

NDWAC MDBP Rule Revisions Working Group

May 23, 2022
Meeting Summary

Meeting Synthesis

Background on the MDBP Working Group

The United States Environmental Protection Agency (EPA) has sought public input and information to inform potential regulatory revisions of eight National Primary Drinking Water Regulations (NPDWRs) included in five Microbial and Disinfection Byproducts (MDBP) rules following the third Six-Year Review. EPA hosted an initial virtual public meeting in October 2020 to solicit input on further improving public health protection from MDBPs in drinking water. Throughout 2021, EPA sought input relevant to any potential rule revisions through additional public meetings focusing on topics identified through public comments and information.

EPA has now charged the National Drinking Water Advisory Council (NDWAC or Council), a Federal Advisory Committee (FAC) established under the Safe Drinking Water Act (SDWA) of 1974 to provide the agency with advice and recommendations on potential revisions to the MDBP Rules. In addition, to support the work of the Council, EPA asked the NDWAC to form a working group to explore specific issues and identify potential MDBP rule revision options for the Council to consider in making recommendations to EPA. More information on the NDWAC MDBP Rule Revisions Working Group (Working Group) meeting schedule and other information about the Working Group is available at: <https://www.epa.gov/ndwac/national-drinking-water-advisory-council-ndwac-microbial-and-disinfection-byproducts-mdbp>. More information on the potential rule revisions is available at: <https://www.epa.gov/dwsixyearreview/potential-revisions-microbial-and-disinfection-byproducts-rules>. EPA is also currently providing the public with an opportunity to send written input to EPA via the public docket at www.regulations.gov, Docket ID: EPA-HQ-OW-2020-0486.

Meeting Purpose

The purpose of this first Working Group meeting was to make member introductions, review previous public engagements (2020 and 2021) and Working Group member interview findings, and start a discussion on the use of technical support for the Working Group. In advance of the May meeting, the Working Group received a meeting agenda and background information developed for the 2020-2021 MDBP stakeholder meeting series. This document provides a synthesis of presentations and discussions from the first Working Group meeting on May 23rd, 2022. Readers can find the meeting materials at (<https://www.epa.gov/ndwac/national-drinking-water-advisory-council-ndwac-microbial-and-disinfection-byproducts-mdbp>). In addition to Working Group members, approximately 200 observers attended the meeting.

Welcome and Introduction

Bruno Pigott, Deputy Assistant Administrator, Office of Water, EPA

The Deputy Assistant Administrator highlighted critical MDBP regulations and their potential to reduce risks from MDBPs as a key aspect of public health and drinking water. Mr. Pigott set the stage for the importance of the NDWAC to provide the agency with advice and recommendations on key issues related to potential revisions to MDBP rules in a manner that strives for equitable protection of public health, particularly disadvantaged and historically underserved communities. Further, Mr. Pigott urged Working Group members to listen to each other with open minds and to work toward achieving consensus on their recommendations to the NDWAC.

Eric Burneson, Director, Standards and Risk Management Division, Office of Ground Water and Drinking Water (OGWDW), Office of Water, EPA

Mr. Burneson provided an additional welcome and introduction for the first NDWAC Working Group meeting. He briefly provided a recap of the public engagement meeting series that focused on over ten key MDBP topic areas that represent potential opportunities to improve public health protection. Those topics included disinfectant residual levels, opportunistic pathogens, such as *Legionella*, regulated and unregulated disinfection byproducts, consecutive drinking water systems, drinking water distribution systems, finished water storage, precursor removal and treatment, source water considerations, sanitary surveys, and water safety plans. He also provided an overview of the schedule for the overall potential MDBP rule revisions.

Lisa Daniels and Andy Kricun, NDWAC MDBP Rule Revisions Working Group co-chairs

Ms. Daniels and Mr. Kricun stated that their goal as co-chairs is to be stewards of a fair and balanced process. They also highlighted the importance of ensuring that every person in the country has access to safe drinking water at an affordable rate. They thanked the EPA for the foundation to this Working Group provided by the previous stakeholder engagements.

Working Group Introductions

Working Group members were asked to introduce themselves and say what they are hoping to bring to this Working Group process. They were also asked to state what other members should know about them. The facilitator highlighted the breadth of experiences represented by the group and the variety of motivations for improved rules. See Appendix 1 for the roster of Working Group members and an indication of those attending this meeting.

Presentation: Previous Public Engagement

Presentations during this segment of the meeting provided a review of the operational procedures for the Working Group members, a summary of the previous public engagements, and the Working Group interview findings. EPA staff provided key highlights of the public input received for the stakeholder meeting topics. The meeting summaries and background documents on each meeting topic are available in MDBP Rule Revisions public docket at www.regulations.gov, Docket ID: EPA-HQ-OW-2020-0486.

EPA compiled feedback received from the public during the engagements. Some statements from the public included the following highlights:

- Operational practices and challenges related to maintaining a numerical disinfectant residual level;
- Considerations in controlling opportunistic pathogens and *Legionella*, including shared responsibility between water systems and building owner/operators;
- Actions to further control unregulated and brominated haloacetic acids (HAAs) could lead to unintended consequences and impact trihalomethanes (THMs) and other DBPs;
- DBP precursor issues and potential considerations related to parameters such as bromide and total organic carbon;
- Possible actions for EPA to consider improving consecutive system compliance including the potential for additional monitoring at the interconnection between wholesalers and consecutive systems;
- Approaches for EPA to consider in improving distribution system water quality and considerations related to building water quality;
- Sanitary risks for finished water storage facilities and approaches for improving finished water storage facility water quality;
- Challenges for improving and protecting source water;
- Additional precursors and metrics to consider;
- Challenges with sanitary surveys and approaches for improving sanitary surveys;
- Consideration of Water Safety Plans (WSPs) or complementary approaches; and
- Additional MDBP topic areas for consideration.

Presentation: Working Group Interview Findings

Rob Greenwood from Ross Strategic provided a presentation covering the summary findings from the Working Group one-on-one, pre-convening interviews. In starting the presentation, he referenced the Working Group procedures to remind members that they serve on the Working Group in an individual capacity based on expertise or perspective - the members do not represent agencies or organizations. He further referenced the Operating Procedures to highlight that the NDWAC's mission statement to the Working Group asks that members strive for consensus recommendations and where consensus is not possible, the Working Group should provide options to the NDWAC. Highlights from the facilitator's presentation appear below.

Interview Question 1: Working Group Operating Procedures

- The facilitator, in response to questions raised by individual Working Group members during the interviews, indicated that 1) seeking opportunities for environmental justice improvements is an explicit part of the EPA charge to NDWAC and flows down to the Working Group for consideration, 2) individual Working Group member discussions between meetings are not restricted as part of the Operating Procedures, and 3) member alternates will only be on emergency basis since the meeting schedule will be set in advance.

Interview Question 2: Working Group Member Top Priorities

- The presentation indicated that Working Group member priorities aligned well with previous stakeholder input and the facilitation team is suggesting for the topics and sequencing of Working Group discussions.
- Working Group member priorities included: examining the role a numeric disinfection residual can play in improving public health outcomes; addressing key microbial contaminants such as *Legionella* and NTM; addressing disinfection byproducts both currently regulated and unregulated; compliance costs and the impact on affordability; distribution system water quality management opportunities (including finished water storage and consecutive systems); improved methods for monitoring and sampling; improvements for environmental justice outcomes (e.g., equal access to reliable and affordable service; groundwater systems (both the criteria for determining Groundwater Under the Direct Influence of Surface Water (GWUDI systems) and the management/regulation of pure groundwater systems); the role of the public water system in improving public health outcomes related to premise plumbing and opportunities for directly improving premise plumbing management; simultaneous compliance (for example, with the Lead & Copper Rule and Revised Total Coliform Rule); small systems (including compliance challenges, technical, financial, and managerial capacity, and the role of enhanced technical assistance); and source water quality (with an emphasis on total organic carbon, dissolved organic carbon, and pollution source control).
- Cross-cutting member priorities included: improving outcomes from and addressing gaps in existing SDWA regulations; improving public health protection while reducing implementation burden; finding more comprehensive solutions such as addressing both DBP and microbials in a more holistic way to produce multi-benefits from individual actions; and addressing the role of statutes other than SDWA (e.g., Clean Water Act for source water control).

Interview Question 3: Working Group Key Challenges

- Data and current science variability and gaps with respect to distribution system conditions and microbial and DBP contaminant occurrence and the connection to public health outcomes.
- The variability of water system operating contexts making it difficult to find one size fits all solutions.
- Effective integration with parallel regulation processes such as PFAS and Lead and Copper rule.
- Different Working Group member vantage points – members have different knowledge and potentially different viewpoints and a different assessment of acceptable risks and related tradeoffs (suggesting a need to elevate understanding among Working Group members and develop a team mentality of working on problems together).
- Timeline constraints and building consensus in a virtual meeting context.

Interview Question 4: Proposed Discussion Approach

- The presentation indicated the Working Group Members expressed a reasonable to strong level of comfort with the framing and high-level topic sequencing approach presented to the Working Group members for their consideration during the interviews.
- Working Group member interview feedback emphasized the need to begin discussion with a focus on establishing a common understanding of the problem characterization, then moving on to consider intervention options and related implementation requirements and implications.
- The interview feedback also emphasized the need to track and work through interdependencies and for big picture, multi-benefit, cross-cutting thinking.

Interview Question 5: Working Group Member Lessons Learned

- During the interviews, Working Group members placed substantial emphasis on the role of technical support and asked for a diverse set of technical backgrounds among those providing technical analyses, a sense of common understanding across experts when possible, and to recognize that there is an imbalance of access to in-house technical resources across Working Group members.
- Working Group members also had stressed the need to build sufficient time into the process to allow for technical material to be absorbed and responded to. Members also indicated that in-person meetings can be helpful to consensus building and that breakout groups during meetings can provide an opportunity for more in-depth exploration of topics.

Interview Question 6: Working Group Indications of Technical Support Needed

- During the interviews, Working Group members identified a substantial range of technical topics they view as important to MDBP rules revision discussions and may need technical analyses to support their deliberations. Topics consistently identified during the interviews included:
 - Contaminant profiles - where they come from, how they evolve, and what are the interventions and their associated benefits (e.g., public health outcomes) along the drinking water value chain.
 - DBPs: toxicological profile, documented health impacts (epidemiology), research related to original DBP requirements, state experiences with impact on DBPs of moving to a numeric residual, DOC relationship to DBP formation, chloramination for DBP management.
 - Distribution system dynamics – factors influencing water quality (e.g., hydraulics in storage towers) and the dynamics of contaminant occurrence and exposures.
 - Economics and implementability of proposed interventions.
 - Lived experience perspective – bringing in directly impacted individuals to address the Working Group.
 - Monitoring and testing - accuracy (particularly relative to monitoring requirements and compliance thresholds) and alternatives (e.g., nucleic acid extraction, comprehensive sampling approach, use of UV 254 as a surrogate for DOC).
 - Opportunistic pathogens - occurrence data in distribution systems and premise plumbing, public health endpoints (epidemiology), and the link between public health endpoints and distribution system water quality.
 - Profile of current MDBP conditions - compliance, operational realities, public health improvements, and residual risks.
 - Public health estimate science - understanding the science of public health estimates.
 - Simultaneous compliance – a chemistry 101 tutorial that explains what happens with water chemistry as systems make changes.
 - TOC - current compliance conditions, who is having trouble, and what has been accomplished.

- Underserved and underprivileged communities – information and analyses requested on considerations given to underserved and underprivileged communities when formulating the original rules.

Interview Question 7: Working Group Logistical Support Needed

- Emphasis on ensuring scheduling of meetings and material distribution is done well in advance of subsequent Working Group meetings.
- The presentation also indicated Working Group members are supportive of creating a shared document repository.

Discussion on Interview Findings

After the presentations, Working Group members were invited to ask clarifying questions and to address two specific questions:

1. Are there additional priorities or challenges the Working Group should be aware of/consider?
2. What are the elements of common purpose we see in the priorities and challenges?

In response to these questions, the Working Group members provided the following observations.

- Additional priorities should include climate with respect to differences across the nation (geography) and in climate change bringing increased flooding and drought. Other additional priorities include a focus on underserved communities and supplementing their resources, exploring opportunities for consolidation or shared services to bridge resource gaps, and adding a repository of information for utilities (with a focus on those utilities that do not regularly network with other utilities and benefit from the related joint learning) to access that includes best practices.
- The Working Group’s common purpose should be looking to strike a balance for providing improvements to public health while limiting the burden on rates and capacity.
- Issues that occur with small systems need to be considered in the context of the impacts of multiple rules and related compliance requirements. It is important to note that consolidation can be difficult for small rural systems given their operating conditions such as large distances between rural systems and challenging topography. There also is a need to balance public health protection and a small system’s operation and maintenance budget. There is a need to find long-term support (e.g., operator qualification, number of operators), but also a need to identify where this financial support can come from with small systems in mind. Some systems were built off grants but are now in disrepair. The Bipartisan Infrastructure Law (BIL) has some capital costs covered, but not operation and maintenance (O&M) costs. Additionally, consultants need to design for operators’ ability to run treatment plants and not just use the latest technology. It may be more efficient to have sustained help over time so that system is kept in “good working order.”
- For each issue, the Working Group needs to identify the problem and how the group can address the issue holistically. For example, if a system puts in ozone to limit *Cryptosporidium* but also has bromide in the source water, then increased bromate formation may be of concern.
- On the multiple benefits point, areas of common interest to the Working Group should be identified. Some approaches will yield benefits for both microbes and DBPs. New money from the BIL can be

used for infrastructure, but discussion is needed on how systems can use that funding to solve MDBP issues with effective targeting. Restructuring systems and sharing resources among systems should be explored as alternatives to full consolidations. The Working Group should identify effective methods for sharing resources with innovative ideas to address small system challenges.

- The Working Group should include in its discussions the implications of home water treatment, including advantages and disadvantages of point-of-entry (POE) and point-of-use (POU) devices. There is a shared responsibility for safe drinking water that includes steps on the consumer side as well those taken by water systems. It is also difficult to define “safe water” and how that applies to environmental justice communities and immunocompromised populations. Potential rule revisions need to take into account these sensitive populations.
- The Working Group needs to explore the nexus of multiple benefits, future needs, emerging pathogens (e.g., what if COVID was waterborne?), issue of affordability, failure of vision, and how the regulation structure affects water at the local level. We also need to remember that consequences (e.g., costs) are not local – consequences can be of a shared societal nature. This rule revision has the potential to restructure drinking water regulations in a visionary way to address limitations of systems, while not discriminating against low income or disadvantaged systems. With the BIL funding, let us not limit the possibilities of Working Group suggestions just based on existing rules.
- This Working Group should emphasize strong interest and common purpose in where and what the current drinking water problems are. Building consensus on the common issues first before framing solutions to the problems is needed for this Working Group to be successful. Thinking outside the current paradigm requires possible rule revisions to support the public water systems and local rate payers. We are working in a context where the current model of funding water systems from rate payers is broken.
- The Working Group should discuss shared responsibility and explore how public water systems can or should engage building owners. The previous suggestions are for “normal operations,” but the Working Group also needs to consider what happens during unusual operations (e.g., COVID) and how that will or could impact drinking water quality. By being better prepared, systems can better manage. For example, understanding how extra storage for unusual conditions could impact water quality.
- Consider an approach that considers threshold levels that encourage systems to look at potential problems before reaching non-compliance threshold levels.

Many observations reflected Working Group members emphasizing the need to look outside of the current status quo and to think strategically and long-term. These rule revisions, done thoughtfully, have the potential to ensure robust systems that can handle an uncertain future - not just focusing on the problems of today, but also preparing for how to protect public health long term. There was also an emphasis on current capacity of systems and how systems can meet current regulations. The Working Group should consider how current compliance issues will impact systems moving forward with potential new rules.

Working Group Process Plan

The first portion of Segment 4 of the meeting focused on the process plan for the Working Group. A presentation to the Working Group outlined the potential topic sequencing as follows: problem

characterization; interventions; screening of interventions using Working Group derived criteria; and implementation mechanisms. During the final steps of Working Group deliberations a findings and recommendations report (which packages problem characterization findings, the scope of interventions considered, and recommendations related to preferred interventions and related implementation mechanisms) will be prepared. The Working Group interviews highlighted the need for members to identify the strongest or most desirable interventions, and this will require the development of screening criteria by the Working Group to examine the full implications of the interventions under consideration. A drinking water value chain framework (source water, treatment, distribution, and premise) is also being developed to recognize and work through the interdependency of drinking water issues.

A tentative 13 meeting series was proposed to address all topic sections: Meeting 1 for introductions, priorities, and Working Group goals; Meetings 2 through 4 for problem characterization; Meeting 5 for wrapping up problem characterization; Meeting 6 for intervention scoping and evaluation approach; Meetings 7 and 8 for intervention characterization; Meeting 9 for connecting preferred interventions to implementation; Meeting 10 for translating interventions to recommendations; Meeting 11 for draft recommendations; Meeting 12 for final refinements to recommendations; and Meeting 13 for the final report discussion. The presentation emphasized that this meeting series will be an iterative process and even though the series looks linear there will be a need to be adaptable. This meeting series provides a basic framing (i.e., number of meetings and timeframe), big picture needs (e.g., multi-benefit), and individual problem-solving areas.

Working Group members provided the following observations and questions with respect to the proposed process approach.

Observations

- This sequence of topics gives a roadmap and can help keep the Working Group organized, but there will be lots of information associated with this process, and it needs to be delivered and managed in an organized fashion. The process needs to cover where we have been and where we are headed, but it is also needs to be flexible and change as discussions and developments dictate.
- This is a logical way to walk through the information to reach the consensus the Working Group seeks. Recognizing the need for technical support, time is needed between meetings so that Working Group members can receive and thoughtfully review information and be prepared to engage effectively in discussions.

Questions to the facilitator

- Question: Will the Working Group follow this approach for each area then bring things to together at the end? (e.g., separately address DBPs and *Legionella*)
- Response: the facilitators want to maintain a dual focus on individual problem solving, while maintaining a broader lens on interdependencies.
- Question: Will the Working Group have a pre-final report and get comments from NDWAC and have a chance to adjust?
- Response: There is the intent to keep the full NDWAC informed of Working Group deliberations, including interim findings and recommendations in part to avoid any surprises at the closure of the process. The specifics of how this will be done remain under consideration. Previous NDWAC

Working Groups have had check in points near the end of deliberations to prepare the full NDWAC for receipt of recommendations.

Technical Support

The second portion of this Segment of the Meeting focused on the potential for technical support to the Working Group. EPA indicated that it recognizes the need for the Working Group to have more technical, data-driven information, and EPA is in the process of framing out for Working Group consideration the specific approach to providing technical support to the Working Group. The presentation noted that EPA staff is available for technical support for targeted analysis for Working Group requests and plans to provide opportunities outside of the agency to also provide technical support. The goal is to have technical support from a core group of experts supplemented by other individual experts as needed to help provide additional insights. The meeting plan is to discuss potential analysis questions at one meeting then provide targeted analysis results at a following meeting.

Working Group members posed the following questions and provided the following observations in response to the EPA's presentation.

Questions

- Question: Procedural question regarding targeted analysis, what is the process for agreeing on what to ask for?
- Response: EPA is still looking at options for technical support, but it may depend on technical analyses requests. EPA has processed results of the interviews, and the problem characterization area may help refine data analysis requests through input from Working Group members. At each meeting, members need to think ahead two or three meetings so that the technical analysts can start working on those requests. EPA will present what it thinks is available and the Working Group will also come with their understanding. EPA may also identify additional information available. That is a key role of the technical analysts, but there is a need to figure out how to prioritize requests and how to synthesize the information.
- Question: As for distribution system dynamics, could EPA be more specific on what that would include since this is a big multifaceted topic? A lot of white papers from EPA came out on this topic previously.
- Response: Topic selection should be driven by questions from individual Working Group members. EPA has further developed materials on some of these topics including papers and additional resources through factsheets. EPA has a distribution system toolbox on its distribution system website (<https://www.epa.gov/dwreginfo/drinking-water-distribution-system-tools-and-resources>). These resources were not intended for the Working Group specifically, but for assistance to public water systems. Note that these materials are still under development, and EPA is actively looking at a broad range of distribution system issues.
- Question: How will the issues be set-up for the Working Group? For example, if systems want to have a residual level that will create DBP issues, this could set up the need for a multiple step evaluation by the Working Group. We also will need to consider health effects, health risk assessments, microbiomes (i.e., risk tradeoffs between microbes), etc.
- Response: Concerns about the shift in microbiome are valid. The Working Group can proactively suggest analysis. Working Group discussions and considerations should go beyond *Legionella*.

- Question: On the sequencing, toward the end of the process are there enough meetings? Interventions and recommendations may need more time.
- Response: Facilitators are trying to be proactive and look ahead to future meetings, which should provide the time to address technical questions and hopefully reduce or avoid timing issues.
- Question: For DBPs and microbes, there is always a give and take on how to balance each risk. Several states have a numeric residual level, how does that affect the federal level? Meeting in the middle to find a balance point (e.g., small systems in many states), what tool can be put in place? Many do not think the “cure” for DBP issues are chloramines particularly for small systems, but how can the Working Group help these systems? How do we help them navigate the process to comply with the rule?
- Response: EPA has a lot of resources on chloramine usage. On nitrification prevention, training and education are needed since chloramines are sometimes considered as the most cost-effective way to reduce regulated DBPs.
- Question: Will there be any review of data related to violations with the current rules (to set the stage with where we are now, e.g., distribution of violations)?
- Response: Future presentation and discussion will go over the current non-compliance situation.
- Question: One piece of data that is missing, in ground water and possibly surface water, is dissolved organic carbon. Issues with DBPs can be from dissolved organic carbon with total organic carbon below the requirements. Washington state believes that ground water systems are missing DBP issues because of limited DBP monitoring requirements for them.
- Response: National occurrence information on total organic carbon is in the fourth Unregulated Contaminant Monitoring Rule for surface water and groundwater systems.

Questions Posed Without Response Due to Time Constraints (EPA will factor into future plans)

- Question: Are the twelve meetings enough (in addition to the May 23rd meeting)? Do we have enough subject matter experts? The Working Group will need information ahead of meetings to participate in a meaningful manner.
- Question: Good idea to have a standing wrap up, what will happen to outstanding technical questions? Is there an opportunity for sub-groups and an opportunity to dive deeper into that area? In person connection would also be helpful.
- Question: How will the Working Group address additional technical assistance needs, site specific challenges, and technical expertise on how that impacts treatment (e.g., radon)?
- Question: Can health experts come in to discuss microbial problems (i.e., *Legionella* and Crypto) and their effects across the US? Associations have data out there already without new technical requests.

Working Group Member Observations

Below are additional observations raised by working group members during the course of the conversation on technical support.

- Overall, from an operational standpoint, it all starts back in precursor removal and moves through the distribution systems. Flexibility is needed to meet the demands of all types of systems – affordability equals flexibility in the potential rule revisions. Sequencing topics is good, but the Working Group needs the ability to see connection across problem areas and work through how the

water flows. On technical support, the members need the most current risk and occurrence data. Also, one issue in one geographic area does not mean it is an issue on a national level.

- For DBPs, one rule to have for the whole country does not work. There are systems that have six different treatment sources and every one of the sources have different contaminants coming in. There needs to be a cost analysis on these numbers (i.e., exposure to customers) and what that translates to in terms of health effects. What are the health effects from DBP exposure versus customers not having any water? More information is needed on carcinogenicity and risk of cancer from DBPs. Provide guidance manuals on chloramine control.
- The proposed topic sequencing is fine, but the concern is with problems that do not have solutions or solutions that have been tried but there still is reduction needed or compliance challenges persist. Can this be added to problem characterization? Are we going to be able to come up with answers for some complex simultaneous compliance problems (for small and large systems)? Large systems with large distribution systems and possible consecutive systems added on have DBP problems so the systems switch to chloramines and that has its own issues. Vast systems have the issue with water age (and cannot flush their way out), so water quantity as well as quality issues occur. Hopefully, the Working Group can come up with new ideas, but not all will be affordable for certain systems.
- The Working Group also needs to look at other risk-risk tradeoffs, (e.g., microbial, lead & copper, DBPs) not just MDBP topics but other cross-cutting issues.
- EPA may also regulate PFOA (perfluorooctanoic acid) and PFOS (perfluorooctanesulfonic acid). Such requirements could change the dynamics of these systems and that could also affect MDBP issues.
- The Working Group may need to consider identification of issues continuously and have a set time during each meeting to discuss (e.g., PFOA and PFOS rules). The Working Group needs to be thoughtful about process to think through the contaminants that would be issues. What can the Working Group do to think ahead? We may need extra time to address certain issues and handle them at the technical level comprehensibly. Individual contaminants have changed, but the concerns are similar to those addressed during previous MDBP rules. The Working Group should try to be proactive as much as possible.
- The Working Group needs to be mindful that emerging contaminants (e.g., PFOA and PFOS) and wastewater treatment issues can impact source water.

EPA Cross-Cutting Responses to Working Group Member Questions and Observations

Below are EPA responses to Working Group member questions and observations during the course of the conversation on cross-cutting issues.

- Raising real-world operational challenges will be very helpful throughout the process. Please write down these thoughts to incorporate for discussion. Implementation challenges were also brought up during interviews.
- Many points from these comments and questions are consistent with the Safe Drinking Water Act (SDWA). We heard a frequent ask for data, and SDWA relies on the best data available. Risk-risk tradeoffs (i.e., microbes and DBPs) are a central part of the SDWA, and it calls for EPA to evaluate these as well since they are inherently linked and risk balancing comes into play. Concerns about costs and benefits is a critical element under SDWA, and EPA will provide that information, as well as related mitigation efforts. This will not be a full cost-benefit economic analysis at this time, but

EPA does have preliminary information. SDWA also needs to consider implementation issues and small system diseconomies of scale (i.e., affordability).

- Other Working Group members have expressed the need to think outside of the SDWA framework (e.g., Clean Water Act for source control), we encourage that thinking, but when it comes to drinking water rules, EPA only has direct control over work within the SDWA framework. NDWAC can consider other ways, but EPA may not be able to take action on drinking water rule if they are outside of SDWA.
- EPA does have data sets related to the questions posed by Working Group members, and EPA is currently getting these data ready for analysis to support the group. It is important, however, to recognize that EPA should not be the sole messenger to the working group, and in that context, EPA is looking to engage other technical experts. EPA also has additional information available or close to available now.

Working Group Goals Discussion

Segment 5 of the meeting focused on discussion among members related to Working Group Goals. The members were asked to consider three questions:

1. How will the Working Group measure success in providing recommendations to the NDWAC?
2. What are the needs and interests the Working Group will have considered to reach a successful outcome?
3. What other principles do the Working Group members hold that can guide this path to success?

Working Group member responses are summarized below.

- Reflecting on the value of consensus, we are all hopeful, but we need to recognize that we are dealing with challenging tradeoffs. The value of the Working Group is a crystallization of the issues at hand and clear responses to those even if consensus cannot be reached.
- Measuring success would include nonregulatory solutions and innovation. The most useful outcomes will be to give the NDWAC ideas for EPA to do within SDWA for the Council's consideration.
- One measure of success would include an outcome based on sound science and constructive communication and appreciation for other viewpoints. This necessitates the need to articulate, and when possible, reconcile our viewpoints. We need to include regulatory and non-regulatory options and distinguish between the two. Consensus building is sometimes difficult, but the Working Group needs to work together.
- It was an iterative process for MDBP rules (Stage 1 and 2). The Working Group will want to think about comprehensive and overarching topic areas. In the problem definition phase, can we figure out where we are with each issue? Some science and health information are available now to move forward with recommending interventions, while for other problem areas the Working Group may need to suggest interim steps that can be taken in support of potential future rulemaking. Data sharing and understanding perspectives will help with what is ready and what needs more information for regulation.
- Success on technical scale would include identifying feasible, flexible, and affordable options. We do not want to leave environmental justice communities behind because of cost. Affordability may

mean less protective interventions, while risk assessment should be “need blind” so that everyone can enjoy the same level of protection.

- Feasible, technical assistance provided in a manner similar to the Total Coliform Rule (rather than penalties) could help with the compliance problem.
- The exposure in this rule is different than other rules (i.e., consumption versus inhalation). Inhalation risk needs to be better integrated.
- Earlier MDBP rules reflect iterative steps. If the Working Group can do a few things very well now and articulate the data needs for the next iterative steps it will be consistent with earlier efforts and reflect that making improvements is iterative and this Working Group is not an end process.
- No major changes are needed in current plan.
- Guiding principles can make the group successful. For a fair and balanced process, we need to consider all views with mutual respect. Affordability, flexibility, and feasibility are important issues. To get to consensus in the Working Group, members need to identify areas of common ground, but also recognize views where consensus is not found. This Working Group can still capture good information for the NDWAC’s consideration.
- Goals for affordability, flexibility, and feasibility are aspirational, but what were the concerns and thinking that informed the previous rule development? The Working Group can identify data needs now and how to set the stage for the future and moving even further (i.e., infrastructure, financing, contaminants, etc.). A comprehensive look at the universe of concerns with a no-regrets viewpoint will be helpful. What would allow us to reach consensus on limitations, sensitive subpopulations issues, emerging contaminants?
- The measure of success would be benefits outweigh the costs. In this context, however, the Working Group needs to consider how to fund utilities that cannot afford the treatment for the health outcomes wanted.
- It is important to identify the proper risk balancing that reflects the right balance for everyone regardless of cost. We cannot have two standards for one system that can afford and one that cannot. These rules should be reasonable and feasible for all systems equally.

EPA Observations Related to Working Group Discussion

EPA is thankful for the Working Group members’ willingness to help the NDWAC sort through these complex issues to protect public health. Progress can be made even though there are a lot of issues on a limited time frame. These are problems that are worth being solved and we are thankful the Working Group members are willing to go on this journey. EPA plans a comprehensive look at topics, with non-regulatory and regulatory options, providing a better understanding on available information for the concerns of most interest. The resources theme discussed throughout this meeting will carry forward. An additional question to keep in mind is: what are the key principles that will be helpful for the group when vetting strengths and weaknesses?

Meeting #2 Agenda and Next Steps

The second NDWAC Working Group Meeting will draw on previous stakeholder input and pivot to problem areas. Problem characterization will include review of the current regulatory baseline and baseline conditions, existing public health concerns, gaps in the current regulatory structure feeding into current problem areas, and anticipating the technical support needs for the next few meetings. It is important to

think of this process as a value chain, starting from source water through premise plumbing and carrying through the whole process. Moving into the problem areas, the Working Group needs to identify the firm footing (i.e., science and data) that can be used to make near-term recommendations for specific interventions versus where information is lacking and requires recommendations to support future deliberations. This is an iterative process. The Working Group will need to determine how it can setup the discussion for the future while not neglecting current needs.

For technical support areas, EPA, drawing on 2021 stakeholder meetings and Working Group member input, has identified potential areas to cover for opportunistic pathogens: residual unaddressed or newly emergent health risks, occurrence of opportunistic pathogens in drinking water, and growth of opportunistic pathogens in drinking water value chain (i.e., source to tap). For DBPs, the EPA has identified potential areas as residual unaddressed or newly emergent health risks, occurrence, and challenges and magnitude. Additionally, EPA has identified cross-cutting considerations that include fecal pathogens (e.g., *Cryptosporidium* and *Giardia*), implementation challenges, and simultaneous compliance. EPA is looking to the Working Group for post meeting input to add and refine technical questions on DBPs and opportunistic pathogens outlined in the slide presentation.

Immediate next steps for the Working Group include:

- Completing meeting scheduling through the end of 2022.
- Obtaining further Working Group input on specific technical experts to provide support to the Working Group process.
- Working Group review and input on the specific problem topic areas proposed for consideration during Meeting 1.
- Developing and vetting the Meeting 2 agenda with the Working Group Co-Chairs and members.
- Preparing and circulating with Working Group members a draft summary of Meeting 1.

NOTE: The May 23, 2022 meeting of the NDWAC MDBP Rule Revisions Working Group was opened and closed by Elizabeth Corr, the Designated Federal Officer.

Appendix 1: MDBP Working Group Meeting Attendance*

Name	Attendance
Andy Kricun, WG Co-Chair	x
Lisa Daniels, WG Co-Chair	X
Alex Rodriguez	x
Benjamin Pauli	x
Bill Moody	x
Elin Betanzo	x
Erik Olson	x
Gary Williams	x
Jeffrey Griffiths	x
John Choate	x
Jolyn Leslie	x
Kay Coffey	x
Lynn Thorp	x
Lisa Ragain	x
Michael Hotaling	x
Nancy Quirk	x
Rosemary Menard	x
Scott Borman	x
* All Working Group members were present	