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**DRAFT Meeting Highlights  
Residential Graywater Advisory Committee  
May 12, 2020 2:00pm - 4pm  
Virtual Meeting via Google Hangouts**

## **Participants:**

Barry Glotfelty, Frederick Co. Environmental Health Dept., MACHO  
Claire Welty, UMBC  
Dave Duree, Advanced Systems, Drip Irrigation  
Ching Tien, MDE  
Ellen Frketic CWEA and MES  
Gary Anotonides, Ches. Env. Prot. Assn  
Tom Buckley, WSSC Water  
Jenny Willoughby, City of Frederick, MML  
Jim George, MDE  
Les Knapp, MACO  
Massoud Negahban-Azar, UMD  
Matthew Cummers, Calvert Co. Environmental Health Dept., MACHO  
Matt Rowe, MDE  
Mike Harmer, WSSC Water  
Mike Moulds, Kent County DPW/MACO  
Nasser Kamazani, Montgomery County  
Nony Howell, MDE  
Robert Mitchell, Worcester Co. Environmental Health Dept., MACHO  
Zohreh Movahed, CWEA Water Reuse Committee

## **Summary of Action Items**

1. Advisory Committee comments on Version 2 of the Draft Regulation are being accepted by MDE until the end of May. Send them to [Jim.George@Maryland.gov](mailto:Jim.George@Maryland.gov)
  - a. The Graywater Issues List shared with the Committee is a helpful guide for conducting a review.
2. Advisory Committee members should review these Highlights to ensure they fairly reflect views that are attributed to the Committee. Send comments to [Jim.George@Maryland.gov](mailto:Jim.George@Maryland.gov)

## **Meeting Highlights**

1. **Review Past Highlights, Announcements, Meeting Overview**
  - a. **Status:** Jim George noted the second draft of the Graywater Regulation was circulated to the Advisory Committee by email on April 20, with comments

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requested by May 8. He received six sets of comments, which are greatly appreciated.

- b. **Additional Time for Ver 2 Review:** Jim acknowledged that April 20 - May 8 was not a lot of time for review. Therefore, MDE will be accepting comments until the end of May. Advisory Committee members may send them to Jim. He will send an email out to this effect.
- c. **List of Issues:** In the follow-up invitation to this meeting, sent by email last week, Jim included a List of Issues (PDF: *Graywater Reg Issues Consolidated April 2020*). It is a refinement of the list we used during our last Advisory Committee meeting and will be used to identify both Unresolved and Resolved issues.

It will serve as a record of key things the Graywater Advisory Committee discusses. You may use it as a touch-stone for ensuring that issues of importance to you are tracked and addressed. You are welcome to let Jim know if you have any questions or suggestions about that list.

- d. **Graywater Overview Tables & Figure:** Jim sent you a PDF file that includes Two Overview Tables and a figure describing a branched drain irrigation system system.

## 2. Discussion of Approving Authority Designee - Nony Howell (MDE)

Nony Howell explained that the approvals of graywater irrigation systems would be performed in an analogous manner as onsite sewage disposal systems. This is currently formalized by two key documents: 1) an MOU between the Maryland Department of Environment (MDE), Maryland Department of Health (MDH) and the local health departments, and 2) delegation agreements between MDE and the local health departments.

These documents are currently under development and the intention is to incorporate graywater systems. The Environmental Liaison Committee is working on the MOU with an August deadline as their goal. The individual delegation agreements are at varying stages of completion.

Jim explained that the Version 2 draft regulation proposes defining Graywater as a form of sewage over which existing authority governs management of discharges. However, this authority requires that approval of discharges take the form of a permit. This precludes the option of a simple registration process for low flow systems, which had been considered by the Advisory Committee. That said, the draft regulation would allow low flow systems to be approved without a site inspection if deemed appropriate by the Approving Authority (MDE Secretary or designee).

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Matt Cummers mentioned that in the current draft Reg, 26.04.12.00, 2nd paragraph, reference to local health departments adopting any necessary implementing ordinances is not workable, because few have the authority to do so; ordinances are the purview of the local government. Nony mentioned that local governments may need to amend their plumbing codes.

Further discussion included a comment that the language needed clarification (B. Glotfelty). A question of how graywater irrigation would work in the municipal setting was raised by J.D. Willoughby. Currently, the installation of septic systems is precluded in sewerred (S1) areas; however local health department staff do perform duties in these areas when wells are installed. It was agreed that clarifications, and possibly more discussion, is needed on the specific language in the regulation to ensure local local authority exists to enable implementation of graywater systems, including plumbing codes.

### 3. Discussion of Key Issues

#### **Broad Issues:**

- A. Overview Tables & Figure: Jim George presented two tables and a figure of a branched drain irrigation system as background information to support the discussion (See material at the end of these highlights).
- B. Defining Graywater: Jim George reiterated that the draft Reg defines graywater as a subset of sewage in order to maintain authority over its regulation. In doing so, permits for graywater discharges (irrigation); therefore, we will set aside the option of having a simple registration for low flow irrigation systems.
- C. Operating permit for single residence irrigation systems: The Ver 2 regulation only calls for construction permits for graywater irrigation systems. One commenter (B. Glotfelty) noted that enforcement of some operations issues, like no discharge when soils are saturated, would benefit from having an operating permit.

This generated considerable discussion of the pros and cons. As a baseline, Jim noted that septic systems do not have operating permits; however, the government still has expectations for operational requirements. In theory, an operating permit provides more enforcement leverage. On the downside, some Committee members have advised against operating permits as impractical to administer.

The conversation transitioned to the issue of operating permits for single family toilet flushing systems. The discussion touched on the NSF 350 standard requiring manufacturers to establish maintenance contracts with purchasers; however, the enforcement of such a requirement falls to regulators. This brought the group revisit a topic it has discussed in the past, i.e., it is not practical to envision enforcement of practices inside of single family residences. It was, in part, for this reason that the Ver 2 Reg proposes toilet flushing be allowed with a plumbing permit, registration (so we know the system exists) and a land recording of the system.

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Jim noted that, as of today, no prohibition exists on the installation of any type of graywater system for toilet flushing. In response to the option that the Reg could be silent on graywater toilet flushing, and simply let people do it, Committee members felt we have an obligation to provide direction in the Regs. It was generally agreed that expressing the requirement for NSF 350 technology, which is a plumbing code requirement already, provides some degree of public safety beyond remaining silent. The question of whether to have an operating permit for the single residence setting was left unresolved; however, consensus supports an operating permit for multi-family residential toilet flushing if that setting is adopted.

- D. Regs Vs Guidelines: Jim George said that at least one comment received suggests that some material in the Ver 2 Reg could be moved into a guidance document. Jim asked the Committee to keep this in mind while continuing its deliberations. MDE is trying to avoid creating a document external to the regulation that would be incorporated by reference, due to the administrative burden and inflexibility of refining the guidance when needed.

## **Graywater Issues List Topics**

The Committee had only about 30-minutes to begin discussing the topics on the issues list (See filename: Graywater Reg Issues Consolidated April 2020).

(1) Under “Scope Issues,” Issue: “Should regulations enable multi-unit residential toilet flushing” with graywater?

Zohreh M. raised the issue of Covid-19 and noted that, in general, the disinfection in graywater systems in NY City for this purpose have been effective. Jim mentioned that such systems must have the ability to switch over to potable water as a back-up; therefore, if treatment efficacy were ever in question, the system could be switched over to the backup water supply.

Matt C. felt that this use should remain within the regulation, but could require adoption of a local ordinance.

Zohreh M. voiced that this setting made the most sense, compared to the single family setting. Aside from maintenance, she noted the cost effectiveness.

(2) Under “Approval & Oversight Issues” Issue: “Should Registrations be allowed?” a) For single family residential toilet flushing, b) for low flow irrigation

Jim George observed that sub-issue (a) is central to a topic that has been set aside earlier. Sub-issue (b) is effectively resolved by the legal requirement that discharges are prohibited without a permit as described above. The Committee members appeared to accept this synopsis.

Matt C. noted before the close of the meeting that, for completeness, some of the configurations of graywater systems would likely involve an electrical permit as well. Jim thanked him for his observation.

At this point, time ran out and discussion of the Issues List ended.

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## 4. **Summary of Tasks, Next Steps**

Committee Members were invited to comment on the Ver 2 Draft Reg and Graywater Issues List by the end of May.

Next Meeting: June 23, 1:30 - 4pm (Tentative)

**Table 1 – Graywater Regulation Overview**

Graywater Quality Type	Treatment	Uses	Setting
<b>Type 1</b>	Untreated <sup>1</sup>	Non-Drip Irrigation <sup>3</sup> (Subsurface)	● Single Residence
	Filtered (~100 microns)	Drip Irrigation (Subsurface)	● Single Residence
<b>Type 3</b>	NSF 350 Std. <sup>2</sup>	Drip Irrigation <sup>4</sup> (Subsurface)	● Single Residence
		Toilet Flushing	● Single Residence ● Multi-Family

Notes:

1. Coarse filtering may be considered, though it is often discouraged as unnecessary, messy and often not maintained.
2. NSF 350 – BOD & TSS reduction to ~ 10mg/l with disinfectant.
3. Non-Drip irrigation is referred to as ‘branched drain irrigation’ in the regulation (Figure 1).
4. Subsurface drip irrigation using Type 3 graywater is discouraged as being excessive treatment for the use.

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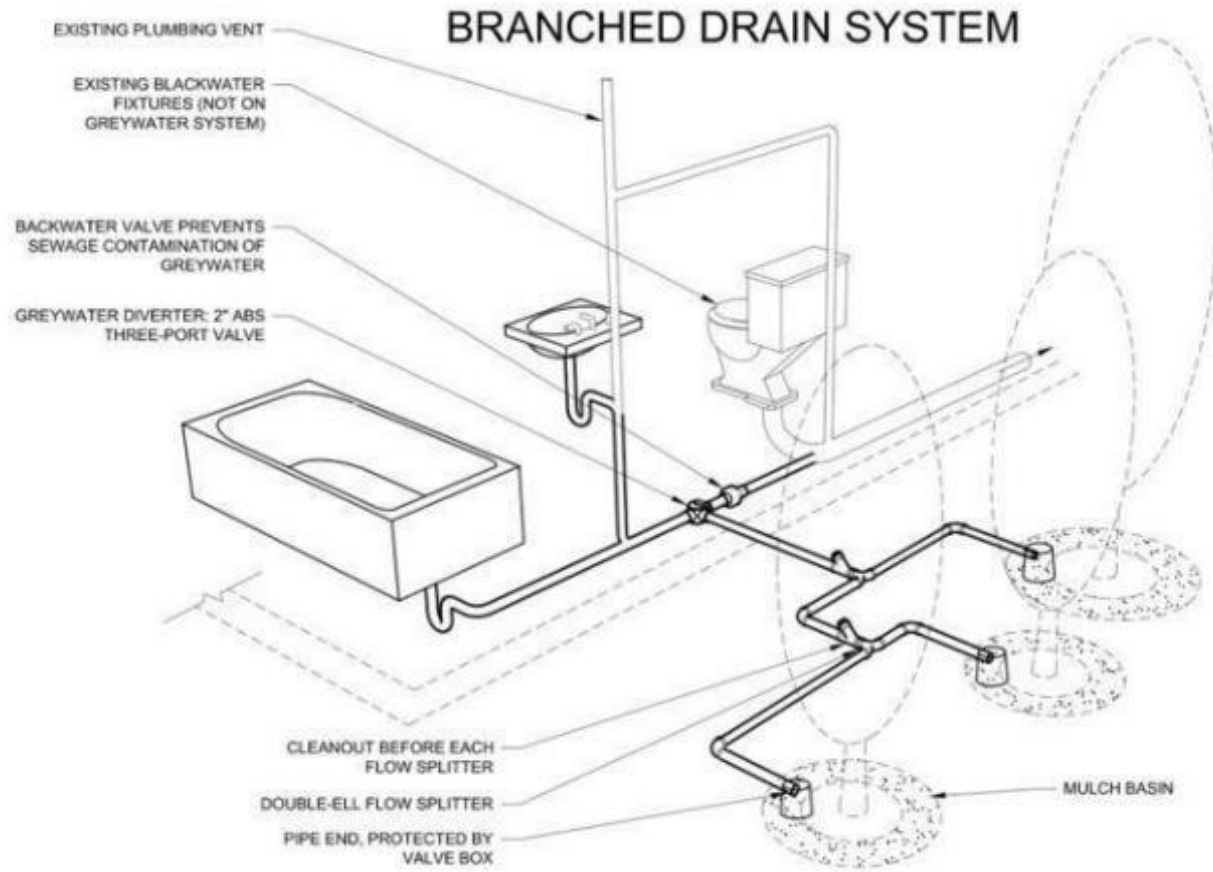


Figure 1 – Branched Drain System (Non-Drip Subsurface Irrigation). Characterized by discharges at the end of pipes that are much less prone to clogging than drip irrigation.

**Table 2 – Graywater Approvals**

Graywater	Uses	Setting	Approvals
<b>Type 1 (Untreated)</b>	Non-Drip Irrigation (Subsurface)	Single Residence	<ul style="list-style-type: none"> <li>● Plumbing Permit</li> <li>● Construction Permit for Irrigation System</li> </ul>
<b>Type 1 (Filtered<sup>1</sup>)</b>	Drip Irrigation (Subsurface)	Single Residence	
<b>Type 3 (NSF 350 Std<sup>2</sup>)</b>	Drip Irrigation <sup>2</sup> (Subsurface)	Single Residence	
	Toilet Flushing	Single Residence	<ul style="list-style-type: none"> <li>● Plumbing Permit</li> </ul>
Multi-Family		<ul style="list-style-type: none"> <li>● Plumbing Permit</li> <li>● Construction Permit for Treatment System</li> <li>● Operating Permit</li> </ul>	

Notes:

1. Mechanical filtering with ~100 micron pore size to avoid internal clogging of the drip irrigation system.
2. NSF 350 – BOD & TSS reduction to ~ 10mg/l with disinfectant.
3. Subsurface drip irrigation using Type 3 graywater is discouraged as being excessive treatment for the use.