

**Virginia Stormwater Best Management Practice (BMP) Clearinghouse  
Stakeholder Meeting**

DEQ Piedmont Regional Office  
4949-A Cox Road, Glen Allen, VA 23060  
September 21, 2016

Meeting minutes by Jane Walker -- Additional information pertinent to the meeting discussion but not provided during the meeting is included within brackets, [].

**Virginia Department of Environmental Quality (DEQ) Staff Present**

Robert Cooper, DEQ-Central Office  
Fred Cunningham, DEQ-Central Office  
Melanie Davenport, DEQ-Central Office  
Ben Leach, DEQ-Central Office  
John McCutcheon, DEQ-Piedmont Regional Office  
Derek Tribble, DEQ-Piedmont Regional Office

**Contracted Administrative Personnel Present**

Jane Walker, Virginia Water Resources Research Center (VWRRC)

**Stakeholders Present**

Joe Battiata, City of Hopewell  
Derek Berg, Contech Engineered Solutions  
Whitney Blankenship, City of Lynchburg  
Tommy Branin, Colonial Construction Materials, Inc.  
Scott Crafton, Louis Berger  
Jacob Dorman, Contech Engineered Solutions  
Normand Goulet, Northern Virginia Regional Commission  
Joe Grist, City of Newport News  
Jeff Hancock, Virginia Department of Transportation (VDOT)  
Richard Jacobs, Culpeper Soil and Water Conservation District (SWCD)  
Greg Johnson, City of Virginia Beach  
Whitney Katchmark, Hampton Roads Planning District Commission  
Chuck Lacey, Advanced Drainage Systems (ADS)  
Brian Rustia, ADS/BaySaver  
Kateri Shreve, Luck Ecosystems  
Corey Simonpietri, ACF Environmental  
Sean Simonpietri, Exact Stormwater Management  
Diana St. John, City of Virginia Beach  
Steve Sunderman, Terrazia PC (Roanoke Cement Co.)  
Troy Tignor, Spotsylvania County/Virginia Environmental Professionals' Organization  
(VAEPO)  
John Woodburn, Goochland County

### **Call to Order & Introductions**

Fred Cunningham of DEQ called the meeting to order. Everyone introduced herself or himself.

### **Minutes from June 23, 2016 Meeting**

No additions or corrections were proposed to the minutes of the previous meeting.

### **Update: DEQ Stormwater Program**

Mr. Cunningham reported that DEQ has been busy issuing permits, conducting plan reviews, and working with localities. He offered that they have been reviewing Annual Plans and Specifications with the emphasis on gas utility entities. DEQ hosted a public meeting on the seasonal high groundwater table (SHGT) study [in association with House Joint Resolution (HJR) 587, 2015] and expects to have one more meeting on this topic to receive input on a draft report to be written by DEQ for the Governor and General Assembly.

Melanie Davenport reported that the 2016 erosion and stormwater consolidation legislation directs DEQ to propose an appropriate fee structure for the Virginia Erosion and Stormwater Management Program (VESMP). As background, the effective date of the bill is the later of July 1, 2017 or 30 days after the State Water Control Board adopts regulations to carry out the purposes of the bill. In addition the legislation recognizes that localities can increase the fee schedule established in regulation if needed. DEQ was directed to request from localities revenue and costs for implementing both ESC and stormwater programs. DEQ has established a stakeholder advisory group (SAG) to discuss fees that will have its first meeting next week. DEQ will compile the information and input and will report to the General Assembly in 2017.

Ms. Davenport stated that Delegate Hodges is continuing work on a study of “opt out” for localities. She has been interviewed by a law student with the Virginia Coastal Policy Center at William and Mary. The goal is to have white papers before the end of December. Ms. Davenport offered to keep everyone updated on the status of the work.

Ms. Davenport explained that Virginia, and other Bay states, are gearing up for Phase III of the Chesapeake Bay TMDL (total maximum daily load) Watershed Implementation Plan (WIP). Addressing unregulated urban stormwater is a big issue in the Phase III WIP, and DEQ will be seeking input from localities on this issue and others. DEQ will host outreach sessions with localities, both for staff and elected officials. There will be regional work sessions with local entities and stakeholders. These meetings will occur later this fall. Information to be covered at the sessions will include basic information on the TMDL, work accomplished under the first two WIPs, what ecological indicators are showing about the Bay, updates to the Bay model (at a simple level), different state initiatives, general expectations, and the timeline for WIP development.

Ben Leach reported that DEQ has been reviewing the standards and specifications for BMPs and added that there may be more BMPs, both manufactured and non-manufactured, coming online for various projects. He added that VDOT is developing a list of BMPs to help them better understand maintenance requirements and total life cycle costs; not every BMP on the BMP Clearinghouse will be listed on VDOT’s list. VDOT’s process is separate from DEQ’s work so contact VDOT’s Chris Swanson if there are questions regarding the VDOT list. In response to a

question, Mr. Leach replied that manufacturers must apply to get on the VDOT list. [Chris Swanson's contact information: 804-786-6839 or [Chris.Swanson@VDOT.Virginia.gov](mailto:Chris.Swanson@VDOT.Virginia.gov) -- Following the meeting, Mr. Swanson explained that, at this time, VDOT has not established criteria for approval on VDOT's product list, except that the manufacturer must be on DEQ's list for removal efficiency as well as submit requested VDOT information. Completeness of the VDOT application is currently VDOT's determinant for listing.]

### **Update: MTD Sizing**

Mr. Leach presented a table that could be added to the BMP Clearinghouse website. The table contained all approved manufactured treatment devices (MTDs), their total phosphorus (TP) removal credits, and links to the respective device's sizing information as submitted to DEQ as well as sizing criteria awarded by New Jersey and/or Washington. Mr. Leach requested input on the proposed table.

A representative of a MTD manufacturer stated that he saw little value in the information provided and offered that it may encourage improper MTD sizing. He explained that each state awards different sizing criteria. For example, Washington does not evaluate hydrodynamic separators; it simply posts information provided by manufacturers. In contrast, New Jersey awards sizing criteria for these devices. Thus, New Jersey's sizing criteria can be half of that posted in Washington.

The individual stated that the goal of the stakeholders who initiated the request was to tie the sizing listed on the BMP Clearinghouse website with that specifically used by DEQ to list the device. The sizing information needs to be specific to Virginia and should not include sizing used in other states. Only the hydraulic loading rate (HLR) used in studies that DEQ evaluated should be considered. If sizing from all states is included, users will be able to pick the highest loading rate presented, which will likely result in the device being undersized for storms in Virginia.

Robert Cooper stated that the rates listed in the application are the design HLRs provided by the manufacturers. He noted that testing generally only occurs for one size unit and one type of configuration. Also testing rarely or never takes place at the maximum design capacity. A representative of a MTD manufacturer offered that testing (in Washington and New Jersey) is only required to hit the maximum design capacity once or twice for approval because the MTD is designed for an infrequent event. In most cases, the storms will be less than the design storm. The MTD representative added that the HLR is what other states use and can be applied to all sizes of a device.

Another MTD representative added that slowing down the flow into a filter improves its performance. Thus, when undersizing filters, one will shorten the maintenance cycle. Another added that hydrodynamic separators may not be able to remove 20% TP if undersized (performance may go to 0%).

Mr. Leach stated that it is the responsibility of engineers, plan reviewers, and Virginia Stormwater Management Program (VSMP) authorities to apply criteria to BMPs to ensure that

they are what they say they are. If these entities are not evaluating the BMPs, such lack of review needs to be addressed.

Mr. Cunningham asked about the downside of using the HLR for sizing MTDs. Mr. Cooper responded that there is great variability with how MTDs perform. For example, the state of Washington has a more gentle rainfall pattern than does Virginia. As you get closer to the maximum HLR, performance will likely decrease, and maintenance will increase.

A representative of a MTD manufacturer requested that DEQ post the HLR that came from the testing that took place. He summarized that all are in agreement that what they (stakeholders who initiated the effort) propose is more conservative than the table DEQ presented. Ms. Davenport asked if there were any disagreements with the statement; none were made.

Mr. Cunningham summarized that the group seems to be in agreement that a HLR should be posted on the BMP Clearinghouse website. Several verbalized support for the statement. A representative of a local government explained that engineers are responsible for calculating the flow rate from the site; using the HLR allows them to determine the size of the device to use.

Someone asked if the HLR was being determined for devices using one specific test, and a MTD manufacturer representative responded that it is not. Mr. Cooper asked if the HLR changes based on if testing is for total suspended solids (TSS) or TP. A representative of a MTD manufacturer replied that it depends on “what you are shooting for and why.” In general, the lower the HLR, the better it will perform (slower flows generally result in higher treatment performance). A representative of a MTD manufacturer stated that people are putting in devices that are sized below what their testing supports and thus there is a need to post the HLR.

A representative of a MTD manufacturer stated that at the last meeting, it was decided to update the memo [Guidance Memo No. 14-2009] to reflect the method for calculating a peak flow rate to be treated based on the required water quality volume; he noted that the memo has not yet been updated to reflect this process and requested that it be updated and posted on the BMP Clearinghouse website. Another individual added that Virginia’s method [for determining the peak flow rate for the 1-year 24-hour storm; Chapter 11 of 2013 draft Handbook] uses a modified curve number to be consistent with other Bay states; he added that it is not the only way to arrive at a number but is an agreed upon way.

Other issues to consider include use of devices for offline versus online. It is easier to size a MTD based on the treatment volume than on the 1-, 2-, or 10-year storm event.

Mr. Leach commented that even when a sizing chart is posted on the BMP Clearinghouse website, it will not automatically change the behavior of 100s of consulting firms working in Virginia. Mr. Cunningham noted that the chart will be a starting point, and a representative of a MTD manufacturer added that most (95%) will follow guidance put out by DEQ.

Mr. Leach offered that sizing information from the registration submitted to DEQ could be posted on the BMP Clearinghouse. Then, the HLR from studies submitted to DEQ could be determined for each MTD and posted soon afterwards. There are two or three MTDs that may

not have the HLR listed within the application, and some may have two or three studies where the HLR may differ between studies. A representative of a MTD manufacturer suggested that for devices with multiple HLRs, DEQ could take the average of the HLRs. Someone else suggested listing all HLRs for the device. Mr. Leach offered that the sizing chart could link to information within the applications and within this document, there could be a section that calls out the HLR. Some voiced support for the suggested action.

A representative of a MTD manufacturer requested language for DEQ's preferred method for calculating the water quality flow. Mr. Cooper suggested that some methods are listed in the Handbook, but other models could be used. A representative of a MTD manufacturer stated that the proposed models he has seen produce flows that are much smaller than those produced from the method in the Handbook. He added that everyone will start using whichever method produces the smallest treatment volume so that MTDs will be sized to treat a smaller flow. Thus, guidance is needed. A representative of a local government added that linking the sizing to performance is critical. He noted that the MTD manufacturers are just looking to "level the playing field." Ms. Davenport added that she hears people saying they want flexibility and reliability. A representative of a local government suggested that DEQ pick a method it likes and explain it in guidance. Mr. Cooper commented that some may argue that modeling could be considered more accurate. He asked if DEQ could dictate which method someone uses (given that this is not in the regulations). Mr. Cunningham stated that it is acceptable for DEQ to write guidance that explains its expectations. If someone wants to use something else, they will then need to justify their reasoning. A representative of a MTD manufacturer commented that if written as a policy of DEQ, 95% will follow it.

Mr. Leach concluded that the chart of sizing information could likely be posted in about a week, and the HLRs could be posted soon afterwards. Both should be finalized by the next stakeholder meeting (November 16, 2016).

#### **Update: House Joint Resolution 587, 2015**

Mr. Cooper offered that DEQ has received suggestions and comments regarding the SHGT report at the stakeholder meeting (August 29, 2016), through phone conversations, and as written comments. He offered that DEQ is asking that comments be submitted before the end of September. Mr. Cooper added that he is in the process of putting pen to paper for the second year report. A stakeholder requested clarification on whether or not the report is to focus on criteria or BMP standards and specifications. Mr. Cooper offered that both runoff reduction credit and changes within the design specifications are being considered. For example, he is looking into possible changes to some of the design specifications to give relief to the 2-foot separation between the BMP and groundwater table. He added that DEQ is considering other practices to consider and what other states are doing.

A representative of a MTD manufacturer commented that some MTDs are water tight so are not impacted by a SHGT. Use of such MTDs would give localities more flexibility in meeting criteria. He stated that such devices with adequate testing should not be limited to the interim TP credit of 50% removal.

A stakeholder asked if DEQ has made a decision on proposing “relief” or “zones” on the criteria. Mr. Cunningham offered that DEQ is simply trying to make recommendations on identified options. He offered that a draft report will be developed, and a stakeholder meeting will be held to discuss the draft report. The finalized report will be given to the General Assembly. Another stakeholder asked if DEQ foresees regulatory changes. Mr. Cunningham replied possibly but noted that other changes, such as changes to the design specifications, could be accomplished without making regulatory changes. A different stakeholder suggested that DEQ be proactive in including recommendations so that the General Assembly does not have to dictate how to best resolve this issue through legislation.

### **MTD Listing Request**

Mr. Cunningham explained that DEQ received a request from Cultec for their filter-fabric infiltration system, which is similar to the ADS StormTech® Isolator Row™ system approved and posted on the BMP Clearinghouse website. Cultec’s request is different in that it is based off of public performance data from the StormTech system, not their own system. A key component of the Cultec system is the filter fabric; they sent the fabric specifications (based on ASTM testing methodologies) and all, except for one number, are the same as the fabric used in StormTech’s first chamber. Mr. Cunningham explained that the basis for the approval request is the study of the filter fabric, which is made by multiple manufacturers.

A representative of a MTD manufacturer stated that DEQ is under an obligation to treat all equally. Such an approval would undermine Virginia’s testing program. There was general consensus that DEQ should only base approvals on testing specific to the device seeking approval. One stakeholder summed up his thoughts as follows: If the device is identical to another device already approved, then it is a legal issue, and if it isn’t identical, then it needs to be tested. Several noted that such systems are much more complex than just filter fabric. It is the system as a whole that provides treatment, and it is the system as a whole that should be tested.

Mr. Copper asked if DEQ should update its guidance to allow provisional acceptance until specific testing is completed. Some asked how DEQ would back it down if the testing showed it wasn’t performing as expected. Would DEQ require that provisionally accepted MTDs not performing as expected be taken out of the ground? Others suggested that the state of Washington uses a “pilot level” approval for devices without data. It allows up to five installations and requires evaluation prior to granting a “conditional” or “general” use designation. Others added that if DEQ adopts a program like Washington’s, it needs to know where the five devices are installed and which device is being monitored. A stakeholder requested clarification on “provisional acceptance,” stating that a pilot program that approves the installation of a few devices for testing purposes is very different from a program where the device can be installed anywhere but is awarded “provisional credit.” Mr. Cunningham clarified that DEQ has considered both perspectives and is simply seeking input.

A stakeholder offered that the Virginia Department of Health (VDH) has a pilot testing program for onsite wastewater systems; VDH gives provisional approvals to install a few systems for testing purposes. A different stakeholder offered that DEQ could respond to Cultec’s request by following the same concept as used for building materials, for which each and every product

must have approval from Underwriters Laboratories (UL). A representative of a MTD manufacturer stated that no other stormwater program in the country would consider the request made by Cultec; each and every product must be tested.

An individual noted that Cultec's product seems to work like a non-proprietary infiltration BMP and wondered if DEQ had encountered anyone seeking the same credit as a non-proprietary device. Mr. Cunningham clarified that if an infiltrating MTD system is designed according to DEQ's non-proprietary infiltration specifications, it could be awarded the credits given for the non-proprietary infiltration BMP.

A stakeholder reported that VDOT received a request from a manufacturer who claimed to backward engineer a device using off-the-shelf products. VDOT's response to the manufacturer was to test their product and have it posted on the BMP Clearinghouse website.

Mr. Cooper noted that some MTD systems could be useful as pretreatment for non-proprietary devices. There was general consensus for the use of MTDs in this way. An individual asked: If stormwater is pretreated, could the separation distance between the BMP and the groundwater table be relaxed (to 6 inches) in areas with a SHGT? Mr. Cooper offered that he had not considered it and suggested this idea be expanded and submitted as a suggestion for consideration within the SHGT report. Several examples in other states, such as Florida, were provided where MTDs are used as pretreatment as a way to help protect the groundwater. It is easier to clean out a hydrodynamic separator than an underground system. An individual offered that the MTD could be incorporated as part of a treatment train. Another individual offered that guidance should be given on sizing for pretreatment. A representative of a MTD manufacturer suggested that the same sizing criteria could simply be carried over for pretreatment uses.

An individual offered that there are devices that are used to pretreat bioretention but are not tested for phosphorus removal. He wondered if DEQ has considered listing devices with 0% TP removal credit for use as pretreatment. He added that the design specifications state that MTDs can be used for pretreatment if listed on the BMP Clearinghouse. He noted that these devices would be good for pretreatment but will not be tested for phosphorus removal because of the expense (and thus are not currently listed on the BMP Clearinghouse website). Another individual stated that it comes down to proper sizing for pretreatment and suggested DEQ look into this in more detail when given the opportunity.

### **General Comments**

A representative of a MTD manufacturer requested a status update on a product his company submitted to DEQ for review. Mr. Cooper replied that the information has been reviewed and added that DEQ personnel will soon discuss the submission and make a decision.

A representative of a MTD manufacturer requested that DEQ provide guidance on the proper order for listing BMPs in a treatment train. Mr. Cooper offered that in the next round of iterations of the specifications, this type of information should be provided. He added that it is provided in some states. He stated that some use the VRRM spreadsheet, which is just a tool, to propose treatment trains that make no sense; he noted that it is the responsibility of the VSMP

authority to review the plans and make sure the proposed treatment train makes sense. The MTD manufacturer representative requested that any type of logic guidance could be helpful.

A stakeholder asked when the focus was going to move away from the effectiveness of MTDs and onto other BMP issues. He voiced a particular interest in learning if maintenance is being addressed. Ms. Davenport replied that anything installed under the 2014 Construction General Permit IIB criteria must have a maintenance agreement that is enforceable by the VSMP in order to terminate permit coverage. If covered under the general permit and permit coverage is not terminated, DEQ assesses an annual maintenance fee. There is, therefore, a financial incentive to establish a maintenance agreement.

The individual then asked if future stakeholder meetings would focus on other BMP issues, and if so, is there a general timeframe for when other BMP issues would be covered. He also asked if there is value on establishing criteria for maintaining BMPs. His point being that as people select BMPs for installation, it would be helpful to know ahead of time what resources are likely needed for proper maintenance of the BMP. Ms. Davenport responded that DEQ does not have the resources (neither the funding nor personnel time) to go back and review the technical analysis that was done on the non-proprietary BMPs. She added that some in northern Virginia are attempting to develop a program to provide funding for state universities to look at the work that went into the assumptions on which Virginia based its specifications and efficiencies for non-proprietary BMPs. As yet, however, nothing has been proposed.

An individual stated that VDOT is looking at life cycles and life-cycle costs for some MTDs. VDOT is doing this work to help them decide which devices are best for their use.

Mr. Cunningham responded to the stakeholder's timeframe question by stating that Robert Cooper's efforts will be focused first on the SHGT issue and ongoing reviews of MTD submissions. It will then shift to non-proprietary BMP specifications, and as part of this effort, meetings will be held to receive input from stakeholders. DEQ will be focusing more on maintenance issues as the program develops. For example, DEQ's training office is holding training sessions for DEQ's inspectors associated with maintenance of non-proprietary BMPs. Mr. Cunningham stated that DEQ plans to focus more on non-proprietary BMPs after the first of the year (2017).

The individual then asked if maintenance could be part of the information provided for the approved MTDs. A representative of a MTD manufacturer stated that the devices come in various sizes and that maintenance needs are site specific so that huge ranges would need to be provided if this information is to be posted for approved products. The expected frequency of maintenance and type of maintenance needed is covered in the MTD registration application.

A stakeholder suggested the agency develop certification for stormwater plans where the engineer would need to sign off on the plan. The language could be specifically for the engineer to ensure he/she is doing due diligence for how the BMP(s) was/were selected and sized and acknowledge an understanding of how the BMP(s) work. It was suggested that the stakeholder draft language that would encompass his vision for such a certification statement.



**Next Meeting Dates**

Mr. Cunningham noted the next meeting is planned for November 16, 2016 at the Henrico Training Center.

**Adjournment**

With no further business, Mr. Cunningham thanked everyone for participating and adjourned the meeting.