

**U.S. Environmental Protection Agency
Total Coliform Rule / Distribution System
Advisory Committee Meeting**

April 9-10, 2008

Location:
RESOLVE
1255 23rd Street, NW, Suite 275
Washington, D.C. 20037

Meeting Summary

Meeting Objectives/Desired Outcomes:

- *Discuss options and begin to identify areas of possible agreement for revising the Total Coliform Rule, including rule construct, monitoring provisions, system categories, action levels, investigation and follow-up, and public notification, etc.;*
- *Discuss purpose, timetable, priorities and coordination mechanisms for research and information collection concerning distribution systems; and*
- *Discuss topics for upcoming TCRDSAC meetings.*

I. Welcome, Introduction, Meeting Objectives and Agenda

Crystal Rodgers-Jenkins, the Designated Federal Officer, opened the meeting and welcomed the meeting attendees and members of the Advisory Committee to this seventh meeting of the Total Coliform Rule / Distribution System Advisory Committee (TCRDSAC).¹

Gail Bingham, the facilitator from RESOLVE, briefly reviewed the objectives of the meeting, the meeting agenda, and the meeting materials. She noted that the main focus of the meeting was to work through the policy issues related to the variations under consideration for revisions to the Total Coliform Rule (TCR).

II. January and February Meeting Summaries

The TCRDSAC reviewed suggested edits to the January meeting summary provided in their binders.² They approved the summary and agreed to include in the summary for the April meeting the following comments about the January meeting summary (in italics), which were not explicitly said at the January meeting:

- *Several states may have good intentions with regard to cross-connection control, but lack the legislative authority to require these programs, or are at risk to lose authority.*

¹ Please see Attachment A for the Total Coliform Rule / Distribution System Federal Advisory Committee roster. Please see attachment B for a copy of the meeting agenda. Please see Attachment C for a list of the meeting attendees.

² Please see Attachment D for a copy of the January TCRDSAC meeting summary.

- Main breaks are one example of how pressure in the distribution system may be reduced to a vacuum which could *and has pulled* contaminants back into the distribution system.
- When there is an increase in the velocity of water as a result of a high water demand, there may be a resulting reduction in pressure. Backsiphonage potentially can *and has occurred* upstream and downstream of the high water demand.
- Increased pressure from a customer premise can *and has caused* backflow even without a loss of pressure in the distribution system.

Members also received a copy of the February meeting summary in their binders. The Committee agreed to provide comments on the summary by close of business on April 25.

III. Results of Analyses for Revisions to the Total Coliform Rule

Doug Owen, Malcolm Pirnie, provided the TCRDSAC an overview of the technical presentations for this meeting.³ He reminded the members of the information requested at the last meeting, and informed them of the assumptions the Technical Work Group (TWG) made for comparing variations among possible recommendations for revising the TCR. He emphasized that the numbers put forth in the presentations are not final, but will provide members with a broad conceptual sense of the relative differences among options, including the current TCR.

A. Presentation: Results of Analysis for the Current Total Coliform Rule (as written and implemented)

On behalf of the TWG, Vanessa Speight, Malcolm Pirnie, gave a presentation on the results of the TWG's analysis for the current TCR, as written and as implemented.⁴ The objective of this presentation was to provide an understanding of the best estimates of the number and percent of systems, by category, that are likely to be triggered by the provisions of the current TCR, population affected, distribution of types of actions that are taken, and cost.

After listening to the presentation, the Committee asked several clarifying questions. In response, Dr. Speight and other TWG members made the following points:

- The cost per household was determined by dividing the average population by 2.9 persons per household.
- The cost per household in triggered systems includes the cost of baseline monitoring.
- The 67 primacy agencies include the states, territories, one tribe, and EPA direct implementation tribal programs at the regional level.
- For the purposes of creating national estimates, the TWG assumed that states that did not submit data to the Six-Year Review had the same rate of violations as the 37 states that did submit data. This assumption is reflected in the tables presented to the TCRDSAC.
- The modeling predictions for options variations, which the TWG will present at a future TCRDSAC meeting, will look at the difference in occurrence rates in systems on regular monitoring versus those on reduced monitoring.

³ Please see Attachment E for a copy of Mr. Owen's presentation "Background Information Related to Options Review."

⁴ Please see Attachment F for a copy of Dr. Speight's presentation "Results of Analysis for the Current Total Coliform Rule."

- On slide 12, the unit cost per sample includes labor and shipping. All the systems under 1000 used the same contract rate (\$86.30) for monitoring costs per sample.
- Slide 16 shows a range of costs for triggered CWS serving a population of less than 1000; disinfected systems have lower costs because they have fewer Total Coliform (TC) positives.
- The number of transient systems on reduced monitoring includes any system that takes less than 12 samples a year.
- The data on acute violations comes from the federal SDWIS database; the data from the Safe Drinking Water Information System (SDWIS) and the Six-Year Review are for the year 2005.

Individual Committee members and alternates also added their own perspectives and clarifications to some of the points made in the presentation. Among these comments were the following:

- Public water systems (PWS) are not distributed proportionately across the country. Because Region 5 regulates 40 percent of the PWS, reduced monitoring is essential in that it allows the primacy agency to do meaningful enforcement in the field.
- It is important that limited resources do not affect the ability of primacy agencies to implement those actions that are most protective of public health.
- Based on the numbers on slide 13, about 75% of the systems with two non-acute violations per year report these violations in two consecutive months. If the two consecutive months are in the summer, the violations could be due to biofilm regrowth, which is difficult to fix when water temperatures are warm.
- Twenty percent of the CWS serving less than 1000 are on reduced monitoring.

Members of the Advisory Committee then engaged in a discussion of issues raised by the presentation on the analysis of the current rule. They discussed the challenges of including in the baseline costs for the current rule the voluntary investigative and corrective actions taken by States and systems, beyond what is required by TCR. One member noted that some systems also historically do more monitoring than is required of them (and will do so under a revised rule as well), and questioned the validity of adding the costs for these actions to the calculations for the current rule. Another member responded that it is important to understand the incremental cost of a new rule; if systems are already taking actions that will become part of a new rule, the cost of these actions should not be included as incremental costs. A third member noted that some systems that now do more monitoring than required may choose to do less if there is no longer a Maximum Contaminant Level (MCL) for TC.

During the discussion of the presentation on the analysis of the current rule, members of the Advisory Committee made the following requests for additional information from the TWG:

- Which are the 15 states that allow quarterly monitoring (slide 8)? Based on the economy in these states, what would be the consequences if no reduced monitoring were allowed in a new rule? Would some regions of the country be impacted more than others?
- Is there a geographic pattern to where the systems with two consecutive TC violations are located, and what time of year do these violations occur?
- Verify unit costs for monitoring; be sure to include all appropriate related costs such as travel to collect samples and shipping costs (especially for multiple samples).

- Recheck the number of states allowing reduced monitoring for non-community groundwater systems serving less than 1000 to make sure it reflects the current baseline of quarterly monitoring with reduction to annual monitoring.

B. Presentation: Results of Varying the Baseline and Reduced Monitoring Provisions Assuming a Treatment Technique Approach

Dr. Speight then provided the Committee with a presentation on the results of the TWG's analyses of variations to the baseline and reduced monitoring provisions, assuming a treatment technique approach.⁵ The objectives of the presentation were to show a preliminary estimate of the number of systems that might qualify for reduced monitoring, and the analysis of baseline monitoring costs with five variations.

In response to questions from the Advisory Committee, Dr. Speight and other TWG members made the following points of clarification:

- For this analysis, baseline monitoring includes routine samples, but not repeat or additional samples. The estimates are based on averaging data from the Six-Year Review.
- On slide 11, the column referring to MCL or monitoring and reporting violations only refers to TCR violations.
- For variations 4 and 5, the TWG used the simplifying assumption that a system with one or fewer service connections had no distribution system.

The Committee members also added the following points to augment the information in the presentation:

- As with the analysis in the last presentation, the number of systems on reduced monitoring is overstated because it includes systems for which baseline monitoring is quarterly monitoring. (As noted earlier, the TWG will recheck these numbers.)
- Implementation of variation 4 would require states to track systems with and without distribution systems; this would result in additional transition costs for states.

During the discussion that followed the presentation on the analysis of baseline and reduced monitoring variations, one member of the Advisory Committee observed that the take home message from the presentation was that the cost of the rule will increase if there is no option for reduced monitoring. This member also pointed to the information on slide 11 describing which criteria for reduced monitoring might provide the best incentives – in the form of lowered costs – to systems. Another member underscored that the costs of the rule could increase for small systems, and pointed out that the same would not be true for systems serving greater than 1000.

One member raised the question of whether increased monitoring brings increased value. In response, another member expressed the view that nothing should change from the current rule for systems that are currently doing a good job and that the intent of the revised rule should be to focus attention on those systems that are not performing well.

⁵ Please see Attachment G for a copy of Dr. Speight's presentation "Results for Varying the Baseline and Reduced Monitoring Provisions Assuming a Treatment Technique Approach."

One member noted that there is no option yet under consideration that allows a reduction to annual monitoring, and systems that currently do so will have their monitoring increased. Another member suggested that the Committee consider adding an option of annual monitoring for some non-community systems if their barriers are in place and the systems are in compliance with industry standards. A third member expressed the view that annual sampling is too infrequent.

A Committee member pointed out that it is not the frequency of the monitoring but the proactive actions that systems will take to qualify for reduced monitoring that will be most protective of public health. This member also suggested that the Committee consider requiring that systems meet all the criteria for reduced monitoring.

One member added that placing an emphasis on correcting a problem when it does occur also addresses the public health goal of the rule. This member also noted the value of targeting monitoring to where and when the greatest risks occur.

The Committee also discussed the option of building a linkage to the GWR by allowing point of entry (POE) sampling in the new rule. (The current TCR does not allow POE as a monitoring location.) One member expressed a preference for keeping the two rules separate from one another, and giving states the flexibility to address sampling sites on a case-by-case basis. Another member proposed allowing POE as an option when developing sampling site plans.

Several representatives also expressed a preference for keeping the revised rule as simple and as close to the existing TCR as possible.

Over the course of their discussion on the analysis of baseline and reduced monitoring variations, Committee members requested the following information from the TWG:

- On slides 21 and 22, double check the numbers for systems doing baseline monitoring under variation 1.
- In current and future analyses, separate out the systems doing quarterly and annual monitoring and show those costs.
- In current and future analyses, provide a further breakdown of CWS to include those serving less than 500 and less than 100.
- Provide separate analyses for ground water NCWS and surface water NCWS.
- For variations 2 and 3, add to the analysis an option of one sample a month for the smallest systems serving less than 100.
- Keep all five variations in future analyses.

C. Presentation: Results of Varying the Approaches to Investigation and Corrective Action Assuming a Treatment Technique Approach

Dr. Speight then turned to the next presentation from the TWG on the results of its analyses of variations to the approaches to investigation and corrective action, assuming a treatment

technique approach.⁶ The objectives of the presentation were to: present the analysis of assessment actions with several variations; present the preliminary characterizations of assessments that would include different levels of responses triggered after different events; and discuss potential follow-up actions based on the findings of an assessment.

Following the presentation, the Advisory Committee engaged in a discussion of the purpose of an investigation or assessment, when an investigation would occur, and at what level of intensity. The Committee also began a discussion about corrective actions and other consequences related to investigations. Several times over the course of the discussion, members noted that investigations and assessments for small systems should be thought of and treated differently.

Several Committee members expressed the view that investigations are unlikely to find the cause of a TC positive. Although it is important to look for the reasons a sample is positive, such as laboratory error or a contaminated sample tap, the focus of investigations should be on ensuring that appropriate barriers are in place and intact in the distribution system.

The Committee then engaged in a conversation about when and at what level of intensity an investigation should occur. There was general agreement that the first exceedance of the trigger (two TC positives for systems taking less than 40 samples per month; 5 percent TC positives for systems taking more than 40 samples per month) should result in a Tier 1 investigation involving a self-evaluation by the system. Committee members then offered the following suggestions for how a Tier 1 investigation could work:

- The state could send an informal notice of exceedance of the trigger to the system, with a simple list for the system to check-off when doing its self-evaluation.
- Systems could send a copy of the self-evaluation form to the state (with monthly reports if they do them). One member thought this was particularly important for small system that would not be likely to hold onto records over the three-year time period between sanitary surveys.
- The checklist could be an attachment to the sampling site plan and both could be reviewed and customized during a sanitary survey.
- The state receipt of the form or checklist would close the investigation. The state would record that the form was received, what deficiencies were found, and what, if any, corrective action was taken.
- If the checklist is simple enough, the expectation could be that systems would do everything on the list.
- For small systems, reconsider if the trigger would be exceeded if two positive routine samples are followed by two negative repeat samples.

Members also suggested that the Agreement in Principle (AIP) could reference the type of self-evaluation form that states would develop; or a prototype of the form could be included as an attachment to the AIP with the understanding that these would not be meant as the final forms and states and EPA would have the flexibility to use these as a starting point. The AIP could

⁶ Please see Attachment H for a copy of Dr. Speight's presentation "Results of Varying the Approaches to Investigation and Corrective Action Assuming a Treatment Technique Approach."

also state whether or not systems must evaluate everything that is critical to public health protection.

The Advisory Committee then discussed what would trigger a more intense, Tier 2 investigation, and what this investigation would entail. Again there was general agreement that a Tier 2 investigation should be triggered at least by the second consecutive exceedance of the TC threshold. Other possible Tier 2 triggers were discussed. Committee members made several suggestions related to a Tier 2 investigation including the following:

- A more detailed and formalized investigation should be done for Tier 2.
- The investigation could be done by a party approved by the state, which could include the system itself.
- The investigation report should be sent to the state.

The Committee also discussed whether or not there should be a Tier 3 investigation. One member suggested a Tier 3 investigation should occur after the third exceedance of the trigger in a 12-month period. Other members thought it was unnecessary to specifically articulate the details of a third tier, because the state would definitely get involved and do its own evaluation in circumstances where there were multiple violations.

During the meeting, one member of the Committee prepared a proposal for a three-tiered approach for assessment and corrective action for systems on monthly monitoring.⁷ An alternate Committee member agreed to work with this member to develop a similar approach for systems with different monitoring frequencies.

In order to assist the Advisory Committee in its deliberations about options for investigations or assessments, a small group of Committee members agreed to develop assessment tools for a simple Tier 1 self-assessment and a more detailed Tier 2 assessment.

Members of the Committee also began a discussion about corrective actions and other consequences related to investigations. Among the suggestions posed were the following:

- If a deficiency is found, require that it be fixed. Follow the model used with sanitary surveys: give systems a timeline to file the evaluation report and a timeline, either set or negotiated, to correct the deficiency.
- States could require further action if they are dissatisfied with the Tier 1 self-assessment.
- Consider giving states the option of requiring follow-up action and determining what the action should be.
- For a Tier 2 exceedance, consider requiring additional monitoring the following month.
- Filing a fraudulent self-evaluation report could result in loss of operator certification.

IV. Options Discussion for Revisions to the Total Coliform Rule

The agenda for this meeting included a list of topics generated at earlier meetings, and the Committee added the following:

- Repeat and follow-up monitoring

⁷ A copy of the proposed three-tiered approach is available from the Designated Federal Officer.

- Laboratory method approval
- Consolidating sanitary survey requirements
- MCL for *E. coli* versus TC versus fecal coliform
- Data management
- Consolidated sanitary survey requirements
- Transition considerations

Over the course of the meeting, the Advisory Committee discussed several of the topics on the list.

Indicators and MCL. The Committee began by discussing indicators and MCLs – for *E. coli*, TC, and fecal coliform - as a construct for the revised rule. One member proposed that the revised rule: maintain the MCL and Maximum Contaminant Level Goal (MCLG) for *E. coli* in the current rule; change TC from an MCL to a treatment technique with a trigger that requires evaluation and correction; and remove fecal coliform as an indicator. Members of the Committee agreed that MCL and Maximum Contaminant Level Goal (MCLG) for *E. coli* in the current rule should carryover into the revised rule.

The Committee discussed the proposal to change TC from an MCL to a treatment technique. One member of the Committee stated a preference for TC as an indicator only (as opposed to either an MCL or a treatment technique), and stressed the importance of providing a clear explanation of the value of keeping TC in a revised rule. The member also raised a concern that a treatment technique for TC could result in additional regulatory burden, noting, however, that further discussions about the investigative and corrective action provisions of the rule might address this concern. Other members stressed that a treatment technique approach, which focuses on actions to find and correct deficiencies in the distribution system, emphasizes the proactive approach that Committee members believe is protective of public health.

Several members of the Committee stressed the importance of keeping TC in the rule. Many members, noting that TC is an indicator of system health not public health, supported the view that TC should not remain an MCL. One member emphasized the importance of requiring clear, enforceable, mandatory actions if TC changes to a treatment technique

With the caveat that the concerns raised by members about TC as a treatment technique need to be addressed in the package of provisions for a revised rule, the Committee agreed that:

The following proposal is a likely candidate for the Agreement in Principle that the revised rule: 1) maintain the MCL and Maximum Contaminant Level Goal (MCLG) for *E. coli* in the current rule; 2) change TC from an MCL to a treatment technique with a trigger that requires evaluation and correction; and 3) remove fecal coliform as an indicator.

Reduced Monitoring: criteria for moving on and off of reduced. During their discussion of reduced monitoring, several members of the Committee suggested that systems should lose the privilege of reduced monitoring after the second exceedance of the trigger. One member also suggested that this privilege could be lost after failure to do an assessment or failure to take corrective action. One member stated that systems taking less than quarterly samples should be

required to take two quarterly or six monthly samples before they are eligible to return to reduced monitoring. Members also noted that different approaches may be warranted depending on a system's monitoring frequency.

Repeat Monitoring. The members who spoke generally favored the approach of three repeat samples, one at the original site, and two at sites that would be determined (in the system's site sampling plan) based on potential areas of risk and system type. One member noted a concern about being too specific about sampling locations, because each situation is different.

Follow-up Monitoring. The Advisory Committee then turned to a discussion of follow-up sampling. Several members of the Committee stated their preference for removing the requirement in the current rule for five samples in the month following a TC positive. Others felt it was important that systems on less than monthly monitoring do some sampling the month following an exceedance, because otherwise it could be several months before the state would know that a problem had not been corrected. Some members also expressed a preference for determining the number of follow-up samples in the sampling site plan rather than being prescriptive in the rule. As with reduced monitoring, members noted that there should be different approaches for different systems and different monitoring frequency.

One member observed that requiring small systems to do both corrective action and follow-up sampling the next month could add significantly to their costs.

Transition. As the Committee discussed baseline, reduced and repeat monitoring, they posed several questions about the transition period from the current to the revised TCR, including:

- What should be the time period for transition?
 - Should the transition timeline be tied to sanitary surveys? Should systems stay with the current rule provisions until the next sanitary survey?
 - Should the timeframe be based on the time it takes to ensure that the reduced monitoring criteria in the new rule have been met?
- Should there be grand parenting based on historical sanitary survey results?

Public Notification. The Committee briefly discussed the Public Notification provision of the rule. Some members stated that the Public Notification requirement in a treatment technique construct (for failure to do an investigation or take follow-up corrective action) is more effective risk communication than the requirement in the current rule (for a non-acute violation). Another member suggested that the opportunity to raise public awareness is lost if there is no Public Notification when the TC threshold is exceeded.

Linkage between TCR and GWR. The Committee also discussed possible linkages between the GWR and the TCR. One member proposed giving systems the option of including a point of entry sample in their sampling site plan. One member stated that systems taking one sample per month should take that sample at a site that is representative of the distribution system; if this sample is positive, one of the repeat samples could be at the point of entry.

During its discussion of other proposed rule revisions, the Committee asked the TWG to provide the following analyses:

- Add a sixth variation to the baseline and reduced monitoring analysis:
 - Baseline monitoring: current rule as implemented
 - Reduced monitoring: apply more stringent criteria for staying on reduced, such as annual site visit, source water protection, compliance history, or other identified criteria
- For repeat sampling analysis, assume three repeat samples, one at the original site and two additional.
- For follow-up sampling analysis, provide costs for one follow-up sample and five follow-up samples.

V. Application of Public Health Concepts to Distribution System Protection

John Neuberger, a member of the Advisory Committee, briefed the Committee on a paper he prepared on the “Application of Public Health Concepts to Distribution System Protection.”⁸ In order to provide a more direct link between public health and drinking water, Dr. Neuberger proposed that the Committee consider how to apply three concepts - assessment, policy development, and assurance – under the umbrella of the Committee’s charge.

Members of the Committee expressed appreciation for the logic of Dr. Neuberger’s proposal. One member saw useful connections between the rule and the three categories described in the paper. Another member thought the paper provided a valuable entry way into the information collection and research needs portion of the Committee’s charge.

The Committee discussed the current shortcomings related to the data available for assessment. One member explained that there are regulatory limits on what information states have to provide to EPA through SDWIS. EPA is working toward the goal of having the state and federal databases compatible with one another, so that all the data will be available for assessment and policy development. The member further noted that EPA is working with CDC on the waterborne disease outbreak surveillance system. Another member observed that the utilities also have data.

The Committee then discussed some of the points raised by Dr. Neuberger related to assuring that the public health policies are carried out. One member noted that the Agency does not have the authority to do all that Dr. Neuberger suggests in his paper, particularly related to the concept of assurance. For example, operators of non-transient and CWS have to be certified, but they do not have to work full-time. One member pointed out that some states have training programs for sanitary surveys; another member commented that the Drinking Water Academy also provides sanitary survey training.

VI. Information Collection and Research Priorities

A. Discussion: Context for Information Collection and Research Recommendations

⁸ A copy of Dr. Neuberger’s paper “Application of Public Health Concepts to Distribution System Protection” is available from the Designated Federal Officer.

The Advisory Committee then turned to a discussion of the second part of its charge: “What data should be collected, research conducted, and/or risk management strategies evaluated to better inform distribution system contaminant occurrence and associated public health risks in the distribution systems.” Ms. Bingham noted that the charge focused on both risk characterization (Is there a problem that needs to be addressed?) and risk management (Is there enough information to know what to do about the problem?).

In discussing the context of the Information Collection and Research recommendations, members of the Committee stressed several points. Members emphasized that the research and data collection efforts must be clearly and specifically focused on the goal of identifying public health risks in distribution systems. One member reminded the Committee of the presentations from a number of public health panelists that highlighted several gaps in public health data. Others noted that it is important to conduct research needed to define issues first and then target information collection efforts based on that research. Several members expressed a desire to avoid what they saw as the limitations of previous federal research and information collection efforts. For example, one member pointed to the need to collect data that is compatible with data from public health information systems.

One Committee member described a three-step process for risk characterization and management in the distribution system: 1) identify knowledge gaps in understanding risk in the distribution system; 2) do the research to fill those gaps; and 3) take action to address the risks. The member then voiced a concern about a presumption that the last step in the process, acting on the results of the research and information collection efforts, would be further federal regulations. This member preferred an approach that would make the information from the research and information collection efforts available, through guidance or other means, for state and local officials and others to act on accordingly. Another member of the Committee noted that everyone – utilities, federal, state, and local governments – would be compelled to act if the information collected clearly identified a public health risk. Some members of the Committee stated that the Advisory Committee’s recommendations to EPA should be clear that there has been no decision that federal regulation will result from the research and information collection – or that it will not – leaving all options, including regulation, on the table for addressing the risks identified through research and information collection efforts.

One member of the Committee reminded the Committee that the Stage 2 Microbial Disinfection Byproducts (MDBP) Federal Advisory Committee called on the EPA to “initiate a process” to learn what needs to be done to address risks in the distribution system, but did not state that the EPA should promulgate regulations based on what was learned. This member also noted that a previous ICR resulted in less action being taken than had been anticipated.

One member of the Committee, noting the limitations of the SDWIS database, suggested that additional compliance measures could be added to address some of the data gaps.

B. Presentation: Information Collection and Research Priorities

On behalf of the TWG, Dr. Speight gave a presentation to the Committee on the results of the TWG's work to prioritize gaps for distribution system research and information collection.⁹ The objective of the presentation was to review the priority rankings by the TWG (with the criteria that informed the rankings) of knowledge gaps for the seven issue areas identified by the Committee at its January meeting.

After the presentation, Dr. Speight and other members of the TWG responded to questions and concerns from the Advisory Committee. In response to a question from a one member, Dr. Speight explained that the TWG used the term "national program" to refer to any effort taken across the country to address an identified risk. The TWG did not presume that a national program meant federal regulation. Another member of the Committee noted that it is important to know if there is a national issue ("national characterization") that should be addressed at a national level.

Some members noted that the issue of deteriorating infrastructure was not specifically addressed in the presentation. One member stressed the importance of highlighting information that shows the link between this issue and public health effects. The member stated that infrastructure is falling apart because of lack of resources, and it is important to provide a rationale for expanded federal and state investment. A member of the TWG explained that the TWG considered infrastructure a contributing factor for many of the issue areas.

One member cautioned that implementation of the GWR and the MDBP rule will have an impact on the data collected through the research and information collection plan, because utilities will learn from the rules and respond to problems that are identified (for example, by fixing storage tanks). A member of the TWG responded that it would be important to determine how to get this data when developing the analytical frameworks recommended by the TWG.

One member also pointed out that, in addition to public health risks, there are other risks that state and local officials take into consideration, such as worker safety, economic and business impacts, fire protection, traffic disruption, icing of streets in cold weather, and damage to buildings.

The Advisory Committee then turned to a discussion about prioritization of the research and information collection gaps identified by the TWG. There was general agreement that there is much that is already known about the first four issue areas listed in the presentation (cross-connection and backflow; storage; mains; intrusion). Some members pointed out that systems and states know these issues are a problem and are addressing them through sanitary surveys, inspections, EPA guidance, and best management practices. For this reason, these Committee members suggested that priority be given to longer-term fundamental research in the remaining three issues (biofilm, nitrification, contaminant accumulation). Other members of the Committee favored an approach that would prioritize filling the remaining gaps in knowledge in the first four issues areas so that decisions about whether or not additional attention should be paid to them can be made as quickly as possible. One member noted that the public health experts

⁹ Please see Attachment I for a copy of Dr. Speight's presentation "Information Collection and Research Priorities."

pointed to clear evidence of the connection between these issues and waterborne disease, and stressed that the public health impact of these issues are still unknown. An alternate to the Committee explained that until there is a way to capture and unify all the information on what and how many significant deficiencies are being reported, across different system types, it is not possible to know if there is a national occurrence problem. Once this data is obtained, the next step will be to cross this information with public health data from the CDC. A member of the Committee stressed the importance of addressing the gap in knowledge about public health effects either through research and information collection or through revisions to the TCR. Another member observed that even with information about public health effects, problems will continue to occur.

A member of the Advisory Committee suggested that, for those areas where there is enough information to know there is a public health problem, there are steps that could be taken now, while efforts are underway to fill the knowledge gaps. For example, the states and EPA could look at the sanitary survey guidance and see if there are changes that could be made related to these issues. Related to TCR revisions, this member also noted that operational evaluations could target actions that address these issue areas.

One member of the Committee also noted that the TWG recommended starting with an analytical framework to provide a foundation for all the research and information collection efforts that followed. Members of the TWG explained that a framework, developed across all the issues, would show linkages between the issue areas and provide the opportunity for a unified data collection plan. The framework would also facilitate a sensitivity analysis to show which pieces of information would have the biggest impact.

During the discussion of research and information collection priorities, one member of the Advisory Committee stressed the importance of considering the different research needs of different system sizes. Another member noted that information collection that involved data the states already have would be less intensive and less expensive than conducting research.

In order to assist the Advisory Committee in its deliberations about research and information collection priorities, a representative group of members agreed to develop a proposal for the Committee's consideration.

C. Discussion: Implementation Mechanisms for Information Collection and Research

Audrey Levine, the EPA national program director for the drinking water research program, provided an overview of a proposed draft Agreement in Principle for information collection and research needs recommendations, which had been prepared by a small group consisting of EPA staff, TWG members, and TCRDSAC alternates.¹⁰

After Ms. Levine's overview, members of the Advisory Committee first discussed the frequency and methods of ongoing communication with stakeholders. One member stated that stakeholder meetings should occur more frequently than every three years. Another member suggested there

¹⁰ A copy of the proposed draft Agreement in Principle language for information collection and research needs is available from the Designated Federal Officer.

be a stakeholder meeting after the development of the Comprehensive Distribution System Research Plan. Ms. Levine noted that the proposed language also calls for several workshops, and added that other means of communication could be considered.

The Committee then turned to a discussion of the funding for the Research Plan. Ms. Levine began by explaining that the Research Partnership would be responsible for coordinating which members of the Partnership do which research projects, with each partner then following its own practices for funding projects. The Committee member representing EPA added that the Agency would include the research projects suited to EPA in the Office of Research Development's (ORD) multi-year plan. The member further noted that some projects might be funded through EPA's STAR (Science to Achieve Results) grant program. Ms. Levine also noted that, although ORD's budget is dependent on the federal budget and, therefore, it is not possible to make specific funding commitments beyond the current year's budget, it is possible to make multi-year grants for projects that will take several years to complete.

One member of the Advisory Committee raised a question about the need to sign an Agreement in Principle, since some of the potential members of the Research Partnership will conduct the research in any event. Ms. Levine noted that the section of the Agreement outlining roles, responsibilities, and financial and in-kind contributions needs to be developed further.

A member of the Committee asked EPA to provide a summary of distribution system research projects conducted by ORD.

VII. Small Business Regulatory Enforcement Act (SBREFA) Report

Pamela Barr, U.S. EPA alternate on the Committee, provided an overview of the Small Business Advocacy Review (SBAR) Panel's report on the revisions to the TC monitoring and analytical requirements and consideration of distribution system issues.¹¹ Ms. Barr noted that members received a copy of the Panel report's executive summary in their meeting materials.¹²

In response to questions from the Committee members, Ms. Barr made the following points:

- At least two of the four panel members regularly attended TCRDSAC meetings, and a few of the Small Entity Representatives (SERs) are taking part in the TCRDSAC process. The SERs also were given access to the presentations made to the Committee.
- The EPA is required by law to consider both the SBAR Panel's recommendations and the recommendations of the Advisory Committee. The two processes were scheduled in parallel so that each could benefit by the other's work.

VIII. Public Comment

No members of the public offered comment at this meeting.

¹¹ Please see Attachment J for a copy of Ms. Barr's presentation "Executive Summary – Report of the Small Business Advocacy Review Panel."

¹² A copy of the executive summary of the SBAR Panel Report is available from the Designated Federal Officer.

IX. Next Steps and Action Items

Ms. Bingham and the Committee developed the following list of proposed topics for the May meeting of the TCRDSAC meeting:

- Monitoring
 - Baseline
 - Reduced
 - Repeat and follow-up
 - Criteria and timing for changes
 - Implications for transition
- Assessments and corrective action
 - Levels
 - Degree of detail
 - Triggers
 - Reporting
- Violations
- Consolidated sanitary survey requirements
- Public notification
- Research and information collection
- Operator certification
- Transition between the current TCR and the revised TCR

Ms. Bingham noted that three subgroups, including two formed during this meeting, will meet to build on the Committee's discussion of its two charges and develop proposals for discussion at the May meeting:

- Coordination Mechanisms for Research and Information Collection Subgroup: Audrey Levine, Gary Lynch, Stig Regli, Alan Roberson, and Scott Summers will revise and add to the research mechanisms document based on the Committee's input.
- Assessment and Corrective Actions Subgroup: Carrie Lewis, Harvey Minnigh, David Baird, Patti Fauver, and Gary Lynch will elaborate on the Committee's ideas about assessment and corrective action.
- Research and Information Collection Priorities Subgroup: David Visintainer, Beth Messer, Pam Barr, Lynn Thorp, Bruce Tobey, Mark LeChevallier, and John Neuberger will discuss how to move forward with the Committee's discussion of research and information collection priorities.

Over the course of the meeting some members of the Committee agreed to develop option packages for revising the TCR for the Committee's consideration. Ms. Bingham also invited other members to propose packages. She said that she would send an email requesting that members send their packages to her in time for the analyses to be completed before the May meeting.

Ms. Bingham also shared with the Committee a draft annotated outline for an Agreement in Principle that was compiled from past meeting summaries and conversations with members.¹³ She noted that RESOLVE would add text based on preliminary agreements emerging from the May meeting and again after the June meeting. Committee members will then circulate the draft Agreement in Principle with their constituents.

Ms. Bingham reminded the Committee not to engage in email conversations with more than seven other members of the Committee.

The Committee then discussed the possibility of adding an additional meeting or conference call after the last scheduled meeting in July. RESOLVE agreed to gather information about the Committee's availability in August and September in case an additional meeting is necessary.

Comments to the February meeting summary are due to RESOLVE by COB April 25. The TWG will next meet on May 20, 2008 in Washington, D.C. The TCRDSAC will next meet on May 22-23, 2008 in Washington, D.C.

NOTE: This document was prepared by the facilitators for consideration by the Total Coliform Rule Distribution System Advisory Committee and does not constitute a product of the Committee. The Total Coliform Rule Distribution System Advisory Committee is a federal advisory committee chartered by Congress, operating under the Federal Advisory Committee Act (FACA; 5 U.S.C., App.2). The Committee provides advice to the Administrator of the U.S. Environmental Protection Agency on revisions to the Total Coliform Rule (TCR), and on what information about distribution systems is needed to better understand the public health impact from the degradation of drinking water quality in distribution systems. The findings and recommendations of the Committee do not represent the views of the Agency, and this document does not represent information approved or disseminated by EPA.

¹³ A copy of the draft outline for an Agreement in Principle for revisions to the TCR is available from the Designated Federal Officer.

Attachments

Attachment A – TCRDSAC roster*

Attachment B – Meeting agenda*

Attachment C – List of meeting attendees

Attachment D – January TCRDSAC meeting summary

Attachment E – Doug Owen’s presentation “Background Information Related to Options Review”*

Attachment F – Vanessa Speight’s presentation “Results of Analysis for the Current Total Coliform Rule”*

Attachment G – Vanessa Speight’s presentation “Results of Varying the Baseline and Reduced Monitoring Provisions Assuming a Treatment Technique Approach”*

Attachment H – Vanessa Speight’s presentation “Results of Varying the Approaches to Investigation and Corrective Action Assuming a Treatment Technique Approach”*

Attachment I – Vanessa Speight’s presentation “Information Collection and Research Priorities”*

Attachment J – Pamela Barr’s presentation “Executive Summary – Report of the Small Business Advocacy Review Panel”*

* The meeting presentations and other documents may be found online at http://www.epa.gov/OGWDW/disinfection/tcr/regulation_revisions_tcrdsac.html.

U.S. Environmental Protection Agency
Total Coliform Rule / Distribution System
Advisory Committee Meeting
April 9-10, 2008

Meeting Attendees

John Albert, American Water Works Association Research Foundation
Ali Arvanaghi, U.S. EPA
Sarah Bahrman, U.S. EPA
Zeno Bain, U.S. EPA
David Baird, National Rural Water Association*
Pamela Bar, U.S. EPA*
Jeremy Bauer, U.S. EPA
Carolyn Berndt, National League of Cities
Gail Bingham, RESOLVE
Eric Bissonette, U.S. EPA
Manja Blazer, IDEXX
Kevin Bromberg, SBA Advocacy
Erica Brown, Association of Metropolitan Water Agencies*
Gary Burlingame, Philadelphia Water Department
Joyce Chandler, U.S. EPA
Jimmy Chen, U.S. EPA
James Cherry, City of Virginia Beach Public Utilities
Sean Conley, U.S. EPA
Cesar Cordero, U.S. EPA
Tom Crawford, Native American Water Association*
Cynthia Dougherty, U.S. EPA*
Patti Fauver, Environmental Council of States*
Melinda Friedman, Confluence Engineering
Mark Gibson, HACH Homeland Security Technologies
Kathy Grant, RESOLVE
Tom Grubbs, U.S. EPA
Yu-Ting Guilaran, U.S. EPA
Trish Hall, U.S. EPA
Curtis Haymore, The Cadmus Group, Inc.
Christine Maloni Hoover, National Association of State Utility Consumer Advocates*
Maggie Lavay, U.S. EPA
Mark LeChevallier, National Association of Water Companies*
Debbie Lee, RESOLVE
Frank Letkiewicz, The Cadmus Group, Inc.
Carrie Lewis, American Water Works Association*
Sabrina Lovell, U.S. EPA
Gary Lynch, National Association of Water Companies*
Jennifer Lynette, U.S. EPA
Beth Messer, Environmental Council of States*

Harvey Minnigh, Rural Community Assistance Partnership*
Russell Navratil, County of Henrico, VA
John Neuberger, Council of State and Territorial Epidemiologists*
Amy Newbold, U.S. EPA
Eva Nieminski, Utah Department of Environmental Quality
Darrell Osterhoudt, Association of State Drinking Water Administrators*
Doug Owen, Malcolm Pirnie
Jonathan Pressman, U.S. EPA
Stig Regli, U.S. EPA
J. Kevin Reilly, U.S. EPA
Alan Roberson, American Water Works Association*
Crystal Rodgers-Jenkins, U.S. EPA
Patsy Root, IDEXX Labs, Inc.
Ken Rosenfeld, National League of Cities*
Sharon Roy, Centers for Disease Control and Prevention
Rick Sakaji, East Bay Municipal Utility District
Tom Schaeffer, Association of Metropolitan Water Agencies
John Scheltens, American Water Works Association
Mick Schock, U.S. EPA
Paul Schwartz, University of Southern California
Nicole Shao, U.S. EPA
Jerry Smith, Association of State Drinking Water Administrators*
Tim Soward, IntelliTech
Vanessa Speight, Malcolm Pirnie
David Spenard, National Association of State Utility Consumer Advocates*
Anne Spiesman, Washington Aqueduct
Scott Summers, University of Colorado at Boulder
Jim Taft, Association of State Drinking Water Administrators
Ed Thomas, National Rural Water Association
Bruce Tobey, National League of Cities*
Steve Via, American Water Works Association
Bob Vincent, National Environmental Health Association*
David Visintainer, Association of Metropolitan Water Agencies*
Paul Whittemore, National Rural Water Association*
Mae Wu, Natural Resources Defense Council*

* TCRDSAC Member or Alternate