Two Onsite BMP Proposals

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Overview

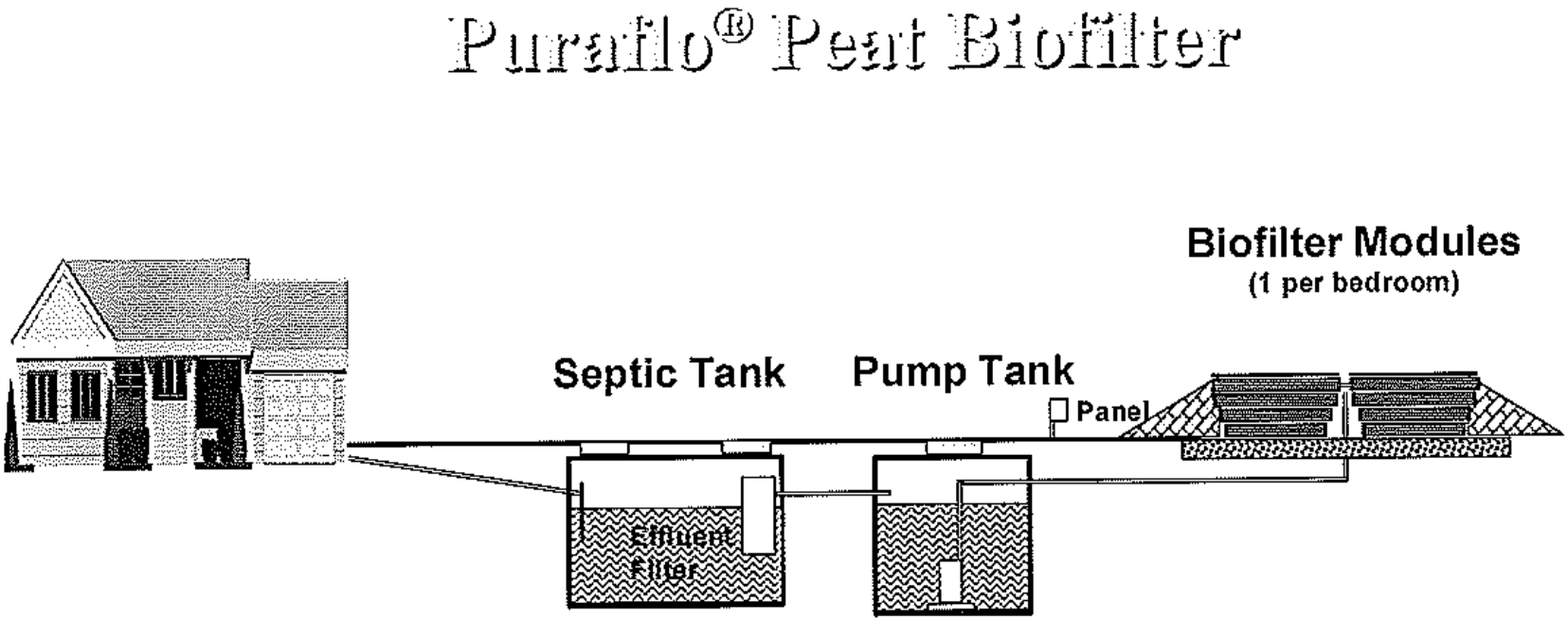
- Two manufacturers submitted requests for onsite sewage sector Best Management Practices (BMPs) to VDH May 2014.
- Originally to go directly to WWTWG, but modifications to the BMP Protocol in June 2014 dictated that VA present these BMPs.
- BMPs were presented to WWTWG in September 2014.
- WWTWG requested responses to a number of questions before proceeding
- This presentation will provide those responses.

Proposed BMPs

- Anua
  - Puraflo Peat Biofilter with shallow dispersal (≤ 18 inches) to pad or trench dispersal
  - ≥ 50% net N reduction requested
- American Manufacturing Company (AMC)
  - Filtered septic tank effluent (STE) distributed at low loading rates
  - < 12 inch install depth and > 12 inch separation to limiting feature
  - Soil texture groups 2, 3, and 4 (not 1)
  - ≥ 50% net N reduction requested

Anua Puraflo Peat Biofilter to pad/trench

Typical pad layout



Anua Puraflo Peat Biofilter - VA Study

	Samples	Monthly Avg TN (mg/l)	% Reduction From PT	% Reduction From SC	% Reduction From PW
Background (BG)	n=72	1.84			
Pump Tank (PT)	n=108	58.12			
Puraflo Sample Chamber (SC)	n=146	34.83	40.1%		
Pad Well (PW)	n=83	14.65	74.8%	58.0%	
10-ft Down-gradient (DG)	n=85	6.04	89.6%	82.7%	58.8%

Anua Puraflo Peat Biofilter - VA Study

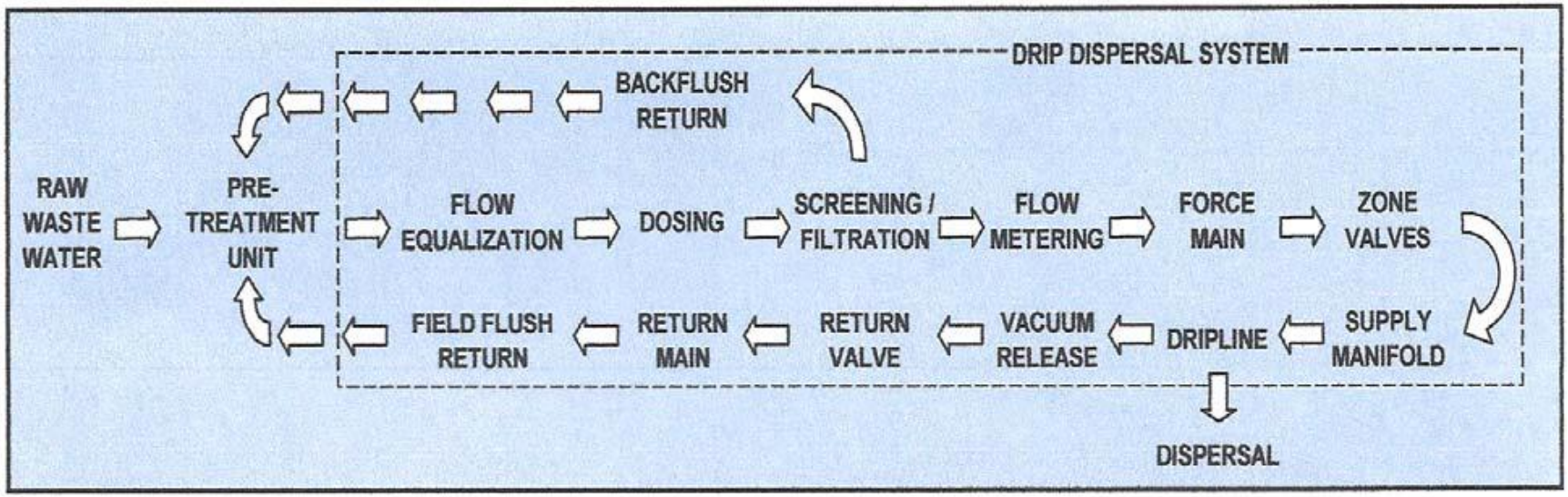
- 5 kg raw → Puraflo unit at 40% reduction → 3 kg out of Puraflo unit and into pad/trench
- Pad reduces additional 58% from Puraflo unit (sample chamber) → 1.26 kg delivered at edge of drainfield
- ***Net*** reduction beyond baseline is (4 - 1.26)/4 = 68.5%

Puraflo Peat Biofilter - Summary

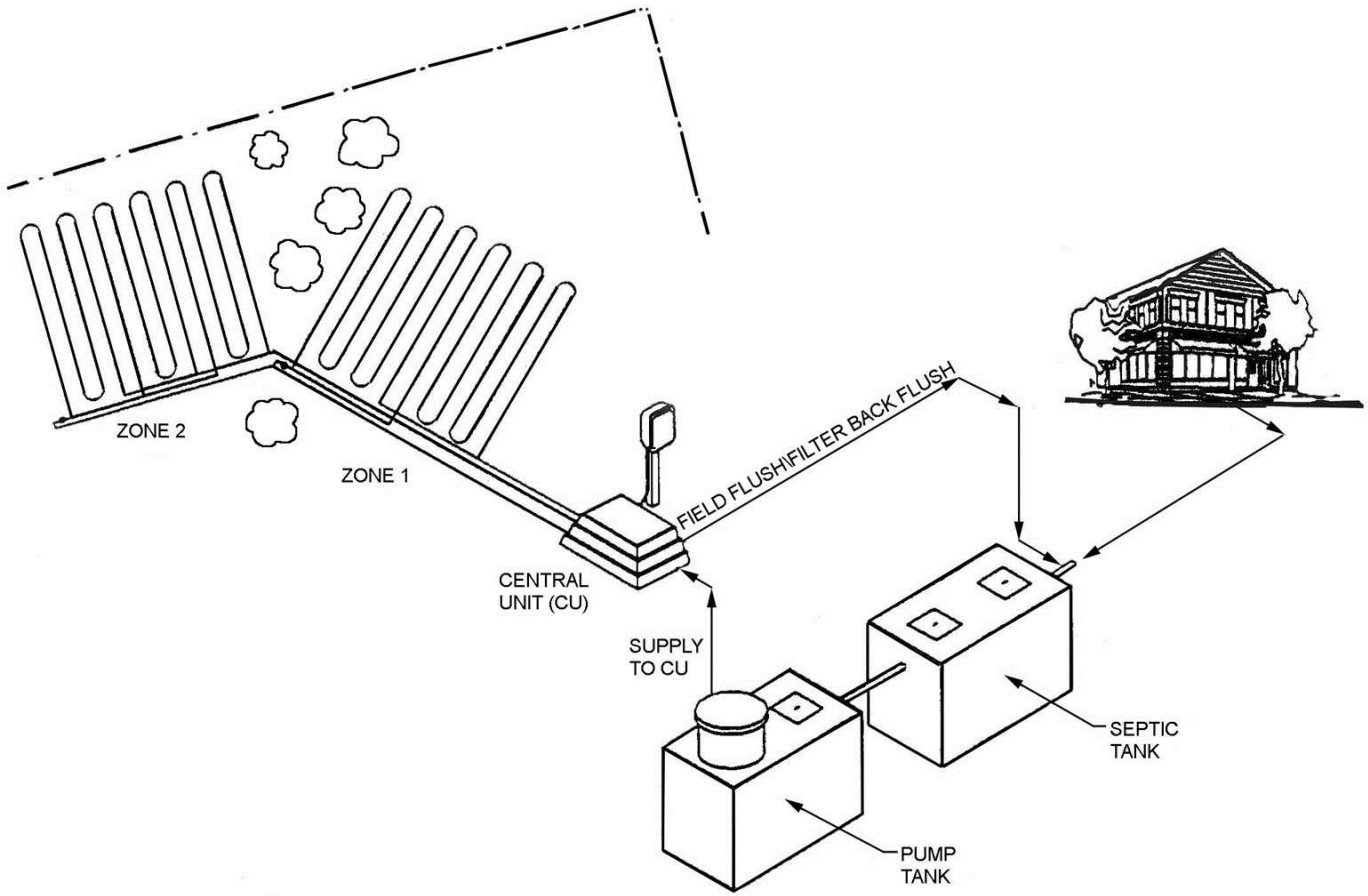
BMP Request: Anua Puraflo Peat Biofilter with shallow dispersal (≤ 18 inches) to pad or trench dispersal for ≥ 50% net N reduction.

Recommendation: Advance to Onsite BMP Panel for detailed review.

American Manufacturing Company Perc-Rite Drip Dispersal System



Typical layout



Static Plow Installation of Tubing

American Manufacturing Company Perc-Rite Drip Dispersal System

Basis

Two main studies are used in support of the request, which specifically used the Perc-Rite system:

1. Hepner, L.D., D. Linde, C. Weber, and D. Smith, 2007, "Reduction of Bacteriologic and Chemical Constituents of Septic Tank Effluent with Depth Using a Drip Dispersal System," Eleventh Individual and Small Community Sewage Systems Conference Proceedings, ASABE Publication Number 701P1107.

   Additional information on this study is found in:
   Hepner, L.D., D. Linde, C. Weber, and D. Smith, 2005, "Alternative On-Lot Technology Research – Soil Based Treatment Systems," Delaware Valley College, Doylestown, PA.

2. Hayes, J.G. Jr. and A.N. Moore, 2007, "Long Term Impacts of Micro-Irrigation 'Drip' Treatment and Disposal Systems on Delaware's Marginal Soils," Eleventh Individual and Small Community Sewage Systems Conference Proceedings.

AMC Perc-Rite Drip Dispersal - Summary

Request:

- Filtered septic tank effluent distributed at low loading rates
- < 12 inch install depth and > 12 inch separation to limiting feature
- Soil texture groups 2, 3, and 4 (not 1)
- ≥ 50% net N reduction

Recommendation: Advance to Onsite BMP Panel for more detailed review.

Questions

What panel does this go to for approval?

- **We assumed the Onsite BMP Panel would be used– not the attenuation panel.**

What is the procedure for approval?

- **We understand that we are to present a BMP for consideration to be examined further by a panel. We are asking for the WWTWG to assign the review of these BMPs to the Onsite BMP Panel.**

Questions

Why can't we use the proprietary treatment technology testing protocol in the Expert Panel Report (use of NSF 245 and field testing)?

- **These are both BMPs that include a soil component. The testing protocols in the Expert Panel Report were focused on treating effluent before it hits the soil. There is not a protocol for examining these types of systems.**

Questions

Are we using 3rd party testing of just whatever the vendor wants to submit?

- **These two BMPs used various 3rd party testing to support their claims. The purpose of the review is to establish if the data is robust enough.**

Does the Data sharing workgroup or Expert Panel know how we should proceed on approving BMPs?

- **VA understood that we have to follow the BMP Protocol that is set out. First step is for review of the BMP to be assigned to a review panel by this workgroup.**

Questions on Anua

Would it be easier to lump this into the mound system BMP?

- **Peat is demonstrated to produce a high quality effluent (recognized to 10/10 limit in VA) and therefore it is not the same as a mound system**

How frequently does sand have to be replaced vs peat?

- **Peat replacements occur 7 to 15 years depending on use and type of peat. Sand has a longer life – 20 years or more unless fouled.**

Cost?

- $20,000 -30,000 (4 bedroom house - installed)

Question on Perc-Rite

Perc-Rite recommends secondary treatment in MD to avoid clogging of emitters.

- **This BMP is being advanced by Perc-Rite because they believe that system overcomes the clogging issues and is a cost-effective way to comply with the TN reductions**.

The previous panel already looked at drip.

- **Yes that's true. This vendor is asking that we look at the information that is specific to his product which makes it better at TN reduction**

Cost?

- **$15,000 to $20,000**

Conclusion

- Request is to authorize the assignment of the review of these two BMPs to the appropriate Panel.
- Recommend reconvening the Onsite Expert BMP Panel