

**Virginia Department of Health
Sewage Handling and Disposal Advisory Committee (SHADAC)
Meeting Summary**

Date: August 20, 2019
Time: 10 am to 2 pm
Location: James Madison Building
5th Floor Large Conference Room
109 Governor Street
Richmond, Virginia 23219

Remote Locations: Fairfax Health Department
10777 Main Street
Fairfax, Virginia 22030

SHADAC Members

Mike Lynn – Home Builders Association of Virginia
Morgan Cash – Virginia Association of Professional Soil Scientist (sitting in for Bill Sledjeski)
Cody Vigil – Manufacturers Representative
William Johnson – American Council of Engineering Companies of Virginia
Alan Brewer – Virginia Association of Counties
Trapper Davis – Virginia Onsite Wastewater Recycling Association (sitting in for Curtis Moore)
Valerie Rourke – Virginia Department of Environmental Quality
Lance Gregory – Virginia Department of Health
V’lent Lassiter – Chesapeake Bay Local Assistance
Shaun McGuigan – Manufacturers Representative (sitting in for Colin Bishop)

VDH Staff and Members of the Public

Dr. Marcia Degen	Scott Currie	Paul Saunders	Danna Revis
Trisha Henshaw	Anthony Creech	Jay Conta	

Remote from FHD

Adrian Joye	Kevin Crisler	David Middlebrooks
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Administrative

1. Welcome.

Chairman Lynn welcomed the committee members, VDH staff, and the public to the meeting.

2. Approve agenda.

Mr. Davis moved to approve the agenda.

Mr. Vigil seconded the motion.

All members were in favor of the motion.

3. Introduction of new members.

Mr. Gregory announced Mr. Johnson as the new SHADAC representative for the American Council of Engineering Companies of Virginia. Mr. Gregory also noted that the Virginia Environmental Health Association has a new representative, Mr. Larry Madison. Appointments for the Virginia Onsite Wastewater Recycling Association and the Virginia Association of Professional Soil Scientist are expected shortly.

3. Review summary from April 16, 2019 meeting.

Chairman Lynn commented that there is still a lot of confusion in localities when an safe, adequate, and proper evaluation is required; need further discussion.

Mr. Davis moved to approve the summary.

Mr. Brewer seconded the motion.

All members were in favor of the motion.

4. SHADAC representatives; request to organizations follow up.

Mr. Gregory noted that VDH still need nominations from a number of representative groups. He will be following up with those groups shortly.

Public Comment Period

There were no public comments.

Standing Agenda Items

1. Issues related to internal VDH policies and processes.

a. Freedom of Information Act (FOIA) processing.

Mr. Gregory noted that he has received several comments with concerns about the processing of FOIA request processing. His understanding is that private sector providers were concerned that property owner can receive immediate service without a fee when requesting a records, but if a private sector provider request the record on behalf of the owner it takes several days with an associated cost.

Mrs. Revis noted that the process in Chickahominy Health District works great. They have a central email address for processing FOIA request, and get responses back quickly. But other districts ask for a FOIA form which is not required by the Code of Virginia.

Mr. Davis noted that he has an understanding with local health department because his company files four or five request per day, and he understands it may take five days for a response.

Mr. Cash noted that the Loudoun Health Department process works great. He submits a request, and within one day the record is online.

Mrs. Rourke noted that DEQ has a web portal. She noted that it takes time and resources to building the structure.

Mr. McGuigan stated that it is doable. There are states that require electronic submission of all forms; New Hampshire.

Chairman Lynn noted that some counties have taken it on rather than waiting for the state. He believes the issue is the need for a set process. With the move to the private sector, the private sector need the records more than ever.

Mr. McGuigan commented that if the requestor is an agent of the homeowner, then it should be processed faster.

Mr. Johnson asked whether we are facing an education and training gap.

Mrs. Revis noted that VDH does the training every year, but localities have set up their own process.

Mr. Brewer commented that there is a customer service element. When a homeowner comes in they are asking for a record and they are asking for help, so the person behind the counter is trying to help. But for the private sector that person just needs the record.

Mrs. Rourke noted that in some cases VDH has to prioritize request.

Old Business

1. Hardship Guidelines and Petition for Services

Mr. Gregory discuss the process that VDH went through to implement the new Hardship Guidelines. The guidelines were posted on June 11th, and following a 30 day public comment period, VDH determined there were four commenters that believed the guidelines were contrary to state law or regulations. Based on the new Code section, those comments required VDH to delay implementation for 30 days and respond in writing. The Hardship Guidelines then become effective on August 11th. Having gone through the new process, future guidelines and policies will need to be in final form about four months prior to the planned implementation date.

Mr. Gregory noted that so far there have been only a minimum amount of questions, and the transition appears to be moving forward. Mr. Gregory clarified that any applicant seeking VDH services must first submit a petition for service form, and must meet the means testing requirements or a hardship. VDH has provided training on means testing for local health

department staff. Mr. Gregory noted that the intent of the petition for services for is that owners will know whether they qualify immediately, unless they are requesting further consideration.

Mrs. Rourke asked whether VDH would actually have to revise the policy via the new process just to update the service provider maps since the formula is actually in the policy as approved.

New Business

1. Draft Chesapeake Bay Phase III Watershed Implementation Plan (WIP).

Mr. Gregory noted that there are five goals in the Phase III WIP related to onsite sewage.

- Create a Wastewater Infrastructure Workgroup.
- VDH to seek funding for a Wastewater Infrastructure Grant Manager.
- Require reporting of sewer connections.
- Pilot program to transfer of pump out oversight to VDH.
- Designate VDH as a state certifying authority and provide sale tax exemption for community systems serving 10 or more households that use total nitrogen reducing treatment systems.
- Establish regulations for total nitrogen limits for all onsite systems dispersing greater than 1,000 gpd, including conventional.

Mr. Gregory announced that the Wastewater Infrastructure Workgroup has been created based on an agreement between Secretaries of Health and Human Resources, Natural Resources, and Commerce and Trade. The workgroup has the following goals:

1. The Work Group shall identify the issues of greatest concern with inadequate and failing wastewater treatment. Each Work Group member shall gather and exchange information of benefit to other members.
2. The Work Group shall make recommendations for the most appropriate, equitable, and feasible approach to identify, quantify, and prioritize wastewater infrastructure needs. These shall include, at a minimum, mapping tools developed by the Virginia Institute of Marine Science Center for Coastal Resources Management for Tidewater Virginia, the Virginia Department of Environmental Quality Integrated Water Quality Assessment Report, and socio-demographic, economic, and culture factors.
3. Where feasible and equitable, the Work Group shall prioritize solutions within areas of greatest concern and those that provide multiple benefits in the areas of economic development, public health, water quality, Chesapeake Bay restoration, and environmental justice. Solutions may include, but are not limited to, regionalizing wastewater infrastructure and connecting failing septic systems to community onsite septic or sewer systems.
4. The Work Group shall identify overlapping authorities and direct joint efforts where feasible, coordinate each agencies' funding and loan opportunities, align policy documents and administrative guidelines, and pursue additional funding sources and loans.
5. The Work Group shall strive to quantify the gap in funding needs as well as identify and make recommendations for amendments to the Code of Virginia to foster implementation of identified solutions.

6. The Work Group shall ensure proposed solutions will increase Virginia's resilience to sea level rise and natural hazards pursuant to Governor Northam's Executive Order Number 24 (2018).
7. The Work Group shall take a proactive approach to engaging with communities identified through their efforts to appropriately, equitably, and feasibly prioritize wastewater solutions and shall recommend means to encourage participation by communities with the greatest needs.

Mr. Gregory noted that much of the goals revolve around concept of wastewater islands that Danna Revis initiated several years ago. The Virginia Institute for Marine Science (VIMS) has been working to map wastewater islands, starting with a pilot in several Eastern localities.

Mr. Brewer commenter that there are other components that play into risk of failure; age of system, size of the system. If a county has that data, it would be important. There are localities that have already done this type of assessment, and it would be good to compare VIMS mapping with on the ground truthing.

- a. House Bill 2322 Report.

Mr. Gregory stated that House Bill 2322 requires VDH to develop a plan to transition the septic pump out program from localities to VDH for the localities in Three Rivers and Eastern Shore Health Districts. Staff have met with the Northern Neck, Middle Peninsula, and Accomac-Northampton Planning District Commissioner, the DEQ, and local health department staff. The program would transition about 80,000 systems under oversight by VDH. The goal is to have a draft interim plan prior to the General Assembly Session and outline obstacles that must be addressed to finalize the plan. Localities have reported a wide range of compliance; from near 0% to as high as 87%. A major hurdles that has been identified is the lack of disposal facilities, which will be exacerbated by an increase in pump outs.

The SHADAC discussed 15.2-2123 of the Code of Virginia regarding requirement for localities to consider septage treatment when constructing new sewage treatment plants.

Mr. Johnson noted that there is no desire by disposal facilities to accept the waste. Problem is the risk to nitrification and denitrification of accepting sewage.

Members also noted that some localities do not accept septage from outside the service area.

Mr. Brewer asked whether the localities that are getting high percentage of compliance are doing enforcement or civil penalties. He suggested approaching a target goal with education and outreach, without enforcement.

Mr. Johnson noted a similar situation where counties are fighting inflow and infiltration, system is receiving downspout waste. No one being taken to court. In that case they offered bounties.

Chairman Lynn asked whether the U.S. EPA will administer a penalty if Virginia doesn't meet our pump out goals.

Mr. Brewer comment that is his understanding is that localities have goals and states have mandates.

b. House Bill 2811 draft policy. (20 minutes)

Dr. Degen discussed VDH's draft policy in response to House Bill 2811 for certification of pollution control equipment for state sales tax exemption. HB 2811 identified VDH as a certifying authority for pollution control equipment and facilities and identifies criteria for eligibility. The bill became effective on March 18, 2019.

The eligibility criteria are as follows:

- An onsite sewage system serving 10 or more households;
- Uses nitrogen reducing processes and technology;
- Constructed, wholly or in part with public funds;
- Real or personal property, equipment, facilities or devices;
- Used primarily for the purpose of abating or preventing pollution of the waters of the Commonwealth; and
- Constructed, reconstructed, erected, or acquired in conformity with the VDH state program or requirements for abatement or control of water pollution.

The purpose of GMP is to:

- Assist VDH staff in determining whether certain equipment and facilities are used for the abatement or prevention of pollution of waters of the Commonwealth;
- Explain the limitations on the type of projects that are eligible for tax exemption certification;
- Provide guidance to agency staff, owners, and private sector professionals on processing applications for tax exemption certifications; and
- Establish expectations for processing the applications.

The components of GMP are:

- Background with the authorizing Code language in Appendix.
- Explanation of eligibility criteria.
- Description of process.
- Application.
- Checklist.
- Approval letter for certification.
- Intent to Deny Sales Tax Certification Letter.
- All applications to be processed in OEHS.

Dr. Degen comment that the idea is to have a simple process, application looking for basic construction information with reference to approved set of plans and a description of the plans. Policy also describes process for denial and appeal.

Mr. Davis asked whether the policy is it retroactive.

Dr. Degen stated it is not.

Mr. Davis asked whether the policy covers projects for maintenance purposes.

Dr. Degen said it does, but the project would have to be receiving state funds.

Mr. Johnson asked whether there is an equivalency for the 10 households, or does it literally have to be 10 single family households.

Dr. Degen noted the policy says it can be a duplex and could include commercial connections, but would need to have at least 10 residential connections.

Mr. Johnson suggested including something in the approval letter that talks about how to use the tax exemption.

Chairman Lynn commented that he was told on some projects for counties that it was tax exempt, but then couldn't use the tax exemption for their business.

Mr. Brewer noted that service authorities are not tax exempt.

New Business Continued

2. Onsite soil evaluator (OSE) and professional engineer (PE) designs.

Dr. Degen noted that VDH has been dealing with the issue of OSE versus PE design requirement a lot lately; specifically what can an OSE do.

Section 54.1-402 of the Code says must meet all applicable codes. Section 32.1-163.5 limits OSEs to this section, says must comply with the Board's regulations. GMP 2016-03 replaced old GMP 147. GMP 147 included criteria for pad systems. GMP 2016-03 says you can use old design criteria from GMP 147.

a. Pads.

Dr. Degen commented that a pad is typically a trench that is wider than 3 feet and not longer than 100 feet. GMP 147 was the only place that had design specifications and included a variance from the regulations. GMP 147 allowed wider than 3 feet, eliminated increase in depth on slope, and waived limit on trenches shallower than 12 inches. So we only have a GMP that was rescinded to design pads, not in regulations.

Dr. Degen asked the SHADAC are pads, in general, within an AOSEs purview?

Mr. Davis said yes. OSEs have been able to design pads since 2000 with Puraflo's.

Mr. McGuigan comment that for a pad with Puraflo, yes because it is proprietary. There are approvals based on proprietary products that have demonstrated their ability.

Mr. Davis commented that he does not think we should do it for septic tank effluent.

Dr. Degen commented that the policy was only for TL-3.

Mr. Johnson commented that he doesn't understand how VDH is looking back to GMP 147 if all of these things are in 2016-03. He added that GMP 147 was rescinded. He asked what is packaged about a pad that allows someone other than a PE to use the technology.

Chairman Lynn commented that there are package products based on an approval.

Mr. Johnson asked who is the manufacturer responsible when there is no manufacturer involved.

Dr. Degen commented that part of this issue is that we have a historical background. AOSEs have been doing pads following GMP 147. GMP 147 separated it away from the manufacturer.

Mr. Johnson commented that all of those system connect back to a product approval. He believes the answer is no, a pad is not within the purview of an OSE. But think the better question is that there are manufacturers with pads incorporated into part of the design, and so in those cases they are within the OSEs purview.

Dr. Degen commented that without something to refer to, we are seeing wide variability in the designs.

Mr. Davis asked why not just amend GMP 2016-03 back into GMP 147.

Mr. Brewer commented that need to make sure that anything we do, we are not placing license holders in jeopardy with DPOR.

b. Distribution systems.

Dr. Degen commented that GMP 147 said you don't have to use pressure distribution, but VDH was at least looking for a pump. Some OSEs have used gravity flow with pipe turned upside down.

Mr. Davis asked whether the OSEs are using pipe already approved in the regulations, or are they specifying the pipe and where to place the holes. If so, that is engineering.

Mr. McGuigan commented that for pipe manufacturers, there is a reason they say strip up holes down. To take a product and turn it upside down is actually a fact of engineering because you're not using the product as prescribed. Without pressure, all of the water will go to the lowest hole.

Chairman Lynn commented that VDH needs to look at the root of the problem. VDH just switched the program to the private sector, the more VDH limits what OSEs can do, the less people there are to do the work. He believes if the design is prepackage, then an OSE should be able to do it.

c. Building up for vertical separation.

Dr. Degen commented that section 80 of the Regulations for Alternative Onsite Sewage System Regulations (AOSS Regulations) say the design should specify when sand or soil is used to increase vertical separation.

She asked whether an OSE can develop a specification for sand, soil, or soil-like material that is not found in a 'catalogued standard design' or in an applicable code?

Mr. McGuigan commented that no, an OSE cannot.

Mr. Vigil commented that for manufacture approvals, they used specified fill material for their product approval.

Mr. McGuigan commented that the OSE cannot develop the specifications, but if the specifications are cataloged, then they can use them.

Dr. Degen noted that with sand based treatment units, the specified sand is part of the treatment unit. So the sand is part of the treatment unit, so you cannot use that sand to increase vertical separation. We have a situation where an OSE wants to use that type of product, but they are putting treatment in front of it, and they want to use the specified sand as part of the vertical separation.

Mr. Johnson commented that the whole conversation is the design of material. If it were standard products, standard materials, then you fall within the criteria. I think the answer to the can you do it is no, until you have standard designs.

Chairman Lynn commented that gravelless is the only thing VDH has cataloged that is not NSF tested.

d. Increasing depth and center-to-center on slopes.

Dr. Degen commented the regulations calls for increasing depth of trenches and the center to center spacing of trenches with slope. GMP 147 waived the increase in trench depth, but did not waive the increase in the center to center spacing. It also allowed the installation of trenches shallower than 12 inches on any type of soil up to 15% slope. Currently the AOSS Regulations are silent on any installation criteria so the Sewage Handling and Disposal Regulations would apply unless the system design is under 32.1-163.6. The only policy that provided details for this type of design was rescinded, however, the new GMP directs a designer to continue to use the design guide in the rescinded policy. This raises the question of whether an OSE can design under this rescinded policy and can VDH approve it under 32.1-163.5?

Mr. Davis commented that the issue follows with the pad discussion.

Chairman Lynn asked why VDH increased the separation distance (center to center) on slopes.

Mr. Conta commented that it was done with the understanding that as you got increase slopes because trenches were creeping closer together, reducing the separation between trenches, as well as concern about hydraulic overloading of the bottom trench.

Dr. Degen also noted questions about wastewater characterizations. She asked whether the 'residential strength' can be evaluated on the 'raw' wastewater or can blending/flow equalization/ septic tank effluent be used to demonstrate a residential strength applied to the soil?

Mr. Davis commented that it is the raw water.

Mr. Johnson commented the design is a flow equalization process.

Dr. Degen then asked if an AOSE has a PE do a wastewater characterization that indicates residential strength but the flow for the source is not in accordance with or is not found in Table 5.1, can the AOSE design the system?

Mr. Davis asked whether the PE say its residential strength.

Mr. McGuigan stated that if the PE is specifying the design flow.

Mr. Johnson commented that it is not a wastewater characterization if they don't include the flow.

3. Proposed revisions to the Private Well Regulations.

Mr. Creech provided a presentation giving an overview of the proposed revisions to the Private Well Regulations. The proposed language can be found on www.townhall.virginia.gov.

Mr. Johnson asked whether the permit renewal will be automatic.

Mr. Brewer asked if there are modified abandonment procedures for hand dug wells.

Mr. Creech commented that yes, the procedures cover all wells.

4. Starting the process to revise the Sewage Handling and Disposal Regulations.

Mr. Gregory stated that VDH is looking to begin the process to revise the Sewage Handling and Disposal Regulations. Given the scope of the regulations, VDH anticipates the need to develop sub workgroups to address various aspects of the regulations.

Mr. Brewer suggested that the full SHADAC address the big picture questions and establish the goals for the sub workgroup. Sub workgroups can handle the line by line suggestions. Having a starting point, and something to react to would be helpful.

Mr. Vigil agreed.

Chairman Lynn asked whether VDH can you have a base regulation that acknowledges policy; could the regulations just be administrative, and then you have a design policy. Mr. Gregory said he would follow up on that potential.

Dr. Degen commented that DEQ storm water regulations have technical guidance.

Mrs. Rourke commented that it is a slippery slope of regulating by policy. Another option is to have a core regulations, and then a general permit requirement.

Adjourn.

**Virginia Department of Health
Sewage Handling and Disposal Advisory Committee (SHADAC) Meeting
Agenda**

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Time: 10 am to 2 pm
Location: James Madison Building
5th Floor Large Conference Room
109 Governor Street
Richmond, Virginia 23219

Remote Locations: Fairfax Health Department
10777 Main Street
Fairfax, Virginia 22030

Administrative (30 minutes)

1. Welcome. (5 minutes)
2. Approve agenda. (5 minutes)
3. Introduction of new members. (5 minutes)
3. Review summary from April 16, 2019 meeting. (10 minutes)
4. SHADAC representatives; request to organizations follow up. (5 minutes)

Public Comment Period (15 minutes)

Standing Agenda Items (20 minutes)

1. Issues related to internal VDH policies and processes. (20 minutes)
 - b. Freedom of Information Act processing.

Break (10 minutes)

Old Business (30 minutes)

1. Hardship Guidelines and Petition for Services (30 minutes)

New Business (40 minutes)

1. Draft Chesapeake Bay Phase III Watershed Implementation Plan. (40 minutes)
 - c. Wastewater Infrastructure Workgroup. (5 minutes)
 - d. House Bill 2322 Report. (15 minutes)
 - e. House Bill 2811 draft policy. (20 minutes)

Break (10 minutes)

New Business Continued (85 minutes)

2. Onsite soil evaluator and professional engineer (PE) designs. (60 minutes)
 - e. Pads. (15 minutes)
 - f. Distribution systems. (15 minutes)
 - g. Building up for vertical separation. (15 minutes)

- h. Increasing depth and center-to-center on slopes. (15 minutes)
- 3. Proposed revisions to the Private Well Regulations. (15 minutes)
- 4. Starting the process to revise the Sewage Handling and Disposal Regulations. (25 minutes)

Certification of Pollution Control Equipment for State Sales Tax Exemption

HB 2811 identified VDH as a certifying authority for pollution control equipment and facilities and identifies criteria for eligibility.

(Because VDH was not a certifying authority, VDH approved pollution control projects were ineligible for sales tax exemption.)

Effective date: March 18, 2019

Eligibility:

- is an onsite sewage system serving 10 or more households;
- uses nitrogen reducing processes and technology;
- is constructed, wholly or in part with public funds;
- is real or personal property, equipment, facilities or devices;
- is used primarily for the purpose of abating or preventing pollution of the waters of the Commonwealth; and
- is constructed, reconstructed, erected, or acquired in conformity with the VDH state program or requirements for abatement or control of water pollution.

Purpose of GMP:

- Assist VDH staff in determining whether certain equipment and facilities are used for the abatement or prevention of pollution of waters of the Commonwealth;
- Explain the limitations on the type of projects that are eligible for tax exemption certification;
- Provide guidance to agency staff, owners, and private sector professionals on processing applications for tax exemption certifications; and
- Establish expectations for processing the applications.

Components of GMP

- Background with the authorizing Code language in Appendix
- Explanation of eligibility criteria
- Description of process
 - Application
 - Checklist
 - Approval letter for certification
 - Intent to Deny Sales Tax Certification Letter
- All applications to be processed in OEHS

Request for Direction on AOSE vs PE Designs

Controlling Statutes

§ 54.1-402. Further exemptions from license requirements for architects, professional engineers, and land surveyors.

11. Conventional and alternative onsite sewage systems receiving residential wastewater, under the authority of Chapter 6 of Title 32.1, designed by a licensed onsite soil evaluator, 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, provided (i) the flow is less than 1,000 gallons per day; and (ii) if a pump is included, (a) it shall not include multiple downhill runs and must terminate at a positive elevational change; (b) the discharge end is open and not pressurized; (c) the static head does not exceed 50 feet; and (d) the force main length does not exceed 500 feet.

§ 32.1-163.5. Onsite sewage evaluations.

A. Notwithstanding other provisions of this chapter, for purposes of subdivision review, permit approval, and issuance of letters for residential development, the Board, Commissioner, and Department of Health shall accept private site evaluations and designs, in compliance with the Board's regulations for septic systems and other onsite sewage systems, designed and certified by a licensed professional engineer, in consultation with a licensed onsite soil evaluator, or by a licensed onsite soil evaluator. The evaluations and designs included within such submissions shall be certified as complying with the Board's regulations implementing this chapter.

Policy

From GMP 2016-03 : "GMP #147 is rescinded and replaced with this policy. GMP #147 included design requirements for pad, trench, and drip dispersal systems. Although promulgation of the AOSS Regulations negated the need for design specifications found in GMP # 147, nothing precludes a designer from using prior design guidance since it complies with the AOSS Regulations."

a. Pads. (15 minutes)

After being used by proprietary products (Ecoflo and Puraflo), the concept of a pad was introduced in GMP 147 in 2009. GMP 147 provided several variances to the SHDR to allow for the construction of pads and shallow trenches. See attached section of GMP for details. The applicable variances allowed for:

- Trenches wider than 3 feet but no longer than 100 ft
- Eliminates increase in depth of trench/pad with increase in slope
- Waives limit of trenches shallower than 12 inches to only TG I and II for slopes up to 15% (no TG limitations for slopes up to 15%)
- Maintains depth of gravel for aggregate trenches and LPD

The GMP also provided some design criteria for trenches.

- Installed on contour
- Bottom pad area is level
- Vertical separation is maintained over whole pad area
- System shall be designed to provide equal flow within 10% but notes that distribution by gravity or pressure dosing (before or after treatment system) is acceptable
- 20 ft separation distance between pads or other absorption system
- Can't mix pads and trenches

Question: Pads are not found in the SHDR and there are only references to the idea of a pad in the AOSS Regulations. The only policy that provided details and variances for pads was rescinded, however, the new GMP directs a designer to continue to use the design guide in the rescinded policy.

Are pads, in general, within an AOSEs purview?

Can VDH approve a pad designed by an AOSE under 32.1-163.5?

b. Distribution systems. (15 minutes)

GMP 147 stated that the system shall be designed to provide equal flow within 10% but notes that distribution by gravity or pressure dosing (before or after treatment system) is acceptable. Pressure distribution had not been required under GMP 147 and has not historically been required. However, VDH has interpreted this to require that a pump be in the system dosing somewhere, either to the treatment system and then subsequently to the pad or dosed to the pad directly. The basis for this interpretation is that effluent is pumped to a Puraflo pad, but no other 'pressure' distribution occurs after the treatment unit. The Puraflo pad was one of the original pad designs considered in GMP 147.

Some AOSEs have been using a grid system to provide more even distribution without pressurizing the pipe. Typically 3 or 4 inch piping is capped or connected to make a grid and the holes turned up so that the pipe has to fill up to the hole before it can flow out. The theory is that it would provide more even distribution than standard gravity dispersal piping. This design was reviewed by VDH engineering and did not appear to violate the PE exemption. Some engineers consider the subject design to be engineering because there should be some pressure in the distribution piping which would violate one of the PE exemptions. OEHS Technical services has requested guidance on this issue.

Question: Can an AOSE design a distribution system that is not found in the SHDR, does this design constitute engineering, and can VDH approve such a design under 32.1-163.5?

c. Building up for vertical separation. (15 minutes)

In Section 80 of the AOSS Regulations, it states "14. The designer shall specify methods and materials that will achieve the performance requirements of this chapter whenever sand, soil, or soil-like material is used to increase the vertical separation."

Question: Can an AOSE develop a specification for sand, soil, or soil-like material that is not found in a 'catalogued standard design' or in an applicable code?

There are products that are NSF 40 certified that utilize a specified sand for treatment. Examples are GeoMat, ATL, Presby, Eljen. These all have a distribution and media pack surrounded by sand and have been tested by NSF to produce TL2 effluent at the base of the sand.

AOSEs do use these products for TL2. They also use these products just for distribution, but follow the manufacturer's protocol for sizing and installation.

However several AOSEs have asked, when such a product is being used for distribution only, can the sand required by the unit be used to meet vertical separation requirements? In general, all of these manufacturers state that when used to produce TL2 effluent, the vertical separation is measured from the bottom of the required sand. **But if you don't have to produce TL2, can an AOSE utilize such a system's sand layer to create vertical separation?**

d. Increasing depth and center-to-center on slopes. (15 minutes)

The SHDR calls for increasing depth of trenches and the center to center spacing of trenches with slope. GMP 147 waived the increase in trench depth, but did not waive the increase in the center to center spacing. It also allowed the installation of trenches shallower than 12 inches on any type of soil up to 15% slope.

Currently the AOSS Regulations are silent on any installation criteria so the SHDR Regulations would apply unless the system design is under 32.1-163.6. However because of the previous guidance under GMP 147, and the reference to the design criteria in the new GMP 2016-03, the question is again.

The only policy that provided details for this type of design was rescinded, however, the new GMP directs a designer to continue to use the design guide in the rescinded policy.

Can an AOSE design under this rescinded policy and can VDH approve it under 32.1-163.5?

ADDITIONAL QUESTIONS – Residential Wastewater

§ 54.1-400. Definitions.

"Residential wastewater" means sewage (i) generated by residential or accessory uses, not containing storm water or industrial influent, and having no other toxic, or hazardous constituents not routinely found in residential wastewater flows, or (ii) as certified by a professional engineer.

A PE can certify that a source is residential strength so that an AOSE is eligible to design the system under the exemption. The exemption language says 'Conventional and alternative onsite sewage systems receiving residential wastewater...'

Should the 'residential strength' be evaluated on the 'raw' wastewater or can blending/flow equalization/ septic tank effluent be used to demonstrate a residential strength applied to the soil?

If an AOSE has a PE do a wastewater characterization that indicates residential strength BUT the flow for the source is not in accordance with or is not found in Table 5.1, can the AOSE design the system?

Example: PE demonstrates a reduced flow per bedroom for a residence and residential strength. Can the AOSE take that wastewater characterization and design from it or does the flow deviation make it a PE design under 32.1-163.6?

Example: PE develops a flow for a new source and a wastewater characterization that is not in Table 5.1. The PE says the wastewater is residential strength and has assigned a flow. Can the AOSE design the system?

B. Trench width. 12 VAC 5-610-950 E.2, limits absorption trenches to widths between 18 inches and 36 inches. This section is waived to allow the use of absorption pads. A pad is an absorption area wider than three feet but not longer than 100 feet. Absorption pads may be used under the following conditions:

1. A system may contain one or more pads.
2. The combined area of all pads in a system may not exceed 1,200 square feet.
3. Pads and trenches may not be used together in a single system.
4. Pads shall be limited to sites with slopes of 10 percent or less.
5. The pad design must incorporate a means to approximate uniform dispersal.

C. Minimum Cross Section Dimensions 12 VAC 5-610-950.E.1 is waived. This section establishes how sidewall depth is measured and requires increases in the installation depth of trenches as the slope of the site increases. By waiving Section 950.E.1 absorption systems designed under this policy may be installed at grade even on steeper slopes. No distinction is made between pads and trenches. Section 12 VAC 5-610-950.F, which increases the lateral separation distance between trenches as the slope of the site increases, is not waived.

Designers are encouraged to use a conservative approach when designing shallow placed systems on sloping sites to prevent effluent from breaking out at the contact between the original soil surface and the fill interface. Drip Dispersal may be appropriate technology for difficult sites.

D. Minimum Installation Depth. 12 VAC 5-610-596 C.1, which limits the installation of trenches shallower than 12 inches to Texture Group I and II soils, is waived for slopes up to 15 percent. For slopes up to 15 percent, there are not any soil texture group limitations for shallow placed systems. The infiltrative surface (i.e., the bottom of the pad or trench) shall be installed at grade or deeper on naturally occurring undisturbed soil. No fill material shall occur beneath the infiltrative surface. On sloping sites the installation depth shall be measured on the downhill side of the trench or pad.

E. Loading Rates. Table 5.4 of the *Regulations* and 12 VAC 5-610-950 D, which establish loading rates for subsurface soil absorption systems, are waived. Systems designed pursuant to this policy shall use Table 2 contained herein to determine the maximum acceptable loading rates. Designers are authorized and encouraged to use more conservative loading rates.

F. Pump System Designs.

1. Pumps Integral to Treatment Systems. Pumps integral to the treatment system are pumps that move sewage or effluent from the house or pretreatment system to the treatment system and/or pumps that move effluent within the treatment system. The *Regulations* do not

specifically address pumps used for purposes other than conveying effluent to a dispersal system. Section 880 is waived in its entirety for pumps, pump chambers, and appurtenances integral to treatment systems.

2. Conveyance Pumps. The pump requirements contained in 12 VAC 5-610-880 subsections A.1, B.1, B.6, and B.7 are waived. Pump systems designed in accordance with these sections of the *Regulations* are not appropriate for systems dispersing treated effluent to a reduced size absorption area. Therefore, the use of the pump design criteria in subsections B.1, B.6 and B.7 in the *Regulations* is expressly prohibited except when the sizing criteria in Table 5.4 of the *Regulations* are used. The requirement in subsection A.1 for a velocity of two feet per second to achieve scouring, while not necessarily needed for treated wastewater, may be used at the discretion of the designer.

- G. Plans and Specifications. Formal plans and specifications required in Section 250.C is waived for designs that are exempt from the practice of engineering.
- H. The depth of gravel in Section 930.E is not waived. All trenches and pads, which use aggregate, shall be designed using six inches of gravel (or other approved aggregate) under gravity percolation lines and two inches over the line. For LPD (low pressure distribution) systems 8.5 inches of aggregate is required under the pipe and two inches over the pipe.
- I. Separation Distance to Impervious Strata for Shallow Placed Systems. An impervious stratum is a soil feature that has a measured or estimated percolation rate in excess of 120 minutes per inch and may include bedrock, pans, restrictions, or shrink-swell soil. The separation distance to these features for shallow placed systems is shown in Table 4.3 of the *Regulations*, with the exception of the separation distance to watertable. The separation distance to an impervious strata may be reduced from 18 inches to a distance not less than 12 inches below the trench bottom when a professional engineer certifies in writing that he has evaluated the hydraulic capacity of the site to disperse wastewater and in his professional opinion, water mounding will not encroach on the separation distance required in Table 3.
- J. Separation Distance to Watertable. The separation distance between the infiltrative surface of a soil absorption system and a watertable as shown in Table 4.3 of the *Regulations* is waived. Use Table 3 of this policy.

Table 3	
Separation Distance between Infiltrative Surface of Soil Absorption System and Watertable	
Percolation Rate	Separation Distance
1-25	6 inches
26-37	8 inches
38-49	10 inches
50-120	12 inches

K. The Minimum Standoff Distance to Watertable, or Other Limiting Factor, is Achieved Under the Entire Absorption Area. The absorption area may consist of any dispersal method approved by the department or authorized by the variance. The absorption area determined may be achieved by either an absorption pad or absorption trenches, provided:

- The absorption area, (either pads or trenches) is installed on contour. When a pad system is designed, the longest dimension of the pad shall be along the contour. Contour means that the longitudinal axis of the pad follows the contour of the site within 4 inches (+/-2 inches). Every effort *should* be made to minimize the linear loading rate, particularly when using a pad design.
- When a pad is utilized, the bottom pad area shall be installed level while maintaining at least the minimum required separation distances to all soil limiting factors.
- No portion of the pad bottom area may be installed in fill material.
- The system shall be designed 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.
- When designing a drip dispersal system, the designer may use the loading rate shown for either the two or the three foot wide trenches shown in Table 1. To determine the area needed, divide the daily peak wastewater flow in gallons by the loading rate (GPD/ft²) selected from Table 1. Multiply this result by three to determine minimum footprint area in square feet. The drip dispersal design guidance in GMP #107 applies to the design of the drip field. Where slopes and/or restrictive horizons are a consideration, the Absorption Area Increase Table in GMP #107 must be followed.
- When a pad is proposed for use within 20 feet up slope or down slope from another proposed or actual absorption system, the designer must certify that the upslope system will not adversely impact the down slope system and produce the calculations used to make the certification.
- The absorption area cannot be smaller than the maximum loading rates established in Table 1. A larger area may be specified by the designer. The minimum absorption area shall be 320 square feet and no additional area reduction shall be permitted for the use of water saving fixtures.
- All absorption trenches shall use parallel distribution (i.e., either a distribution box or pressure distribution). Distribution to the absorption area may be accomplished by gravity flow to an underlying pad or a distribution box, or under positive pressure to a manifold. In any case, effluent shall be applied proportionally to the absorption area herein.

- The infiltrative surface that comprises the absorption area may be installed at grade. On sloping sites, this shall be measured on the downhill side of the installation (i.e., no fill material may be placed below the absorption system).
- Cover material shall be provided from the top edge of the absorption system horizontally in all directions to existing grade and shall cover the top and side of the absorption area, which may be exposed during construction. The designer shall include sufficient cover in the system design to prevent freezing. In no case shall the depth of cover be less than four inches (note: in some areas of the state this may be insufficient to provide frost protection). The finished slope of the cover material shall not exceed 1:4 (rise:run) and a slope of 1:6 or shallower is preferred. Soil cover material shall be conducive to successful vegetative growth.

Private Well Regulations Update



Presentation to SHADAC




August 20, 2019

Private Well Regulations Update

Where We Are in the Process

- Original Regulation - September 1988
- First Major Revision - 1990
- Minor revisions since
- Workgroup Formed in 2016
- NOIRA published October 1, 2018 - No public comments received
- Draft regulation approved by Board of Health - June 6, 2019

Private Well Regulations Update

Documents		
 Proposed Text	6/13/2019 4:46 pm	
 Agency Statement	6/6/2019	
 Attorney General Certification	7/1/2019	

Status	
Exempt from APA	No, this stage/action is subject to article 2 of the <i>Administrative Process Act</i> and the standard executive branch review process.
Attorney General Review	Submitted to OAG: 6/13/2019 Review Completed: 7/1/2019 Result: Certified
DPB Review	Submitted on 7/1/2019 DPB review in progress. [Day 44]
Secretary Review	Not yet submitted to Secretary of Health and Human Resources
Governor's Review	Not yet submitted
Virginia Registrar	Not yet submitted
Comment Period	<p>You may comment on this stage in a Town Hall comment forum as soon as it is published in <i>The Virginia Register of Regulations</i>.</p> <p>If you sign up for the Town Hall email notification service, you will be notified when the comment forum opens.</p> <p>The regulatory information regarding this stage is subject to change until 10 days before it is published in the Register.</p>

Private Well Regulations Update

Significant Changes

- Definitions
- Classes of Water Wells
- Reorganization of sections (e.g., water quality)
- Well Location
 - Table 3.1
 - Additions and Changes
- Materials
- Construction
- Well Abandonment



Private Well Regulations Update

Other Changes

- Masculine pronouns
- Spelling and Grammar
- Consistency with other Regulations

Private Well Regulations Update

WHAT TO LOOK FOR - **DEFINITIONS**

Definitions added or modified to provide consistency with other regulations and clarity to the public

Private Well Regulations Update

WHAT TO LOOK FOR - **PERMITS**

Permit is no longer 54 month duration.

Permit period matches onsite permits (18 months with provision for ONE 18 month renewal).

Private Well Regulations Update

WHAT TO LOOK FOR – **CLASSES OF WELLS**

This section has been revised so that Class IV (non-potable) well construction standards MIRROR the Class III (potable standards). This will allow homeowners to easily modify a well classification in the future if warranted.

Clarified that wells drilled to determine water supply are NOT observation/monitoring wells

Private Well Regulations Update

WHAT TO LOOK FOR – **WELL LOCATION**

Table 3.1 (separation distances) has been revised to improve readability (e.g. by removing footnotes) and to provide additional setbacks that are consistent with other regulations.

The setback from termite treated foundations has been discontinued.

Standards are provided to assist in well location for properties adjoining ≥ 3 acre properties used for agricultural purposes.

Private Well Regulations Update

WHAT TO LOOK FOR – **WELL MATERIALS**

This section has been modified to clarify that materials used in well construction must reference national standards applicable to water wells (NSF, ASTM)

Subsections have been added addressing drilling fluids, water, and disinfection compounds

NO COAL COMBUSTION BY-PRODUCTS in grout

Private Well Regulations Update

WHAT TO LOOK FOR – **WELL CONSTRUCTION**

This section has been modified to add subsections addressing well bore, filter pack, development, maintenance and repair

There is more information regarding well construction than there is for wells in the Waterworks Regulations. Waterworks references the AWWA A100 Standard.

There is no comparable national standard that can be referenced for private wells

Private Well Regulations Update

WHAT TO LOOK FOR – **WELL ABANDONMENT**

This section has been modified to clarify what constitutes “Clean Fill” used in well abandonments; to clarify a prohibition against using coal combustion by-products in well abandonment; and to provide an alternate method for abandoning bored wells such that they can be declassified as “wells” with respect to separation distance. These changes will protect groundwater and assist homeowners.

Private Well Regulations Update

Other Considerations

- The regulation sequence is restructured so that regulatory information is presented in the order that wells are constructed
- An alternate method for well disinfection is added
- Clarifies permanent abandonment for monitoring wells that are taken out of service
- An updated reference to DEQ requirements in Groundwater Management Areas is added.

Private Well Regulations Update

Summary

The update to Private Well Regulations will:

- Provide clarity
- Provide more options to homeowners
- Provide consistency with other regulations and other agencies (DEQ, DPOR, DHCD)
- Enhance protection of public health and groundwater resources

Private Well Regulations Update



Questions?

Presentation to SHADAC

August 20, 2019