



Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

RICHARD K. SULLIVAN JR.
Secretary

KENNETH L. KIMMELL
Commissioner

Approval for Remedial Use Bottomless Sand Filter Residential Design Flows 880 gallons per day (gpd) or less

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection (hereinafter “the Department”) hereby issues this Approval for Remedial Use, approving Bottomless Sand Filters (hereinafter “BSF’s”) for use in the Commonwealth of Massachusetts subject to the conditions herein. Design and use of BSF’s are subject to compliance by the Designer, the Disposal System Installer, the Operator, and the System Owner with the terms and conditions herein. Any noncompliance with the terms or conditions of this Approval constitutes a violation of 310 CMR 15.000.

David Ferris, Director
Wastewater Management Program
Bureau of Resource Protection

August 5, 2010, revised March 3, 2011
Date of Issuance

I. PURPOSE

The purpose of this Approval for Remedial Use is to provide conditions under which the local approving authority and Department may approve the use of bottomless sand filters.

The BSF is an alternative component of a soil absorption system (SAS) for residential on-site sewage disposal systems where soil or site conditions make conventional soil absorption systems infeasible. A conventional SAS may be infeasible where there is a shallow water table and/or limited area for the siting of a conventional system. As compared to a conventional system, in certain instances, the BSF provides for higher loading rates and requires significantly less filling of land, less land area, and less disturbance of the site.

The Department hereby approves an allowable reduction in the effective leaching area for residential systems that employ an BSF designed and approved in accordance with the conditions of this Approval with design flows less than or equal to 880 gpd. The effective leaching area

reduction is allowable whether or not the BSF is installed in conjunction with an approved Enhanced Nitrogen Removal technology to comply with the Nitrogen Loading Limitation provisions of 310 CMR 15.214.

Site-specific proposals to install a BSF do not require Department approval, provided that the applicant obtains approval from the local approval authority in accordance 310 CMR 15.000 and provided that the applicant complies with all the conditions of this approval, including submitting all the documentation and certifications to the Department, as specified herein.

II. General Description of the Technology

The use of a BSF in accordance with this Approval for Remedial Use requires, among other things:

- Design, installation, and operation of the System generally in accordance with the Rhode Island DEM guidelines upon which the Massachusetts DEP has largely based the approval and acceptance of this technology in the Commonwealth of Massachusetts;
- A Designer, Soil Evaluator, and Installer, who have received appropriate training for the design, installation, and use of BSF’s;
- A MassDEP approved treatment unit prior to the BSF;
- A Disclosure Notice in the Deed to the property (310 CMR 15.287(10));
- Certifications by the Designer and the Installer (310 CMR 15.021(3));
- A Massachusetts certified operator under contract for periodic inspection and maintenance (310 CMR 15.287(10));
- Periodic sampling, recordkeeping, and reporting, in accordance with this Approval;
- Notification within 24 hours by the System Owner to the local approving authority of any System failure;
- Storage capacity must be provided in the system above the elevation of the high level alarm equal to at least the volume of the design flow for one day; and
- System Owner Acknowledgement of Responsibilities, in accordance with this Approval.

The System consists of a BSF preceded by a treatment unit. The treatment unit prior to the BSF must be a unit that is capable of providing secondary treatment and must already be approved by the Department. A specific volume or dose of the treatment unit effluent is periodically pumped at set time intervals to the BSF. The effluent from the treatment unit is pumped onto and evenly distributed over the surface of the BSF. The BSF consists of at least 2 feet of sand media meeting stringent specifications through which the wastewater percolates and is filtered. The bottom of the BSF rests on existing permeable soils or rests on approved fill above existing permeable soils into which the final effluent is discharged for disposal.

III. Conditions of this Certification

The term “System” refers to the BSF in combination with the other components of an on-site treatment and disposal system that may be required to serve a facility in accordance with 310 CMR 15.000.

The term “Approval” includes the Special Conditions, Standard Conditions, General Conditions of 310 CMR 15.287, any Attachments, and the RI DEM referenced documents. A Deed Notice template is available from the Department.

Relevant RI DEM documents include:

- a) RI DEM Soil Evaluation Guidance
<http://www.dem.ri.gov/programs/benviron/water/permits/isds/pdfs/seg0108.pdf>
- b) RI DEM BSF Guidance
<http://www.dem.ri.gov/programs/benviron/water/permits/isds/pdfs/bsfdoc.pdf>
- c) Important Update to BSF Loading Rates
<http://www.dem.ri.gov/programs/benviron/water/permits/isds/pdfs/info.pdf>
- d) Advisory Concerning BSF Design and Installation Procedures - Cold Weather Related Design Adjustments and Precautions
<http://www.dem.ri.gov/programs/benviron/water/permits/isds/pdfs/bsfcold.pdf>

Remedial Use of a Bottomless Sand Filter in Massachusetts may be approved when the design, installation, and operation of the System is in accordance with RI DEM guidelines and complies with the following conditions. To the extent any the following conditions diverge from the RI DEM BSF Guidelines, these conditions supplant the RI DEM guidelines.

III. A. Special Conditions

1. BSF’s shall only be proposed to serve existing facilities for which there is no increase in the actual or proposed design flow and the facilities are served by a failed, failing or nonconforming existing system and where it has been demonstrated that:
 - a) connection to a sewer system is not feasible;
 - b) an upgraded system which is in full compliance with 310 CMR 15.100 through 15.293 cannot be installed; and
 - c) an upgraded system cannot be installed under the Local Upgrade Approval provisions of 310 CMR 15.405 (“LUA”) without any variances issued pursuant to 310 CMR 15.410 to 15.416.
2. If any other alternative system which has MassDEP General Use Certification, Provisional Approval, or Approval for Remedial Use pursuant to 310 CMR 15.280 can be installed on the site without any variances and without the use of a BSF, the Designer shall show on the plans the area for an approvable system without the BSF. The System Owner shall not disturb the area in any manner that will render it unusable for future installation of a Title 5 compliant system under Maximum Feasible Compliance.

3. Supervision of the installation shall be by the Designer who designed the System and who is a Massachusetts Registered Professional Engineer or Massachusetts Registered Sanitarian and can demonstrate that (s)he has satisfactorily completed 20 hours of appropriate training for the design and installation of BSF’s through the University of Rhode Island (URI) Onsite Wastewater Training Program. Courses OWT 105, OWT 125, and OWT 150 together meet this requirement.
4. For any site where a BSF is proposed, a percolation test shall be performed in accordance with the requirements of 310 CMR 15.104-105. A BSF may be installed only in areas where a naturally occurring pervious layer exists with a percolation rate of 60 minutes per inch or faster.
5. The soil evaluation necessary to determine the appropriate loading rate shall be done in accordance with the RI DEM categorization system by a Massachusetts Approved Soil Evaluator.
6. Design flows shall be established in accordance with Title 5 and the System shall only be approved for residential use with a minimum design flow of 330 gpd and a maximum design flow of 880 gpd. The minimum flow may be reduced accordingly if a deed restriction limiting use to 2 bedrooms and 220 gpd is granted to the local Approving Authority or, as a condition of a Department approved variance, a deed restriction limiting use to 1 bedroom and 110 gpd is granted to the local Approving Authority.
7. A secondary treatment unit must precede the BSF and shall have General Use Certification, Provisional Use Approval, or Remedial Use Approval granted by MassDEP. Those systems approved for Piloting shall not be used in conjunction with a BSF.
8. A septic tank meeting the requirements for new construction must precede the secondary treatment unit unless the treatment unit approval does not require it.
9. The loading rate of the BSF shall be as specified in the most recent RI DEM Guidance and shall be based on the categorization of soils in accordance with RI DEM Soil Evaluation methodology. However, only Category 2 Systems Loading Rates may be used unless the Approving Authority allows Category 1 Systems Loading Rates for a system utilizing a time dosed treatment unit prior to the BSF and the treatment unit meets the requirements of Paragraph 7, above. No increase in the loading rates is allowed under LUA.
10. Except as provided in Paragraph 11, the BSF must be sited above 4 feet of naturally occurring pervious material.
11. In an area with at least two feet of naturally occurring pervious material, the approving authority may allow a reduction in the required four feet of naturally occurring pervious material layer, only when:
 - a) it has been demonstrated that the four-foot requirement for naturally occurring pervious material cannot be met anywhere on the site;
 - b) no reduction is allowed under LUA for setbacks from public or private wells, bordering vegetated wetlands, surface waters, salt marshes, coastal banks, certified vernal pools,

- water supply lines, surface water supplies or tributaries to surface water supplies, or drains which discharge to surface water supplies or their tributaries;
- c) a minimum horizontal setback distance of at least 15 feet from the bottom of the sand filter to any side slope shall be maintained and shall not be reduced by the use of an impervious barrier as provided in Paragraphs 13 or 16; and
 - d) after obtaining local approval, a BRPWP 64c site-specific permit application is submitted to the Department and approved.
12. The local approving authority may grant Local Upgrade Approvals in accordance with the procedures of 310 CMR 15.405, except for the limitations to LUA imposed in Paragraphs 11 and 14.
13. To prevent potential sewage breakout, the setback distance from any naturally occurring side slope shall be a minimum of 15 feet measured horizontally in any direction from the bottom of the BSF, unless a suitable impervious barrier is installed, in accordance with the provisions of 310 CMR 15.255(2).
14. The top of the sand of the BSF must be a minimum of 4 feet above seasonal high groundwater, as determined in accordance with Title 5, except in soils with a percolation rate faster than 2 min./inch, where the top of the sand of the BSF must be at least 5 feet above seasonal high groundwater. The approving authority may not allow under LUA a reduction in the required separation between the top of the sand of the BSF and the high groundwater elevation.
15. The depth of sand in the BSF may be increased above the required 2 feet for the purposes of achieving an increased depth to groundwater, provided that the retaining wall supporting the filter sand shall be of suitable structural material and designed by and the construction is supervised by a Massachusetts Registered Professional Engineer.
16. If the bottom of a BSF is above existing grade, the BSF shall be placed on fill meeting the requirements of 310 CMR 15.255(3). Fill may be placed beneath the BSF provided that the horizontal distance of the fill to side slopes shall be 15 feet unless a suitable impervious barrier is installed, in accordance with the provisions of 310 CMR 15.255(2), to prevent potential sewage breakout.
17. The frames and covers of the access manholes of all System treatment units shall be watertight, made of durable material, and shall be installed and maintained at grade, to allow for necessary operation, sampling and maintenance access.
18. Any treatment unit or other System structures with exterior piping connections located within 12 inches or below the Estimated Seasonal High Groundwater elevation shall have the connections made watertight with neoprene seals or equivalent.
19. In case of pump failure, pump control failure, loss of power or system freeze up, storage equal to the volume of design flow for one day shall be provided above the high-level alarm in the pump chamber prior to the BSF.

20. The Designer shall provide an Owner's Manual and an Operation and Maintenance Manual to the System Owner. The Owner's Manual and the Operation and Maintenance Manual shall include this Approval and the RI BSF Guideline.
21. Upon submission of an application for a DSCP, the Designer shall provide to the local approving authority:
 - a) a certification, signed by the owner of record for the property to be served by the unit, stating that the property owner:
 - i) has been provided a copy of the Remedial Use Approval for the BSF, the Department's approval for the treatment unit that precedes the BSF, and all attachments and the Owner agrees to comply with all terms and conditions;
 - ii) has been informed of all the owner's costs associated with the operation including power consumption, maintenance, sampling, recordkeeping, reporting, and equipment replacement;
 - iii) understands the requirement for a contract with a certified operator;
 - iv) agrees to fulfill his responsibilities to provide a Deed Notice as required by 310 CMR 15.287(10) and the Approval; and
 - v) agrees to fulfill his responsibilities to provide written notification of the Approval conditions to any new owner, as required by 310 CMR 15.287(5);
 - b) proof that he/she has satisfactorily completed 20 hours of appropriate training for the design and installation of BSF's through the University of Rhode Island Onsite Wastewater Training Program. Courses OWT 105, OWT 125, and OWT 150 together meet this requirement; and
 - c) certification by the Designer that the design conforms to this Approval and the RI DEM Guidelines.
22. Prior to commencement of construction of the System, the System Owner shall provide to the local approving authority a copy of a signed contract for a minimum period of one year with an Operator meeting the qualifications specified in Paragraph 29.
23. Prior to the commencement of construction, the Disposal System Installer must certify in writing to the Designer, the Approving Authority, and the System Owner that (s)he is a locally approved installer and has received appropriate training for the installation of a BSF by a vendor, professional organization, or institution recognized by RI DEM.
24. Prior to the placement of the BSF sand media, the local approving authority shall receive a copy of the certified soil analysis conducted on the media in accordance with ASTM D0136 and ASTM C-117 or equivalent. The System shall meet the requirements of ASTM- C33 sand with an effective size of 0.3 mm (D_{10}) and a uniformity coefficient of 3.0 to 4.0 (D_{60}/D_{10}). The maximum allowable percentage of fines passing a Number 200 sieve shall be 1%. [RI DEM BSF Guideline p. 13]

25. No changes shall be made to the approved plan or the System without the prior written approval of the local approving authority. Prior to use of the System, the System Owner shall comply with the Certificate of Compliance provisions of Title 5, 310 CMR 15.021.
26. Prior to the issuance of a Certificate of Compliance by the local approving authority, the following documentation shall be submitted to the local approving authority:
 - a) In accordance with 310 CMR 15.021(3), the System Installer and Designer must certify in writing that the System has been constructed in compliance with 310 CMR 15.000, the approved design plans, and all local requirements, including any local approving authority site-specific requirements;
 - b) In accordance with 310 CMR 15.021(3), the Designer must certify in writing that any changes to the design plans have been reflected on as-built plans which have been submitted to the Approving Authority by the Designer;
 - c) As a condition of this Approval, the System Installer and Designer must certify in writing that the System has been constructed in compliance with the terms of this Approval;
 - d) After recording and/or registering the Deed Notice required by 310 CMR 15.287(10), the System Owner shall provide to the Approving Authority: (i) a certified Registry copy of the Deed Notice bearing the book and page/or document number; and (ii) if the property is unregistered land, a Registry copy of the System Owner’s deed to the property, bearing a marginal reference on the System Owner’s deed to the property. The Notice to be recorded shall be in the form of the Notice provided by the Department.
27. Upon receipt of a Certificate of Compliance, the Designer and the System Owner shall be responsible for providing to the Department:
 - a) a copy of the approving authority Certificate of Compliance, the Designer certification of the installation, and the Installer certification of the installation;
 - b) proof that the Designer is Massachusetts Professional Engineer or Massachusetts Registered Sanitarian and that(s)he has satisfactorily completed 20 hours of appropriate training for the design and installation of BSF’s through the University of Rhode Island Onsite Wastewater Training Program. Courses OWT 105, OWT 125, and OWT 150 together meet this requirement;
 - c) proof that the Installer has received appropriate training for the installation of a BSF by a vendor, professional organization, or institution recognized by RI DEM;
 - d) a copy of the owner’s certification required by Paragraph 21;
 - e) a copy of the as-built plans and soils evaluation data;
 - f) a copy of the signed O&M Agreement required by Paragraph 30;
 - g) A copy of any Owner’s manual and any operation and maintenance manual provided by the Designer; and
 - h) the Deed Notice documentation required by Paragraph 26.d).
28. Prior to signing any agreement to transfer any or all interest in the property served by the System, or any portion of the property, including any possessory interest, the System Owner shall provide written notice of all conditions contained in the Approval to the transferee(s).

Any and all instruments of transfer and any leases or rental agreements shall include as an exhibit attached thereto and made a part of thereof a copy of the Approval for the System. The System Owner shall send a copy of such written notification(s) to the Local Approving Authority within 10 days of giving such notice to the transferee(s).

Operation and Maintenance

29. Inspection, operation and maintenance (O & M), sampling, and field testing of the System required by this Approval shall be performed by a System Operator with the following qualifications:
- a) is an approved System Inspector in accordance with 310 CMR 15.340; and
 - b) has been certified at Grade Level II (two) by the Board of Registration of Operators of Wastewater Treatment Facilities, in accordance with Massachusetts regulations 257 CMR 2.00. The name of the Operator shall be included in the agreement.
30. Prior to the issuance of a Certificate of Compliance by the local approving authority, the System Owner shall submit to the local approving authority a copy of a signed O&M Agreement with a qualified contractor. The Agreement shall be at least for one year and include the following provisions:
- a) The System Operator must have the qualifications specified in Paragraph 29.
 - b) The System Operator must inspect the System in accordance with the Approval and anytime there is an equipment failure, System failure, or other alarm event;
 - c) The System Operator shall be responsible for obtaining sample analyses results from a qualified laboratory and submitting the results to the System Owner in accordance with Paragraph 42 and to the local approving authority in accordance with Paragraph 43.
 - d) In the case of a System failure, an equipment failure, alarm event, components not functioning as designed, or violations of the Approval, procedures and responsibilities of the Operator and System Owner shall be clearly defined for corrective measures to be taken immediately. The System Operator shall agree to provide written notification within five days describing corrective measures taken to the System Owner and the local board of health; and
 - e) Procedures and responsibilities for recording monthly wastewater flows must be defined.

31. The System shall comply with the following initial monitoring requirements and effluent limits. The O&M Agreement, as required by Paragraph 30, shall include the following monitoring schedule, which may be modified in accordance with Paragraph 32:

Parameter	Monitoring Frequency	Sample Type	Location	Effluent Limits
pH	2 times/year*	grab	effluent of treatment unit, prior to BSF	6 to 9
Biochemical oxygen demand (BOD ₅) ¹	2 times/year*	Composite or grab	effluent of treatment unit, prior to BSF	≤ 30 mg/l ²
Total suspended solids (TSS) ¹	2 times/year*	Composite or grab	effluent of treatment unit, prior to BSF	≤ 30 mg/l
Fats, oil, and grease (FOG)	2 times/year*	Composite or grab	effluent of treatment unit, prior to BSF	≤ 5 mg/l
Flow ³	2 times/year*	read ³	water meter(s) ³	-----
Depth of Ponding	2 times/year*	measure	Inspection port to top of BSF sand (bottom of peastone)	Paragraph 33
Depth of Ponding	2 times/year*	measure	BSF observation well to the bottom of filter sand	Paragraph 33
Breakout	2 times/year*	observation	Immediate area outside of BSF	Paragraph 33

* At seasonal properties, monitoring must be done 30 to 60 days after seasonal occupancy begins. A second inspection and monitoring must be done no less than 2 months after the initial testing or just prior to the seasonal end-of-use.

At year-round properties, monitoring must be done once between 1/1 and 4/30 and once between 9/1 and 12/30, but at least 90 days apart.

Footnotes:

1. sampled from BSF pump chamber or equivalent.
2. mg/l = milligrams per liter
3. If facility water supply does not include a water meter, a water meter shall be installed. If the facility contains more than one water meter serving flows that discharge to BSF, all meters shall be reported with a summary of water use.

NOTE: To the extent that monitoring requirements for the treatment unit that precedes the BSF are more stringent than required by this Approval, monitoring shall be performed to meet those requirements, as well.

32. After 2 years of successful operation**, BOD₅, TSS, and FOG sampling may be suspended provided that the System complies with all other provisions of Paragraph 31, and provided that the System complies with the following additional parameters which are to be field measured, recorded, and reported:

Field Testing Parameters	Monitoring Frequency	Sample Type	Location	Effluent Limits
turbidity	2 times/year*	measure	effluent of treatment unit, prior to BSF	≤ 40 NTU
settleable solids	2 times/year*	measure	effluent of treatment unit, prior to BSF	Measure only
apparent color	2 times/year*	measure	effluent of treatment unit, prior to BSF	Measure only
dissolved oxygen	2 times/year*	measure	effluent of treatment unit, prior to BSF	≥ 2 mg/l

* At seasonal properties, field testing must done 30 to 60 days after seasonal occupancy begins. A second field test must be done no less than 2 months after the initial testing or just prior to the seasonal end-of-use.

At year-round properties, monitoring must be done once between 1/1 and 4/30 and once between 9/1 and 12/30, but at least 90 days apart.

**Successful operation shall mean compliance with the monitoring requirements and effluent limits of Paragraphs 31 and 32, as appropriate, and the absence of objectionable odors, the absence of ponding on top of the BSF filter sand or at the bottom of the filter sand, and the absence of any breakout of the effluent to the surface of the ground.

NOTE: To the extent that the monitoring requirements for the treatment unit that precedes the BSF are more stringent than required by this Approval, monitoring shall be performed to meet those requirements, as well.

33. Whenever ponding is observed in the BSF, breakout is observed, or objectionable odors occur, the monitoring program required by Paragraph 31 shall be reinstated immediately and an inspection and evaluation of the BSF shall be performed by a Massachusetts Professional Engineer or Massachusetts Registered Sanitarian that has satisfactorily completed 20 hours of appropriate training for the design and installation of BSF’s through the URI Onsite Wastewater Training Program. Courses OWT 105, OWT 125, and OWT 150 together meet this requirement.

The evaluation shall determine whether the System is failing, determine the cause of odors, ponding, or breakout, and provide recommendations for changes in the design, operation, and/or maintenance of the System. The engineering evaluation and recommendations shall be submitted to the System Owner, the Department, and the local approving authority within 60 days of the inspection and shall include all monitoring data, inspection reports, and laboratory analyses since the last annual report. Recommendations shall be implemented, as approved by the local approving authority, in accordance with an approved schedule. The

sampling program required by Paragraph 31 shall continue until 2 consecutive years of successful operation.

34. Whenever field testing indicates a pH outside the specified range, an exceedance of the turbidity limit or D.O. below the desired minimum, the System Operator shall collect an effluent sample from the treatment unit for laboratory analysis for BOD₅, TSS, and FOG.
35. Whenever two consecutive monitoring rounds, as required by Paragraph 31 or 34, include at least one exceedance of any of the limits for BOD₅, TSS, or FOG, the System Operator shall conduct an evaluation and provide recommendations, within 90 days of the second exceedance, for changes in the design, operation, and/or maintenance of the treatment system that precedes the BSF. The evaluation and recommendations shall be provided to the System Owner and local approving authority and shall include all monitoring data, inspection reports, and laboratory analyses since the last annual report. Recommendations shall be implemented, as approved by the local approving authority, in accordance with an approved schedule.
36. The System Owner shall maintain, at all times, an O & M Agreement that meets the requirements of Paragraphs 30.
37. The System Owner and the System Operator shall properly operate and maintain the System in accordance with this Approval, the Designer's operation and maintenance requirements, the RI DEM BSF Guidelines, and the requirements of the local approving authority.
38. At a minimum, the System Operator shall inspect the System:
 - a) twice annually;
 - b) in accordance with the Designer's approved O&M manual and the requirements of the local approving authority; and
 - c) any time there is an alarm event, equipment failure, or System failure.

Recordkeeping and Reporting

39. Upon determining that the System has failed, as defined in 310 CMR 15.303, the System Operator shall notify the System Owner immediately.
40. Upon determining that the System has failed, as defined in 310 CMR 15.303, the System Owner and the System Operator shall be responsible for the notification of the local approving authority within 24 hours of such determination.
41. In the case of a System failure, an equipment failure, alarm event, components not functioning as designed, or any violations of the Approval, the System Owner and the System Operator shall be responsible for the written notification of the local approving authority within five days describing corrective measures taken.
42. Within 60 days of any site visit, the System Operator shall submit an O&M report and inspection checklist to the System Owner. The O&M report and inspection checklist shall include, at a minimum:

- a) for a System failure, any corrective actions taken;
 - b) wastewater analyses, wastewater flow data, and field testing results;
 - c) any violations of the Approval;
 - d) any determinations that the System or its components are not functioning as designed;
and
 - e) any other corrective actions taken or recommended.
43. By September 30th of each year, the System Owner and the System Operator shall be responsible for submitting to the local approving authority all O&M reports and inspection checklists completed by the System Operator during the previous 12 months.
44. The Installer shall maintain on-site, at all times during construction, a copy of the approved plans, the owner’s manual, and the Operator’s manual, including the RI DEM BSF Guidelines. The System Owner and the System Operator shall maintain copies after construction is completed.
45. The System Owner shall maintain System Operator O&M reports and inspection checklists.
46. The System Owner shall notify the local approving authority in writing within seven days of any cancellation, expiration or other change in the terms and/or conditions of the O&M Agreement required by Paragraph 30.

III. B. Standard Conditions

47. The provisions of 310 CMR 15.000 are applicable to the design, installation, use and operation of a System utilizing an approved or certified alternative technology, except those provisions that specifically have been varied by the conditions of the Approval.
48. The design, installation, and use of the System must conform to the terms and conditions of the Approval and the Department approved attachments.

Standard Conditions Applicable to the System Owner

49. This Approval shall be binding on the System Owner and on its agents, contractors, successors, and assigns. Violation of the terms and conditions of this Approval by any of the foregoing persons or entities, respectively, shall constitute violation of this Approval by the System Owner unless the Department determines otherwise.
50. The System Owner shall obtain all necessary permits and approvals required by 310 CMR 15.000 prior to the installation and use of the System in Massachusetts.
51. The System is approved for the treatment and disposal of residential sanitary sewage only. The System Owner shall not introduce any wastes that are not sanitary sewage into the System. The System Owner shall dispose of wastes generated or used at the facility that are not sanitary sewage by other lawful means.

52. The System Owner shall at all times have the installed System properly operated and maintained in accordance with the most recent O&M provisions of this Approval for the alternative technology and in accordance with any additional requirements of the Approving Authority. Any updates of the O&M provisions of this Approval for the alternative technology are available from the Department.
53. The System Owner shall furnish the Department any information that the Department requests regarding the System, within 21 days of the date of receipt of that request.

Reporting

54. All notices and documents required to be submitted to the Department by the Approval shall be submitted to:

Director
Wastewater Management Program
Department of Environmental Protection
One Winter Street - 5th floor
Boston, Massachusetts 02108

Rights of the Department

55. The Department may suspend, modify or revoke the Approval for cause, including, but not limited to, noncompliance with the terms of the Approval, non-payment of any annual compliance assurance fee, for obtaining the Approval 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 Approval, 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 the Approval and/or a System utilizing the Technology against the Company, the Designer, the System Owner, the Installer, and/or the Operator of the System.

III. C. General Conditions

Title 5 Regulations 310 CMR 15.287: “General Conditions for Use of Alternative Systems Pursuant to 310 CMR 15.284 through 15.286”

“The following conditions shall apply to all uses of alternative systems pursuant to 310 CMR 15.284 through 15.286:

- (1) All plans and specifications shall be designed in accordance with 310 CMR 15.220.
- (2) Any required operation and maintenance, monitoring and testing plans shall be submitted to the Department and approved prior to initiation of the use. Monitoring and sampling shall be performed in accordance with a Department approved plan. Sample analysis shall be conducted by an independent U.S. EPA or Commonwealth of Massachusetts approved testing laboratory, or an approved independent university laboratory, unless otherwise provided in the Department's written approval. It shall be a violation of 310 CMR 15.000 to omit from a report or falsify any data collected pursuant to an approved testing plan.

- (3) The facility served by the alternative system and the system itself shall be open to inspection and sampling by the Department and the Local Approving Authority at all reasonable times.
- (4) The Department and/or the Local Approving Authority may require the owner or operator of the system to cease operation of the system and/or to take any other action necessary to protect public health, safety, welfare and the environment.
- (5) The owner or operator shall provide written notice to any new owner or operator that the system is an alternative system. Such notice shall include notice of the general conditions and any special conditions applicable to the system and its owner.
- (6) The owner or operator, or the proponent of the alternative system, shall obtain and provide the Department with a determination from the board of certification of operators of wastewater treatment facilities established pursuant to M.G.L. c. 21, § 34A as to whether a certified operator is required for operation of the alternative system. The Department shall waive this requirement if it has on file a determination for the alternative system, and shall notify the owner, operator, or proponent of the determination.
- (7) It is a violation of 310 CMR 15.000 to install, construct, or operate an alternative system except in full compliance with the written approval and 310 CMR 15.287.
- (8) The Department may require the issuance of a groundwater discharge permit pursuant to 314 CMR 5.00 (groundwater discharge program) for any alternative system.
- (9) The system owner shall maintain an operation and maintenance contract with a Massachusetts certified operator where one is required by 257 CMR 2.00, or otherwise with a person qualified to operate and maintain the system in accordance with the Department’s written approval.
- (10) Prior to obtaining a Certificate of Compliance for installation of a new or upgraded system, the system owner shall record in the chain of title for the property served by the alternative system in the Registry of Deeds or Land Registration Office, as applicable, a Notice disclosing both the existence of the alternative on-site system and the Department’s approval of the system. The system owner shall also provide evidence of such recording to the Local Approving Authority.”

Guidance for Operation and Maintenance Manual and Inspection Checklist

The System Operator shall properly document inspections, sampling, field-testing, and other operation and maintenance activities in accordance with the approved O & M Manual. At a minimum, the O & M Manual shall require the recording by the System Operator the following information during site visits:

- a) Date, time, air temperature, and weather conditions;
- b) Observations for signs of breakout of sanitary sewage in the vicinity of the Alternative System, which indicate a failure of the Alternative System.
- c) Detection of any odors in the area of the SAS or around the treatment system when first approached;
- d) Annual check of the sludge depth and scum layer thickness and pumping records;
- e) When responding to alarm events, the cause of the alarm and any remedial steps taken to address the alarm and to prevent or reduce likelihood of future similar alarm events;
- f) Field testing results of the effluent for turbidity, pH, apparent color, and settleable solids;
- g) Inspection, cleaning, and lubrication performed;

- h) Any adjustments of control settings, as recommended or deemed necessary;
- i) Any testing of pumps, switches, alarms, as recommended or deemed necessary; and
- j) Parts replacement and reason for replacement, whether routine or for repair.