

**Minnesota 3M PFC Settlement**  
 Agenda for Citizen-Business Group Meeting

Tuesday, December 15, 2020  
 1:00 PM-4:00 PM

**Webex link:** [Join the Meeting](#)

*(If using Webex, we request that you connect to the audio using your phone rather than the computer, and use the “Call me” option. Please refer to the Webex instructions for more information.)*

Conference line (if not using the Webex “Call me” option): 1-415-655-0002; Access code: 178 314 7080#

**Meeting Purpose:**

- Update on Project 1007 and implications for the Conceptual Plan
- Open discussion on the Draft Conceptual Plan and recommended options
- Clearly identify a path forward to finalize the Conceptual Plan

1. Welcome a. Webex instructions b. Roll call c. Agenda d. Updates and email follow-up e. Liaison report(s)	Kirk Koudelka – MPCA Jess Richards – DNR Emma Glidden Lyon – Abt Associates Mark Lorie – Abt Associates	1:00 PM
2. Update on Project 1007	Kirk Koudelka – MPCA Jess Richards – DNR Rebecca Higgins – MPCA	
3. Discussion of topics selected by the Work Group	Kirk Koudelka – MPCA Jess Richards – DNR Mark Lorie – Abt Associates	
4. Public comments and questions	Mark Lorie – Abt Associates	2:20 PM
BREAK	N/A	2:30 PM
5. Discussion of topics selected by the Work Group (cont.)	Kirk Koudelka – MPCA Jess Richards – DNR Mark Lorie – Abt Associates	2:40 PM
6. Path forward and next steps	Kirk Koudelka – MPCA Jess Richards – DNR Mark Lorie – Abt Associates	
7. Public comments and questions	Mark Lorie – Abt Associates	3:50 PM
ADJOURN		4:00 PM

**Minnesota 3M PFC Settlement**  
Notes from the Citizen – Business Group Meeting

Tuesday, December 15, 2020  
1:00 p.m. – 4:00 p.m.  
Virtual Webex Meeting

Group members in attendance:

Amy Schall	Barbara Ronnigen
Dave Schulenberg	David Filipiak
Jess Richards	Kevin Chapdelaine
Kirk Koudelka	Mark Jenkins
Michael Madigan	Monica Stiglich
Steven Johnson	

Presenters:

- Rebecca Higgins, Minnesota Pollution Control Board (MPCA)
- Kirk Koudelka (MPCA)
- Jess Richards, Minnesota Department of Natural Resources (DNR)
- Emma Glidden-Lyon, Abt Associates
- Mark Lorie, Abt Associates

**Welcome**

Emma Glidden-Lyon (Abt Associates) and Mark Lorie (Abt Associates) welcomed the work group to the meeting. Mark reviewed the agenda. The purpose of the meeting was to hear an update on Project 1007 and receive feedback from the work group members on topics that they suggested to the Co-Trustees. There was a presentation on the health effects of PFAS preceding the meeting. The slides and recording of that presentation will be posted on the 3M website. Kirk Koudelka (MPCA) provided updates to the work group. He reiterated that the goal of the meeting was to listen to work group feedback. He also acknowledged the work group email exchanges about health impacts and net present values. The Co-Trustees sent an email to the work group with additional related information including updated net present values for options in West Lakeland. Kirk pointed out that the Co-Trustees would like the majority of the work group conversations to happen during the monthly meetings rather than on email.

Monica Stiglich and Kevin Chapdelaine provided a liaison update. Key discussion items from November’s Government-3M work group meeting included:

- Cost estimates. While there were requests for the costs to be reviewed by a third party, the Co-Trustees felt that was already provided between the community employees and the consultants they work with.
- The rate study. Both Lake Elmo and Oakdale said they had big differences in their rate study than what was presented. Discussions during last month’s meeting showed that was because the rate study effort for the State assumed all communities would use water rates to pay for growth-related infrastructure, which is actually not the case. Infrastructure for growth is usually paid for by developer fees or similar fees.

- The Citizen-Business group was very focused on health based standards. There was a lot of concern on future changing values and frustration there were not more concrete answers on this topic. There was not as much concern in the Government-3M work group.
- Lowell Johnson offered to help with communications to the public on the health impacts and planned Conceptual Drinking Water Supply Plan. This would be useful as these are extremely complex issues.

Kirk added that costs were also discussed in the Subgroup 1 meeting and one-on-one meetings with the communities. There was also discussion on whether private wells would be sealed if the home was connected to a municipal system, or whether a homeowner could keep the private well for irrigation purposes. There is support from some communities for keeping private wells for irrigation but the Co-Trustees have not made a decision yet. There was also conversation about how public comments would be utilized. The Co-Trustees are reviewing and compiling comments now.

### Update on Project 1007

Rebecca Higgins (MPCA) and Gary Krueger (MPCA) provided an update on Project 1007. The goal of this effort is to understand the complex picture of sources, pathways, and risks in the area, and to better understand how PFAS contaminants have moved throughout the region, in part aided by a flood mitigation system installed by the Valley Branch Watershed District in the 1980's. Project 1007 is covered under Priority 1 of the Settlement, which directs MPCA to conduct a source assessment and feasibility study. According to the Agreement with 3M, any mitigation measures identified in the study will likely be funded by Settlement dollars. The Project 1007 PFAS investigation effort has been collecting samples along the Project 1007 corridor as part of a source assessment analysis and to gather information to build a detailed conceptual site model. Key findings include:

- The Project 1007 system is extremely complex with a high level of interconnection between hydrologic regimes of surface water and groundwater across the entire region. The State is working on a combined drinking and surface water model that will analyze the flow of PFAS contamination in more detail over time. The model will combine above- and below-ground geologic features to provide insights into how PFAS could impact the area's aquifers.
- The 3M Oakdale Disposal Site and Washington County Landfill are primary sources of PFAS into the system. There is a gradation of PFAS impacts present throughout the entire Project 1007 corridor that exceed site-specific water quality criteria for PFOS. These water quality criteria are new as of October of 2020 and were developed in-part for this specific area. The site-specific water quality criteria are values protective of fish habitat, ultimately aimed at human protection for fish consumption. This criteria includes a value for fish tissue and for surface water that supports meeting the fish tissue value. Concentrations in sediment and surface water are highest immediately downgradient of the Oakdale Disposal Site. There are also a number of sediment sinks where PFAS has settled and become secondary sources, partly due to hydrologic properties of the water bodies and the organic nature of the quiet portions of the system. An example of a sediment sink is the wetland area immediately downgradient of the Oakdale Disposal Site. Rain storms or other natural events may cause more PFAS to be released from the sediment sink locations, and are referred to as PFAS "pulses". These pulses are most evident in the system after the Project 1007/Raleigh Creek confluence at Tablyn Park after precipitation events.

- Most of the PFAS mixture is made up of PFOS in samples collected to-date in the surface water, sediment and animal tissues. A varied blend of the PFAS signature is present in the groundwater near the disposal sites with PFOA and PFBA making up a greater portion of the total PFAS near the Washington County Landfill as opposed to PFOS dominating the signature from the Oakdale Disposal Site, with some precursor PFAS compounds (including FOSAs, FASEs, and FASAAs).
- PFAS foam can be generated from physical agitation from precipitation, wind, or high turbulence areas, and are found in a variety of forms on surface water bodies: actively accumulating, organic/particulate rich, frozen, deflated, or not-accumulating/small clusters of foam. Residents are encouraged to stay away from foam if they see it and wash their hands immediately after coming into contact. High concentrations of foam do not necessarily correlate with the highest PFAS concentrations in the water in which foam is found. Significantly high concentrations of foam were found in Raleigh Creek and at the outlet of Horseshoe Lake.

Rebecca then discussed the merits of using multi-benefit wells as a way to address long-term regional groundwater impacts. Multi-benefit wells could possibly serve long-term municipal drinking water demands while controlling large, regional groundwater plumes. These would be extraction wells in the bedrock to capture and treat PFAS-contaminated water. The combined extraction rate of the multi-benefit wells would represent 67% of 2040 total regional average daily demand. A key component of multi-benefit wells is managed aquifer recharge through direct injection of the excess treated groundwater. This practice is less common in Minnesota but is common in many other places in the country and across the globe. Long-term remedial actions will be dependent on PFAS presence, concentrations and behaviors, PFAS plume geometry and movement, fate and transport, and PFAS risks and remedies.

Rebecca also discussed interim corrective actions which involve surface water cleanup options. The State expects to consider targeted sediment cleanup assessment in 2021. The interim surface water clean-up option under evaluation is a two-step process involving first, surface activated foam fractionation that aerates contaminated water, forcing PFAS to form foam which is removed and hyper-concentrated. The treated water can be returned to the source. The first tests of the foam fractionation have shown a 79-85% removal of total PFAS, with up to 99% removal of PFOA/PFOS. The second step in the process uses electrochemical oxidation to transform, oxidize and mineralize the hyper-concentrated small volume PFAS liquid, thereby decoupling the carbon-fluorine bonds. Hyper-concentrated PFAS liquid from the Oakey Air Force Base treatment system in Australia is being tested at the AECOM laboratory in Austin, Texas to evaluate the second step in this process. That PFAS liquid is similar in PFAS composition to the Project 1007 surface water.

Rebecca then discussed the Project 1007 next steps. Source assessment work will be ongoing for the next 1-2 years. Modeling and interim corrective actions will take place over the next 1-3 years. The feasibility study will begin in 1-1.5 years and this will address the long-term, regional cleanup options. Cleanup itself will take years to decades.

*Feedback:*

One work group member asked if the sources were still releasing PFAS into the system. Rebecca explained that there was still PFAS coming from the Oakdale Disposal Site and Washington County Landfill. There is a large plume of PFAS in the subsurface. The Oakdale Disposal Site especially impacts

surface water, but this in turn impacts groundwater because of the high interconnectivity of the system. 3M is conducting some additional source assessment at the Oakdale Disposal Site regarding the surface water pathway. They are still obligated to implement a remedy at the Disposal Site. Soil and sediment have been removed from the Oakdale Disposal Site but their surface water/groundwater system needs some updating. The State does not have any responsibility to address sources from the Oakdale Disposal Site aside from reviewing and approving 3M's plans. Until 3M rectifies the leaching of contaminants, the State will need to address PFAS as a continuous flow of contamination. The State has told 3M that they need to reevaluate their systems. There are still PFAS releases from Raleigh Creek as well.

Others were concerned about the costs of the multi-benefit wells and were confused why POETS couldn't be used to fix this issue. Rebecca and Gary explained the multi-benefit wells would address PFAS impacts on a much larger scale and that POETS would not be effective. Another work group member asked about the impact of multi-benefit wells on drinking water supply for residents who live to the East. Rebecca assured the work group members that the State would not deplete the drinking water supply for communities through this effort and would know more details after looking at injection capacities throughout the area to see where the State could safely re-inject the water. The goal is to maintain regional aquifer levels for drinking water.

One work group member asked how the Project 1007 study related to the Conceptual Plan. It seemed to them the Project 1007 solutions proposed would impact implementation of the Plan. Gary explained it was part of the work under the Settlement and it could impact groundwater, which is the drinking water source in the area. However, that could be years down the road, so there is still a need for treatment now. This type of work is why the State proposes setting aside different funding buckets under the recommended options.

### **Discussion of topics selected by the Work Group**

The work group members decided which topics to discuss during the meeting.

### **Public comments and questions**

There were no questions or comments from the public at this time.

### **Discussion of topics selected by the Work Group**

#### *Acceptability of options*

The work group members first discussed the acceptability of Options 1, 2, and 3 as laid out in the draft Conceptual Plan. The results of the discussion are below:

- The majority of work group members preferred Option 2 because it has the lowest HI treatment threshold (0.3) among the three options.
- Multiple work group members did not like any option because they wanted to treat all wells due to equity issues. However, of the options, they indicated that Option 2 would be acceptable. They felt that there is an issue with equity if residents are paying the same amount for water under the recommended options but some would have treated water and some would not. This led to a discussion on what work group members mean when they advocate for treating all wells. One work group member encouraged the group to really think about the implications of treating every well. This would result in very high costs and may not be the best use of funds.

Another work group member explained they were referring to all affected wells in the area. Several work group members advocate treating all wells because of the changing health-based values and health risk limits. These numbers have been reduced over the last few years and there is no assurance they will not change again in the future. They feel treating all wells, even if it meant increased water rates, would be worth the money because it would give protection against future changing health based values and health risk limits.

- There was additional discussion on equity. One work group member thought they couldn't achieve true equity since not all wells within the county would be treated due to the boundaries of the East Metro area for the Settlement, even though they know there is PFAS outside of this area. They felt they should select an option that was as equitable as possible, and advocate for Option 2.

Another work group member asked why the State prefers Option 1. Kirk explained that they looked at a multi-pronged approach. They first ran scenarios with an HI of 1 and 0 and found that someplace in the middle (0.5) was most reasonable. They felt \$70 million for drinking water protection was important because it would reduce plume movement and prevent the need for more treatment in the future. The same is true for sustainability and conservation. Option 1 provides greater flexibility. By not treating to the lowest possible HI, but still under the HI of 1, the State preserved the ability to make some more adjustments if costs are different than currently estimated. One work group member emphasized that 0.5 was still below the current HI level of 1, but thought it still did not provide as much additional protection as Option 2. However, this member was comfortable with Option 1 or Option 2.

One work group member added that Option 3 seemed to be off the table because some residents do not want their water rates to be controlled by St. Paul Regional Water Services.

Kirk responded to the idea of treating all wells, clarifying that they did estimate costs for treating all wells or keeping all residents on POETS and found the costs were very high with a short operation and maintenance (O&M) duration. Those costs will then fall to communities and individual homeowners, which the State does not feel is equitable.

### *Additional well testing*

The group discussed the issue of additional well testing. One work group member pointed out that they haven't had their well tested in two years but one of their neighbors just received a POETS. Others agreed. The Co-Trustees clarified that any resident can still request well testing and that the State was prioritizing areas with known contamination to continue thoroughly mapping the contamination. Another work group member pointed out that costs will go up if the State does more testing.

### *Treatment of wells*

One work group member asked if residents could refuse treatment. Kirk and a representative from the Minnesota Health Department (MDH) explained that many people do not want to get sampled and that some with advisories refuse bottled water. If contamination only affects you and your household, then you can decide if you get treatment or not. However, if others are involved (e.g., a landlord and renters), then you cannot refuse treatment. Residents must also disclose contamination during the sale of the property and the State has been working with realtors to make sure that information is disclosed. Representatives from MDH added that the well management group is working on some additional

messaging and policies with the Co-Trustees and that the State doesn't condemn wells until they are cross contaminating aquifers.

### *Cost allocations*

The group discussed cost allocations. One work group member said they would take money away from sustainability and conservation and use it to treat more wells. They were wondering how that allocated money differed from state or local money already being used on sustainability. Kirk explained that while the State knows some communities already have strong sustainability programs or get support from the Metropolitan Council to help with sustainability, there are not enough funds to address regional sustainability and conservation, which would reduce the need for treatment in the future. This money would allow the region to take on larger sustainability and conservation projects and would not have to compete with other programs and projects for these funds. Rebecca added that aquifer recharge would be extremely important for sustainability and conservation throughout the region. When there is discussion about maintaining drinking water, it needs to incorporate groundwater recharge, which is the main drinking water source in the area.

Other work group members recognized the importance of sustainability and conservation but felt that the Project 1007 study should have been incorporated into the costs from the beginning of the Plan since it could impact construction of capital infrastructure under the Plan. They asked where the money for the multi-benefit wells would come from. Kirk said that most would come from drinking water protection or sustainability and conservation. Some may be justified to come out of capital costs in communities where immediate work is not required and sustainability efforts could reduce the need for treatment. Another work group member supported sustainability and conservation set asides because they felt the work would not be funded any other way.

The work group also discussed the \$41 million set aside for neighborhood hookups. Kirk explained this fund was to cover neighborhoods that had not yet been sampled and account for future plume movements. There is still uncertainty around the fund. The Plan could use all of it to hook up neighborhoods or may not need the full amount. One work group member felt this money should be put toward a lower HI threshold of 0.3. One work group member explained that they see the fund as an additional contingency. They felt \$41 million was a fair amount.

### *Disposal and Liability*

The work group asked about communities' responsibility and liability in disposing of PFAS treatment media. They were concerned that there were few places that disposed of the media because it had PFAS contamination. Hannah explained that incineration was the preferred disposal method and was considered in the cost estimates. Wood has included media change out and disposal costs as well as the cost of moving the media from the home or treatment site to the incineration site. The incineration site would be up to the vendor. Some vendors have their own sites where they dispose of the media. Kirk understood the concern that cities have if the vendor mishandles the disposal of the media and then there is PFAS contamination from that media. The State still needs to look into the issue of the chain of custody of PFAS media and subsequent liability.

### **Next steps**

Mark discussed next steps for the work group. The public comment period ended on December 10<sup>th</sup> and the State and consultants are working through the feedback now to find common themes. They are also reviewing work group comments. There will be no work group meetings in January. The February meetings, and potentially the March meetings, will focus on a summary of the feedback received and options for updating and finalizing the Conceptual Plan. In March, the Co-Trustees plan to have another round of one-on-one meetings to discuss updates to the options. The final decision is slated for April and information will be disseminated to the public through work group members, work group meetings, and public meetings.

### **Public comments and questions**

A member of the public asked work group members to clarify what was meant by treating all wells. Work group members explained they were referring to all affected wells in the East Metro area.