

PFAS Treatment Technologies Subgroup
Virginia Department of Health Office of Drinking Water
DRAFT Meeting Minutes
June 24, 2021
1.5 hours (10:00 a.m. – 11:30 a.m.)

1. Meeting Opening

ODW Southeast Virginia Field Office (SEVFO) Director, Dan Horne called the meeting to order at 10:05 am. The meeting was by electronic communication means because of the ongoing public health emergency. Dan reminded everyone attending the meeting that it would be conducted as a public meeting under FOIA guidance, and would be recorded. Minutes and meeting materials will be posted on Town Hall.

Dan welcomed all Subgroup members and members of the public to the Treatment Technologies meeting and called roll. Members attending the meeting who answered the roll call were:

1. Henry Bryndza (Dupont)
2. Jessica Edward-Brandt (Loudoun Water)
3. Wendy Eikenberry (Augusta County Service Authority)
4. Jamie Bain Hedges (Fairfax Water)
5. Mike Hotaling (Newport News Water Works)
6. Mike McEvoy (Western Virginia Water Authority)
7. Russ Navratil (VA AWWA)
8. Kelly Ryan (Virginia American Water)
9. Dan Horne (ODW)

Others noted as being present:

Ellen Egen
Erik Rosenfeldt
Amanda Waters

VDH:

Christine Latino (ODW)
Robert Edelman (ODW)

2. Review Meeting Agenda

Dan reviewed the agenda proposed for the meeting.

1. Call to order – Member roll-call – Review Agenda – Review draft minutes from last meeting
2. Report on assignments from last meeting
3. Speaker on cost issues
 - Small systems and large systems

- Surface water systems and groundwater systems
 - Capital costs, operating costs, disposal costs
 - Based on experiences in other states
4. Update on resources
 5. Upcoming Meeting and webinars
 6. Preparing for next meeting
 7. Next Meeting
 8. Public Comments

Dan asked if there were any additions to the proposed agenda. There were no proposed additions. Hearing nothing, he advised that the agenda was accepted as proposed.

3. Review of the Draft Minutes from Last Meeting

Dan noted that he forwarded the draft minutes from the May meeting by email on June 21. There were no proposed edits or changes. The group agreed to accept the minutes as final.

4. Report on Assignments from Last Meeting

Dan reported that he and Henry worked on a proposed template for the technology summaries. He shared that on the screen so that the members could review and provide comments. A number of members made suggestions for edits. Dan will edit the document and send it the subgroup for review, in the next couple of days. If everyone agrees with the revisions, then we can start writing the summaries.

Dan reported that he has reached out to DEQ on the issue of handling wastes, but has not yet received a response. He will continue to reach out, and will advise of his findings.

5. Speaker on cost issues

Dr. Erik Rosenfeldt, of Hazen & Sawyer, was to be the guest speaker. Due to technical issues, he could not make his presentation. The presentation will be rescheduled to a later date.

6. Update on resources

Dan advised that he had received a 4-page “white paper” by Fishbeck Engineering, discussing the Robinson Elementary School (MI) project. It is posted on SharePoint in the June meeting folder.

Dan reported that Henry had shared an interesting report with him. The 2018 North Carolina General Assembly created the North Carolina Per- and Polyfluoroalkyl Substances Testing (PFAST) Network. PFAST is a collaborative effort of seven NC universities, charged with studying PFAS occurrence, effects, and remediation, and submitting a report to the NC General Assembly, various NC agencies, and US EPA

Region 4. The report, including findings and recommendations, was filed on April 15, 2021. There is a 9-page section with very brief discussions of “PFAS removal technologies performance testing.” Dan posted a copy of the report on SharePoint, in the June meeting folder.

7. Upcoming meetings and webinars

The next meeting of the Full PFAS Workgroup is proposed for a July date “to be announced”.

8. Preparing for next meeting, assignments

It is time to start preparing the treatment technology summaries. As noted earlier, Dan will revise the draft template and send it out for review and acceptance. He noted that Henry and Russ had previously volunteered to write summaries, and he asked for others to volunteer as well.

9. Next Meeting:

Dan noted that we have been meeting on the fourth Thursday of the month at 10:00 a.m., as an electronic, remote meeting, in accordance with the Governor’s Emergency Order regarding the pandemic. VDH understands that the Order will expire June 30, 2021. This means that the special exception that allowed remote meetings will also expire, and we must go by the base public meetings law, which would require in-person meetings. At this point, we are unsure if we must meet in person or not. Dan asked the members of the subgroup for their preferences concerning in person meetings. Several persons expressed a willingness (or even a preference) for an in-person meeting, while others expressed a preference for a remote meeting (one lives in Oregon, and can’t make an in-person meeting, another isn’t going in to the office yet). It was asked if a hybrid meeting (some attendees in person and others remote) could be set up. Dan advised that he did not know the answer yet.

The next meeting is currently scheduled for July 22, at 10:00 a.m. The date could change – one idea that had been floated was holding the Full Work Group as an in-person meeting for several hours in the afternoon, and holding the subgroup meetings that morning. It was noted that several people are members of more than one subgroup, so those meetings would need to be scheduled carefully – meetings with shared membership couldn’t take place at the same time.

Dan will advise of the date and time (and perhaps location) of the next subgroup meeting, once more information is known.

10. Public Comments

There were no comments from the public.

11. Adjournment

Dan adjourned the meeting at 10:56 a.m.

PFAS Treatment Technologies Subgroup
Virginia Department of Health Office of Drinking Water
DRAFT Meeting Agenda
May 27, 2021
1.5 hours (10:00 a.m. – 11:30 a.m.)

1. Meeting Opening
 - a. Call to order
 - b. Member roll-call
 - c. Review draft agenda
 - d. Review of draft minutes from March meeting
2. Reports on assignments from last meeting
 - a. Developing a template/framework for summaries
3. Update on resources
4. Upcoming meetings and webinars
5. Preparing for next meeting, assignments
6. Public Comments
7. Next Meeting: Thursday, June 24, 10:00 a.m.

Establishing Regulatory Limits for PFAS in Virginia Drinking Water

Treatment Technology Subgroup

Dan Horne

Virginia Department of Health

June 24, 2021

Subgroup Members

Henry Bryndza (DuPont)

Jessica Edwards (Loudoun Water)

Wendy Eikenberry (Augusta County Service Authority)

Mark Estes (Halifax County Service Authority)

Chris Harbin (City of Norfolk)

Jamie Bain Hedges (Fairfax Water)

Jack Hinshelwood (VDH - ODW)

Mike Hotaling (Newport News Water Works)

Mike McEvoy (Western Virginia Water Authority)

Russ Navratil (Virginia Section AWWA)

Kelly Ryan (Virginia American Water)

Dan Horne (VDH - ODW) Team lead

PFAS Subgroup Meeting Agenda

24 June 2021

1. Call to order - Member roll-call – Review agenda – Review draft minutes from May meeting
2. Report on assignments from last meeting
3. Speaker (Dr. Erik Rosenfeldt) on cost issues
4. Update on resources
5. Upcoming meetings and webinars
6. Preparing for next meeting
7. Next Meeting
8. Public Comments
9. Adjourn



Review of Draft Minutes from Last Subgroup Meeting

- Distributed to Subgroup members on June 21
- Any comments, suggestions for changes/edits?
- Consensus for accepting summary as final

Report on Assignments from last meeting

- **General assignment for all members:**
 - Be prepared to start synthesizing information and preparing summaries to present to Full Workgroup and other subgroups
- **Specific assignments:**
 - VDH will contact DEQ about handling PFAS wastes (GAC, resin, RO concentrate)
 - **Dan Horne:** work with Henry to develop template for technology summaries (suggestion - follow the Minnesota Blueprint)

Presentation on Costs and Issues

Presentation by Dr. Erik Rosenfeldt (Hazen)

(due to technical difficulties in delivering the presentation, the presentation will be rescheduled to a later meeting)

Update on Resources

- 4-page “white paper” by Fishbeck Engineering, discussing Robinson Elementary School, MI - posted to SharePoint, in June meeting folder
- “Findings and Recommendations of the North Carolina Per- and Polyfluoroalkyl Substances Testing Network Final Report to the North Carolina General Assembly” April 15, 2021 - Revised April 30, 2021 - posted to SharePoint, in June meeting folder

Upcoming meetings and webinars

- Next meeting of the Full PFAS Workgroup - proposed for July 2021 (TBA)

Preparing for next meeting

- Time to start preparing summaries of treatment processes - to include information previously collected, ID gaps where we need additional info
- **Assignment(s):**
 - Dan will revise draft template as discussed and share with subgroup for review and acceptance
 - Once template is accepted, need volunteers to begin writing summaries.

Next Meeting of Subgroup

- Subgroup has been meeting on fourth Thursday of the month, at 10:00 a.m.
- Target is for meetings to last no more than 90 minutes (end early if possible)
- Discussion of complication: Pandemic State of Emergency is reportedly going to end on June 30 - implications for meetings of public bodies - discussion of potential for in-person meetings vs. electronic/online meetings

Next meeting: TBD

Public Comments

Have any Questions, Comments, or Suggestions? Contact

Daniel B. Horne

Daniel.Horne@vdh.Virginia.gov

757-683-2000 x 102

Virginia PFAS Workgroup
Treatment Technology Subgroup
Template for Technology Summary

Treatment Technology Name

1. General description of the technology
2. Generic diagram(s) of typical treatment train
3. Discussion
 - a. Advantages
 - b. Disadvantages
 - c. Environmental impacts
 - i. Residuals/RO concentrate
 - ii. Greenhouse gases
 - iii. Carbon footprint/energy costs
 - d. Impacts to process effectiveness to consider
 - i. Which species are removed, and to what extent
 - ii. Practical/achievable removal levels for specific species
 - iii. Competing co-contaminants
 - e. Scalability – applicability to small systems
 - f. Need for pilot testing on the actual water to be treated
4. References to relevant studies (pilot or full-scale)
5. Cost considerations and factors
 - a. Factors that affect life cycle costs
 - b. How long can a process be used to remove specific species (when is replacement needed)
 - c. Affordability
6. Selected references for primary sources