



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

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Commissioner

APPROVAL FOR REMEDIAL USE
Pursuant to Title, 310 CMR 15.000

Name and Address of Applicant:

GENERIC – Recirculating Sand Filter

Trade name of technology and model: Recirculating Sand Filter (RSF) designed in accordance with Department guidance (hereinafter the "System"). An inspection checklist is part of this approval.

Date of Issuance: March 24, 1995
Modified: November 2, 1998, and March 10, 2008

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection hereby issues this Approval for Remedial Use in the Commonwealth of Massachusetts of the System described herein. Use of the System is conditioned on and subject to compliance by the System owner/operator with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Approval constitutes a violation of 310 CMR 15.000.

A handwritten signature in black ink, appearing to read "Glenn Haas".

Glenn Haas, Acting Assistant Commissioner
Bureau of Resource Protection

March 10, 2008
Date

I. Purpose

1. The purpose of this Approval is to allow use of the System in Massachusetts, on a Remedial Use basis.
2. With the necessary permits and approvals required by 310 CMR 15.000, this Approval for Remedial Use authorizes the use and installation of the System in Massachusetts.
3. This Approval authorizes the use of the System where the local approving authority finds the following: a) that the System is for upgrade of a failed, failing or nonconforming system, and b) the design flow for the facility is less than 10,000 gallons per day (GPD), and there is no increase in design flow to be served by the System. The System, as approved in this Remedial Use Approval, cannot be used for new construction or where there is an increase in design flow. The System may only be installed on facilities that meet the criteria of 310 CMR 15.284(2).

II. Design Standards

1. The System has a recirculation tank and pump, and an underdrained open sand filter. Effluent from the septic tank is collected in the recirculating tank, where it is mixed with the effluent returned from the sand filter. The mixture is periodically pumped onto the sand filter and evenly distributed over the filter surface. A drain line, at the bottom of the sand collects the sand filter effluent and returns it by gravity to the recirculating tank (or if the tank is full, to the pump chamber). A Massachusetts registered professional engineer or registered sanitarian may design a System in accordance with 310 CMR 15.220(1).
2. The System shall be installed between the septic tank and the pump chamber of a standard Title 5 system constructed in accordance with 310 CMR 15.100 - 15.279, subject to the provisions of this Approval.
3. The System may be used in soils with a percolation rate of up to 90 min./inch. For soils with a percolation rate of 60 to 90 min./inch, the effluent loading rate for the soil absorption system (SAS) shall be 0.15 gpd / sq.ft.
4. The System must be designed in accordance with the Department's guidance titled *Recirculating Sand Filters (RSF) Design Guidance*, dated April 2006. This guidance can be viewed on the DEP's internet site at <http://www.mass.gov/dep/water/laws/policies.htm#t5guid> within *Title 5/Septic Systems Guidance*.
5. All access ports and manhole covers shall be installed and maintained at grade to allow for maintenance of the System. Control panel(s) including alarms shall be mounted in a location accessible to the System operator.

III. Allowable Soil Absorption System Design

1. The following reductions are allowable for Soil Absorption Systems (SAS) when designing the System.
 - A. The approving authority may allow up to a 50 percent reduction in the area of the soil absorption system required by 310 CMR 15.242; or
 - B. The approving authority may allow a reduction in the required separation between the bottom of the SAS and the high groundwater elevation of up to two feet. This provides a minimum separation of two feet (in soils with a recorded percolation rate of more than two minutes per inch) or a three feet (in soils with a recorded percolation rate of two minutes or less per inch); or
 - C. The approving authority may allow a reduction in the required four feet of naturally occurring pervious material in an area with no less than two feet of naturally occurring pervious material, provided that it has been demonstrated that the four foot requirement cannot be met anywhere on the site.

EXCEPTION: If a remedial System needs more than one of the allowable reductions listed above, then the reductions must first be approved by the local approving authority and then approved by the Department pursuant to 310 CMR 15.284 through filing a BRPWP 64c permit application.

2. Additional reductions allowable for Soil Absorption System (SAS) when designing the System:
 - A. When using 1A, 1B, or 1C above for the System where full compliance with 310 CMR 15.000 is not feasible, the local approving authority may consider granting local upgrade approvals in accordance with the provisions of 310 CMR 15.401 – 15.405.

For example:

 - i. When an applicant chooses up to a 50 % reduction in the SAS area with the use of I/A technologies, the local approving authority may grant a local upgrade approval for reduction to estimated high groundwater in accordance with 310 CMR 15.405(1)(h).
 - ii. When an applicant chooses up to a two foot reduction in the estimated separation of high groundwater from the bottom of the SAS area with an I/A technology, the local approving authority may consider granting a local upgrade approval for SAS reduction in accordance with 310 CMR 15.405(1)(c).
 - iii. When an applicant chooses a reduction in the naturally occurring soil with the use of an I/A technology, a local upgrade approval may grant either a reduction in SAS area in accordance with 310 CMR 15.405(1)c or a reduction in groundwater separation in accordance with 310 CMR 15.405(1)(h).
 - B. If any remedial system is still not able to achieve full compliance with all of the minimum set back distances in 310 CMR 15.211, even taking into account provisions for local upgrade approval in accordance with the provisions of 310 CMR 15.401 –

15.405 the applicant must obtain variance(s) from the approving authority and then approval from the Department pursuant to 310 CMR 15.410 through filing a BRPWP 59b permit application.

IV. General Conditions

1. The Department has not determined that the performance of the System will provide a level of protection to public health and safety and the environment that is at least equivalent to that of a sewer. Accordingly, no new System shall be constructed and no System shall be upgraded or expanded, if it is feasible to connect the facility to a sanitary sewer, unless a variance as provided for in 310 CMR 15.004 is obtained.
2. Pressure distribution designed in accordance with Department guidance is required. The Department's *Pressure Distribution Guidance*, dated May 24, 2002, can be viewed at <http://mass.gov/dep/water/laws/policies.htm#t5guid> under *Title 5/Septic Systems Guidance*.
3. Any required operation and maintenance, monitoring and testing shall be performed in accordance with a Department approved plan. Any required sample analysis shall be conducted by a U.S. EPA or Commonwealth of Massachusetts approved testing laboratory, unless otherwise provided in the Department's written approval. It shall be a violation of this Approval to falsify any data collected pursuant to an approved testing plan, to omit any required data or to fail to submit any report required by such plan.
4. The facility served by the System, and the System itself, shall be open to inspection and sampling by the Department and the local approving authority at all reasonable times.
5. In accordance with applicable law, the Department or the local approving authority may require the owner of the System to cease use of the System and/or to take any other action as the Department or the local approving authority deems necessary to protect public health, safety, welfare or the environment.
6. Design, installation and use of the System shall be in strict conformance with this Approval, the DEP's design guidance and specifications and 310 CMR 15.000, subject to the exceptions allowed in this Approval. The *RSF Design Guidance* can be viewed on the DEP's internet site at <http://www.mass.gov/dep/water/laws/policies.htm#t5guid> within *Title 5/Septic Systems Guidance*.

V. Conditions applicable to the System Owner

1. The System is approved for the treatment and disposal of sanitary sewage only. Any wastes that are non-sanitary sewage generated or used at the facility served by the System shall not be introduced into the System and shall be lawfully disposed.
2. Effluent discharge concentrations shall meet or exceed secondary treatment standards of 30 mg/L biochemical oxygen demand (BOD5) and 30 mg/L total suspended solids (TSS). The effluent pH shall not be less than 6.0 or more than 9.0 standard units (S.U.).
3. Any effluent samples shall be taken at a flowing discharge point, i.e. distribution box, pump chamber or other Department approved location downstream of the treatment unit.

Any required influent sample shall be taken at a point that will provide a representative sample of the influent. The system designer, subject to written approval by the Department, shall determine influent sampling locations.

4. Operation and Maintenance Agreement:
 - A. Throughout its life, the owner shall operate and maintain the System in accordance with the RSF design document, designer's operation and maintenance requirements and this Approval. To ensure proper operation and maintenance (O&M), the owner shall enter into an O&M agreement. No O&M agreement shall be for less than one year.
 - B. No System shall be used until an O&M agreement is submitted to the approving authority which:
 - i. Provides the name of an operator competent in providing services consistent with the System's specifications, which must be a Massachusetts certified operator if one is required by 257 CMR 2.00, that will operate and monitor the System. The operator must inspect and field test Systems installed at single family homes at least every six months in accordance with the Department's policy and anytime there is an alarm event, and for all other Systems at least every three months and anytime there is an alarm event. This Department policy, *Inspection and Sampling in Title 5 I/A Single Family Home Remedial and General Use Treatment Systems with Design Flows Less than 2000 gallons/day* can be obtained on the internet at <http://mass.gov/dep/water/wastewater/iatechs.htm>.
 - ii. Contains procedures for notification to the Department and the local board of health within five days of a System failure or alarm event and for corrective measures to be taken immediately.
5. Effluent from Systems serving single family residential facilities shall be field tested in accordance with the above referenced Department policy. For non-residential facilities and all facilities with design flows of 2,000 GPD or greater, System effluent shall be sampled for laboratory analysis at least quarterly for the following parameters: pH, BOD₅, and TSS.
6. The System owner shall at all times have the System properly operated and maintained in accordance with this Approval, the designer's operation and maintenance requirements and the Company's approved procedures and sampling protocols. The System owner shall notify the Department and the local approving authority in writing within seven days of any cancellation, expiration or other change in the terms and/or conditions of their O&M agreement.
7. Prior to transferring 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 this 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 thereof a copy of this Approval for the System. The System

owner shall send a copy of such written notification(s) to the Department and local approving authority within 10 days of such notice being given.

8. By January 31st of each year for the previous year, the System owner shall submit to the local approving authority all data collected in accordance with item 6, above, including all Department Title 5 IA O&M checklists and System technology checklists completed during the previous calendar year by the System operator for each inspection performed. The RSF Operation & Maintenance Inspection Checklist can be obtained on the internet at <http://mass.gov/dep/water/wastewater/iatechs.htm> under *RemedialUse* and *Recirculating Sand Filters*.
9. Prior to the issuance of a Certificate of Compliance for the System, the System owner shall record and/or register in the appropriate Registry of Deeds and/or Land Registration Office, a Notice disclosing both the existence of the alternative septic system subject to this Approval on the property and the Department's approval of the System. If the property subject to the Notice is unregistered land, the Notice shall be marginally referenced on the owner's deed to the property. Within 30 days of recording and/or registering the Notice, the System owner shall submit the following to the Department and the local approving authority: (i) a certified Registry copy of the Notice bearing the book and page/instrument number and/or document number; and (ii) if the property is unregistered land, a Registry copy of the owner's deed to the property, bearing the marginal reference.

VI. Reporting

1. All notices and documents required to be submitted to the Department shall be submitted to:

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

VII. Rights of the Department

1. The Department may suspend, modify or revoke this Approval for cause, including, but not limited to, noncompliance with the terms of this 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 this Approval and/or the System against the owner, or operator of the System, and/or the designer.