



I/A Systems: Boards of Health's Role in the Approval Process

CLAIRE GOLDEN, MassDEP | MEHA SPRING WEBINAR

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Session Description

- ▶ A review of the requirements for approval of an I/A installation at a facility and a few miscellaneous items
- ▶ I/A Technologies and MassDEP's Approval Process
- ▶ Focus on Secondary Treatment Unit Remedial Use Approval Requirements and Standard Conditions
- ▶ Questions the BOH should ask itself
- ▶ Use of a checklist
- ▶ I/A technology problems and failures
- ▶ Questions

DISCLAIMER

This presentation pertains solely to 310 CMR 15.000, Title 5 of the State Environmental Code, and is for educational and informational purposes only. Please note that municipalities may have regulations that are more restrictive than Title 5.

Any reference to a proprietary technology in the presentation is solely for illustrative purposes and does not constitute an endorsement of or comment upon said technology by the presenter or MassDEP. The same applies to any questions posed to the presenter and the accompanying answers.



I/A Technologies & MassDEP's Approval Process

Types of I/A Technologies

- ▶ Restorative Treatment Processes
- ▶ Drip Dispersal Systems
- ▶ Buried Filter SASs
- ▶ Bottomless Sand Filter
- ▶ Secondary Treatment Units (STUs)
- ▶ Nutrient Reducing
- ▶ Miscellaneous:
 - ▶ Septic tanks
 - ▶ Alternative aggregate
 - ▶ Effluent tee filters*

Types of I/A Approvals: Technology

General Use
Approval

Remedial
Use
Approval

Piloting Use
Approval

Provisional
Use
Approval

General Use Approvals

- ▶ May be installed wherever a conventional Title 5 system can
- ▶ No limit/minimum on number of installations
- ▶ Approval letter types:
 - ▶ Fully specific for technology
 - ▶ Alternative SAS/sand filter/chamber with Standard Conditions
 - ▶ STU with Standard Conditions

Piloting Approvals

- ▶ Reductions of some sort are sought
- ▶ Limited data on technology or on technology in this climate
- ▶ Limited to 15 installations statewide
- ▶ With successful piloting, may apply for additional approval(s)
- ▶ Very few technologies still have this approval
- ▶ Rarely, if ever, applied for

Provisional Approvals

- ▶ Reductions of some sort are sought
- ▶ More data (than piloting) is available
- ▶ Often trying to confirm reliability
- ▶ Approval often is grouped with a RUA
- ▶ Installation of at least 50 units statewide
- ▶ With successful provisional installations, may apply for additional approval(s)

Types of I/A Approvals: Site-Specific Technology Installations

Piloting Use
Approval

Remedial Use Approvals

- ▶ Reductions in design criteria are permitted
- ▶ Permitted for repairs only with no increase in flow
- ▶ Unlimited number of installations statewide

Remedial Use Approvals:

Remedial Use

RSF
BSF
Composting Toilets
Restorative Systems
Drip Dispersal
Systems

Alternative
SAS/Patented Sand
Filters & Chambers

Standard Conditions:
Eljen
Presby
Cultec
Infiltrator
Etc.

Secondary
Treatment Units

Standard Conditions:
FAST
Bioclere
Hoot
Jet
Etc.



STUs Certified for Remedial Use

STUs Certified for Remedial Use Standard Conditions:

Approval for Remedial Use allows the use of the Alternative System only where the local Approving Authority finds that the Alternative System is for the upgrade or replacement of an existing failed, failing or nonconforming system with a design of flow of less than 10,000 gpd, where there is no increase in the actual or proposed design flow, and where a conventional system with a reserve area, designed in accordance with the standards of 310 CMR 15.100 through 15.255, cannot feasibly be built on-site.

1 sentence
84 words
508 characters

When can a STU Remedial Use I/A be used:

Upgrade or Replacement

- Existing
- Failing/Failed
- Nonconforming

Design Flow

- < 10,000 gpd
- No increase in actual or proposed design flow

Conventional System

- With a reserve area, designed in accordance with Title 5, cannot feasibly be built on-site

Size, Depth to Groundwater & Depth of Naturally Occurring Pervious Material Reductions

- Up to 50% SAS area reduction
- Groundwater separation reduction
- Conditions for approval of GW separation
 - GW elevation determined by SE agent of the BOH
 - No reduction(s) under LUA to wet/water setbacks
 - If $\geq 2,000$ gpd, mounding analysis
- Up to a 2 foot reduction in naturally occurring pervious material
- No alternative design standard has been further lessened by LUA
- Any additional deviation requires a BSF or variance
- Plans must indicate an area for maximum feasible upgrade (MFU)

- MFU area shall not be disturbed so as to preclude future upgrade
- No permanent structures may be constructed in the MFU area
- MFU options and the order in which they are to be considered:
 - A fully compliant conventional system except for reserve area
 - Conventional system under LUA
 - BSF in conjunction with a STU
 - Conventional system with variances or an alternative system and variances
 - Tight tanks

Maximum Feasible Upgrade (MFU) Area Requirements

Required DSCP Submittals

- ▶ Designer's technology training certificate
- ▶ For non-residential or any $\geq 2,000$ gpd residential system company certification
- ▶ Designer certification
- ▶ Owner certification, acknowledging:
 - ▶ Receipt of various documents
 - ▶ Compliance with all terms and conditions
 - ▶ Knowledge of estimated operation costs
 - ▶ Understanding the service contract requirement
 - ▶ Deed Notice requirement
 - ▶ Written notification provided to any new owner
 - ▶ Garbage grinder restriction, if appropriate
 - ▶ Understands the requirement to repair/replace/modify as necessary regardless of any warranty

Other Requirements

- ▶ Installation by BOH-approved installer
- ▶ Certain documents must be on-site during installation
- ▶ Installer and Designer certifications that technology was designed and installed as Approval requires
- ▶ Connection to sewer within 60 days of its availability
- ▶ Deed Notice
- ▶ Minimum 1-year O&M Agreement
- ▶ Prior to any transfer, written notice to new owner
- ▶ Service contractor notification to Owner of any Approval changes
- ▶ Amendment of O&M agreement within one year of any changes to Approval
- ▶ Owner shall provide Service Contractor access
- ▶ Various O&M contract change notifications
- ▶ Notification requirements in the event of failure



Questions the BOH
may want to ask itself



Is the existing system failed, failing or non-conforming?



Is the design flow < 10,000 gpd?



Is any increase in actual or proposed design flow proposed?



Can a system, designed in accordance with Title 5, be built on-site?

Use of a checklist

Advantages of a Checklist

- Helps to itemize the requirements.
 - There are a lot of them.
 - It can get confusing!
- Makes sure the requirements are met.
- Ensures consistency in reviews.
- Model STU Remedial Use Review Checklist can be found at:

<https://www.mass.gov/doc/model-remedial-use-secondary-treatment-unit-plan-review-checklist-0/download>



APPLICANT:			
FACILITY ADDRESS:			
SYSTEM DESIGN FLOW: gpd			
FACILITY AGGREGATE DESIGN FLOW: gpd			
*****THIS FORM IS TO BE USED ONLY FOR UPGRADES/REPAIRS*****			
IF FEASIBLE TO CONNECT TO SEWER, STU FOR REMEDIAL USE CANNOT BE USED.			
REVIEWED BY:			
DATE:			
REMEDIAL USE STU PROPOSED:			
MODEL NO. (IF APPLICABLE):			
Non-regulatory citations refer to requirements within MassDEP's <i>Standard Conditions for Secondary Treatment Units Approved for Remedial Use</i> with a last revision date of November 30, 2016			
	N/A	OK	NO
MINIMUM REQUIREMENTS PRE- AND POST-APPROVAL (PAGE 1)			
Disclosure notice in the deed [310 CMR 15.287(10)]			
Certification by the designer [310 CMR 15.021(3)]			
MA certified wastewater treatment plant operator trained for the STU under contract for operation and maintenance [310 CMR 15.287(10)]			
Periodic sampling, recordkeeping and reporting in accordance with the Approval			
24-hr notification to the board of health of any system failure			
If pumping, 24-hr emergency storage capacity above the high level alarm			
System owner acknowledgement of responsibilities			
II. DESIGN AND INSTALLATION REQUIREMENTS			
Up to 50% SAS area reduction [5.a)]			
Groundwater separation reduction [5.b)]			
2 feet in soils with perc rates slower than 2 minutes per inch [5.b)]			
3 feet in soils with perc rates of or faster than 2 minutes per inch [5.b)]			
Conditions for approval of GW separation [6.]			
GW elevation determined by SE agent of the BOH [6.a)]			
No reduction(s) under LUA to wet/water setbacks [6.b)]			
If ≥ 2,000 gpd, mounding analysis [6.c)]			
Up to a 2 foot reduction in naturally occurring pervious material [5.c)]			
No alternative design standard has been further lessened by LUA [7.]			
Any additional deviation from requirements shall require a Bottomless Sand Filter (BSF) or variance [8.a) and 8.b)]			
Plans must indicate an area for maximum feasible upgrade (MFU) [9.a)]			
MFU area shall not be disturbed so as to preclude future upgrade [9.b)]			
No permanent structures may be constructed in the MFU area [9.c)]			
MFU options and the order in which they are to be considered [10.]:			
A fully compliant conventional system except for reserve area [10.a)]			

Conventional system under LUA [10.b)]			
BSF in conjunction with a STU [10.c)]			
Conventional system with variances or with an alternative system and variances [10.d)]			
Tight tank [10.e)]			
If in a Nitrogen Sensitive Area (NSA) and ≥ 2,000 gpd aggregate flow, a technology approved for nitrogen reduction must be used [11.]			
Covers for all components (other than the septic tank) shall be to grade, shall be watertight and shall be secured as appropriate [12.]			
Watertight connections for structures within 12 inches of or in gw [13.]			
All structures and appurtenances designed to prevent freezing [14.]			
Control panel including alarms shall be mounted in a location accessible to the operator [15.]			
Alarms shall be readily visible and audible to occupants [16.]			
Alarms shall be on a separate circuit than the technology [16.]			
No relief valve or outlet is allowed [17.]			
One inspection port in the SAS [18. and 310 CMR 15.240(13)]			
If feasible to connect to sewer, technology cannot be proposed [25.]			
II. DESIGN AND INSTALLATION REQUIREMENTS - REQUIRED DSCP SUBMITTALS			
Proof that the designer has completed technology training [19.a)]			
For non-residential or any ≥ 2,000 gpd residential system certification by the company [19.b)]			
Designer certification that design confirms to Approval, any Company Design Guidance and 310 CMR 15.000 [19.c)]			
Owner certification stating that the Owner [19.d)]:			
Has received a copy of the approval, the Owner's manual and the O&M manual [19.d)i)]			
Agrees to comply with all terms and conditions [19.d)ii)]			
Has been informed of all estimated operation costs (power, maintenance, sampling, reporting, replacement, etc.) [19.d)iii)]			
Understands the service contract requirement [19.d)iv)]			
Agrees to provide a Deed Notice [19.d)v)]			
Agrees to provide written notification of the Approval to any new owner [19.d)vi)] and 310 CMR 15.287(5)]			
Understands and accepts a restriction on use of a garbage grinder if the design does not provide for the use of one [19.d)vii)]			
Understands the requirement to repair/replace/modify as necessary regardless of any warranty [19.d)viii)]			

II. DESIGN AND INSTALLATION REQUIREMENTS - AFTER APPROVAL			
Owner shall not authorize the system to be installed by anyone but an Installer approved by the BOH and, if required, certified or trained by the technology company [21.]			
Prior to commencement of installation, Installer shall certify to the Designer, the BOH and the Owner that they are locally licensed and, if required, certified by the technology company [22.]			
Installer shall keep a copy of the approved plans, the Owner's manual, the O&M manual and the technology Approval on site at all times during construction [23.]			
Prior to CoC issuance, Installer and Designer certifications that the technology was installed in compliance with the technology Approval [24.]			
When sewer becomes available, 60 days to connect with appropriate abandonment [25.]			
III. OPERATION & MAINTENANCE			
Refer to the Standard Conditions			
IV. ADDITIONAL REQUIREMENTS			
Prior to construction starting and after recording at the Registry of Deeds, Owner shall submit to the BOH:			
A certified Registry Copy of the Deed Notice bearing the book and page and/or document number;			
If unregistered land, a Registry copy of the Owner's deed bearing a marginal reference to the deed [2b)]			
Deed Notice shall be in form as provided by MassDEP [2b)]			
Prior to starting construction, Owner shall provide a signed copy of the O&M agreement to the BOH [5.]			
The O&M Agreement shall be for a least 1 yr and include:			
Name of Service Contractor who meets Approval qualifications [6.a)]			
Service Contractor must inspect the System as required in the Approval [6.b)]			
Service Contractor is responsible to obtaining lab analyses and submittal of same [6.c)]			
Procedure and responsibilities in the case of failure, alarm or operational issues shall be clearly defined with written notification by the Service Contractor within 5 days of event/incident to the Owner, BOH and Company [6.d)]			
ADDITIONAL O&M AND CONTRACT REQUIREMENTS			
Prior to any transfer, Owner shall provide written notice of all the conditions to the new Owner and shall copy the BOH within 10 days [3.]			
Service contractor shall notify Owner of any changes in the Approval within 60 days [7.]			
Owner shall amend the O&M agreement within one year of any changes to Approval [8.]			
Owner shall provide access for the Service Contractor [11.]			
7 day written notification to BOH of any cancellation, expiration or change in terms of an O&M contract [19.]			

Service Contractor shall notify Owner immediately upon determining System is in violation of Approval or has failed [14.]			
Serve Contractor and Owner shall notify BOH within 24 hrs of determining failure [15.]			
Service Contractor shall provide written notification to Company in the event of failure, violators, alarm event, etc. [16.]			
BOD, TSS and PH violations do not constitute failure for purposes of the notifications [17.]			
Breakout constitutes failure of the System [17.]			
Annual report submittal [18.]			

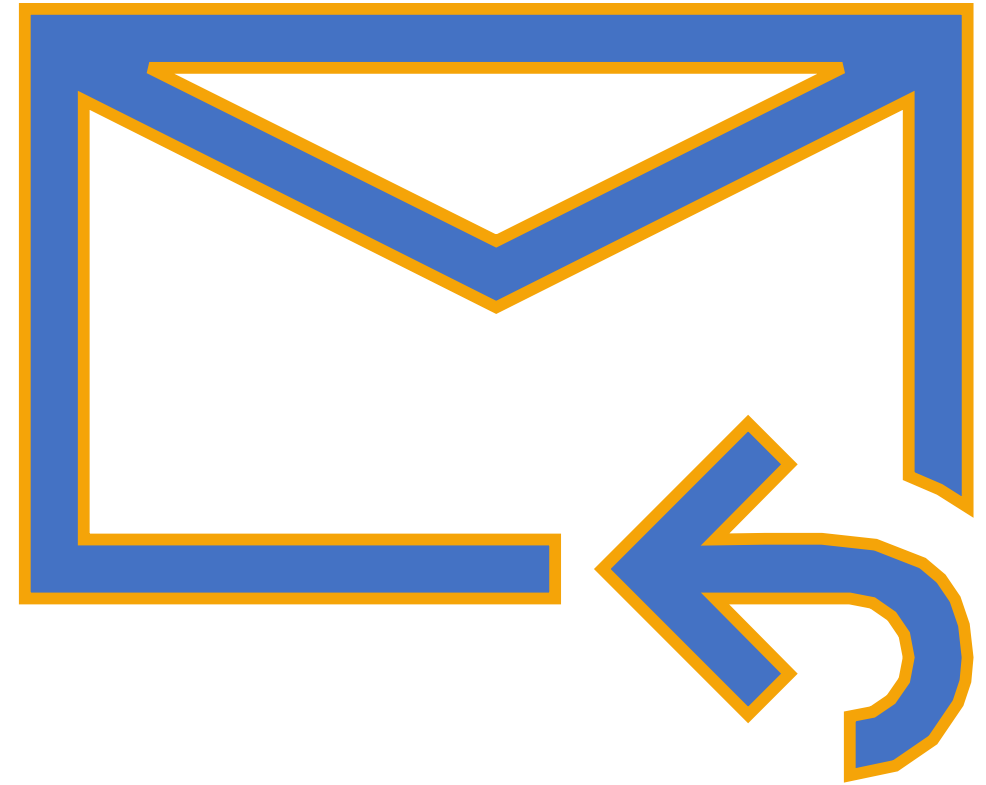


I/A Technology Problems and Failures

MassDEP needs your help

- ▶ MassDEP is requesting Boards of Health notify MassDEP via email of I/A system failures
- ▶ Information sent should include:
 - ▶ Type of I/A system
 - ▶ Age of system
 - ▶ Location of System
 - ▶ Known details/Reason for failure (if known)
- ▶ Please send this information to:
 - ▶ marybeth.chubb@mass.gov
 - ▶ harshraj.thakor@mass.gov

Questions



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