

# Fast Track Proposal: Sewage Handling and Disposal Regulations

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MOVING GMP 147 INTO REGULATION

DECEMBER 16/17, 2020



# Purpose

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To move design components of rescinded GMP 147 into regulations

## Why?

# OSE Design Authority

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- ❑ Issue brought to SHADAC in 2019
  - ❑ Concern that with GMP 147 rescinded that OSEs are designing outside the engineering exemption
  - ❑ SHADAC agreed that OSEs must follow regulation or an approved manufacturer manual in order to comply with “which utilize packaged equipment, such as equipment of catalogued standard design that has been coordinated and tested by the manufacturer, and complies with all applicable codes”
  - ❑ SHADAC directed VDH to investigate how to allow OSEs to continue to do pads and shallow designs
  
- ❑ VDH brought issue to OAG
  - ❑ Result of meeting: A policy is an interpretation of approved regulations. A policy cannot create new design standards that are not found in regulation.
  - ❑ Clearest path is for VDH to modify the SHDR to include the desired regulatory changes

# The Plan

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## Step One:

- Prepare a FAST TRACK REGULATORY change to incorporate design elements from GMP 147 into the SHDR.

## Step Two:

- Update GMP 2010-01 (Verifying Licensure of Department of Professional and Occupational Regulation (DPOR) regulations for work submitted to the Virginia Department of Health (VDH)

## Step Three:

- Notify VDH staff and OSEs that until Reg is adopted, VDH will no longer recognize the variances allowed in GMP 147. RESETS the program.
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# Status

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First Draft of FAST TRACK Reg out for internal review –  
summer 2020

First Draft to SHADAC and VDH Districts – December 2020

# Overview of Draft Changes to SHDR

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- Adding definitions where new terms added such as TL2 and TL3
- Waiving of formal plans for OSE designs
- Allows for variations from 2 fps velocity in force mains for settled sewage and pumps integral to a treatment unit
- Incorporates new pump categories (internal, conveyance, and transfer)
- Addresses installing below a restriction with TL2 and TL3 effluent
- Adds loading rates for TL2, TL3

# Overview continued

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- Shallow trench construction with TL2, TL3
- Pad definition and construction
- Modifications to mounds to allow TL2 and TL3

# Waiver to Formal Plans (147-G)

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Modify 250C to add

“Formal plans and specifications are waived for designs that are exempt from the practice of engineering under 54.1-402A.11”

Also modify definition of Type III to eliminate >1000 gpd criteria



# Pumping – GMP 147-F

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- Pumps integral to Treatment Systems – 147 Waived All of section 880
  - Maintained in Proposed draft
- Conveyance Pumps – 147 Waived 880A1 (velocity), B1 (emergency storage), B6 (open face centrifugal, general station construction) and B7 (controls)
  - Proposed – maintain velocity waiver, maintain parts of B6, maintain part of B7
  - ¼ day emergency storage
  - Minimum working volume for EQ or timed dosing (3/4 day)
  - Maintain positive suction head
  - When multiple pumps, separate suction lines
  - Shutoff valves, check valves, antisiphon, piped to remove for service

# Pumping – GMP 147-F

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- Transfer Pumps (NEW) – EQ pumps, sludge transfer
- Proposed –
  - ¼ day emergency storage
  - Minimum working volume for EQ or timed dosing (3/4 day)
  - Maintain positive suction head
  - When multiple pumps, separate suction lines
  - Controls to automatically start and stop the pumps
  - Alternating pumps
  - Shutoff valves, check valves, antisiphon, piped to remove for service

## Question: Velocity

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Should A1 be modified to allow for velocity <2 fps or just allow for deviations under pump specific deviations?

A. Force mains.

1. Velocity. At pumping capacity, a minimum self-scouring velocity of two feet per second shall be maintained. **When pumping settled sewage, the minimum velocity shall be one foot per second.** A velocity of eight feet per second should not be exceeded.

# Question: Pump Categories

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Are the 3 categories useful? (Integral to treatment unit, transfer, conveyance)

Is adding a minimum working volume for EQ and timed dosing useful?

# New – Installing under a Restriction

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- for STE current regs says 36 inches of no limiting features under a restriction (12 inches of sidewall plus 24 inches below bottom of trench)
- Proposed
  - TL2: 12 inches of sidewall plus 18 inches below bottom of trench
  - TL3 with disinfection: 12 inches of sidewall with 12 inches below bottom of trench

# Minimum absorption area

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GMP 147 - K set absorption area minimum at 320 SF

Current SHDR sets minimum at 400 sf for single family residential dwellings with STE

Should the 320 sf minimum from GMP 147 be maintained for TL2 or TL3 effluent systems?

Should it be caveated to apply to only to single family residential systems?



# Loading Rates

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- Maintain Table 5.4 for STE but clarify that it is for STE
- Add table 5.5 for TL2 and TL3
  - Pressure trench
  - Gravity trench
  - Drip
  - Pad/mound

# Trenches receiving TL2 or TL3 - Cover

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- Minimum cover 4 inches in GMP 147
  - Ok or increase to 6 to agree with drip cover?
  - Increase to 12 inches over gravity systems and 6 for pressure?
- Do we need to specify sideslope on above grade cover? 1:4? 147 recommended 1:6 but required 1:4



## Trenches receiving TL2 or TL3 - Sidewall

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- GMP 147 allowed at grade installations
- OSEs are required to follow standard designs
- No standard design for at grade
- Proposed: Use minimum side wall for approved dispersal methods. 12 inches for gravel trenches and minimum sidewall for a given gravelless height (minimum 8 inches). Timed dosing when less than 12 inches
- Allows for approved deviations through approval design manuals

# Trenches receiving TL2 or TL3 - Slope

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- GMP 147 allowed
  - at grade installations and
  - Can be installed up to 15% slope with any texture group
  - No max slope is provided for trenches
  
- Should the max slope be 15%?

# Pads vs Mounds

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- PADS have level bottoms and only appear in GMP 147
- System to provide 'equal flow, within 10 percent, throughout all portions of the absorption area. Distribution of effluent by gravity or pressure dosing (before or after the treatment system is acceptable)'
- Mound bottoms follow the natural contour of the soil surface
- Mounds are currently defined through reference to Wisconsin sand mounds
- Wisconsin design manual uses pressure distribution

# Proposed changes to SHDR 960 - Mounds

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- Clarifies that they differ from pads in that they follow the natural contour of the site
- Always have pressure distribution
- Sets standards for mounds receiving TL2 or better quality
  - Minimum sand depth 6 inches
  - References Table 5.5 (new loading rates)
  - Cover at 6 inches with minimum side slope of 1:4
  - Deviations allowed by approved manufacturer's manual

# Pads – Add section 966

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- GMP 147 limited to TL3. New allows TL2 as well.
- Loading rates set in Table 5.5
- GMP 147 limited max pad to 1200 sf – Should we keep? Could be trigger to go to pressure dosing?
- 147 did not allow trenches and pads to be in same system. Recommend deleting so it is allowed.
- 147 limited slopes to 10% - maintained
- New – over 1,000 gpd must be pressure dispersal
- <12 inches install requires timed dosing

# Pads - Sidewall

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# Pads cont

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- Cover – proposed to increase from 4 inches to 6 inches.
- Maintain side slope max of 1:4
- Eliminate minimum size (320 sf) or limit to single family dwelling or maintain
- Added new – all pads must be dosed – effort to address issue with ‘equal flow, within 10 percent, throughout all portions of the absorption area. Distribution of effluent by gravity or pressure dosing (before or after the treatment system is acceptable)’