Title 5 Plan Review: A Hands On Approach

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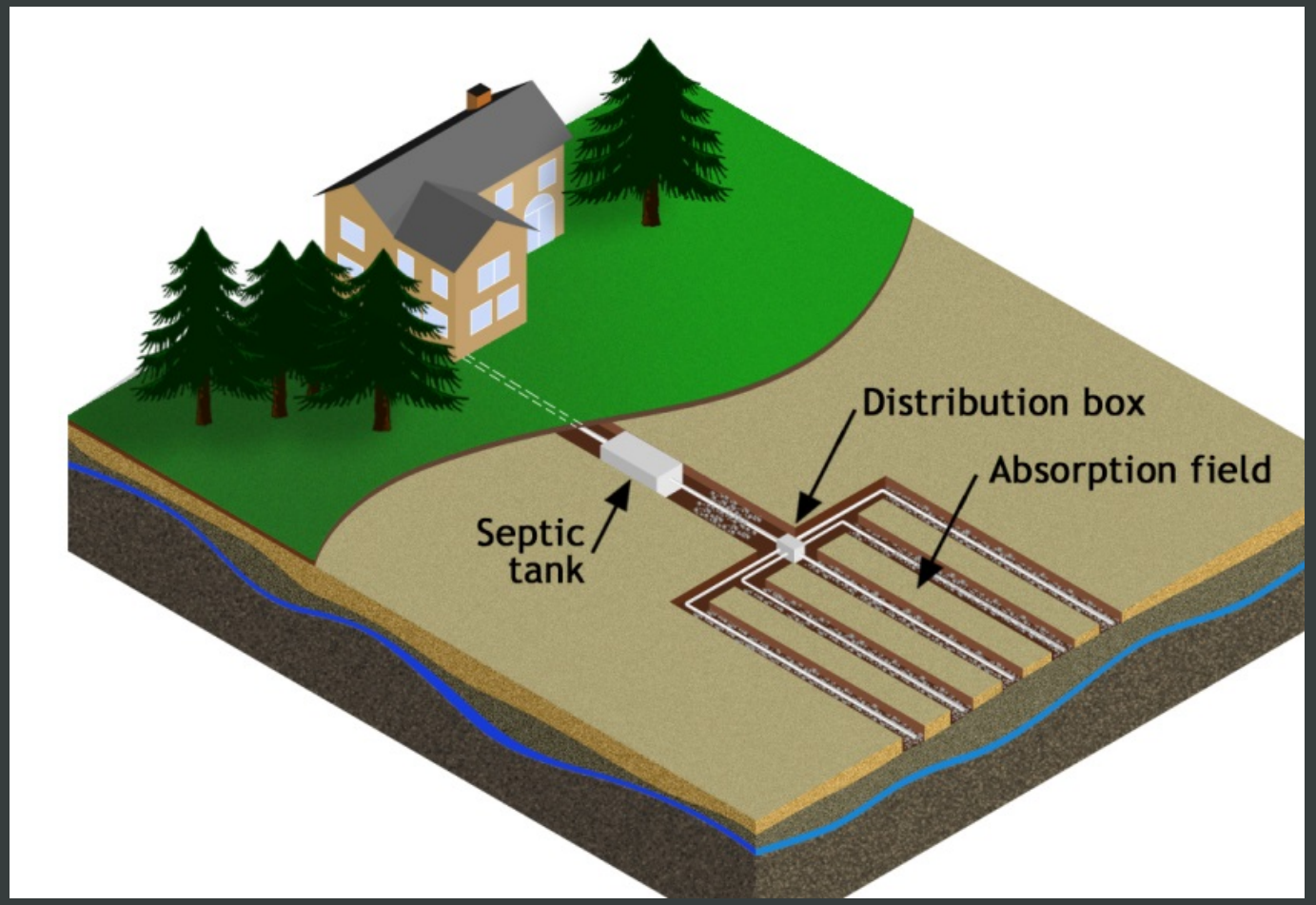
DISCLAIMERS

- 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.
- 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.



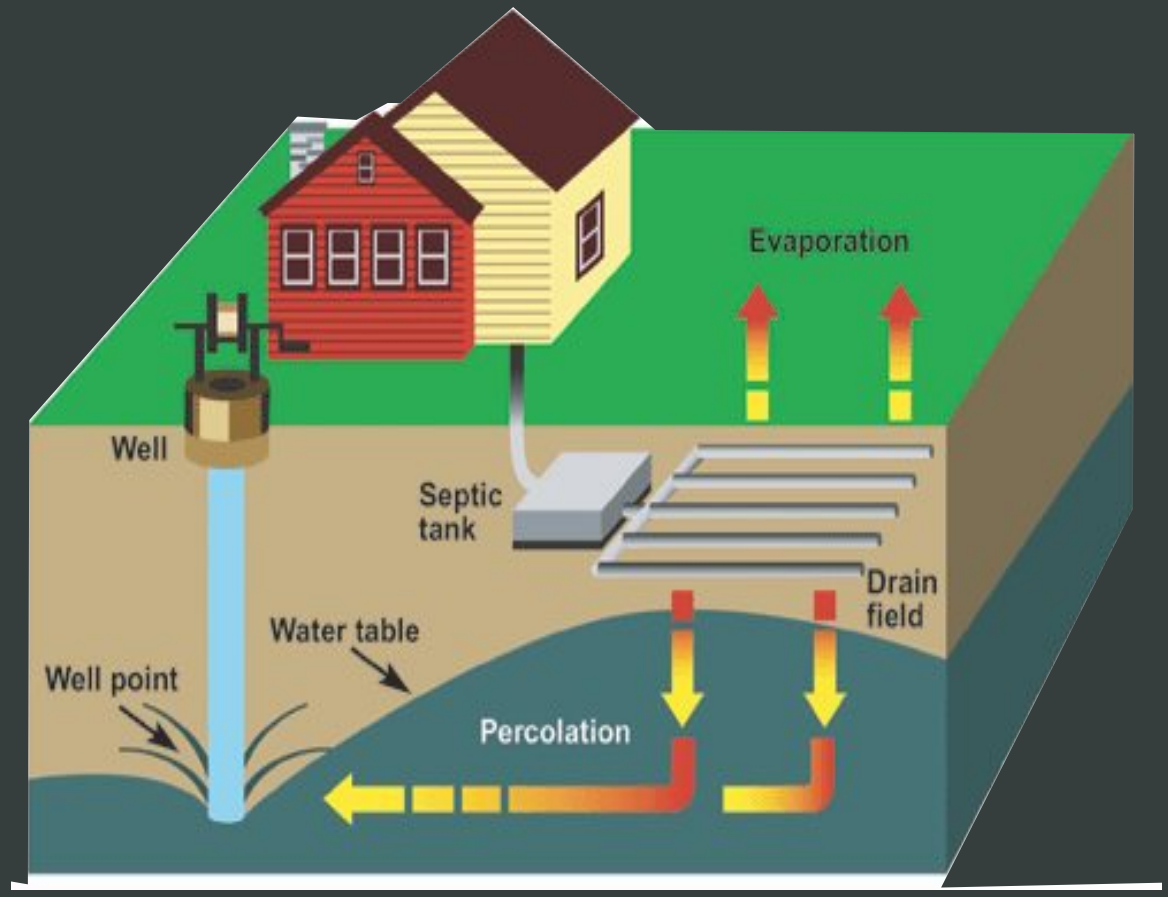
Objectives

- Septic system plan basics
- Non-conventional systems
- Checklists
- Hands-on exercise
- Deficiency and 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 and certification statement
  - BOH witness

Soil Information

- 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

Plan and Profile

- Site plan
  - Property lines/ROWs
  - Buildings/structures and Paved surfaces
- Profile
  - To scale
  - Elevations
- Designer Stamp: PE or RS (PLS stamp?)

System Components 1:

BUILDING SEWER

- Material
- Slope
- Access (change in direction)

SEPTIC TANK

- Size/Compartment(s)
- Inverts
- Material
- Tees/baffles/filter
- Inlet/outlet drop
- Accessibility

System Components 2:

PUMP CHAMBER

- To septic tank
  - Pump type
  - Sizing/compartments
- To d-box or SAS
  - Material
  - Storage
  - Alarms
  - Dual pumps?

DISTRIBUTION BOX

- Material
- Sump size
- Level outlets

System Components 3 – SASs:

- Type – bed/field, trench, gallery/pit/chamber
- LTAR
- Size
- Calculations shown – Mounding calculations?
- Reductions taken?
- Adequate depth to groundwater
- Venting
- Inspection port

Non-conventional Systems

Non-conventional System Designs:

- Tight tank
- Shared system (cluster or not)
- Nitrogen aggregation approval
- Alternative technology
  - Secondary treatment unit (STU)
  - Patented sand filter
  - Drip dispersal system
  - Alternative SAS

Alternative Technology Considerations:

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

Checklists

WHO?

WHY?

WHAT?

HOW?

Who Benefits from Checklists?

- Health Department staff
- Board of Health members
- Consultants to the Dept/BOH
- Designers
- Installers
- Property owners/public

Why Use a Checklist?

MULTIPLE PROGRAMS

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

MULTIPLE REVIEWERS

- BOH staff
- Town/City engineering staff
- Consultants
- Others
  - ConCom
  - Building Dept.
  - Etc.

Some things to Include in a Checklist(s):

- Regulations
  - Title 5
  - Local bylaw
- Design flow
- Soil testing
- Component standards
- SAS design
- Tight tanks
- Greywater systems
- Alternative technologies
  - Standard conditions
- Nitrogen aggregation approvals
- Shared systems
- Timelines for review

How Do You Create a Checklist?

- Make your own from scratch
- 310 CMR 15.220, especially 15.220(4)
- Barnstable County Health Department
- MassDEP

Recommended:
Start with MassDEP's revised checklist (Sep 2019) and remember to include any local bylaws/regulations

Hands On Exercise

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Westford

Deficiency and Approval Letters

Standard Letters

DEFICIENCY

- Deficiency date
- Meeting or hearing date
- Plan name, date & designer
- Deficiencies
  - Listed & detailed
  - Regulatory, policy, guidance & approval citations

APPROVAL

- Approval date
- Meeting or hearing date
- Plan name, date & designer
- Special conditions
  - Coordination with BOH agent
  - Flagging of components
  - Watertightness testing, etc.

Wrap-Up

Common Barriers to Compliant Systems

- Poor soils;
- Ledge;
- Small lot;
- Wetlands;
- On-site well; or
- Any combination/permutation of the above.


Know
the rules!

Questions?

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THE END