WISCONSIN STANDARDS OVERSIGHT COUNCIL

Standards Oversight Council (SOC)

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1010 Proprietary Filtration Devices Standard Team
MEETING NOTES

Wednesday, September 12, 2018 ▲ 9:00am – 3:00pm ▲
Dane County UW-Extension, 5201 Fen Oak Dr., Room 121, Madison, WI

Introduction, Notes Approval (Kate)

Goal: Welcome, introductions, adjust 8/1 notes as necessary and approve.

Present: Kate Brunner, Eric Rortvedt, Jim Bachhuber, Roger Bannerman, Samantha Brown, Adrienne Cizek, Jay Holtz, Judy Horwatich, Jan Kucher, Philip Taylor, Nick Vande Hey, John Voorhees, Jake Brunoehler, Matt Kamenick (guest, StormTrap), and 2 other non-team observers

No comment to draft notes from 8/1 meeting. If there are comments, please get to Kate by end of day 9/13—she will post final on Friday.

Review Group Agreements and Discuss Recommended Changes (Kate)

Goal: Review team goals and dynamics; adjust as necessary.

No comment to team agreements.

Available Devices

Goal: Share information on the available devices

Excerpts of the presentations are below. **See details in the PDF files of presentation slides.**

Roger Bannerman (USGS Field and Lab Testing of Devices)

Review of Roger and Judy's research of 2 filters on test sites (Madison parking lot and Milwaukee freeway).

- Field and lab data varied, and both have value. Even field data between the 2 test sites varied due to different conditions. Inlet pollutant concentration was lower at Madison site so % reductions based on lower starting point.
- Percent load reductions were very different for different devices and different constituents. For example, at the Milwaukee site, even TSS and SSC were clearly divided.

Phil Taylor (Hydro International)

- Modular with GAC, peat, and Mn-coated Zeolite

- "Filter ribbons" in various combinations – these were more recent addition to address NJ change to a lab-test-only system, using smaller particle size distribution
- Tested all combinations for approvals of available variations
- NJCAT verification process requires lab test with standardized particle size distribution.

Matt Kemenick (StormTrap)

- Vault-based sand/media filters – proprietary structure and typically media is non-proprietary (sand, iron-enhanced sand).
- Vaulted sand is accessible for raking or vacuuming; O&M every couple of years
- Some devices have been installed as a below ground infiltration device with limited pretreatment and they can be expected to clog at some point. It is necessary to be able to access the infiltration-soil interface to remediate the clogged surface.

Jay Holtz (Oldcastle Infrastructure)

- Perkfilter – cartridge filtration – media to address TSS and other pollutants
- Bio Pod – high-rate horizontal bed system
- Bio Mod – bioretention system, modular with different components customized to different designs

Discussion – Other Devices (Kate, Team)

Goal: Discuss other devices and technologies not discussed earlier today.

2 general filter types

- Media
- Membrane

Media filters also include pressure filters used at more intensive industrial sites. This standard will not include industrial sites (these are also typically permitted with numeric limits and effluent monitoring; a separate issue).

Common Design Elements

- Initial screening
- Bypass – scour provision
- Settling/Storage
- Floatables
- Maintenance
  - Based on load or flow?
  - Specify minimum frequency
  - What is ongoing monitoring or enforcement
  - Maintenance requirements will be key to our standard

Sizing: evaluate impervious area – specify surface area-to-device size

Pollutant Criteria

- We discuss the possible pollutants to consider in the standard. We will discuss numerical criteria at another meeting.
- TSS – related to NURP per DNR guidance
- TMDLs
  - Sediment/TSS
  - total P (and also ortho dissolved P)
  - bacteria
  - chloride (for informational purposes)
- hydrocarbons (for informational purposes)
- nitrogen (for informational purposes)

Lunch, provided

Proprietary Filtration Device Definitions (Kate, Eric)

Goal: Review draft definitions and discuss potential issues.

Definitions adjusted to consider variety of proprietary devices and media available. Standard will clarify it's not applicable to industrial sites, bioretention and non-proprietary material (like sand or iron enhanced sand). Current preliminary definitions are:

Proprietary flow-through storm water filtration device – A proprietary filter or set of filters (which may include pre-treatment or other equipment and associated piping) that is provided as a defined product or system by a commercial vendor, and is warranted by that vendor to provide specific storm water pollutant removal performance under specified conditions. [ERIC WILL ADD STATEMENT ON POTENTIAL PRE-TREATMENT OR OTHER DEVICE-SPECIFIC DESIGN CONDITION]

Proprietary filter – A defined filter product by a commercial vendor, and is warranted by that vendor to provide specific storm water pollutant removal performance under specified conditions. This does not include concrete sand (C33) or non-proprietary DNR-approved engineered soil.

Current Practice Review (Eric, Kate)

Goal: Review current NJCAT and TAPE programs for how they might be applied in the WI standard. Can these analyses be adapted in WI? What are the pros and cons?

NJ (Note: NJCAT-verified doesn't mean NJDEP certification; NJCAT verifies testing procedure but NJDEP approves whether TSS performance met)

- No field test, just lab test
- Performance Goals:
  - TSS only
  - NOT P or other pollutants
- Not NURP but a NJCAT particle size—can shift curve based on Peclet number?
- O&M requirement when 600 lb/acre threshold reached or when flow rate drops 10%

WA TAPE

- No lab test, just field test
- Long wait to get access to field test site (same site used for testing)
- Performance Goals (approval by criteria by media, e.g. P alone):
  - TSS
  - Dissolved Cu
  - Dissolved Zn
  - Total P
  - TPH

The nuances of the NJ and WA programs are varied and there already exist good presentations put together (e.g. Aqua Shield). **Phil and Sam** will pull together a summary on the NJ and WA programs and present at our next team meeting in October.

Achieving 80% NURP will be down to about 3 micron particle--very difficult, possibly infeasible without immense sizing. NURP is DNR requirement--referenced in DNR post-construction guidance memo, though not in administrative rules.
We reviewed particle size distribution curves comparing EPA NURP, Midwest NURP and NJ for a visual comparison.

Next Meeting Topics and **Plan of Action** (Kate, Eric)

Goal: Identify and understand the topics, concerns, and goals for next meeting. Where more research needed?
Review Action Items and agenda items for next meeting.

Field testing - Roger suggested use of ETV protocol.
Iron enhanced sand filter research – that's non-proprietary treatment

Next meeting 10/10 at DNR Fitchburg
Phil and Sam – NJ and WA programs
Jay and Jim – WEF STEPP (follow-up from October WEFTEC meeting)
Eric – start drafting first couple sections of standard for review to frame boundaries for our criteria
Eric, Roger, Jan – Longer-term follow-up within DNR: possible particle size reconsideration, consider tiered approval for TSS/P/others

End