth of ASTM C33 sand. Onatunde PFT at ¶ 18.a.-e. The Petitioner sought recognition of the actual surface area of the GST, i.e. all of the surface area of each of the "fingers." See Henderson PFT, Ex. 18. The Petitioner sought approval of the GST based on performance data from other states and independent third parties. Application, Section B.3., MassDEP Basic Documents, Henderson PFT, Ex. 1

The Petitioner submitted with the application a testing report produced by the Massachusetts Alternative Septic System Test Center ("the MASSTC Report");[10] State of Connecticut approvals of the GST 62 and GST 37 series products, dated February 7, 2008 and October 7, 2010, respectively; results of load testing[11] of the tallest and widest GST product to test for the impact of live wheel loads on the leaching system, conducted by Korth Engineering, LLC of Marlborough, Connecticut, and requested by the State of Connecticut; installation instructions/guidelines for the 37 and 62 series GST products; a State of Maine determination that the GST system was acceptable for use in Maine, provided it was installed, operated and maintained in accordance with the manufacturer's directions, dated February 22, 2017; and the GST Leaching System product literature. Onatunde PFT at ¶ 10;Henderson PFT, Ex. 1.

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[10] The MASSTC is a project of the Barnstable County Department of Health and Environment in Barnstable County, Massachusetts. It "was established to provide performance information on various alternative onsite septic system technologies. Since its inception in 1999, nearly every major manufacturer of onsite system technologies has been served by standardized testing and validation or by using the facility as a test bed to research and further develop their products." https://www.barnstablecountyhealth.org/programs-and-services/massachusetts-alternative-septic-system-test-center

[11] This load testing is done to assess the impact of weight on the leaching system. A dump truck loaded with aggregate was used, with a combined weight on both rear axels of 64,000 pounds.

MASSTC tested one GST product, the GST 6206, for the Petitioner during a period from July 2009 through June 2011. Regarding hydraulic performance of the tested product, MASSTC reported that no surface breakout was observed, indicating that the soil maintained its hydraulic capacity for the loading rate employed in the test. Observation for liquid levels in observation ports did not reveal any ponding. MASSTC Report at Section 4.1, Hydraulic Performance. Inspection of the biomat[12] after 23 months of hydraulic loading showed only slight color changes, no restrictive biomat area, and no chemically reduced areas. Id. Weekly fecal coliform measurements appeared to indicate that the GST with one foot of underlying sand is comparable to the standard pipe-in-stone system underlain with two feet of sand. Id., Section 4.2, Fecal Coliform Removal.

2. MassDEP's Review of the Application

MassDEP issued a Technical Deficiency letter to the Petition on May 18, 2018 ("TD1"). MassDEP advised the Petitioner that it had determined the application lacked information documenting field performance in the other states where the GST was in use. Specifically, the Petitioner was asked to provide the following information to support the application for approval under 310 CMR 15.288(2) based on comparable use in other states:

1) The approximate number of systems installed in each of the other states, including the types of installation (repair vs. new construction and residential vs. commercial), reduction in field size if offered, and loading rates per linear foot if specified;

2) Records of operation and maintenance and any specific performance data collected such as ponding observations from a monitoring port in the field, any and all effluent monitoring data, pumping records, maintenance actions found necessary, for a period of one year;

[12] "Biomat" is a slime layer that forms below the leaching field of a septic system.

3) Failures history, if any, with a description of cause(s) grouped by use category and state;

4) Information addressing the 90% performance requirement of the regulation and if it had been met (inclusive) of failures due to improper homeowner disposal practices, hydraulic overloading, etc.;

5) A comparison of the proposed loading rates vs. what other state approvals require; and

6) A copy of the Design Manual, clearly showing how the sizing of the leaching area was derived.

TD1, Henderson PFT Ex. 2. Regarding request #6 above, MassDEP stated "[p]lease provide additional explanation and calculation for the minimum leaching area required for each perc. rate vs. soil classification vs. number of bedrooms. The design example should include discussion of and comparison with the long term acceptance rate (LTAR)[13] for conventional soil absorption system according to 314 [sic] CMR 15.242." Id.

The Petitioner responded to TD1 on July 17, 2018. Henderson PFT, Ex. 3. As to the first request, the Petitioner stated that there were over 2,400 systems installed, and provided a project list that included the number of systems installed per year, and stated that "[l]oading rate for each system is based on the state approved loading rate set forth below and provided with our previous application materials and sized based on total surface area." As to request #2 above, the Petitioner stated that it recommends that the GST systems be monitored annually by system designers and/or installation contractors, and homeowners routinely monitor the systems and have them inspected; the Petitioner did not provide any records or documents responsive to this

[13] "LTAR" is "the stable rate of effluent acceptance through the biological mat of a soil absorption system measured in gallons per day per square foot (gpd/sf) or centimeters per day (cm/d)." 310 CMR 15.002.

request. As to request #3 above, the Petitioner responded that there had been no reported failures. To the best of its knowledge, 100% of its systems currently operating "are performing up to or above design parameters. Records of monitoring, pumping, and maintenance actions are held by systems owners, maintenance providers or system contractors." Id. In response request #4 above, the Petitioner relied on the lack of failures to demonstrate that the 90% performance requirement of 310 CMR 15.288(2) had been met. As to request #5 above, the Petitioner included tables showing the approved effective leaching credits approved in Connecticut and Maine, and stated "[w]e are seeking the same surface area recognition in MA as we have received in Maine and from the Connecticut DEP. These sizing and loading rates are reflected in the attached Design Manual." Id.

MassDEP issued a Draft General Certification Approval ("Draft") to the Petitioner on October 11, 2018 and requested that Mr. Henderson provide feedback by the following day. Henderson PFT at ¶ 13; Henderson PFT, Ex. 10. Mr. Henderson provided comments via email message the following day, attaching a marked up copy of the Draft for MassDEP's review. Henderson PFT at ¶ 16; Henderson PFT Ex. 12. Paragraph 5 of the Draft contained the following language:

> 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.

Mr. Henderson's proposed edits to the Draft included the following language (added language underlined):

> Sidewall surface 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 total surface area of one of the sides.

On November 9, 2018, Mr. Henderson contacted MassDEP to inquire about the status of MassDEP's review, stating that he had agreed to the Draft "without any substantive changes to the terms." Henderson PFT at ¶ 17; Henderson PFT, Ex. 13. He was advised by Mr. Onatunde later that day that "as you are aware, the issue of the design loading rate is still under review and consultations are going on within the Department. The engineers are reviewing your calculation method on how you arrived at your loading rate and I hope to get back to you next week on the acceptability of your proposed loading rate." Henderson PFT at ¶ 18; Henderson PFT, Ex. 13. Mr. Henderson responded to Mr. Onatunde by stating that the application uses the loading rated directly from the regulations and that the surface area calculations are the actual surface area measurements. Henderson PFT at ¶ 20; Henderson PFT Ex. 15 (emphasis added).

MassDEP issued a second Technical Deficiency letter ("TD2") on November 13, 2018. TD2 informed the Petitioner that based on the information in the record, MassDEP could approve the GST for a Provisional Use approval, but the GST could not be certified for general use because the application lacked information needed for such an approval. Henderson PFT, Ex. 16; see also notes 7 and 8 above at pp. 6-7 (regulatory language for provisional use and general use approvals). The provisional approval process is designed to give MassDEP adequate data to determine whether the SAS adequately treats the effluent and whether the SAS protects the public health, safety, welfare and the environment and meets the specific objectives in 310 CMR 15.240(3), noted above at p. 4. Chubb PFT at ¶ 25. "Certification for general use is intended to facilitate the use, under appropriate conditions, of alternative systems that have been demonstrated to provide levels of environmental protection at least equivalent to those of conventional on-site systems." 310 CMR 15.288(1). 310 CMR 15.286(2) details how an

applicant shall demonstrate that the alternative SAS is likely to meet the environmental protection standards of Title 5.[14]

More specifically, in TD2, Ms. Chubb cited a lack of data regarding system performance in the other states sufficient to demonstrate comparable use by providing "at a minimum, system use and system monitoring, and operation and maintenance information at least as comprehensive as the in-state protocols outlined in 310 CMR 15.280 through 15.288." Id., citing 310 CMR 15.288(2). She advised that if the Petitioner wanted to continue seeking a general use approval, it would need to submit: records of operation and maintenance and specific performance data for a one year period; effluent data and the effective loading rates associated with the MASSTC testing; and a detailed calculation for its ELA (showing a total SAS reduction of less than or equal to 40%). Henderson PFT Ex. 16. Ms. Chubb noted that "information documenting field performance is important in the evaluation of any I/A [innovative/alternative] technology proposed for General Use Approval." Id.

By email message on November 30, 2018, Ms. Chubb provided the Petitioner with the ELA calculations based on what she described as Title 5 requirements. She explained that for the GST to receive a general use certification, the ELA must be based on a maximum width of three

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[14] 310 CMR 15.286(2) provides in part: The Department shall grant provisional approval for use of an alternative system where connection to a sewer is feasible if the applicant demonstrates that the alternative system is likely to provide a level of environmental protection at least equivalent to that of a sewer in the following manner:

(a) evidence, satisfactory to the Department, of effective past performance of the alternative system over a period of at least two years of general usage in one or more states where relevant physical and climatological conditions are comparable to those in Massachusetts;
or
(b) successful completion of piloting pursuant to 310 CMR 15.285, or equivalent piloting in one or more states where relevant physical and climatological conditions are comparable to those in Massachusetts. Piloting shall be considered successful when at least 75% of piloted systems have performed at the relevant level for at least 12 months.
When relying on system performance in other states, all available information including but not limited to a copy of the other state's written approval, testing and performance data shall be provided.

feet and a maximum depth of two feet: (width) x (depth of sides) x (a factor of 1.67) to account for the 40% reduction that is allowed for alternative SAS. Henderson PFT, Ex. 18. In two responsive email messages to Ms. Chubb that same day, Mr. Henderson provided spreadsheets showing the Petitioner's calculations for the GST surface area, and expressed that based on records he had received from MassDEP in response to a Public Records Act, "it seems there was some confusion as to how to calculate the GST surface area." In the second email message, Mr. Henderson stated "[a]s you are aware, the application requested recognition of the actual surface area of the GST and there is certainly precedence [sic] for the actual surface area to be used in the [sic] determining the effective leaching area, including all the bottom area." Id.

Thereafter, the Petitioner and MassDEP discussed the application by telephone on December 3, 2018,[15] and according to Mr. Henderson, the Petitioner learned for the first time that MassDEP had concerns with the contoured fingered side wall area being used for the effective leaching credit. Henderson PFT at ¶ 35; see also Henderson PFT at ¶¶ 6, 8, 12, and 21. During this conference call, MassDEP allegedly told Mr. Potts and Mr. Henderson that it considered the GST to be a stone trench; that contoured sidewalls were not allowed under Title 5; and that sidewall area would not be credited beyond two feet per linear foot. Henderson PFT at ¶¶ 36-37.

On December 4, 2018, MassDEP issued the Certification that is the subject of this appeal. MassDEP Basic Documents; Henderson PFT, Ex. 20. Based on a lack of information and data sufficient to demonstrate that the GST was technically capable of providing levels of treatment, (including the removal of pathogenic organisms, nutrients, and particulates), at least equivalent

[15] Participants on the conference call included Mr. Potts and Mr. Henderson for the Petitioner and Ms. Chubb, Mr. Onatunde, Brian Dudley of MassDEP's Southeast Regional Office, and Claire Golden of MassDEP's Northeast Regional Office.

to standard on-site SASs at the proposed design specifications, MassDEP did not approve the GST at the design specifications requested. Chubb PFT at ¶¶ 33-37. MassDEP informed the Petitioner that it was MassDEP's determination that the Petitioner had not demonstrated to MassDEP's satisfaction that at least 90% of its systems with the ELAs as presented in the application had performed at a level at least equivalent to that of a conventional on-site system. MassDEP advised the Petitioner that "[if] [it] want[ed] approval for the surface area calculated ELAs as presented in the GST application, further testing and study of the system [would] need to be done under a Provisional Use approval." The provisional use approval would allow the Petitioner to gather the data needed to demonstrate the equivalency required by 310 CMR 15.288(2). Onatunde PFT, Attachment 1, Email message from Marybeth Chubb to Jason Henderson, Tuesday, December 04, 2018, 1:40 p.m. (cover email message to GST Leaching System General Use Certification).

Because MassDEP could not approve the GST as proposed for general use as an alternative system, it evaluated the GST as though it were a conventional SAS and excluded the fingers from its calculations of the ELA. The agency did this because the Petitioner had not made the demonstration required by 310 CMR 15.288(2) that would support inclusion of the fingers. MassDEP evaluated the GST as though the side walls were flat. Based on its review of the information that was submitted and the similarity of the GST to a conventional Title 5 SAS, MassDEP approved the GST at design specifications and with calculated ELAs consistent with a Title 5 SAS that used C33 sand. Chubb PFT at ¶¶ 36-37; HR at 47:00, 55:40. MassDEP determined that the GST could provide an adequate level of protection and would not fail hydraulically at the design capacities of similarly sized conventional systems. Onatunde PFT at ¶

41. The approved ELAs were less than those proposed by the Petitioner, with one or two exceptions.

C. The Petitioner's Appeal

The Petitioner asserted in its Appeal Notice that the Certification "does not resemble" the Proposed Certification on which it provided comments and contains legal errors in the application of law. Specifically, the Petitioner claimed that the Certification failed to recognize the actual sidewall area as required by 310 CMR 15.251 and is not consistent with prior Department approvals of products with similar features. The Petitioner alleged that the Department "is attempting to require [the Petitioner] to provide information not required by 310 CMR 15.000 in order to receive recognition of sidewall surface under 310 CMR 15.280, *et. seq.* when [the Petitioner] should receive that credit under 310 CMR 15.251." Notice of Claim at p. 1; Petitioner's Pre-hearing Statement at 3-4.

V. ISSUES FOR RESOLUTION IN THE APPEAL

As a result of discussions with the parties at the Pre-Hearing Conference on January 24, 2019, the Issue for Resolution in the Appeal was framed as whether the Certification complies with 310 CMR 15.00. This involved two discrete but interrelated sub-issues. First, whether the application complied with the requirements of 310 CMR 15.288(2) such that the GST could have been approved as an alternative SAS at the design parameters proposed; and second, whether MassDEP correctly applied 310 CMR 15.251(1)(e) in its calculations of the ELA when it approved the GST as a though it were conventional Title 5 system.

VII. BURDEN OF PROOF/STANDARD OF REVIEW

As the party challenging the Department's issuance of the Certification, the Petitioner had the burden of going forward by producing credible evidence in support of its position. Matter

of Pioneer Valley Energy Center, OADR Docket No. 2011-010, Recommended Final Decision, 2011 MA ENV LEXIS 109 (September 23, 2011), adopted by Final Decision (July 28, 2011); Matter of Town of Freetown, Docket No. 91-103, Recommended Final Decision (February 14, 2001), adopted by Final Decision (February 26, 2001) ("the Department has consistently placed the burden of going forward in permit appeals on the parties opposing the Department's position."). So long as the initial burden of production or going forward is met, the ultimate resolution of factual disputes depends on where the preponderance of the evidence lies. Matter of Town of Hamilton, DEP Docket Nos. 2003-065 and 068, Recommended Final Decision (January 19, 2006), adopted by Final Decision (March 27, 2006). "A party in a civil case having the burden of proving a particular fact [by a preponderance of the evidence] does not have to establish the existence of that fact as an absolute certainty. . . . [I]t is sufficient if the party having the burden of proving a particular fact establishes the existence of that fact as the greater likelihood, the greater probability." Massachusetts Jury Instructions, Civil, 1.14(d).

The relevancy, admissibility, and weight of evidence that the Applicant and the Department sought to introduce in the Hearing were governed by G.L. c. 30A, § 11(2) and 310 CMR 1.01(13)(h)(1). Under G.L. c. 30A, § 11(2):

> [u]nless otherwise provided by any law, agencies need not observe the rules of evidence observed by courts, but shall observe the rules of privilege recognized by law. Evidence may be admitted and given probative effect only if it is the kind of evidence on which reasonable persons are accustomed to rely in the conduct of serious affairs. Agencies may exclude unduly repetitious evidence, whether offered on direct examination or cross-examination of witnesses.

Under 310 CMR 1.01(13)(h), "[t]he weight to be attached to any evidence in the record will rest within the sound discretion of the Presiding Officer. . . ."

My review of the application is *de novo*. Matter of Woods Hole, Martha's Vineyard & Nantucket Steamship Authority, OADR Docket No. 2016-025, Recommended Final Decision (March 27, 2017), adopted by Final Decision (April 13, 2017); see Matter of Francis P. and Debra A. Zarette Trustees of Farm View Realty Trust, 25 DEPR 24, Recommended Final Decision, February 20, 2018, adopted by Final Decision, March 1, 2018, quoting Matter of John Soursourian, OADR Docket No. WET-2013-028, Recommended Final Decision (2014), 2014 MA ENV LEXIS 49 at 36, adopted as Final Decision, 21 DEPR 63, 2014 MA ENV LEXIS 47 (2014) ("'[t]he Presiding Officer [responsible for adjudicating the administrative appeal] is not bound by MassDEP's prior orders or statements [in the case], and instead is responsible…for independently adjudicating [the] appeal and [issuing a Recommended Final Decision] to MassDEP's Commissioner that is consistent with and in the best interest of the [applicable law and regulations], and MassDEP's policies and practices."

My analysis is guided by the standard of review that the courts would apply in reviewing my decision if it were adopted as a Final Decision. Generally, regulatory terms, like statutory terms, must be interpreted according to their plain, usual, and ordinary meaning. Language should generally not be implied if it is not present, absent a clear intent to the contrary. Courts generally accord an agency interpretation of its regulations considerable deference. However, courts will "not hesitate to overrule agency interpretations when those interpretations are arbitrary, unreasonable, or inconsistent with the plain terms of the regulation itself." Beverly Port Marina, Inc. v. Commissioner of Department of Environmental Protection, 84 Mass. App. Ct. 612, 620 (2013); accord Water Department of Fairhaven v. Department of Environmental Protection, 455 Mass. 740, 749-50 (2010) (court found agency exceeded statutory and regulatory authority); Warcewicz v. Dep't. of Environmental Protection, 410 Mass. 548, 574 N.E.2d 364,

365-66 (1991) (language should not be implied where it is not present and thus it was improper for agency to import a definition from one regulatory body into another); see also Matter of Sullivan, Docket No. WET 2011-013, Recommended Final Decision (May 31, 2011), adopted by Final Decision (June 22, 2011); Matter of Milton, Docket No. WET 2011-030, Recommended Final Decision (March 29, 2012), adopted by Final Decision (April 6, 2012). When the meaning of a regulation is not plain from its language, I am obligated to consider "the cause of its enactment, the mischief or imperfection to be remedied and the main object to be accomplished, to the end that the purpose of its framers may be effectuated." DiFiore v. American Airlines, Inc., 454 Mass. 486, 490 (2009), quoting Industrial Fin. Corp. v. State Tax Comm'r, 367 Mass. 360, 364 (1975).

> The directive to apply the regulations' plain meaning is rooted in the rulemaking process for regulations. It is an elaborate process that is designed to ensure that the agency's regulations are in accord with the public interest and will. The final regulations embody the public sentiment of the Commonwealth on matters of public importance, enabling the agencies to implement and effectuate that public sentiment. The primary duty in interpreting regulations, like statutes, is to effectuate the underlying intent, in accordance with the above interpretative principles. See G.L. c. 30A; Finkelstein v. Board of Registration in Optometry, 370 Mass. 476, 478 (1976). "[O]nce [an agency] exercise[s] its power to promulgate regulations, [it] may not infinitely manipulate or expand their content." Warcewicz, at 552 (citing Finkelstein v. Board of Registration in Optometry, 370 Mass. 476, 478 (1976)).

Matter of Liatsos, Pinchin, and Southwick, Docket Nos. WET-2016-005, 006, 007, Recommended Final Decision after Remand, 26 DEPR 145, 153 (March 25, 2019).

VIII. DISCUSSION AND FINDINGS

A. The Application Did Not Support Approval of the GST As an Alternative SAS At the Design Parameters Proposed.

MassDEP determined that the Petitioner had not demonstrated that the GST provided levels of environmental protection at least equivalent to those of conventional on-site systems, as

required by 310 CMR 15.288. The Petitioner argues that because MassDEP approved the GST for use in Massachusetts "the only issue remaining is whether the terms of the approval, including sizing of GST under the granted approval, was done in accordance with the laws of Massachusetts." Petitioner's Closing Brief at p. 1. In its view, because an approval was issued and MassDEP has not sought to revoke it, MassDEP's determination that the application was not supported by sufficient data is illogical and unsupported.[16] Id. For the reasons discussed below, I reject this argument. MassDEP specifically did not approve the application with the proposed alternative design parameters, and the question here is whether, based on the evidence in the administrative record, it could have or should have.

The applicable regulations for alternative systems, discussed above at pp. 5-7, provide two pathways toward approval. The first pathway involves a sequence of approvals for piloting, provisional approval, and certification for general use. See footnotes 6-8 above at p. 6-7. (containing text of 310 CMR 15.285(1), 310 CMR 2.86(1) and 310 CMR 15.288(1)); Chubb PFT at ¶¶ 17-20; see also Matter of Eljen Corporation, supra, 4 DEPR at 69. "This sequence is intended to develop information on the performance of the alternative system...." 310 CMR 15.281(4). The second pathway affords an applicant the option of forgoing separate approvals through all three steps of the approval process and receiving a certificate for general use by supporting its application either with an evaluation of broad scale field usage in Massachusetts pursuant to a provisional approval under 310 CMR 15.286 or with "adequate information from other jurisdictions or from systems in remedial use...." Id. The Petitioner opted to take the

[16] The Petitioner's argument exposes a flaw in MassDEP's permitting for GST, but not a fatal one. Once MassDEP determined the application did not satisfy the requirements of 310 CMR 15.288, and after the Petitioner did not opt to accept a provisional use approval, the better course of action would have been a simple denial of the application. Instead, MassDEP sought to accommodate the Petitioner and issued the certification at issue in this appeal.

second pathway and support its application by demonstrating comparable use in other states where the GST was in use.

310 CMR 15.288(2) requires an applicant to demonstrate "that the alternative system in general usage will provide a level of environmental protection at least equivalent to that of a conventional on site system designed and constructed in accordance with 310 CMR 15.100 through 15.255." As discussed above at p. 7, an applicant may demonstrate the required levels of environmental protection through "comparable use in one or more states where relevant physical and climatological conditions are similar to those in Massachusetts." 310 CMR 2.88(2). A showing of some level of environmental protection demonstrating that the objectives of 310 CMR 15.240(3) have been achieved is required. Matter of Eljen, supra, at 72. When MassDEP determines that an applicant has made the required demonstration, it "shall certify an alternative system for general use...." 310 CMR 2.88(2).

In support of its position that the application met the requirements of 310 CMR 15.288, the Petitioner presented testimony from Mr. Potts and Mr. Henderson.

Mr. Potts provided the following testimony. The GST incorporates shaped sidewalls that allow additional sidewall surface area for increased soil interface and enhanced aeration. Potts PFT at ¶ 7. The shape is created by using a removable form to shape and construct leaching fingers along the sides of a central distribution channel. Application at p. 2, Section B.4, MassDEP Basic Documents, Henderson Ex. 1. The increased sidewall surface area of the GST has characteristics similar to filtration technology in other industries. Potts PFT at ¶ 8. The GST has been tested in Massachusetts and other states, and more than 3000 GST systems are in operation with no reported system failures. Potts PFT at ¶ 9. The GST was tested at the

MASSTC and shown to be comparable to a Title 5 trench system with half the depth of sand between in and the sample point. Potts PFT at ¶ 10.

Mr. Henderson's testimony described the application and review process (see above at pp. 8-17). As described in detail above, the application included the MASSTC Report; copies of approvals from the States of Connecticut and Maine; results of load testing conducted by Korth Engineering, LLC; installation instructions for the GST; and product literature. Henderson PFT, Ex. 1. See also Onatunde PFT at ¶ 10. It also included the Petitioner's responses to TD1 and TD2. Notably absent from the Petitioner's application was any information or data documenting the performance of the GST in other states; the only information was a statement that there had been no failures.

The evidence presented here is similar to that presented in Matter of Eljen Corporation, but is significantly less robust and with significantly less scientific and technical support. The Petitioner did not provide: any records of operation and maintenance; any specific performance data collected such as ponding observations from a monitoring port in the field; any effluent monitoring data; and pumping records or information about maintenance actions found necessary, for a period of one year. Instead, the Petitioner stated that it did not have those records. See Petitioner's response to TD1, described above at pp. 11-12. Henderson PFT, Ex. 3. The Petitioner stated that there had been no reported failures, and as a result, MassDEP could infer that the 90% performance requirement of 310 CMR 15.288(2) had been met. Id. None of the Petitioner's witnesses offered testimonial evidence related to the specific performance of the GST in other states. The Petitioner did not present any evidence of system use and monitoring for its systems in use in other states, nor any operation and maintenance information at least as

comprehensive as the in-state protocols outlined in 310 CMR 15.280 through 15.288, as required by 310 CMR 15.288(2).

In Matter of Eljen, the applicant argued that it could meet the standard for comparable use by showing similar technology, similar design requirements in two states with similar physical and climatological conditions, and the absence of failed systems. There was no dispute as to the similarity of physical and climatological conditions. Eljen presented testimony from the inventor of its product, Dr. Laak, who testified that because of the product's large amount of fabric, it provided more treatment than a conventional Title 5 system. His testimony included technical attachments showing support in the scientific literature for Eljen's position that increasing load rates as it proposed did not significantly increase the virus, biological oxygen demand, and suspended solids transfer through four feet of soil. The Eljen product was in use in four New England states, and Eljen had not received any reports that the product did not provide adequate environmental protection. Based on this, Dr. Laak opined that the product provided equivalent environmental protection to a conventional system at a certain design factor. Matter of Eljen, supra, 4 DEPR at 71.

Eljen also presented the testimony of Eljen's New Hampshire distributor for the product, Mr. Huber. Mr. Huber's testimony compared design rules for depth to seasonal high groundwater, setbacks to wells and surface water and effluent loadings rates in New Hampshire and Maine with those in Massachusetts and concluded they are similar. In his opinion, while there were differences in design rules from state to state, "the net effect is that Maine and New Hampshire design rules provide their citizens environmental protection comparable to Massachusetts rules [to] protect their health." He also testified that in order to track long term performance of the systems, "he ha[d] kept records of all installations in New Hampshire and has

had personal contact with all the installers." Mr. Huber stated that he had monitored system performance of approximately six systems to observe effluent dosing. He submitted a letter from the New Hampshire Department of Environmental Services indicating that it had not received any reports of malfunction or failures built with the Eljen product. Id. At 71-72.

The Administrative Law Judge ("ALJ") rejected Eljen's argument. She found that some showing of the environmental protection achieved is required and the evidence presented failed to make that showing. She noted that a "demonstration of a level of environmental protection is at the heart of 310 CMR 15.288(2). If [MassDEP] had intended to draft a regulation that provided general use certification for innovative technologies that had performed successfully in other states with similar physical and climatological conditions so long as they were installed under the same design standards for which approvals were being sought in Massachusetts, it could have done so. But by including the requirement that there be a 'demonstration of equivalent level of environmental protection' [MassDEP] sought more. Id. at 72. "In this context, 'environmental protection' refers to the achievement of effluent controls which would result in such objectives as maximum stabilization of organic wastes in the effluent, removal of pathogenic organisms, nutrients, and particulates, recharge of the groundwater table with adequately treated effluent with minimal attendant pollution of the groundwater, and disposal of the effluent without discharge to the ground surface or the creation of any nuisance. See 310 CMR 15.240(3)." Matter of Eljen, supra, 4 DEPR at 72.

Here, I find that the Petitioner has not made the necessary showing. The quantum of evidence it submitted falls short of what was presented by the Petitioner in Matter of Eljen, which was rejected as insufficient to make the required demonstration of environmental protection. Other than copies of approvals from other states and statements that there have been

no reported system failures, there is no evidence in the record that makes the required demonstration of environmental protection based on comparable use in other states, such as was described above in Matter of Eljen. 310 CMR 15.288(2) requires that an applicant produce some evidence of the level of environmental protection achieved in the comparable use states. "This can be achieved through data taken from those systems…using environmental protection criteria such as stabilization of organic wastes in the effluent, and removal of pathogenic organisms, nutrients, and particulates." Matter of Eljen, supra. As with the systems in Matter of Eljen, a lack of failures does not provide any information about the level of environmental protection achieved by the GST. The evidentiary record is devoid of data on specific quality criteria for the GST based on broad scale field use in other states.

Assuming it is true that there were no failures of the GST in the other states, that information alone does not demonstrate compliance with 310 CMR 15.288(2). Information and data from field performance of systems installed in other states is needed to show the systems are providing the required level of environmental protection. See Matter of Eljen, supra, 4 DEPR 69, 72 (demonstration of environmental protection requires at least some showing that the objectives of 310 CMR 15.240(3) have been achieved; the best evidence is generally effluent testing data). Petitioner acknowledged that if these data exist, they are kept by homeowners and system installers; the Petitioner does possess them. I cannot draw an inference simply from a lack of failures that at least 90% of the GST systems have performed at a level at least equivalent to that of a conventional system. This is particularly important where the Petitioner did not provide sufficient data to demonstrate that the GST was technically capable of providing levels of treatment, including removal of pathogenic organisms, nutrients, and particulates, at least equivalent to those of standard SAS at the proposed design specifications. See Chubb PFT at ¶

36. I find that the Petitioner has not demonstrated that its application supports approval of the GST pursuant to the requirements of 310 CMR 15.288. I further find that the Petitioner has failed to sustain its burden of going forward by presenting credible evidence that the information presented in support of its application makes the demonstration required by 310 CMR 15.288(2) such that the GST could be approved as an alternative system at the design parameters proposed.

B. MassDEP correctly applied 310 CMR 15.251(1)(e) in its calculations of the ELA that would be approved for GST Under Title 5.

MassDEP could have simply rejected the Petitioner's application as proposed based on the findings in the previous section. Instead, MassDEP chose to find a way to approve the GST consistent with Title 5. MassDEP considered how the GST was similar to a conventional system and how it differed. HR at 47:04-47:35. Its calculation of the ELA excluded the fingers protruding from the sides of the SAS and included only the two-dimensional surface area of the SAS. The Petitioner had failed to make the demonstration required by 310 CMR 15.288(2), discussed above, that would have supported inclusion of the leaching fingers in the ELA calculation. The Petitioner proposed to calculate the ELA based on the total surface area of each finger. MassDEP determined that the proposed calculations went beyond the allowed design criteria for SASs per Title 5. Instead, MassDEP determined that the GST could provide an adequate level of protection and would not fail hydraulically at the standard loading rates and issued the certification in accordance with those parameters. The Petitioner contends that MassDEP incorrectly applied the regulation when it failed to credit the total surface area of the fingers in calculating the ELA. The crux of the issue is whether the calculation of the ELA pursuant to 310 CMR 15.251(e) was done correctly. As discussed below, I find that it was.

1. Interpretation of 310 CMR 15.251(1)(e)

The Petitioner argues that the phrase "side wall area" in the regulation should be read to include the three-dimensional nature of the GST, with each surface of each finger counted within the calculation. MassDEP contends that based on an engineering standard applied uniformly throughout Title 5, only the two-dimensional area of the side wall is included within the calculation

Subpart C of Title 5 contains the regulations for design, construction, repair and replacement of on-site sewage disposal systems. 310 CMR 15.201 *et seq.* 310 CMR 15.251states in pertinent part:

> (1) Trench Design Specifications:
>
> (a) Length (each trench) 100 feet maximum
>
> (b) Width (each trench) 2 feet minimum, 3 feet maximum
>
> (c) Effective Depth: shall be equal to the depth of the trench below the invert of the distribution pipe with a minimum of six inches up to a maximum of two feet.
>
> (d) The minimum separation distance between any two trenches shall be two times the effective width or depth of each trench, whichever is greater, or where the area between trenches is designated as reserve area, three times the effective width or depth of each trench, whichever is greater.
>
> (e) The effective leaching area shall be calculated using the bottom area and a maximum of two feet (per side) of side wall area for each trench.

Subsection (e) is the subject of the parties' dispute; they disagree as to the interpretation of the phrase "side wall area."

Mr. Onantunde testified that conventional and alternative SAS are sized based on certain parameters, including the amount of effluent the SAS is intended to treat, site specific characteristics related to soil and groundwater that may affect system performance, and the

configuration of the SAS, i.e. whether a trench, field or bed. Onantunde PFT at ¶ 16. The side wall area is a function of the length of the system and the height or depth of the system. HR at 41:33-41:48. Mr. Onatunde acknowledged that Title 5 does not require that a side wall be flat. HR at 41:55. Regarding the ELA, Mr. Onatunde testified that the ELA is expressed in square feet per linear foot and is a measurement of the total infiltrative surface area per linear foot of the SAS. Onantunde PFT at ¶ 16.c. At the Hearing, Mr. Onatunde, who is an engineer, acknowledged that 310 CMR 15.251(1)(e) does not use the term "linear foot", but explained that square feet per linear foot is an engineering standard for Title 5. HR at 33:47-34:13; 36:55-37:19. All engineers calculate the ELA in Title 5 this way, including the Petitioner in its application. HR at 34:13-34:20; 37:24-37:31. The Petitioner did not offer testimony disputing this point. I did not find that Mr. Onatunde's testimony was undermined in any way on cross-examination.

My analysis of this issue is based on the following principles. Absent any ambiguity, the words in the regulation should be interpreted and applied according to their usual and ordinary meaning. Unless there is a clear intent to the contrary, meaning should not be implied. Warcewicz v. Department of Environmental Protection, 410 Mass. 548 (1991); see also In the Matter of Craig and Hope Beckman, OADR Docket No. WET-2014-022, Recommended Final Decision (May 21, 2015), adopted by Final Decision (May 29, 2015). A word's "usual and ordinary meanings" are derived "'from sources presumably known to the [regulation's] enactors, such as their use in other legal contexts and dictionary definitions.'" Police Dept. of Boston v. Fedorchuk, 48 Mass. App. Ct. 543, 548, 723 N.E.2d 41, 46 (2000), quoting Commonwealth v. Zone Book, Inc., 372 Mass. 366, 369, 361 N.E.2d 1239 (1977). See also In the Matter of Robert Zeraschi, Recommended Final Decision, 2008 MA ENV LEXIS 14, *16-17.

The regulation uses the phrase "side wall area"; it does not use the phrase "side wall surface area." The usual and ordinary meaning of "area" is the two-dimensional extent of an object. See, e.g. https://www.dictionary.com/browse/area?s=t. "Surface area" on the other hand, represents a three-dimensional measurement. See, e.g. http://www.math.com/tables/geometry/surfareas.htm The Petitioner clearly recognized this distinction when it added the word "surface" in its comments on the Draft certification, discussed above at pp. 12-13.

In the only reported case addressing this regulation, the ALJ stated

> After the loading rate is determined, the size of the leaching field required for that rate is calculated. This is based on 310 CMR 15.251(1)(e), which states that in determining trench design specification, "the effective leaching area shall be calculated using the bottom area and a maximum of two feet (per side) of side wall area for each trench." This design standard is expressed in square feet per linear foot.

Matter of Eljen, supra (emphasis added). Considering Mr. Onatunde's credible testimony at the hearing that subsection (e) as well as the entirety of Title 5 is interpreted based on engineering practice and agreeing with MassDEP that Title 5 must be read as a whole, HR at 39:14-39:29; 39:59-40:21 (the sections of 310 CMR 251(1) and all sections of Title 5 are read together; the interpretations are interrelated); Singer Friedlander Corp. v. State Lottery Comm'n, 423 Mass. 562, 565, 670 N.E.2d 144, 146 (1996) (regulation should be read as a whole to produce internal consistency), I find that MassDEP's interpretation of the regulation is the correct one. The Petitioner did not rebut this testimony with credible testimony from a competent witness or provide a citation to any source that would support a contrary conclusion. Mr. Santos did not submit rebuttal testimony. Neither Mr. Potts nor Mr. Henderson is an engineer, and neither one credibly testified to any alternative engineering standard or practice under Title 5. As a result, I

find that the phrase "side wall area" in the regulation as applied to a conventional SAS (which is how MassDEP evaluated the GST) means the two-dimensional area of the side wall and does not include the three-dimensional surface area of the GST fingers.

I agree with the Petitioner that the regulation allows inclusion of the three-dimensional nature of the GST fingers, but only if the requirements of 310 CMR 15.288(2) have been satisfied, which, as discussed above, was not demonstrated by the Petitioner. When applying this regulation, individual sections of the regulations must be read in the context of the regulations as a whole and are interrelated. Singer Friedlander Corp. v. State Lottery Comm'n, supra.

2. MassDEP's Calculation of ELA for GST

The Petitioner offered testimony to show that MassDEP was not consistent in its application of 310 CMR 15.251(e) to the GST. Mr. Santos testified on behalf of the Petitioner relative to his experience with MassDEP's history of approving on-site wastewater treatment systems. Mr. Santos has been designing such systems for over 20 years and routinely designs systems that incorporate stone trench leach fields. Santos PFT at ¶¶ 3, 5. Mr. Santos stated that "it is the practice of MassDEP and local approving authorities to base Effective Leaching Credit of a stone trench on the actual trench sidewall area." Santos PFT at ¶ 12. He further testified that "MassDEP and local approving authorities do not limit the [ELA] to two feet per side per trench." Santos PFT at ¶ 13. MassDEP limits the height to two feet. Santos PFT at ¶ 14. Attached to his PFT are three design plans for on-site wastewater treatment systems that incorporate stone trench leaching systems and which were reviewed and approved by MassDEP. Santos PFT at ¶¶ 7, 11; Santos PFT Ex. 1-3. The plans appear to show conventional stone trench leaching systems. Mr. Santos's testimony about these systems is limited to the number of trenches and the number

of square feet of effective leaching credit granted for each system.[17] Mr. Santos did not testify as to whether or how any of the three systems depicted in the plans is like the GST in design, or whether any of the projects was subject to review under 310 CMR 15.288(2). My review of the plans did not find similarities to GST's contoured sidewalls.

Mr. Potts testified that he reviewed the plans attached to Mr. Santos's PFT and in his opinion, the sidewall ELA is not limited to two feet per side on those systems. Attached to Mr. Potts's PFT as Exhibit 3 was a general use certification issued by MassDEP to Cur-Tech, LLC in 2017, purportedly offered to show inconsistent application of the regulation by MassDEP.

The Petitioner failed to establish an evidentiary foundation that the projects shown in Santos Exhibits 1-3 or the Cur-Tech, LLC system are similar in all materials respects to the GST. Without additional factual information about the projects shown on the plans, this testimony is not persuasive to demonstrate that MassDEP's application of the regulation has been inconsistent.

MassDEP did not specifically address Santos PFT Exhibits 1-3 in its rebuttal testimony. However, as noted above, because there is no specific factual testimony about the systems shown in the Santos exhibits, I do not agree with the Petitioner that I have to credit the Santos testimony as true simply because he was not cross-examined at the hearing. See Petitioner's Closing Brief at page 1, note 1. Attachment 1 to his Mr. Onatunde's PFT is the cover email message that accompanied the issuance of the Certification to the Petitioner. In it, Ms. Chubb reiterated the calculation formula for ELA allowed by Title 5 and applied to the GST, and stated in that email message that "[t]his is the calculation that was applied to both the Cur-Tech CTL and the Eljen

[17] In its Hearing memorandum, the Petitioner included additional information regarding these systems, but this information also lacked detail about the nature of the systems depicted in the plans. Importantly, the information was not sworn testimony and I therefore I do not consider it. If the Petitioner wanted those facts to be in evidence, Mr. Santos should have included them in his PFT. See Legal Brief of Geomatrix Systems, LLC at pp. 6-8.

Mantis Technologies." The Petitioner has presented no evidence to contradict this statement, and the record contains no evidence demonstrating that the Petitioner has been treated differently from other applicants or that MassDEP's application of Title 5 has been inconsistent.

Mr. Onatunde and Ms. Chubb testified in detail regarding their review of the GST and the calculation of the ELAs. MassDEP approved the GST for general use but at the ELAs that are the maximum allowed for a conventional system of similar dimensions, subject to caps determined by limitations in 310 CMR 15.251 and 310 CMR 15.252 for trench configuration and for bed and field configurations. Chubb PFT at ¶¶ 37-38; Onantunde PFT at ¶¶ 41-42. Mr. Onatunde provided detailed testimony about how he calculated the ELA for the GST as a conventional system applying 310 CMR 15.251(1)(e), including the engineering standard noted above. Onatunde PFT at ¶¶ 43-49. Specifically, he first identified the maximum ELA allowed for a conventional SAS in trench and bed configurations. Onatunde PFT at ¶¶ 45-46. He then calculated the maximum approvable leaching area for a conventional SAS using ASTM C33 sand, for which MassDEP grants a 40% reduction in size over the size of an equivalent conventional or alternative SAS not using ASTM C33 sand, equating to an increase in the ELA of 1.67 times. Onatunde PFT at ¶ 48. In one instance for the trench configuration, the calculated ELA exceeded that requested by the Petitioner. Onatunde PFT at ¶ 49; Onatunde Appendix I. MassDEP's certification granted the GST this size reduction and increased the ELA over a conventional system.

The Petitioner disagrees with MassDEP's interpretation of the phrase "side wall area" as noted in the section above, but the Petitioner did not otherwise challenge the calculations with credible evidence from a competent source. Based on a preponderance of the credible evidence, I

find that MassDEP correctly applied 310 CMR 15.251 in calculating the ELA for GST. As a result, I find that the Certification complies with Title 5.

C. Petitioner's Allegations of Interference in the Review Process

While not necessary to a determination of the issues in this appeal, I will address certain claims made by the Petitioner in its submissions. Petitioner alleges that there was improper influence on the permitting process. In support of this claim, it asserts that the Certification does not resemble the Draft certification. See Potts PFT at ¶ 17 (MassDEP's raising a concern about sidewall surface area not until eight months into the review process "makes it clear to me that MassDEP manufactured the concern to prevent the [ELA] credit to which GST is entitled…."); Henderson PFRT at ¶ 9 (Information about Connecticut and Maine regulations was requested "only after a third party influence interfered after the normal review process was complete.") and Henderson PFRT at ¶ 11 ("Clearly a third party interfered with the normal unbiased review process and caused [Mr. Onatunde] to adopt another perspective."). There is no merit to these claims. They are unsupported by credible testimony or any factual basis in the record. The claims are merely speculative in nature and carry no weight. Matter of Sawmill Development Corporation, OADR Docket No. 2014-016, Recommended Final Decision (June 26, 2015), 2015 MA ENV LEXIS 63, at 84, adopted as Final Decision (July 7, 2015), 2015 MA ENV LEXIS 62 (petitioners' expert testimony "that pharmaceuticals, toxins, and other potentially hazardous material would be discharged from effluent generated by . . . proposed [privately owned wastewater treatment facility] . . . was speculative in nature and not reliable").

When the draft was issued, it was in the context of MassDEP's ongoing review. MassDEP was still reviewing the GST as an alternative system with an ELA as proposed in the application. Mr. Onatunde testified at the Hearing that it is common practice for MassDEP to

issue a draft before the agency completes its review, and the purpose is to find out whether the agency and the applicant are "on the same page." HR at 49:06-49:16; 49:35-49:50. It is reasonable to conclude that if the Petitioner had provided the information needed to demonstrate compliance with 310 CMR 15.288(2), as requested multiple times by MassDEP, then MassDEP may have been able to issue a certification for general use that resembled the Draft. Once MassDEP concluded that the GST could not be approved for general use as an alternative system as proposed because the application was not supported by sufficient data and information and decided to find another way to approve the GST, the contents of the Draft were of little relevance. The Petitioner speculated that the changes from draft to final certification resulted from an unnamed third party influencing the review process, see Henderson PFRT at ¶¶ 9, 11 and 18; however, the Petitioner does not identify any third party nor is there evidence in the record to support these allegations. As discussed above, the application lacked the required demonstration in 310 CMR 15.288(2) that the GST "in general usage will provide a level of environmental protection at least equivalent to that of a conventional" system. What MassDEP did in lieu of outright rejecting the application, which it could have done, was find a way to approve the GST in compliance with Title 5. The Petitioner was given multiple opportunities to support its application with information that would satisfy the requirements of 310 CMR 15.288(2). MassDEP offered the Petitioner a provisional use approval so that the Petitioner could develop the data and information needed to support a general use certification. The Petitioner declined this option.

CONCLUSION

For the foregoing reasons, I recommend that MassDEP's Commissioner issue a Final Decision affirming the Certification.

Date: 1/10/2020

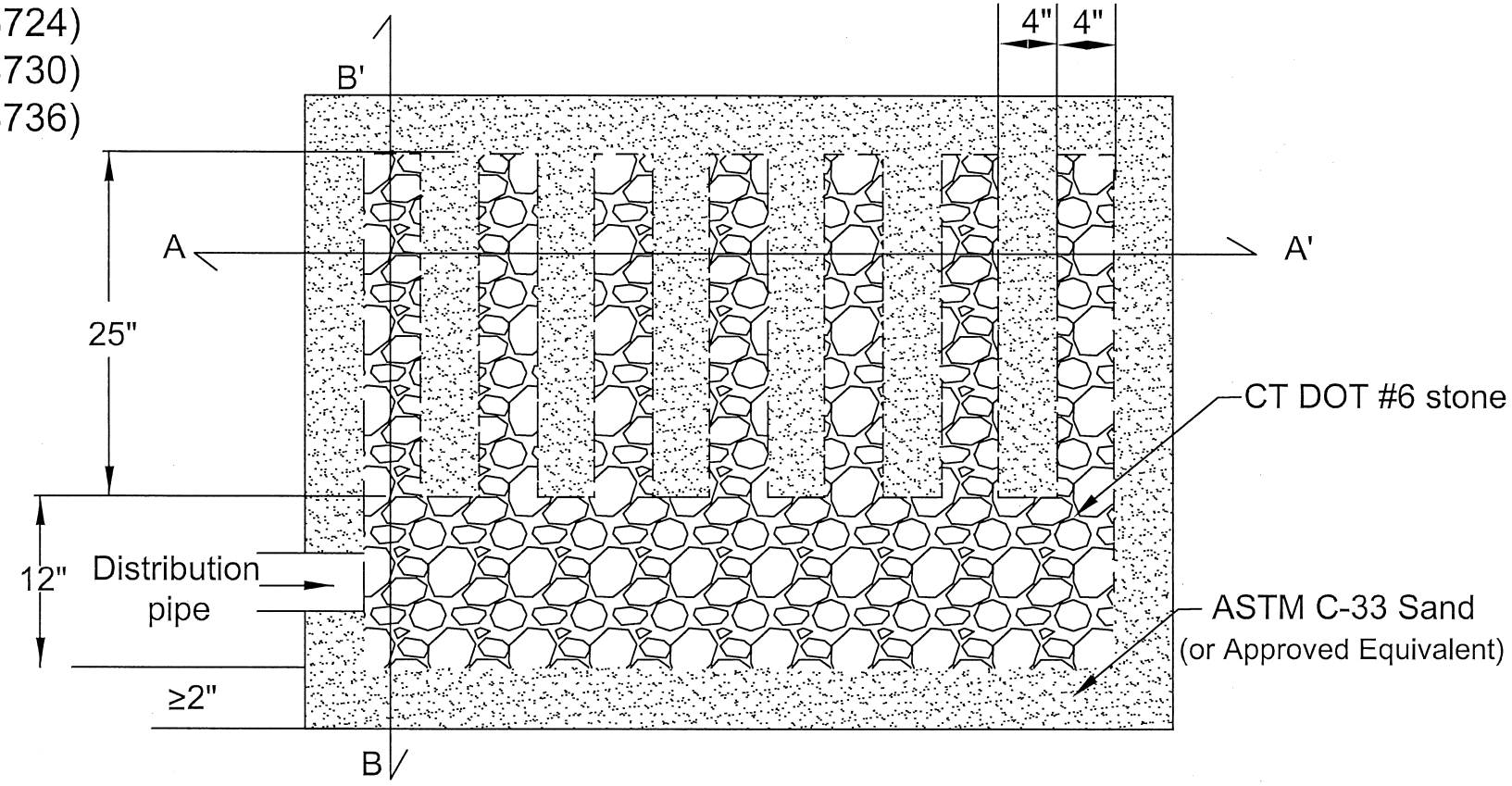
Jane A Rothchild
Presiding Officer

APPENDIX A

6" (GST3706)
12" (GST3712)
18" (GST3718)
24" (GST3724)
30" (GST3730)
36" (GST3736)

GEOMATRIX GST™37 SERIES LEACHING SYSTEM

Plan View

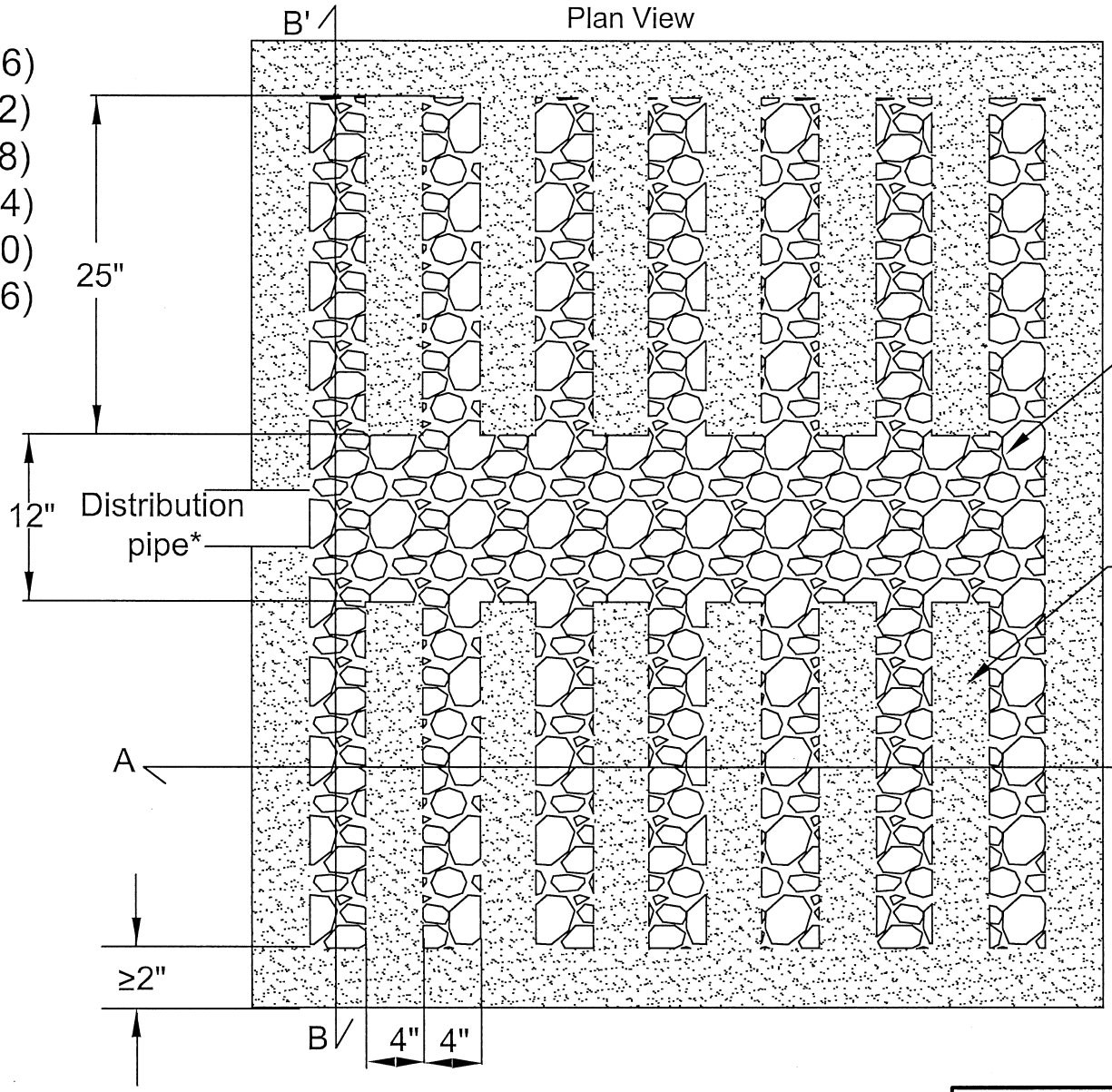


Distribution Pipe:
SDR 35 or Schd. 40, ASTM D-1785 PVC pipe for gravity applications
Schd. 40, ASTM D-1785 PVC pipe for pressure applications

GST 37 SERIES LEACHING SYSTEM Plan View Geomatrix Systems, LLC., Old Saybrook, CT 860-510-0730	
SCALE NONE	REV. B-9/09/10
DATE 9/09/2010	ACAD No. GST37 PLAN VIEW.DWG
DRAWN BY: ERP	SHEET 1 OF 3

GEOMATRIX GST™ LEACHING SYSTEM

6" (GST6206)
12" (GST6212)
18" (GST6218)
24" (GST6224)
30" (GST6230)
36" (GST6236)



*3" min. I.D., ASTM D-3034, SDR 35 pipe for gravity applications
0.75" min. I.D., ASTM D-2665, SCH 40 PVC pipe for pressure applications

GEOMATRIX ST LEACHING SYSTEM
Plan View
Geomatrix Systems, LLC., Killingworth, CT
860-663-3993

SCALE NONE	REV. C-01/28/08
DATE 6/28/2007	ACAD No. GEO ST LS PLAN VIEW.DWG
DRAWN BY: ERP	SHEET 1 OF 3

SERVICE LIST

In the Matter of
Geomatrix Systems, LLC

Docket No. 2018-029
Transmittal # X280163

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