

TITLE 5 PLAN REVIEW

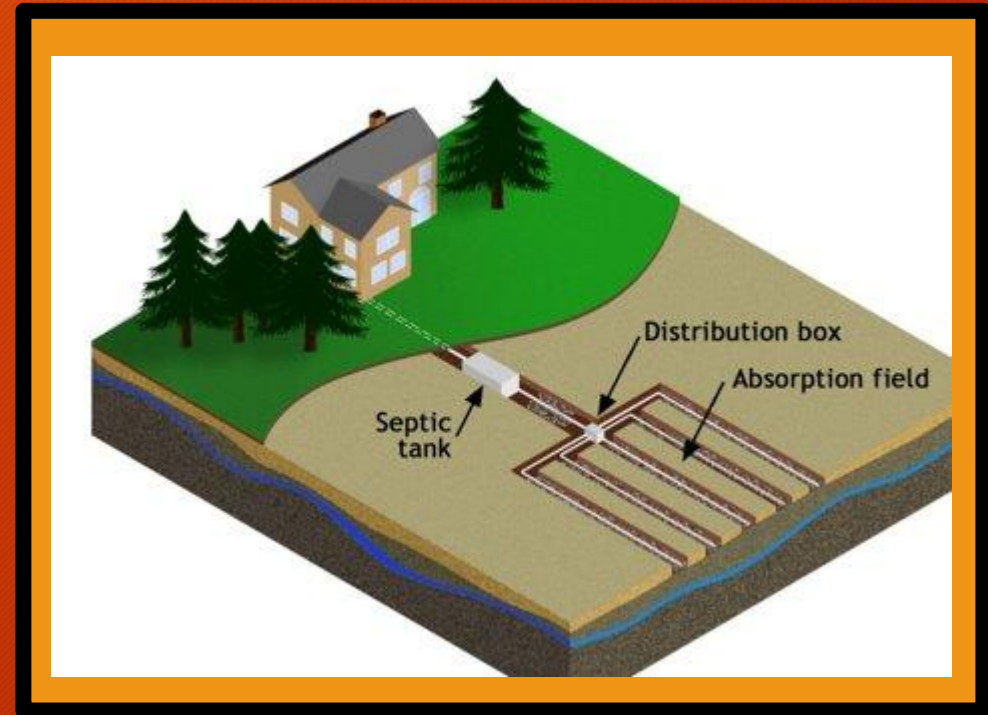
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DISCLAIMERS

- 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

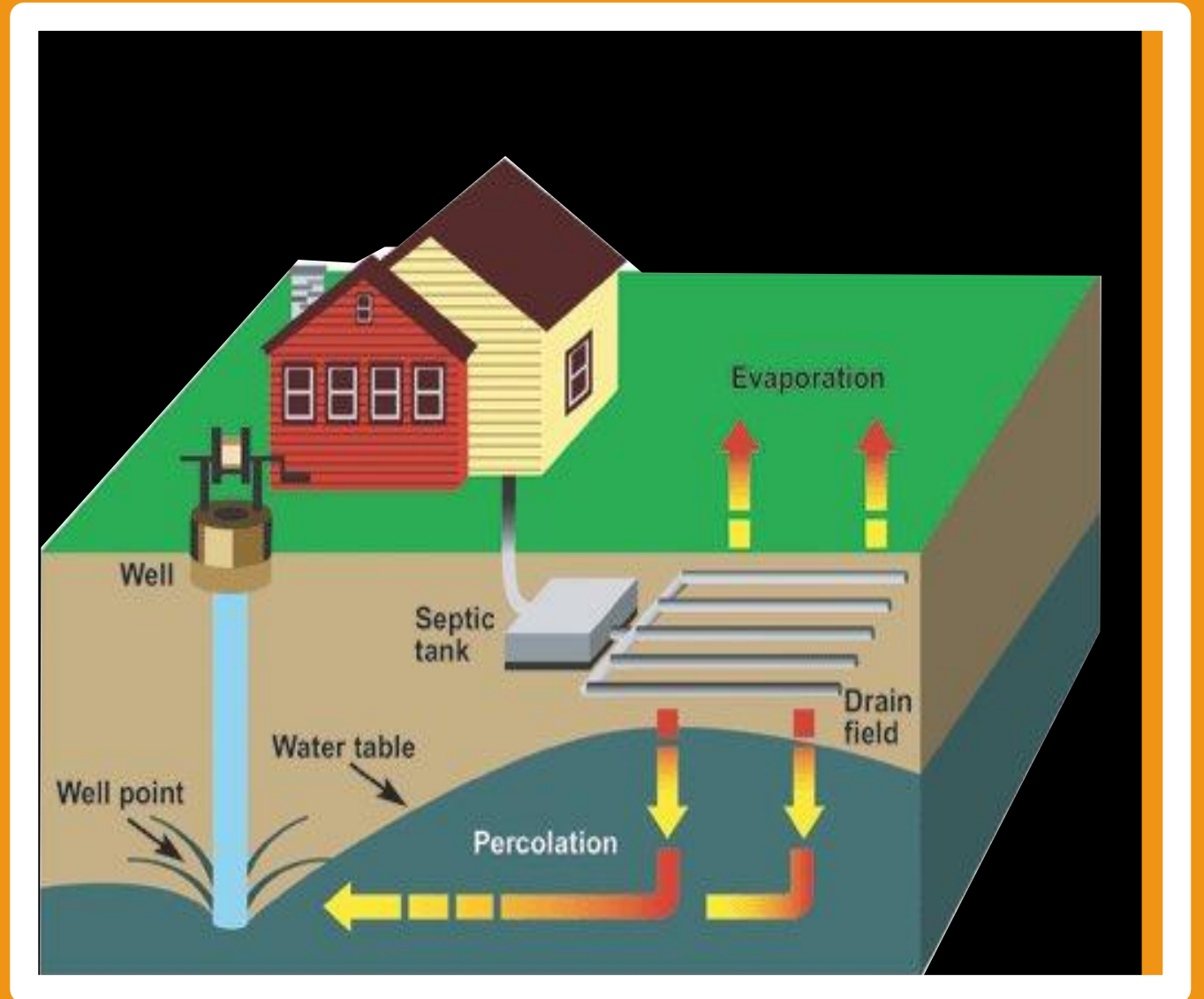
- Septic system plan basics
- Nonconventional systems
- Checklists
- Hands-on exercise
- Deficiency & approval letters
- Wrap-up



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.**

SOIL INFORMATION

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/compartments
- Inverts, drop between inlet and outlet
- Tees/baffles/filters
- Access as required or just for pumping

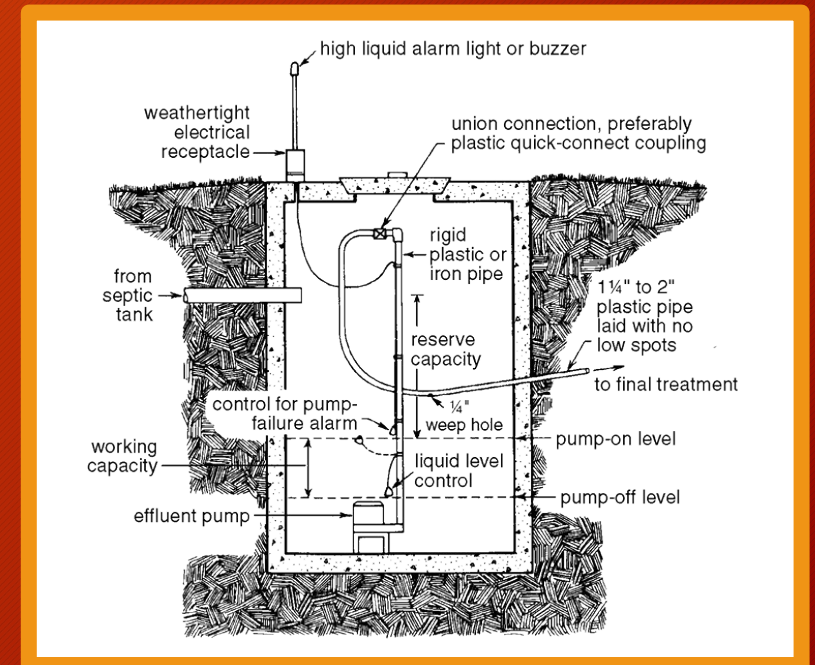
SYSTEM COMPONENTS - DISTRIBUTION

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 $\geq 2,000$ 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-form-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

Approval date

BOH meeting or hearing
date, if appropriate

Plan name, date and
designer

Special Conditions

- Coordination with BOH agent
- Flagging of components
- Watertightness testing

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The End?

Not quite!
We've got some plans to
review.