TITLE 5 PLAN REVIEW

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September 29, 2022
This presentation relates solely to 310 CMR 15.000, Title 5 of the State Environmental Code. Many municipalities have regulations that are more restrictive than Title 5.

Any proprietary technology mentioned in this presentation is used purely as an example and its inclusion does not constitute a comment on or endorsement of the technology by the presenter or MassDEP.
TOPICS COVERED

- Septic system plan basics
- Nonconventional systems
- Checklists
- Hands-on exercise
- Deficiency & approval letters
- Wrap-up
SEPTIC SYSTEM PLAN BASICS
SEPTIC SYSTEM COMPONENTS

- Building sewer
- Grease trap*
- Septic tank
- Alternative technology*
- Pump chamber (pre/post)*
- Distribution box*
- Soil absorption system
- Vents and inspection port
DESIGN PLAN COMPONENTS

- Plan view of the system showing entire lot and all components
- Profile of the system
- Details of the components
- Soil evaluation and percolation testing information
  - SE
  - BOH witness
• Within 60 days after soil testing,
  • SE of record must certify soil results to BOH
  • SE of record must submit soil results to BOH
• Plans should include:
  • All deep hole locations and logs (incl. elev.)
  • Perc test locations and logs (incl. elev.)
• Soil evaluator of record and BOH witness as well as other important information

If late, BOH has right to reject.
PLAN AND PROFILE

• Site plan
  • To scale
  • Property lines/ROWs/easements
  • Buildings/structures and Paved surfaces

• Profile
  • To scale
  • Elevations - spot grades may be necessary

• Designer Stamp: PE or RS (PLS stamp?)
SYSTEM COMPONENTS

BUILDING SEWER
- Material
- Slope
- Access - if there is a change in direction

SEPTIC TANK
- Material
- Size/compartment
- Inverts, drop between inlet and outlet
- Tees/baffles/filters
- Access as required or just for pumping
SYSTEM COMPONENTS - DISTRIBUTION

PUMP CHAMBER
- To septic tank
  - Pump type/size
  - Sizing/compartments of septic tank
- To d-box or SAS
  - Material
  - Storage
  - Alarm
  - Pump type/size
  - Number of pumps

DISTRIBUTION BOX
- Material
- Sump size
- Level outlets
SOIL ABSORPTION SYSTEM

- Type - bed/field, trench, gallery/pit/chamber
- Alternative SAS with or without treatment?
- LTAR
- Size
- Calculations shown
- Mounding calculations - if flow for the facility is \( \geq 2,000 \text{ gpd} \)
- Reductions taken?
  - Depth of naturally occurring pervious material
  - Leaching area size
- Adequate depth to groundwater or is a reduction sought?
- Venting
- Inspection port
NONCONVENTIONAL SYSTEMS
SO WHAT IS NONCONVENTIONAL?

• Tight tank
• Shared system (cluster or not)
• Nitrogen aggregation approval
• Alternative technology
  • Secondary treatment unit (STU)
  • Bottomless sand filter
  • Patented sand filter
  • Drip dispersal system
  • Alternative SAS
  • Effluent tee-filters
• Plastic septic tanks
NONCONVENTIONAL CONSIDERATIONS

• Regulatory requirements
• Applicable MassDEP policy or guidance
  • Impervious barriers
  • N Loading and aggregation
  • Pressure distribution
  • RSF guidance
  • N loading for upgrades in sensitive areas
  • Title 5/Drinking Water Zone I Policy

• Type of MassDEP issued approval
• Model of the technology
• Compliance with terms and conditions of approvals and any standard conditions
  • Best feasible alternative identification and siting
  • Owner acknowledgement
  • Deed notice
CHECKLISTS

Who?
Why?
What?
How?
WHO BENEFITS?

• Health Department staff
• Board of Health members
• Consultants to the Dept/BOH
• Designers
• Installers
• Property owners/public
WHY USE A CHECKLIST?

MULTIPLE RESPONSIBILITIES
- Septic
- Food
- Housing
- Pools
- Public health/nursing
- Emergency preparedness

MULTIPLE REVIEWERS
- BOH staff
- Engineering staff
- Consultants
- Others
- ConCom
- Building Dept.
- Etc.
WHAT TO INCLUDE IN A CHECKLIST

• Regulations
  • Title 5
  • Local bylaw
• Design flow
• Soil testing
• Component standards
• SAS design

• Tight tanks
• Greywater systems
• Alternative technologies
• Standard conditions
• N aggregation approvals
• Shared systems
• Timelines for review
HOW TO CREATE A CHECKLIST

• Make your own from scratch
• 310 CMR 15.220, especially 15.220(4)
• MassDEP
  • Model Title 5 Review Checklist
  • Model Remedial Use Secondary Treatment Unit Plan Review Checklist
  • https://www.mass.gov/lists/title-5-septic-system-forms
  • https://www.mass.gov/lists/title-5-construction-&-repairs-forms-

RECOMMENDATION

Start with MassDEP’s revised checklist (Sept 2019) and remember to include any local bylaws/regulations
HANDS ON EXERCISE

In a few minutes....
DEFICIENCY AND APPROVAL LETTERS
DEFICIENCY LETTERS

Date

BOH meeting or hearing date, if appropriate

Plan name, date and designer

Deficiencies
  • Listed and detailed
  • Regulatory policy, guidance and I/A approval citations as appropriate
### Approval Letters

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<th>Section</th>
<th>Details</th>
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<td>Approval date</td>
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<td>BOH meeting or hearing date,</td>
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<td>if appropriate</td>
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<tr>
<td>Plan name, date and designer</td>
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<tr>
<td>Special Conditions</td>
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<tr>
<td>• Coordination with BOH agent</td>
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<tr>
<td>• Flagging of components</td>
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<td>• Watertightness testing</td>
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### MassDEP REGIONAL CONTACTS

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<thead>
<tr>
<th>Region</th>
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<tbody>
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Not quite! We’ve got some plans to review.