

**Subsurface Sewage Treatment Systems (SSTS)  
Technical Advisory Panel (TAP) for Product Registration**

Meeting Notes – April 16, 2009  
MPCA St. Paul, Board Room West

**Meeting Attendees**

<b>Committee Members</b>	<b>Present on April 16</b>	<b>Guests</b>	<b>Present on April 16</b>
Ed Kerzinski	x	Craig Adams, Premier Pump	x
Mitch Johnson	x	Allison Blodig, Premier Tech	x
Loren Kohnen	x	Shawn Riley, Wright County	x
Kemp Ritter	x	Colin Bishop, Bord Na Mona	x
Sara Christopherson	x	Mike Sundberg, Bord Na Mona	x
Bob Whitmyer	x	Jesse Kloeppner, Orenco Systems	x
Greg Halling	x	Matt Lee, Aqua Test	x
Joe Enfield	x	Eric Larson, Septic-Check	x
Chad Villand	x	Joy Larson, Ritter and Ritter	X
<b>MPCA Staff</b>			
Barb McCarthy	x		
Gretchen Sabel	x		
Mark Wespetal	x		
Bill Priebe, Supervisor	x		
Dave Sahli	x	Leah Hedman, Attorney General Office	x

**Motion by Sara Christopherson, to approve minutes from March 19, 2009 TAP meeting. Second by Joe Enfield. Approved unanimously.**

**Proprietary Distribution Media – TAP Opinion Summary**

A summary document was not provided; Chair Whitmyer is intending to prepare a draft Opinion Summary document for TAP review.

**Website Update**

Barb McCarthy provided a brief update of the website progress, operating permit template and the Drainfield Rock Recommended Standards and Guidance (RSG) Document. The operating permit template is posted on the website and available for use. The Drainfield Rock RSG Document is posted on

the website and is open for public comments. There are some issues related to posting the Listing of Registered products on the MPCA website that will be resolved in near future.

### **Single Pass and Recirculating Sand Filters**

Dave Sahli (MPCA) gave a presentation with general information on the design guidance for these public domain products. These documents were developed by the consulting firm MSA, Inc. through a contract with the MPCA. The single pass filters would likely meet Treatment Level A and B while the Recirculating Sand Filter would likely meet Treatment Level B (or Level C). Fecal coliform bacteria is the parameter of concern that would prevent these public domain filters from meeting Treatment Level A and Treatment Level B.

The TAP discussed issues and concerns related to the sand filter documents. The standards in this document contradict the standards for mounds, this is inconsistent and a problem. The dosing regime for the filters may not be feasible; this needs to be confirmed and addressed. Also, the document covers only systems 2,500 to 5,000 gpd, but standards are needed for sand filter systems down to single family homes. It is also a concern that these documents are being used in the training, as is, without TAP review. The University of Minnesota is expected to provide a detailed list of comments on the sand filter documents.

There is no testing to demonstrate that the systems perform as expected. Without the testing, we are holding these public domain treatment devices to a lesser standard than we expect for proprietary treatment products.

Are the sand filters Type IV or Type V systems? These would be Type IV since it is a prescriptive design. Question: Regarding the recirculating sand filter, is the 2-5 gpd/ft<sup>2</sup> forward flow or the recirculating flow? Answer: Forward flow. Are we going to specify a minimum recirculation rate? Answer: This must be clear for commercial systems; this is not addressed now. The document was prepared for residential strength waste, not for commercial or high-strength waste.

Other questions to answer: What treatment level should sand filters be registered at? What about total nitrogen for recirculating sand filters?

Next Steps: Comments on the sand filter guidance documents are to be sent to Barb McCarthy, who will collect them and work with MPCA engineers to come up with a revised draft for the May 21<sup>st</sup> TAP meeting.

### **Premier Tech – Bottomless Peat Filters**

Allison Blodig from Premier Tech reviewed her letter, dated April 14, 2009, with the TAP. This letter was emailed to TAP on April 15, 2009. Allison Blodig asked the TAP if they were comfortable with approving the product. If the effluent meets Treatment Level A, what are the concerns? Barb McCarthy stated that high loading rates are a concern for phosphorus breakthrough; she distributed data from the

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research site at the Northeast Regional Correction Center (NERCC) where peat filter effluent was discharged into a gravity trench for a number of years. Pan lysimeters were used to collect the filtrate at 1, 2 and 3 ft below trench bottom. Sara Christopherson stated that she did not feel it was fair to hold these products to a higher standard than we hold gravity trenches, where it was shown through a University of Minnesota evaluation of rock and chamber trenches that limited ponding was observed.

Allison Blodig indicated that a 'tracer study' had been performed on the peat filter; a TAP member asked if that study was available for TAP review. Alison Blodig indicated that she would provide the tracer study to the TAP. Question - Is attenuation within the peat the equivalent of timed dosing? The only way to actually consider this is to evaluate the data on how rapidly water moves through the peat; the tracer study would provide information on travel time through the peat. Question - Can this actually be listed as bottom draining filter, since the rule requires pressure distribution? It cannot, unless the TAP agrees with Premier Tech that attenuation within the peat is actually the equivalent of pressure distribution and provides a recommendation to the MPCA. However, it would be considered a Type V System.

Next steps: Approve the closed bottom Ecoflow for Treatment Level A at this point in time. TAP would review the tracer study and other information regarding the timed dosing, pressure distribution issue before considering the open bottom configuration. Question - Does the rule need to be changed before it can be allowed?

### **Effluent Screens**

Barb McCarthy distributed a one-pager that lists several options. Jesse Kloeppner with Orenco Systems, raised concerns that the language not preclude specific types of proprietary devices. After discussion, the committee felt that the language, "Effluent screen is (a commercially-rated) device installed either on the outlet of a septic tank or in a separate compartment to retain solids larger than one-eighth inch." The rule needs to state that effluent screens need to be accessible for maintenance and have an alarm. The concern is that the definition be specific enough to allow local governments to prohibit home-made devices.

### **Bord Na Mona (Puraflo Peat Fiber Biofilter)**

Barb McCarthy reviewed the checklist and draft approval letter prepared in the review of Bord na Mona's submittal. Colin Bishop with Bord Na Mona gave a presentation which included a video describing the treatment process using the Puraflo device. Wastewater goes from a primary tank to a pump tank. Flow from the pump tank is timed dosed to the peat pods every two hours, split equally between all the pods in the system. Each biofilter pod is designed for the flow from one bedroom. Colin Bishop indicated that bottom draining systems have been used in Minnesota for several years, and that they have a proven track record. The bottom draining Puraflo provides better treatment than a mound. The technology is the same; there is no reason to not allow bottom draining peat filters. Question – how is the system pressurized? Wastewater flows through the manifold to an orifice plate in each pod to split the flow and ensure each pod is loaded equally. Colin Bishop presented a table showing the

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difference in loading rates between the time dosed PuraFlo and the demand dosed mound. Tracer studies have shown that it takes 36-48 hours for wastewater to move through the peat.

Septic tank sizing – Question does Minnesota require an NSF sticker on the tank? No. Then the PuraFlo information will specify septic tank sizing in the product information. Question - if they register beginning with the two-pod system, what if you want to put in a one-pod system, is this Type V? Yes. Question - can you explain the training required? Born Na Mona requires a class for anyone who wants to design, install or provide service to a Bord Na Mona system; the company representative comes out to observe at least two installations or service events. Trained individuals are certified by Bord Na Mona and then they are listed on the Bord Na Mona website. Question - what happens if you see someone doing something wrong? They can lose their certification from Bord Na Mona.

Bottomless peat Questions - how is this like a mound? how is it different from mound? Discussion followed. If a mound is a Type 1, shouldn't a peat filter also be a Type 1? What is the configuration of the weep holes under the unit? It varies from 10 to 20 weep holes depending on the model. Four on each end and six on each side – the bottom is domed to direct effluent to the weep holes, which help promote even distribution. Bord Na Mona has a study that documents this to some extent – it was done in 2002 or 2003. Can the TAP make a recommendation to MPCA on this issue? It doesn't seem so. (Sara Christopherson was out of the room.) Colin Bishop reiterated that they feel that their system meets the code and should be allowed for open bottom discharge. Alison Blodig with Premier Tech noted that the Premier Tech system also can be timed dosed. Greg Halling noted that the footprint (and subsequently, the contour loading rate) is greater for the Premier Tech as compared to the Bord Na Mona.

### **High Strength Waste (HSW) Process**

Barb McCarthy discussed the March 12, 2009 draft process for conditional registration. This was developed with input from the SSTS Advisory Committee as well as a group of individuals who participated in a conference call on the subject. Jim Bell with Bio-Microbics discussed his letter, dated April 15, 2009, with the TAP. Question - To get a National Sanitation Foundation (NSF) test, could a device be installed at an NSF facility and then loaded with spiked effluent to simulate actual HSW? Would this be acceptable to MPCA for eventual full certification? Currently, there is not a spiking procedure specified to do this at NSF, but it could be developed. If he has support from more than one state, Mr. Bell thinks he may be able to get EPA support for developing the protocol. Eric Larson with Septic Check observed that there is a great need for this. Discussion – how would you come up with a standard “potion” for testing? Discussion followed, there were concerns, but it does seem possible that it could be done.

Matt Lee with AquaTest noted that the NSF tested devices do not perform as tested in actual installations. He is concerned that NSF isn't the way to go with any of these systems. Bob Whitmyer, Chair, asked the members if they would be interested in a spiked test. It generally seemed that it would

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be beneficial. The State of Washington also felt this way. Jim Bell will talk to some other states and then talk to EPA to see if this can be set up.

How to sample with a composite sampler? If composite sampling is considered, it could be done based on time. For example, a composite sample could be collected by pulling the same sized wastewater sample once per hour for a day (24 hours = 24 samples), and then measuring different volumes from the 24 samples - to obtain a representative sample.

Jim Bell indicated that the 70% organic loading to a system is also a problem. (see Mr. Bell's letter). Jim Bell feels that the 70% should be removed, and instead just register it for the level that it was actually tested at. It would then be up to the TAP to review the data and determine where the product should be registered at in terms of removal of CBOD, TSS, Oil and Grease. The committee seemed to be comfortable with this approach.

Jim Bell asked 'Why test 20 systems'? This is a lot. Question - Can engineering firms be added to the testing list? Yes. Question - What is the difference between Commercial 1 and Commercial 2? It is related to the Oil and Grease levels. Wisconsin says 40 mg/L while our draft says 30 mg/L for Oil and Grease.

Additional concern raised by Alison Blodig - CBOD testing on influent is difficult - it should be BOD on the influent and CBOD on effluent.

Chair Whitmyer requested that MPCA take these comments into account and develop a draft for TAP action at the May 21 meeting.

**Motion to adjourn made by Halling, second Christopherson. No opposition, meeting adjourned.**