

## **Virginia Stormwater BMP Clearinghouse Committee Meeting**

Virginia Department of Forestry (DOF) Building, Board Room  
Charlottesville, VA  
August 12, 2010

Meeting minutes by Jane Walker

### **Committee Members Present**

Colleen Collins, Vanasse Hangen Brustlin, Inc. (VHB)  
Joanna Curran, University of Virginia (UVA)  
Lee Hill, Virginia Department of Conservation and Recreation (DCR)  
Greg Johnson, Patton Harris Rust & Associates (PHR&A)  
Roy Mills, Virginia Department of Transportation (VDOT)  
Madan Mohan, Prince William County  
David Powers, Michael Baker, Jr. Inc.  
David Sample, Biological Systems Engineering and Occoquan Watershed Monitoring  
Laboratory, Virginia Tech  
George Simpson, Roanoke County  
James Talian, City of Lynchburg  
Jae Yoon, Old Dominion University (ODU)

### **Department of Conservation and Recreation (DCR) Staff Present**

Ved P. Malhotra  
John McCutcheon

### **Virginia Water Resources Research Center (VWRRC) Staff Present**

Stephen Schoenholtz  
Jane Walker

### **Others Present**

Joe Battiata, Center for Watershed Protection, alternate for David Hirschman  
Tim Edwards, A.D.S.  
Casey Jensen, CBNLT  
Steve Kindy, VDOT (serves as alternate for Roy Mills in his absence)  
Chris Kuhn, Williamsburg Environmental Group, alternate for Doug Beisch  
Glen Payton, Filterra  
Mark Williams, Luck Stone

### **Call to Order and Introductions**

Lee Hill of DCR called the meeting to order and thanked everyone for coming. Each person introduced herself or himself.

### **Comments on Minutes from Meeting on April 19, 2010**

No changes were suggested regarding the draft meeting minutes from the April 19, 2010 meeting minutes. Lee Hill asked that any changes be sent to Jane Walker of the VWRRC by Monday,

August 16, 2010. Jane explained that the minutes would remain in draft form until they were reviewed and approved by DCR staff. Thus, the official minutes could differ from those currently being reviewed. The official minutes will be posted on the Virginia Regulatory Town Hall Website: <http://townhall.virginia.gov/>.

### **Stormwater Regulations Update**

Lee Hill reminded the Clearinghouse Committee members that new stormwater regulations are currently scheduled to go into effect no later than December 1, 2011. Lee explained that a Regulatory Advisory Panel (RAP) was formed to examine the concerns about the suspended stormwater management regulations, excluding issues related to the Total Maximum Daily Load (TMDL) underway for the Chesapeake Bay. The RAP held its first meeting on July 23, 2010. DCR's director, David Johnson, is chairing and facilitating the panel. Based on input from the panel members, five subcommittees have been formed to address five subtopics: grandfathering, offsets/credits, water quality (issues outside the Chesapeake Bay TMDL), water quantity, and local programs (Part 3 of the stormwater management regulations). The first four subcommittees will have their first meetings on Monday, August 16, 2010 and will meet again on September 1, 2010. The Part 3 subcommittee meeting is scheduled for Tuesday, August 17, 2010. The next RAP meeting is scheduled for September 15, 2010. The scheduled meetings of the RAP and subcommittees are posted on the Virginia Regulatory Town Hall website: <http://townhall.virginia.gov/>.

### **Review of Virginia Technology Assessment Protocol (VTAP)**

Jane Walker summarized the parts of the VTAP that have received the most discussion during and outside of subcommittee meetings as well as issues that need to be brought before the Clearinghouse Committee. She proposed that the Clearinghouse Committee focus on these sections of the VTAP:

- Section 1.4.3 -- Clearinghouse Committee
- Section 1.4.6 -- Proponent's Technical Advisor
- Section 2 -- BMP Performance Goals
- Section 3 -- BMP Certification Designations
- Section 5.3.2.4 -- Estimating Required Minimum Number of Samples
- Section 5.5.4 -- Analytical Methods
- Appendices

### **Section 1.4.3 -- Clearinghouse Committee – Page 5 of VTAP**

Jane Walker offered that a new responsibility is being proposed for the Clearinghouse Committee, and she wanted the members to be aware of this new wording and receive approval to include it in the VTAP. The newly added responsibility is that the Clearinghouse Committee “Encourages submission of the technical evaluation report to the International Stormwater BMP database to facilitate the dissemination of scientific information.” After some discussion, the committee decided that there are three options: (1) require submission of the report to the database, (2) incentivize its submission, or (3) encourage its submission. Some members believe that proponents of BMPs will not submit their reports if the committee only encourages it. Others noted that the committee does not have the authority to require its submission. Providing a means to incentivize the submission of the technical evaluation report received the most

support, but specific ways to incentivize the submission were not discussed. The Clearinghouse Committee Chair, Lee Hill, indicated the Agency would consider the three options.

#### **Section 1.4.6 -- Proponent's Technical Advisor – Page 5 of VTAP**

Jane Walker began outlining the responsibilities of the technical advisor as currently included in the VTAP document:

- Reviews and approves the quality assurance project plans (QAPPs) for all field-monitored test sites;
- Provides oversight of QAPP implementation at field-test sites by periodically inspecting site conditions, sampling equipment, sample handling, etc.
- Validates monitoring data and writes validation report;
- Prepares a technical evaluation report (TER) that includes a summary of test results and research conclusions and compares these with the proponent's performance claims;
- Provides information about the technology to DCR and the Clearinghouse Committee to be included on the Clearinghouse.

Lee Hill asked why the proponent would need to hire a technical advisor. One member offered that because the Clearinghouse Committee is a volunteer committee, it needs overview of the testing being performed by a third party. Someone else suggested that a technical advisor could help with consistency since the members on the Clearinghouse Committee will change during the testing process.

Lee Hill offered that if DCR charges a fee to cover the expenses associated with contracting out an evaluation, he does not see the need for the proponent to hire a technical advisor. The proponent of the BMP would have a cost savings if they did not need to hire a technical advisor. They could always hire a technical advisor if they wanted one.

One member suggested that the manufacturer should not be the one paying the technical advisor, but instead, the government should pay a technical advisor who agrees to perform the assigned tasks. He suggested that DCR could create a pool of technical advisors that it could hire. The proponent of the BMP would then pay a fee, and DCR would use this fee to pay for a technical advisor. That way, DCR would be able to decide who is to be the technical advisor for a particular practice. Others expressed that the proponent would know best what kind of technical advisor they need for their BMP.

Someone offered that some BMP proponents will need more advice from a technical advisor than will others. He did not think it fair to have every BMP proponent paying the same fee. Another observer offered that DCR could establish a consortium of advisors from a fee fund.

Lee Hill proposed that a proponent seeking a Pilot Use Designation (PUD) would not need to hire a technical advisor. Jane Walker offered that the technical advisor could be required for a proponent seeking a PUD if field monitoring data is part of the application; she proposes that as currently written, the use of a technical advisor is based on the work to be performed (approval of field QAPPs, etc.) and not the certification level being sought. One member suggested that technical advisors should be used to approve lab QAPPs as well as field QAPPs.

One member explained that when a road construction project calls for a specific product in a contract that VDOT does not have a design for, the contractor must provide the design and have it certified by a professional engineer (P.E.). Whereas personnel from VDOT review the design, they rely heavily on the P.E. for an independent assurance that the structural components and other components are correct. VDOT charges the vendor upfront for the review costs. He also suggested that the Clearinghouse Committee could have an on-call consultant that they could call on as things come in for review.

Lee Hill offered that DCR could establish a similar review of the stormwater BMPs. DCR could send out an RFP (request for proposals) that requires that the reviewer be someone with a license. This comment generated a discussion of what requirements such an evaluator would need to possess. One member offered that the RFP would not need to be open-ended; instead, it could be open only to Virginia's academics. Another member advised that because of the *Virginia Public Procurement Act*, the RFP would need to be an open process.

Lee Hill summarized previous discussions by the group to establish a consortium of academic reviewers. His concern is how to develop this consortium in time to move forward with the VTAP. He offered to potentially have a RFP that would be good for 2-3 years until DCR gets the consortium up and running. Lee wants to be sure to invite all the colleges and universities in the state that are interested and qualified to assess BMPs. He anticipates that use of an academic consortium would be a way to lower the testing costs for the BMP proponents.

Lee Hill offered his opinion that proponents seeking a PUD should not be required to have a technical advisor since they are only allowed five installations. He thinks that a technical advisor is needed for a Conditional Use Designation (CUD) and General Use Designation (GUD). The proponent should be able to choose the technical advisor for their BMP. One member of the committee supported not limiting what technical advisor the proponent uses. Another member offered that the technical advisor should be approved, and another member added that the technical advisor should be a certified P.E. in Virginia. One committee member requested that even if DCR does not require that the technical advisor be a P.E., it should require certification that the structural components of BMPs are proper and certified by a P.E.

A committee member offered that DCR could establish a technical reviewer as part of the evaluation fee. Lee Hill added that if someone is serving as a technical advisor to the proponent, he or she could not be awarded the evaluation contract through DCR's RFP because that would be a conflict of interest. A committee member offered that proponents could only be required to have a technical advisor or DCR could have a contracted evaluator. Another individual suggested that the technical advisor would only submit what he or she believes will be accepted so preferred the use of a contracted evaluator.

One Clearinghouse Committee member summarized the morning discussion in the following way:

1. Company hires a Technical Advisor (TA) of their choice, but the TA needs to fulfill a set of requirements;
2. TA makes sure all the testing done by the company fulfills the VTAP;
3. TA submits report to Clearinghouse Committee;

4. Clearinghouse Committee turns over the report to DCR's contracted evaluator(s);
5. DCR's contracted evaluator(s) reviews the submitted report and reports to the Clearinghouse Committee;
6. DCR's contracted evaluator(s) is where the University Consortium could be involved.

Lee Hill summarized the discussion:

1. The Clearinghouse Committee requires the use of a technical advisor for lab and field monitoring.
2. The qualifications of the technical advisor are still to be determined.
3. The DCR will hire a review advisor (contracted evaluator) to provide independent review of the monitoring data and results.

An individual representing a BMP manufacturer asked if the technical advisor needs to come from outside the company or if he or she could be an employee of the company. Lee Hill replied that the technical advisor could be an employee so long as he or she meets the established requirements of a technical advisor. Jane Walker noted that with this change, she would need to delete in several places within the VTAP that the proponent's technical advisor be someone who provides "outside objective oversight".

Lee Hill added that based on the discussions the technical advisor would not need to perform the last two bulleted items:

- Prepares a TER that includes a summary of test results and research conclusions and compares these with the proponent's performance claims;
- Provides information about the technology to DCR and the Clearinghouse Committee to be included on the Clearinghouse.

Lee Hill asked if there was general consensus from the committee that the VTAP is heading in the right direction. No one voiced strong concerns.

### **2.3 -- Stormwater Runoff Quality Control – Page 8 of VTAP**

Jane Walker stated that one member of the VTAP Subcommittee proposed deleting the entire section on BMP performance goals since the BMP proponents will be submitting a performance claim, which will be the goal of the BMP. Others have expressed the most concern with Section 2.3 – Stormwater Runoff Quality Control. This section specifies targets for influent and effluent characteristics, specifically for total phosphorus, total suspended solids, suspended sediment concentration, and particle size distribution. The section concludes: "BMPs will be assigned pollutant removal efficiencies based upon the conditions under which the BMP was tested and the resulting verified data pursuant to the VTAP". Several members offered that the section could be confusing, and others indicated that they were accepting of leaving the section in the VTAP document if it is just a target. Lee Hill offered that we may need to specify influent parameters for lab testing but not field testing. The group expressed consensus to remove several sentences stating the particle size ranges where the majority of the total phosphorus resides. The committee concluded that there are three options: leave the section in as written, modify the current section, or delete the section.

### Section 3 -- BMP Certification Designations – Page 10

Section 3 has generated more discussion than any other section of the VTAP. Several representatives of manufactured treatment devices have suggested that the number of field sites for testing to receive certification is too high.

The requirements for each certification level are summarized in Table 3.1 of the VTAP (see below). Several manufacturers have cited that monitoring at five sites to receive a GUD is too expensive. One individual clarified that it is not just the expense of monitoring five sites, but also the time that it takes to complete two years of monitoring at each of the five sites. Another individual stated that data from five sites will not provide enough information to assign, with confidence, a pollutant removal rate. He offered that the first test site is useful for determining the proper sizing needed and to address design issues. Testing at five sites is not enough to provide a single TP removal rate; this information will only tell design information, such as that the BMP does not get clogged with sediment. He concluded that testing at one or two sites gives the same amount of information as testing at two to five sites.

**Table 3.1 of VTAP. Summary of the testing requirements for stormwater BMPs to receive Pilot Use Designation (PUD), Conditional Use Designation (CUD), and General Use Designation (GUD) in Virginia**

<b>Certification Level</b>	<b>Testing Required to Receive Certification</b>	<b>Test Parameter Required to Receive TP Certification</b>
<b>PUD</b>	Full-scale Lab or Field	TP or TSS or SSC
<b>CUD</b>	≥ 2 field sites	TP or TSS or SSC (TSS or SSC accepted only until December 31, 2015)
<b>GUD</b>	≥ 5 field sites	TP

One member proposed requiring field testing at one site to receive a CUD, and three sites (one in each of the following geographic regions: Mountainous, Piedmont, and Tidewater) to receive a GUD. Someone else proposed the possibility of allowing GUD installations only in regions where tested. Thus, a proponent could receive a GUD in the Tidewater region based on one test site in the Tidewater region; the GUD would not be granted for installations in the Mountainous and Piedmont regions until monitoring was performed in those regions. Another individual reminded the group that this proposal would be taking the group back to an earlier proposal. The committee agreed not to separate the state into regions because urban particle sizes tend to be the same throughout the state regardless of the geographic region.

One individual stressed that he has issues with Table 3.2 of the VTAP (see below). He expressed that more installations should be allowed for BMPs receiving the PUD and CUD certifications. A representative of a BMP manufacturer stated that his company generally needs 20-40 installations to pay for one test site. A member of the Clearinghouse Committee added that allowing 50 installations of a manufactured treatment device (MTD) would, on average,

only represent stormwater control for 25 acres in Virginia (based on an average of 0.5 acres for treatment by a MTD).

**Table 3.2 of VTAP. Summary of the number of installations allowed in Virginia and performance credit provided for stormwater BMPs certified in Virginia at the Pilot Use Designation (PUD), Conditional Use Designation (CUD), and General Use Designation (GUD)**

<b>Certification Level</b>	<b>Maximum Number of Installations Allowed in Virginia</b>	<b>Assumed TP Performance Credit</b>
<b>PUD</b>	5	Variable (≥ 20%)
<b>CUD</b>	15 (total includes any <b>PUD</b> installations)	Variable (≥ 20%)
<b>GUD</b>	No Limit (Restrictions may apply)	Based on Field Test Results

Lee Hill asked if there is a retrofit possibility if after testing, the conclusion is that the BMP is not performing to an acceptable level. Several individuals stressed that a requirement for retrofits is not acceptable.

One representative of a MTD suggested that his biggest issue concerns the number of required monitoring sites in Virginia. Lee Hill stressed that the testing simply needs to meet the protocol requirements. The testing sites do not need to be located in Virginia. The test sites must simply represent conditions similar to those found in Virginia. The vendor clarified that finding five appropriate testing sites in areas with Type II rainfall could be difficult. A member of the Clearinghouse Committee reminded the group that Chesapeake and Virginia Beach have Type III precipitation. Others noted that the precipitation distribution in these areas in comparison to the distribution in other regions of the state is not significantly different.

The meeting broke for lunch. Lee Hill asked the committee members to consider during the lunch break what numbers they would recommend for Table 3.1 and Table 3.2 of the VTAP and be prepared to report their suggestions when the meeting resumed.

Three committee members did not return to the meeting following the break, which left seven members present for voting. Lee Hill gave everyone a chance to voice his or her opinion. Staff from DCR and VWRRC as well as some members of the general public did not participate in the voting. The results are summarized in the tables below.

Certification Level	Testing Sites Required to Receive Certification	Description of Respondent
CUD	1	3 committee members 3 alternate/general public
CUD	2	4 committee members 1 alternate
GUD	2	1 committee member (if require rigorous testing) 1 general public (added could go up to 3 sites)
GUD	3	2 committee members 2 alternate/general public
GUD	4	3 committee members 1 alternate
GUD	5	1 committee member

Certification Level	Maximum Number of Installations Allowed in Virginia	Description of Respondent
PUD	10	1 committee member
PUD	15	1 committee member 1 alternate
PUD	20	4 committee members 3 alternate/general public
PUD	Unlimited (if require retrofits for poor performance)	1 committee member
CUD	20	1 committee member
CUD	30	1 committee member 1 alternate
CUD	40	4 committee members 3 alternate/general public
CUD	Unlimited (if require retrofits for poor performance)	1 committee member

**Section 5.3.2.4 -- Estimating Required Minimum Number of Samples – Page 30**

Currently, the VTAP document contains the statement: “For the purposes of BMP testing under this guidance, the minimum number of events required to be sampled is set at 24.” The report by the expert panel states, “For example, the New Jersey Department of Environmental Protection (NJDEP 2009) has adopted a sampling requirement of no less than 24 events over two years. The TARP [The Technology Acceptance Reciprocity Partnership Protocol for Stormwater Best Management Practice Demonstrations] amendments (2009) contain the same requirement.” A member of the committee explained that NJCAT only requires 20 storms to be sampled. David Sample agreed that NJCAT only requires 20 storms, but David was uncertain if there is a



statistical reason for having 24 storms instead of 20. He offered to check with the individual on the panel who worked on this section of the VTAP. Another committee member suggested that the committee should consider the statistics used to set the number of tested storms regardless of what number NJCAT has set.

David Sample described the proposed goal of a sequential sampling campaign by comparing it to a typical statistical analysis. The statistical analysis requires a very large number of samples and assumes independence of each event, an assumption that may not be correct for all cases associated with the assessment of stormwater BMP performance. Sequential sampling requires a smaller number of sampled events, but the sampling events need to be collected in sequence. The goal of sequential sampling is to provide insight into the behavior of the BMP over time and thus make up for the smaller number of sampled events. The sequential sampling methodology currently defined in the VTAP requires more samples than what is required by TARP.

Also in this section of the VTAP, it is stated, “The failure to sample events in a continuous sequence undoubtedly reduces the power of the sampling campaign. In such cases, the damage to the program must be ameliorated by increasing the monitored storm total by 2 for each lost storm in a sequence.”

Lee Hill offered to examine both requirements discussed in this section.

#### **Section 5.5.4 -- Analytical Methods – Page 42**

The committee discussed the proposed requirement to use laboratories certified under the Virginia Environmental Laboratory Accreditation Program (VELAP) for analysis of constituents covered by The National Environmental Laboratory Accreditation Conference (NELAC) Institute (TNI). One individual commented that just because a lab is accredited does not mean that it knows anything about analyzing stormwater, which generally has lower concentrations of pollutants than do point source discharges. A member of the committee added that the QAPP should address such concerns. Ved Malhotra of DCR added that certified labs carry a lot of weight.

Because most laboratories at universities adhere to standard analytical methods but do not have VELAP certification, it was suggested that education-related labs could be exempt from the certification requirement. University labs would need to submit their QAPP for approval by the Clearinghouse Committee, DCR, and/or peer-review. They would then be required to follow their approved QAPP. Laboratories not affiliated with a university would need to be VELAP certified.

Jane Walker of the VWRRC commented that if the BMP assessments will be used to set removal efficiencies for use by localities with nutrient/sediment TMDLs, they may be required to use VELAP certified labs, in accordance with 1 VAC 30 Chapter 45 and 46.

#### **Appendices**

Jane Walker stated that several potential BMP proponents had requested the inclusion of examples as part of the VTAP, and several examples had been submitted for this purpose. Upon closer inspection, she noticed that the examples do not follow what is required in the VTAP.

One committee member offered to rewrite the example that she submitted, as she was attempting to illustrate another point with her example. Another committee member suggested that examples may be unnecessary and further added that if examples cannot be provided for all calculations, they should be omitted entirely. Jane Walker added that she had requested additional examples that follow the VTAP requirements, but the members of the VTAP Subcommittee did not have time to get the new examples to her prior to this meeting. The committee was in agreement that the examples should meet the requirements specified in the VTAP or explain why the example differs from the requirements.

### **Future Work**

Jane Walker offered to update the VTAP based on the discussions at the meeting, and Lee Hill offered to continue working to address the many questions and comments posed in the VTAP. He will summarize these questionable areas when he presents the VTAP to DCR's director, David Johnson.

### **General Comments**

There were no general comments made by committee members.

### **Next Meeting Dates**

The next meeting of the Clearinghouse Committee is scheduled for October 18, 2010. With no further business, the meeting was adjourned.